Programming Manual

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Allen-Bradley

PowerFlex® 750-Series AC Drives

Catalog Numbers 20F, 20G, and 21G

Allen-Bradley • Rockwell Software

Rockwell Automation

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Important User Information

Solid-state equipment has operational characteristics differing from those of electromechanical equipment. Safety Guidelines for the Application, Installation and Maintenance of Solid State Controls (publication SGI-1.1 available from your local Rockwell Automation sales office or online at http://www.rockwellautomation.com/literature/) describes some important differences between solid-state equipment and hard-wired electromechanical devices. Because of this difference, and also because of the wide variety of uses for solid-state equipment, all persons responsible for applying this equipment must satisfy themselves that each intended application of this equipment is acceptable.

In no event will Rockwell Automation, Inc. be responsible or liable for indirect or consequential damages resulting from the use or application of this equipment.

The examples and diagrams in this manual are included solely for illustrative purposes. Because of the many variables and requirements associated with any particular installation, Rockwell Automation, Inc. cannot assume responsibility or liability for actual use based on the examples and diagrams.

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Throughout this manual, when necessary, we use notes to make you aware of safety considerations.

	WARNING: Identifies information about practices or circumstances that can cause an explosion in a hazardous environment, which may lead to personal injury or death, property damage, or economic loss.
	ATTENTION: Identifies information about practices or circumstances that can lead to personal injury or death, property damage, or economic loss. Attentions help you identify a hazard, avoid a hazard, and recognize the consequence
	SHOCK HAZARD: Labels may be on or inside the equipment, for example, a drive or motor, to alert people that dangerous voltage may be present.
	BURN HAZARD: Labels may be on or inside the equipment, for example, a drive or motor, to alert people that surfaces may reach dangerous temperatures.
IMPORTANT	Identifies information that is critical for successful application and understanding of the product.

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This programming manual contains new and updated information to content originally published in the PowerFlex 750-Series AC Drives User Manual, publication 750-UM001.

Content regarding mechanical and electrical installation of 750-Series drives is now exclusively published in the PowerFlex 750-Series Drive Installation Instructions, publication 750-IN001.

New and Updated Information

The following parameters were added.

Monitor File

16 [Elpsd Mtr MWHrs]
17 [Elpsd Rgn MWHrs]
18 [Elpsd Mtr kWHrs]
19 [Elpsd Rgn kWHrs]

Motor Control File

120 [PM IXqVoltage125]

Protection File

481 [CbFan Derate]
482 [CbFan TotalLife]
483 [CbFan ElpsdLife]
484 [CbFan RemainLife]
485 [CbFan EventLevel]
486 [CbFan EventActn]
488 [HsFan Derate]

Torque Control File

1560 [FrctnComp Mode]
1561 [FrctnComp Trig]
1562 [FrctnComp Hyster]
1563 [FrctnComp Time]
1564 [FrctnComp Stick]
1565 [FrctnComp Slip]
1566 [FrctnComp Rated]
1567 [FrctnComp Out]

Position Control File

756 [Interp Psn Input]
757 [Interp Vel Input]
758 [Interp Trq Input]
759 [Interp Psn Out]
760 [Interp Vel Out]
761 [Interp Trq Out]
848 [Psn Gear Ratio]

Position Control File

1153 [Dead Time Comp]
1154 [DC Offset Ctrl]

Applications File

1500 [Roll Psn Config]
1501 [Roll Psn Status]
1502 [RP Psn Fdbk Stpt]
1503 [RP Psn Fdbk Sel]
1504 [Roll Psn Preset]
1505 [Roll Psn Offset]
1506 [RP EPR Input]
1507 [RP Rvls Input]
1508 [RP Rvls Output]
1509 [RP Unwinde]
1510 [RP Unit Scale]
1511 [RP Psn Output]
1512 [RP Unit Out]
1515 [PsnTrqBst Ctrl]
1516 [PsnTrqBst Sts]
1517 [PsnTrqBst RefSel]
1518 [PsnTrqBstPsnOfst]
1519 [PsnTrqBst UNWCnt]
1520 [PsnTrqBst Ps X1]
1521 [PsnTrqBst Ps X2]
1522 [PsnTrqBst Ps X3]
1523 [PsnTrqBst Ps X4]
1524 [PsnTrqBst Ps X5]
1525 [PsnTrqBst Trq Y2]
1526 [PsnTrqBst Trq Y3]
1527 [PsnTrqBst Trq Y4]
1528 [PsnTrqBst TrqOut]
1580 [SO Config]
1581 [SO Status]
1582 [SO Setpoint]
1583 [SO Offset]
1584 [SO EPR Input]
1585 [SO Rvls Input]
1586 [SO Rvls Output]
1587 [SO Cnts per Rvls]
1588 [SO Unit Scale]
1589 [SO Position Out]
1590 [SO Unit Out]
1591 [SO Accel Time]
1592 [SO Decel Time]
1593 [SO Fwd Vel Lmt]
1594 [SO Rev Vel Lmt]
1600 [Id Comp Enbl]
1601 [Id Comp Mtrng 1]
1602 [IdCompMtrng 1 Iq]
1603 [Id Comp Mtrng 2]
1604 [IdCompMtrng 2 Iq]
1613 [Id Comp Regen 1]
1614 [IdComp Regen 1 Iq]
1615 [Id Comp Regen 2]
1616 [IdCompRegen 2 Iq]

Inverter Common File

1	[Sys Rated Amps]	12	[Fault Status]	31	[Testpoint Val 1]
2	[Sys Rated Volts]	13	[Alarm Status]	32	[Testpoint Sel 2]
3	[I1 Rated Amps]	18	[Ground Current]	33	[Testpoint Val 2]
10	[Online Status]	30	[Testpoint Sel 1]		

Inverter 1 File

105	[I1 Fault Status]	120	[I1 Heatsink Temp]	128	[I1 HSFanElpsdLif]
107	[I1 Alarm Status]	121	[I1 IGBT Temp]	129	[I1 InFanElpsdLif]
115	[I1 U Phase Curr]	124	[I1 HSFan Speed]	140	[I1 Testpt Sel 1]
116	[I1 V Phase Curr]	125	[I1 InFan 1 Speed]	141	[I1 Testpt Val 1]
117	[I1 W Phase Curr]	126	[I1 InFan 2 Speed]	142	[I1 Testpt Sel 2]
118	[I1 Gnd Current]	127	[I1 PredMainReset]	143	[I1 Testpt Val 2]
119	[I1 DC Bus Volt]				

Converter Common File

1	[Sys Rated Amps]	16	[Gnd Cur Flt Lvl]	25	[Gate Board Temp]
2	[Sys Rated Volts]	20	[L1 Phase Curr]	30	[Testpoint Sel 1]
3	[C1 Rated Amps]	21	[L2 Phase Curr]	31	[Testpoint Val 1]
10	[Online Status]	22	[L3 Phase Curr]	32	[Testpoint Sel 2]
12	[Fault Status]	23	[Heatsink Temp]	33	[Testpoint Val 2]
13	[Alarm Status]	24	[SCR Temp]		

Converter 1 File

105	[C1 Fault Status1]	119	[C1 DC Bus Volt]	127	[C1 L31 Line Volt]
106	[C1 Fault Status2]	120	[C1 Heatsink Temp]	137	[C1 PredMainReset]
107	[C1 Alarm Status1]	121	[C1 SCR Temp]	138	[C1 CbFanElpsdLif]
115	[C1 L1 Phase Curr]	122	[C1 GateBoardTemp]	140	[C1 Testpt Sel 1]
116	[C1 L2 Phase Curr]	123	[C1 AC Line Freq]	141	[C1 Testpt Val 1]
117	[C1 L3 Phase Curr]	125	[C1 L12 Line Volt]	142	[C1 Testpt Sel 2]
118	[C1 Gnd Current]	126	[C1 L23 Line Volt]	143	[C1 Testpt Val 2]

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Overview

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The purpose of this manual is to provide you with the basic information needed to install, start-up and troubleshoot PowerFlex® 750-Series Adjustable Frequency AC Drives.

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Who Should Use This Manual

This manual is intended for qualified personnel. You must be able to program and operate Adjustable Frequency AC Drive devices. In addition, you must have an understanding of the parameter settings and functions.

What Is Not In This Manual

The PowerFlex 750-Series User Manual is designed to provide only basic start-up information.

Recommended Documentation

All the recommended documentation listed in this section is available online at **www.rockwellautomation.com/literature**.

The following publications provide general drive information.

Title	Publication
Wiring and Grounding Guidelines for Pulse Width Modulated (PWM) AC Drives	DRIVES-IN001
Safety Guidelines for the Application, Installation and Maintenance of Solid State Control	SGI-1.1
A Global Reference Guide for Reading Schematic Diagrams	100-2.10
Guarding Against Electrostatic Damage	8000-4.5.2

The following publications provide specific PowerFlex 750-Series information on drive installation, features, specifications, and service:

Title	Publication
PowerFlex 750-Series AC Drive Installation Instructions	750-IN001
PowerFlex 750-Series AC Drives Technical Data	750-TD001
Enhanced PowerFlex 7-Class Human Interface Module (HIM) User Manual	20HIM-UM001
PowerFlex 750-Series Safe Torque Off User Manual	750-UM002
Safe Speed Monitor Option Module for PowerFlex 750-Series AC Drives Reference Manual	750-RM001
PowerFlex 750-Series AC Drives Hardware Service Manual (Frame 8)	750-TG001
Dynamic Braking Resistor Calculator	PFLEX-AT001
DeviceLogix User Manual	RA-UM003

The following publications provide specific Network Communications information:

Title	Publication
PowerFlex 755 Drive Embedded EtherNet/IP Adapter	750COM-UM001
PowerFlex 750-Series Drive DeviceNet Option Module	750COM-UM002
PowerFlex 20-750-CNETC Coaxial ControlNet Option Module	750COM-UM003

The following publications provide necessary information when applying the Logix Processors:

Title	Publication
Logix5000 Controllers Common Procedures	1756-PM001
Logix5000 Controllers General Instructions	1756-RM003
Logix5000 Controllers Process Control and Drives Instructions	1756-RM006
RSLogix 5000 Getting Results	9399-RLD300GR

The following publications provide information that is useful when planning and installing communication networks:

Title	Publication
ControlNet Coax Tap Installation Instructions	1786-5.7
ControlNet Cable System Planning and Installation Manual	1786-6.2.1
ControlNet Fiber Media Planning and Installation Guide	CNET-IN001

Obtaining Manuals

To order paper copies of technical documentation, contact your local Rockwell Automation distributor or sales representative.

To find your local Rockwell Automation distributor, visit **www.rockwellautomation.com/locations**

Allen-Bradley Drives Technical Support

Online at…	By Email at…	By Telephone at…
www.ab.com/support/abdrives	support@drives.ra.rockwell.com	262-512-8176

For Automation and Control Technical Support:

Title	Online at…
Rockwell Automation Technical Support	http://support.rockwellautomation.com/knowledgebase

Product Certification

Product Certifications and Declarations of Conformity are available on the internet at: **www.rockwellautomation.com/products/certification**

Manual Conventions

- In this manual we refer to PowerFlex 750-Series Adjustable Frequency AC Drives as: drive, PowerFlex 750, PowerFlex 750 drive or PowerFlex 750 AC drive.
- Specific drives within the PowerFlex 750-Series may be referred to as:
  - PowerFlex 753, PowerFlex 753 drive or PowerFlex 753 AC drive
  - PowerFlex 755, PowerFlex 755 drive or PowerFlex 755 AC drive
- To help differentiate parameter names and LCD display text from other text, the following conventions will be used:
  - Parameter Names will appear in [brackets] after the Parameter Number. For example: parameter 308 [Direction Mode].
  - Display text will appear in "quotes." For example: "Enabled."
- The following words are used throughout the manual to describe an action:

Word	Meaning
Can	Possible, able to do something
Cannot	Not possible, not able to do something
May	Permitted, allowed
Must	Unavoidable, you must do this
Shall	Required and necessary
Should	Recommended
Should Not	Not recommended

General Precautions

Qualified Personnel

ATTENTION: Only qualified personnel familiar with adjustable frequency AC drives and associated machinery should plan or implement the installation, start-up and subsequent maintenance of the system. Failure to comply may result in personal injury and/or equipment damage.

Personal Safety

ATTENTION: To avoid an electric shock hazard, verify that the voltage on the bus capacitors has discharged completely before servicing. Check the DC bus voltage at the Power Terminal Block by measuring between the +DC and -DC terminals, between the +DC terminal and the chassis, and between the -DC terminal and the chassis. The voltage must be zero for all three measurements.

ATTENTION: Hazard of personal injury or equipment damage exists when using bipolar input sources. Noise and drift in sensitive input circuits can cause unpredictable changes in motor speed and direction. Use speed command parameters to help reduce input source sensitivity.

ATTENTION: Risk of injury or equipment damage exists. DPI or SCANport host products must not be directly connected together via 1202 cables. Unpredictable behavior can result if two or more devices are connected in this manner.

ATTENTION: The drive start/stop/enable control circuitry includes solid state components. If hazards due to accidental contact with moving machinery or unintentional flow of liquid, gas or solids exists, an additional hardwired stop circuit may be required to remove the AC line to the drive. An auxiliary braking method may be required.

ATTENTION: Hazard of personal injury or equipment damage due to unexpected machine operation exists if the drive is configured to automatically issue a Start or Run command. Do not use these functions without considering applicable local, national and international codes, standards, regulations or industry guidelines.

Product Safety

ATTENTION: An incorrectly applied or installed drive can result in component damage or a reduction in product life. Wiring or application errors such as under sizing the motor, incorrect or inadequate AC supply, or excessive surrounding air temperatures may result in malfunction of the system.

ATTENTION: This drive contains ESD (Electrostatic Discharge) sensitive parts and assemblies. Static control precautions are required when installing, testing, servicing or repairing this assembly. Component damage may result if ESD control procedures are not followed. If you are not familiar with static control procedures, reference Guarding Against Electrostatic Damage, publication 8000-4.5.2 or any other applicable ESD protection handbook.

ATTENTION: Configuring an analog input for 0-20 mA operation and driving it from a voltage source could cause component damage. Verify proper configuration prior to applying input signals.

ATTENTION: A contactor or other device that routinely disconnects and reapplies the AC line to the drive to start and stop the motor can cause drive hardware damage. The drive is designed to use control input signals that will start and stop the motor. If an input device is used, operation must not exceed one cycle per minute or drive damage will occur.

Class 1 LED Product

ATTENTION: Hazard of permanent eye damage exists when using optical transmission equipment. This product emits intense light and invisible radiation. Do not look into module ports or fiber optic cable connectors.

Start Up

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This chapter provides the information needed to start up the PowerFlex 750-Series drive.

For Information on …	See Page …
Establishing A Connection With EtherNet/IP	21
Prepare For Initial Drive Start-Up	17
Start-Up Menu	19
Drive Status Indicators	20

Start-Up Check List

- This check list supports the Start-Up menu option.
- A Human Interface Module (HIM) is required to run the Start-Up routine.

IMPORTANT Appendix D provides an overview of Human Interface Module (HIM) display elements and menu navigation.

- The Start-Up routine may modify parameter values for Analog and Digital I/O.

ATTENTION: Power must be applied to the drive to perform the following start-up procedure. Some of the voltages present are at incoming line potential. To avoid electric shock hazard or damage to equipment, only qualified service personnel should perform the following procedure. Thoroughly read and understand the procedure before beginning.

Prepare For Initial Drive Start-Up

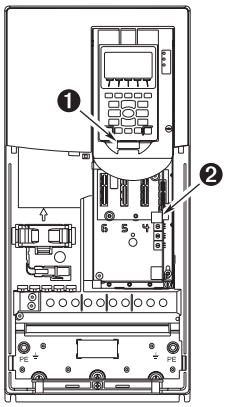
❑ **1.** Confirm that all inputs are connected to the correct terminals and are secure.

❑ **2.** Verify that AC line power at the disconnect device is within the rated value of the drive.

❑ **3.** Verify that control power voltage is correct.

❑ **4.** The remainder of this procedure requires that a Human Interface Module (HIM) is connected to DPI Port 1 or 2.

Figure 1 - DPI Ports ❶ and ❷



❑ **5.** Apply AC power and control voltages to the drive.

If any digital inputs are configured to Stop – CF, Run, or Enable, verify that signals are present or the drive will not start. Refer to Chapter 3 for a list of potential digital input conflicts.

If the STS LED is not flashing green at this point, refer to Drive Status Indicators on page 20.

❑ **6.** When prompted, select a display language. The Start-Up Screen will automatically display for drives that have not been previously configured.

If the Start-Up screen is not displayed press the Enter key.

❑ **7.** Press the Enter key to display the Start-Up Menu.

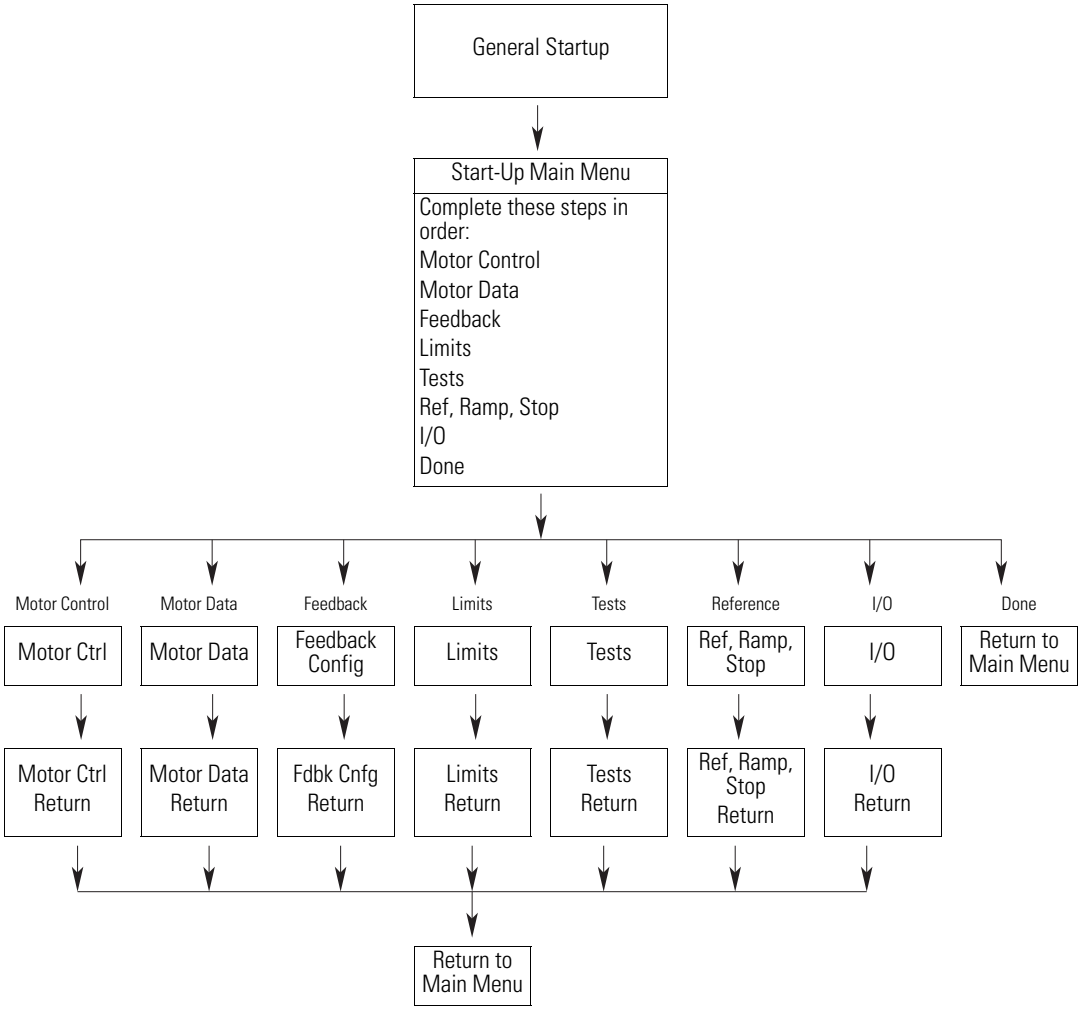
❑ **8.** Use the Up/Down Arrow keys to highlight “2. Basic”.

❑ **9.** Press the Enter key. Follow the menu using the Enter key which will step you through the Start-Up routine.

The Start-Up routine asks simple questions and prompts you to input required information.

Start-Up Menu

The Human Interface Module (HIM) displays the General Start-Up menu by default upon initial power up of the drive. To navigate to the Start-Up menu after the initial power up of the drive, press the (Folders) key



Drive Status Indicators

Table 1 - PowerFlex 753 Status Indicator Descriptions

Name	Color	State	Description
STS (Status)	Green	Flashing	Drive ready but not running, and no faults are present.
		Steady	Drive running, no faults are present.
	Yellow	Flashing	Drive is not running, a type 2 (non-configurable) alarm condition exists and the drive cannot be started.
		Steady	Drive is not running, a type 1 (user configurable) alarm condition exists and the drive continues to run.
	Red	Flashing	A major fault has occurred. Drive will stop. Drive cannot be started until fault condition is cleared.
		Steady	A non-resettable fault has occurred.
	Red / Yellow	Flashing Alternately	A minor fault has occurred. When running, the drive continues to run. System is brought to a stop under system control. Fault must be cleared to continue. Use parameter 950 [Minor Flt Config] to enable. If not enabled, acts like a major fault.
	Yellow / Green	Flashing Alternately	When running, a type 1 alarm exists.
	Green / Red	Flashing Alternately	Drive is flash updating.

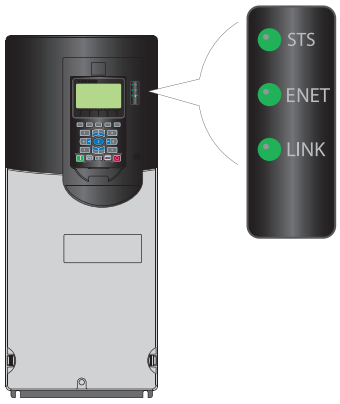


Table 2 - PowerFlex 755 Status Indicator Descriptions

Name	Color	State	Description
STS (Status)	Green	Flashing	Drive ready but not running, and no faults are present.
		Steady	Drive running, no faults are present.
	Yellow	Flashing	Drive is not running, a type 2 (non-configurable) alarm condition exists and the drive cannot be started.
		Steady	Drive is not running, a type 1 (user configurable) alarm condition exists and the drive continues to run.
	Red	Flashing	A major fault has occurred. Drive will stop. Drive cannot be started until fault condition is cleared.
		Steady	A non-resettable fault has occurred.
	Red / Yellow	Flashing Alternately	A minor fault has occurred. When running, the drive continues to run. System is brought to a stop under system control. Fault must be cleared to continue. Use parameter 950 [Minor Flt Config] to enable. If not enabled, acts like a major fault.
	Yellow / Green	Flashing Alternately	When running, a type 1 alarm exists.
	Green / Red	Flashing Alternately	Drive is flash updating.
ENET	Unlit	Off	Embedded EtherNet/IP is not properly connected to the network or needs an IP address.
	Red	Flashing	An EtherNet/IP connection has timed out.
		Steady	Adapter failed the duplicate IP address detection test.
	Red / Green	Flashing Alternately	Adapter is performing a self-test.
	Green	Flashing	Adapter is properly connected but is not communicating with any devices on the network.
		Steady	Adapter is properly connected and communicating on the network.
LINK	Unlit	Off	Adapter is not powered or is not transmitting on the network.
	Green	Flashing	Adapter is properly connected and transmitting data packets on the network.
		Steady	Adapter is properly connected but is not transmitting on the network.

IMPORTANT The Status Indicator LEDs on the HIM cradle do not indicate the current status of an installed Communication Adapter option. If an optional Communication Adapter is installed, refer to that option's user manual for a description of LED location and indication.

Establishing A Connection With EtherNet/IP

There are three methods for configuring the embedded EtherNet/IP adapter's IP address:

- **Adapter Rotary Switches –** Use the switches when working on a simple, isolated network (for example, 192.168.1.xxx) that has other products with switches to set their IP addresses, does not need to be accessed from outside the network, and you prefer a simplified node addressing method. The three adapter switches are read when the drive powers up, and represent three decimal digits from top to bottom (see Figure 2). If set to a valid address (001-254), the adapter will use that value as the lower octet of its IP address (192.168.1.xxx, where xxx = rotary switch settings), along with a subnet mask of 255.255.255.0 and there will be no gateway configured. Also, the setting for adapter P36 [BOOTP] is automatically ignored.

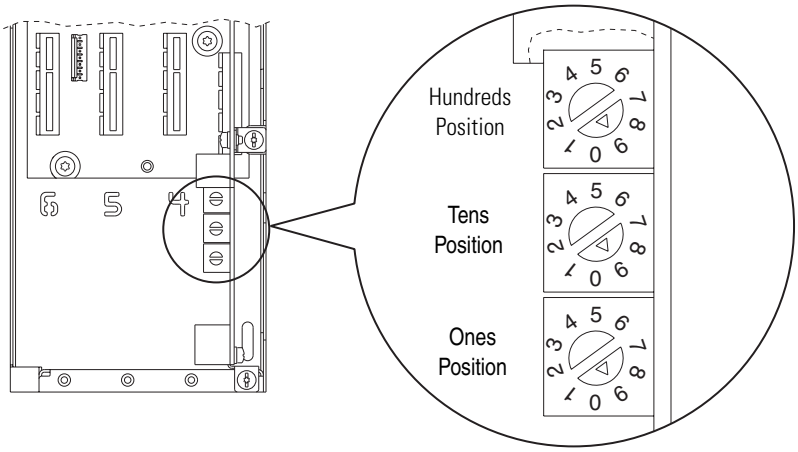
  See Figure 2 and its accompanying table for all possible switch settings and their related descriptions.

IMPORTANT	When using the adapter rotary switches, set the IP address before power is applied because the adapter uses the IP address it detects when it first receives power.

- **BOOTP Server –** Use BOOTP if you prefer to control the IP addresses of devices using a server. The IP address, subnet mask, and gateway addresses will then be provided by the BOOTP server.
- **Adapter Parameters –** Use adapter parameters when you want more flexibility in setting up the IP address, or need to communicate outside the control network using a gateway. The IP address, subnet mask, and gateway addresses will then come from the adapter parameters you set.

IMPORTANT	Regardless of the method used to set the adapter's IP address, each node on the EtherNet/IP network must have a unique IP address. To change an IP address, you must set the new value and then remove and reapply power to (or reset) the adapter.

Figure 2 - Setting the IP Address Switches



Possible Settings	Description
000	Adapter will use, depending on P36 [BOOTP], the BOOTP setting or the adapter parameter settings for the IP address.
001…254	Adapter will use the rotary switch settings for the IP address (192.168.1.xxx, where xxx = rotary switch settings).
255…887	Adapter will use, depending on P36 [BOOTP], the BOOTP setting or the adapter parameter settings for the IP address.
888	Resets the adapter IP address function to factory defaults. Thereafter, the drive must be powered down, the switches set to a setting other than 888, and then the drive must be powered up again to accept the new address.
889…998	Adapter will use, depending on P36 [BOOTP], the BOOTP setting or the adapter parameter settings for the IP address.
999 (default settings)	Disables the rotary switches. Adapter will use, depending on P36 [BOOTP], the BOOTP setting or the adapter parameter settings for the IP address.

Programming and Parameters

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This chapter provides a complete listing and description of the PowerFlex 750-Series drive parameters. The parameters can be programmed (viewed/edited) using a Human Interface Module (HIM). Refer to Enhanced PowerFlex 7-Class Human Interface Module (HIM) User Manual, publication 20HIM-UM001, for information on using the HIM to view and edit parameters. As an alternative, programming can also be performed using DriveTools™ software and a personal computer.

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About Parameters

To configure a drive module to operate in a specific way, certain drive parameters may have to be configured appropriately. Three types of parameters exist:

- **ENUM Parameters**
  These parameters allow a selection from 2 or more items. The LCD HIM will display a text message for each item.
- **Bit Parameters**
  These parameters have individual bits associated with features or conditions. If the bit is 0, the feature is off or the condition is false. If the bit is 1, the feature is on or the condition is true.
- **Numeric Parameters**
  These parameters have a single numeric value (i.e. 0.1 Volts).

The following table shows how each parameter type is presented in this manual.

Table 3 - Table Explanation

❶			❷	❸			
		No.	**Display Name** Full Name Description	**Values**		**Read-Write**	**Data Type**
MOTOR CONTROL	**Motor Data**	**28**	**Motor NP RPM** Motor Nameplate Revolutions Per Minute Rated RPM shown on the motor nameplate.	Units: Default: Min/Max:	RPM 1750.0 1.0 / 40000.0	RW	Real
	Vector Regulator	**107**	**Trq Adapt En** Torque Adaption Enable Enables or disables the adaptive torque calculation. This selection is active only in motor control mode flux vector induction (P35 [Motor Ctrl Mode] = 3 "Induction FV").	Default: Options:	1 = "Enabled" 0 = "Disabled" 1 = "Enabled"	RW	32-bit Integer
FEEDBACK & I/O	**Digin Functions**	**158**	**DI Stop** Digital Input Stop Assigns a digital input used to issue a stop command.	Default: Min/Max:	0 0 / 159999.15	RW	32-bit Integer
	Control Board IO	**220**	**Digital In Sts** Digital Input Status Status of the digital input(s) resident on the main control board (Port 0).				

Options	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Digital In 2 (1)	Digital In 1 (1)	Digital In 0
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Condition False
1 = Condition True

(1) 753 drives only.

No.	Name Description			Read-Write	Data Type
❶	File and Group organization				
	No. - Parameter Number				
	Parameter value cannot be changed until the drive is stopped.				
❷	**Name** - Parameter name as it appears in the DriveExecutive software.				
	Description - Brief description of parameter function. The first line is the full text parameter name.				
	753 = Parameter is specific to PowerFlex 753 drives only. 755 = Parameter is specific to PowerFlex 755 drives only. 755 (8+) = Parameter is specific to PowerFlex 755 Frame 8 drives and larger only.				
❸	**Values** - Define the various operating characteristics of the parameter. *There are 3 types of Values.*				
	ENUM	Default:	Lists the value assigned at the factory.		
		Options:	Displays the selections available.		
	Bit	Default:	Lists the value assigned at the factory.		
		Options:	Displays the selections available.		
	Numeric	Default	Lists the value assigned at the factory.		
		Min/Max.	Displays lowest possible setting/Displays highest possible setting.		
	Indicates if parameter is read-write or read-only. **RW** = Read-Write **RO** = Read Only			RW RO	
	Indicates parameter data type (i.e. integer, floating point, boolean).				32-bit Integer

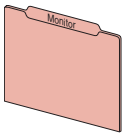
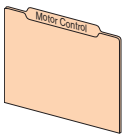
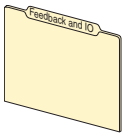
How Drive Parameters are Organized

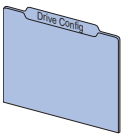
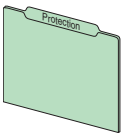
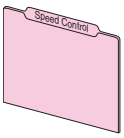
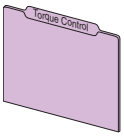
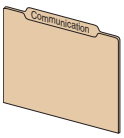
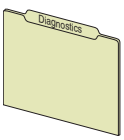
DriveExecutive programming software displays parameters in "Linear List" or "File Group Parameter" format. Viewing the parameters in "File Group Parameter" format simplifies programming by grouping parameters that are used for similar functions. There are eleven files. Each file is divided into multiple groups of parameters.

Parameter descriptions begin on page 47.

Basic Parameter View

Parameter 301 [Access Level] set to option 0 "Basic."

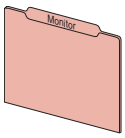
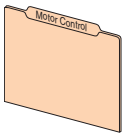
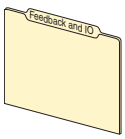
File	Group	Parameters							
Monitor 	Metering	Output Frequency	1	Torque Cur Fdbk	5	Output Power	9		
		Commanded SpdRef	2	Flux Cur Fdbk	6	DC Bus Volts	11		
		Mtr Vel Fdbk	3	Output Current	7				
		Commanded Trq	4	Output Voltage	8				
	Drive Data	Rated Volts	20	Rated Amps	21	Rated kW	22		
Motor Control 	Motor Data	Motor NP Volts	25	Motor NP Hertz	27	Mtr NP Pwr Units	29	Motor Poles	31
		Motor NP Amps	26	Motor NP RPM	28	Motor NP Power	30		
	Mtr Ctrl Options	Motor Ctrl Mode	35	Maximum Voltage	36	PWM Frequency	38		
				Maximum Freq	37				
	Volts per Hertz	VHz Curve	65						
	Autotune	Autotune	70	Autotune Torque	71				
Feedback & I/O 	Digin Functions	Digital In Cfg	150	DI Jog 1	166	DI Accel 2	179		
		DI Enable	155	DI Jog 1 Forward	167	DI Decel 2	180		
		DI Clear Fault	156	DI Jog 1 Reverse	168				
		DI Aux Fault	157	DI Jog 2	169				
		DI Stop	158	DI Jog 2 Forward	170				
		DI Cur Lmt Stop	159	DI Jog 2 Reverse	171				
		DI Coast Stop	160	DI Manual Ctrl	172				
		DI Start	161	DI Speed Sel 0	173				
		DI Fwd Reverse	162	DI Speed Sel 1	174				
		DI Run	163	DI Speed Sel 2	175				
		DI Run Forward	164						
		DI Run Reverse	165						
	Control Board IO	Digital In Sts	220						
	Digital Inputs [753]	Dig In Filt Mask	222	Dig In Filt	223				
	Digital Outputs [753]	Dig Out Sts	225	RO0 Sel	230	TO0 Sel	240		
		Dig Out Invert	226	RO0 Level Sel	231	TO0 Level Sel	241		
		Dig Out Setpoint	227	RO0 Level	232	TO0 Level	242		
				RO0 Level CmpSts	233	TO0 Level CmpSts	243		
				RO0 On Time	234	TO0 On Time	244		
				RO0 Off Time	235	TO0 Off Time	245		
	Motor PTC [753]	PTC Cfg	250	PTC Status	251				
	Analog Inputs [753]	Anlg In Type	255	Anlg In0 Value	260	Anlg In0 LssActn	263	Anlg In0 Filt Gn	265
		Anlg In Sqrt	256	Anlg In0 Hi	261	Anlg In0 Raw Val	264	Anlg In0 Filt BW	266
		Anlg In Loss Sts	257	Anlg In0 Lo	262				
	Analog Outputs [753]	Anlg Out Type	270	Anlg Out0 Sel	275	Anlg Out0 Data	277	Anlg Out0 Hi	280
		Anlg Out Abs	271	Anlg Out0 Stpt	276	Anlg Out0 DataHi	278	Anlg Out0 Lo	281
						Anlg Out0 DataLo	279	Anlg Out0 Val	282

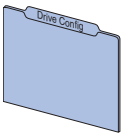
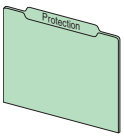
File	Group	Parameters							
Drive Cfg 	Preferences	Speed Units	300	Access Level	301	Language	302		
	Control Cfg	Voltage Class Duty Rating Direction Mode	305 306 308	SpdTrqPsn Mode A	309				
	Auto Manual Ctrl	Logic Mask Auto Mask Manual Cmd Mask Manual Ref Mask	324 325 326 327	Alt Man Ref Sel Alt Man Ref AnHi Alt Man Ref AnLo	328 329 330	Manual Preload	331		
	Braking Features	Stop Mode A Stop Mode B Bus Reg Mode A Bus Reg Mode B	370 371 372 373	DB Resistor Type DB Ext Ohms DB Ext Watts DB ExtPulseWatts	382 383 384 385	Dec Inhibit Actn	409		
Protection 	Motor Overload	Motor OL Actn Mtr OL at Pwr Up Mtr OL Alarm Lvl	410 411 412	Mtr OL Factor Mtr OL Hertz	413 414	Mtr OL Reset Lvl MtrOL Reset Time	415 416		
	Load Limits	Current Lmt Sel Current Limit 1	421 422			Shear Pin Cfg Shear Pin 1 Actn Shear Pin1 Level Shear Pin 1 Time	434 435 436 437		
	Power Loss	Power Loss Actn	449	Pwr Loss Mode A	450				
Speed Control 	Speed Limits	Max Fwd Speed Max Rev Speed	520 521	Min Fwd Speed Min Rev Speed	522 523				
	Speed Ramp Rates	Accel Time 1 Accel Time 2	535 536	Decel Time 1 Decel Time 2	537 538	Jog Acc Dec Time	539		
	Speed Reference	Spd Ref A Sel Spd Ref A Stpt Spd Ref A AnlgHi Spd Ref A AnlgLo Spd Ref B Sel Spd Ref B Stpt Spd Ref B AnlgHi Spd Ref B AnlgLo	545 546 547 548 550 551 552 553	Jog Speed 1 Jog Speed 2	556 557	Preset Speed 1 Preset Speed 2 Preset Speed 3 Preset Speed 4 Preset Speed 5 Preset Speed 6 Preset Speed 7	571 572 573 574 575 576 577		
Torque Control 	Torque Reference	Trq Ref A Sel Trq Ref A Stpt Trq Ref A AnlgHi Trq Ref A AnlgLo Trq Ref A Mult	675 676 677 678 679	Trq Ref B Sel Trq Ref B Stpt Trq Ref B AnlgHi Trq Ref B AnlgLo Trq Ref B Mult	680 681 682 683 684	Selected Trq Ref	685		
Communication 	Comm Control	Port 1 Reference[1]	871						
	DPI Datalinks	Data In A1 Data In A2 Data In B1 Data In B2	895 896 897 898	Data In C1 Data In C2 Data In D1 Data In D2	899 900 901 902	Data Out A1 Data Out A2 Data Out B1 Data Out B2	905 906 907 908	Data Out C1 Data Out C2 Data Out D1 Data Out D2	909 910 911 912
Diagnostics 	Status	Speed Ref Source Last StartSource Last Stop Source Start Inhibits Last StrtInhibit	930 931 932 933 934	Drive Status 1 Drive Status 2 Condition Sts 1	935 936 937				
	Fault/Alarm Info	Minor Flt Cfg Last Fault Code Fault Status A Fault Status B	950 951 952 953						

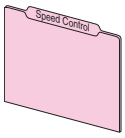
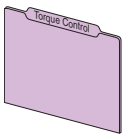
(1) 755 Basic View Only

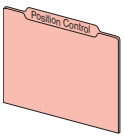
Advanced Parameter View

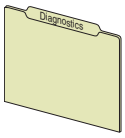
Parameter 301 [Access Level] set to option 1 "Advanced."

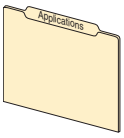
File	Group	Parameters							
Monitor 	Metering	Output Frequency	1	Torque Cur Fdbk	5	Output Power	9	Elapsed MWH	13
		Commanded SpdRef	2	Flux Cur Fdbk	6	Output Powr Fctr	10	Elapsed kWH	14
		Mtr Vel Fdbk	3	Output Current	7	DC Bus Volts	11	Elapsed Run Time	15
		Commanded Trq	4	Output Voltage	8	DC Bus Memory	12		
	Drive Data	Rated Volts	20	Rated Amps	21	Rated kW	22		
Motor Control 	Motor Data	Motor NP Volts	25	Motor NP Hertz	27	Mtr NP Pwr Units	29	Motor Poles	31
		Motor NP Amps	26	Motor NP RPM	28	Motor NP Power	30		
	Mtr Ctrl Options	Motor Ctrl Mode	35	Flux Up Enable	43				
		Maximum Voltage	36	Flux Up Time	44				
		Maximum Freq	37						
		PWM Frequency	38						
		Mtr Options Cfg	40						
	Volts per Hertz	Start Acc Boost	60	Break Voltage	62	VHz Curve	65		
		Run Boost	61	Break Frequency	63				
	Autotune	Autotune	70	Total Inertia	76				
		Autotune Torque	71	Inertia Test Lmt	77				
		IR Voltage Drop	73						
		Ixo Voltage Drop	74						
		Flux Current Ref	75						
Feedback & I/O 	Digin Functions	Digital In Cfg	150	DI Jog 1	166	DI Accel 2	179	DI PID Reset	193
		DI Enable	155	DI Jog 1 Forward	167	DI Decel 2	180	DI PID Invert	194
		DI Clear Fault	156	DI Jog 1 Reverse	168	DI SpTqPs Sel 0	181	DI Torque StptA	195
		DI Aux Fault	157	DI Jog 2	169	DI SpTqPs Sel 1	182	DI Fwd End Limit	196
		DI Stop	158	DI Jog 2 Forward	170	DI Stop Mode B	185	DI Fwd Dec Limit	197
		DI Cur Lmt Stop	159	DI Jog 2 Reverse	171	DI BusReg Mode B	186	DI Rev End Limit	198
		DI Coast Stop	160	DI Manual Ctrl	172	DI PwrLoss ModeB	187	DI Rev Dec Limit	199
		DI Start	161	DI Speed Sel 0	173	DI Pwr Loss	188	DI PHdwr OvrTrvl	200
		DI Fwd Reverse	162	DI Speed Sel 1	174	DI Precharge	189	DI NHdwr OvrTrvl	201
		DI Run	163	DI Speed Sel 2	175	DI Prchrg Seal	190		
		DI Run Forward	164	DI MOP Inc	177	DI PID Enable	191		
		DI Run Reverse	165	DI MOP Dec	178	DI PID Hold	192		
	Control Board IO	Digital In Sts	220						
	Digital Inputs [753]	Dig In Filt Mask	222	Dig In Filt	223				
	Digital Outputs [753]	Dig Out Sts	225	RO0 Sel	230	TO0 Sel	240		
		Dig Out Invert	226	RO0 Level Sel	231	TO0 Level Sel	241		
		Dig Out Setpoint	227	RO0 Level	232	TO0 Level	242		
				RO0 Level CmpSts	233	TO0 Level CmpSts	243		
				RO0 On Time	234	TO0 On Time	244		
				RO0 Off Time	235	TO0 Off Time	245		
	Motor PTC [753]	PTC Cfg	250	PTC Status	251				
	Analog Inputs [753]	Anlg In Type	255	Anlg In0 Value	260	Anlg In0 LssActn	263	Anlg In0 Filt Gn	265
		Anlg In Sqrt	256	Anlg In0 Hi	261	Anlg In0 Raw Val	264	Anlg In0 Filt BW	266
		Anlg In Loss Sts	257	Anlg In0 Lo	262				
	Analog Outputs [753]	Anlg Out Type	270	Anlg Out0 Sel	275	Anlg Out0 Data	277	Anlg Out0 Hi	280
		Anlg Out Abs	271	Anlg Out0 Stpt	276	Anlg Out0 DataHi	278	Anlg Out0 Lo	281
						Anlg Out0 DataLo	279	Anlg Out0 Val	282
	R0 Predict Main [753]	RO PredMaint Sts	285	RO0 Load Amps	287	RO0 ElapsedLife	289	RO0 LifeEvntLvl	291
		RO0 Load Type	286	RO0 TotalLife	288	RO0 RemainLife	290	RO0 LifeEvntActn	292

File	Group	Parameters							
Drive Cfg 	Preferences	Speed Units	300	Access Level	301	Language	302		
	Control Cfg	Voltage Class Duty Rating Direction Mode	305 306 308	SpdTrqPsn Mode A SpdTrqPsn Mode B SpdTrqPsn Mode C SpdTrqPsn Mode D	309 310 311 312	Actv SpTqPs Mode SLAT Err Stpt SLAT Dwell Time	313 314 315	Prchrg Control Prchrg Delay Prchrg Err Cfg	321 322 323
	Auto Manual Ctrl	Logic Mask Auto Mask Manual Cmd Mask Manual Ref Mask	324 325 326 327	Alt Man Ref Sel Alt Man Ref AnHi Alt Man Ref AnLo	328 329 330	Manual Preload	331		
	Drive Memory	Reset Meters	336						
	Start Features	Start At PowerUp PowerUp Delay Auto Retry Fault Auto Rstrt Tries Auto Rstrt Delay	345 346 347 348 349	Sleep Wake Mode SleepWake RefSel Sleep Level Sleep Time Wake Level Wake Time	350 351 352 353 354 355	FlyingStart Mode	356		
	Braking Features	Stop Mode A Stop Mode B Bus Reg Mode A Bus Reg Mode B Bus Reg Lvl Cfg Bus Reg Level	370 371 372 373 374 375	DB Resistor Type DB Ext Ohms DB Ext Watts DB ExtPulseWatts Flux Braking En Flux Braking Lmt	382 383 384 385 388 389	DC Brake Lvl Sel DC Brake Level DC Brake Time	393 394 395	Brake Off Adj 1 Brake Off Adj 2 Dec Inhibit Actn	402 403 409
Protection 	Motor Overload	Motor OL Actn Mtr OL at Pwr Up Mtr OL Alarm Lvl	410 411 412	Mtr OL Factor Mtr OL Hertz	413 414	Mtr OL Reset Lvl MtrOL Reset Time	415 416	Mtr OL Counts Mtr OL Trip Time	418 419
	Load Limits	Drive OL Mode Current Lmt Sel Current Limit 1 Current Limit 2 Active Cur Lmt Current Rate Lmt Regen Power Lmt	420 421 422 423 424 425 426	Motor Power Lmt	427	Shear Pin Cfg Shear Pin 1 Actn Shear Pin1 Level Shear Pin 1 Time Shear Pin 2 Actn Shear Pin2 Level Shear Pin 2 Time	434 435 436 437 438 439 440	Load Loss Action Load Loss Level Load Loss Time OutPhaseLossActn Out PhaseLossLvl	441 442 443 444 445
	Power Loss	Power Loss Actn	449	Pwr Loss Mode A Pwr Loss A Level Pwr Loss A Time	450 451 452	Pwr Loss Mode B Pwr Loss B Level Pwr Loss B Time	453 454 455	UnderVltg Action UnderVltg Level InPhase LossActn InPhase Loss Lvl DC Bus Mem Reset	460 461 462 463 464
	Ground Fault	Ground Warn Actn Ground Warn Lvl	466 467						
	Predictive Main	PredMaint Sts PredMaintAmbTemp PredMaint Rst En PredMaint Reset	469 470 471 472	HSFan Derate HSFan TotalLife HSFan ElpsdLife HSFan RemainLife HSFan EventLevel HSFan EventActn HSFan ResetLog InFan Derate InFan TotalLife InFan ElpsdLife InFan RemainLife InFan EventLevel InFan EventActn InFan ResetLog	488 489 490 491 492 493 494 495 496 497 498 499 500 501	MtrBrngTotalLife MtrBrngElpsdLife MtrBrngRemainLif MtrBrngEventLvl MtrBrngEventActn MtrBrng ResetLog MtrLubeElpsdHrs MtrLubeEventLvl MtrLubeEventActn	502 503 504 505 506 507 508 509 510	MchBrngTotalLife MchBrngElpsdLife MchBrngRemainLif MchBrngEventLvl MchBrngEventActn MchBrngResetLog MchLubeElpsdHrs MchLube EventLvl MchLubeEventActn	511 512 513 514 515 516 517 518 519

File	Group	Parameters							
Speed Control 	Speed Limits	Max Fwd Speed Max Rev Speed	520 521	Min Fwd Speed Min Rev Speed	522 523	Overspeed Limit Zero Speed Limit	524 525	Skip Speed 1 Skip Speed 2 Skip Speed 3 Skip Speed Band	526 527 528 529
	Speed Ramp Rates	Accel Time 1 Accel Time 2	535 536	Decel Time 1 Decel Time 2	537 538	Jog Acc Dec Time	539	S Curve Accel S Curve Decel	540 541
	Speed Reference	Spd Ref A Sel Spd Ref A Stpt Spd Ref A AnlgHi Spd Ref A AnlgLo Spd Ref A Mult Spd Ref B Sel Spd Ref B Stpt Spd Ref B AnlgHi Spd Ref B AnlgLo Spd Ref B Mult	545 546 547 548 549 550 551 552 553 554	Spd Ref Scale Jog Speed 1 Jog Speed 2 MOP Reference Save MOP Ref MOP Rate MOP High Limit MOP Low Limit DI ManRef Sel DI ManRef AnlgHi DI ManRef AnlgLo	555 556 557 558 559 560 561 562 563 564 565	Preset Speed 1 Preset Speed 2 Preset Speed 3 Preset Speed 4 Preset Speed 5 Preset Speed 6 Preset Speed 7	571 572 573 574 575 576 577		
	Speed Trim	Trim Ref A Sel Trim Ref A Stpt Trim RefA AnlgHi Trim RefA AnlgLo	600 601 602 603	Trim Ref B Sel Trim Ref B Stpt Trim RefB AnlgHi Trim RefB AnlgLo	604 605 606 607	TrmPct RefA Sel TrmPct RefA Stpt TrmPct RefA AnHi TrmPct RefA AnLo	608 609 610 611	TrmPct RefB Sel TrmPct RefB Stpt TrmPct RefB AnHi TrmPct RefB AnLo	612 613 614 615
	Slip/Droop Comp	Droop RPM at FLA Slip RPM at FLA Slip Comp BW	620 621 622						
	Speed Regulator	Spd Options Ctrl Speed Reg BW Filtered SpdFdbk Speed Error	635 636 640 641	Speed Reg Kp Speed Reg Max Kp Speed Reg Ki	645 646 647	Spd Loop Damping Spd Reg Int Out Spd Reg Pos Lmt Spd Reg Neg Lmt SReg Output	653 654 655 656 660	VHzSV Spd Reg Kp VHzSV Spd Reg Ki	663 664
	Speed Comp	Speed Comp Sel Speed Comp Gain Speed Comp Out	665 666 667						
Torque Control 	Torque Limits	Pos Torque Limit Neg Torque Limit	670 671						
	Torque Reference	Trq Ref A Sel Trq Ref A Stpt Trq Ref A AnlgHi Trq Ref A AnlgLo Trq Ref A Mult	675 676 677 678 679	Trq Ref B Sel Trq Ref B Stpt Trq Ref B AnlgHi Trq Ref B AnlgLo Trq Ref B Mult	680 681 682 683 684	Selected Trq Ref	685	Torque Step Filtered Trq Ref Limited Trq Ref	686 689 690
	Inertia Comp[755]	Inertia CompMode	695	Inertia Acc Gain Inertia Dec Gain	696 697	Inert Comp LPFBW Inertia Comp Out	698 699	Ext Ramped Ref	700
	Inertia Adaption[755]	InAdp LdObs Mode Inertia Adapt BW InertiaAdaptGain	704 705 706	Load Estimate InertiaTrqAdd	707 708	IA LdObs Delay InertAdptFltrBW	709 710	Load Observer BW	711

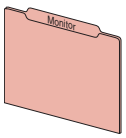
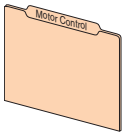
File	Group	Parameters							
Position Control 	Position Cfg/Sts	PTP PsnRefStatus Position Control	720 721	Psn Selected Ref Psn Command	722 723	Psn Reg Status Zero Position	724 725	In Pos Psn Band In Pos Psn Dwell	726 727
	Position Homing	Homing Status Homing Control	730 731	DI Find Home DI Redefine Psn DI OL Home Limit	732 733 734	Find Home Speed Find Home Ramp	735 736	Actual Home Psn User Home Psn	737 738
	Position Watch [755]	PsnWatch1 Select PsnWatch1 DtctIn PsnWatch1 Stpt	745 746 747	PsnWatch2 Select PsnWatch2 DtctIn PsnWatch2 Stpt	748 749 750				
	Direct	Psn Ref Select	765	Psn Direct Stpt Psn Direct Ref	766 767				
	Point to Point	PTP Control PTP Mode DI Indx Step DI Indx StepRev DI Indx StepPrst	770 771 772 773 774	PTP Ref Sel PTP Reference PTP Feedback PTP Ref Scale PTP Index Preset	775 776 777 778 779	PTP Setpoint PTP Accel Time PTP Decel Time PTP Speed FwdRef PTP Command	780 781 782 783 784	PTP Fwd Vel Lmt PTP Rev Vel Lmt PTP S Curve PTP Vel Override PTP EGR Mult PTP EGR Div	785 786 787 788 789 790
	Phase Lock Loop [755]	PLL Control PLL Ext Spd Sel PLL Ext Spd Stpt PLL Ext SpdScale	795 796 797 798	PLL Psn Ref Sel PLL Psn Stpt PLL BW PLL LPFilter BW PLL Virt Enc RPM	799 800 801 802 803	PLL EPR Input PLL Rvls Input PLL Psn Out Fltr PLL Speed Out PLL Speed OutAdv	804 805 806 807 808	PLL Enc Out PLL Enc Out Adv PLL EPR Output PLL Rvls Output	809 810 811 812
	Electronic Gear	Psn Ref EGR Out	815	Psn EGR Mult Psn EGR Div	816 817				
	Position Offset	Psn Offset 1 Sel Psn Offset 1	820 821	Psn Offset 2 Sel Psn Offset 2	822 823	Psn Offset Vel	824		
	Ld Psn Fdbk Scal [755]	LdPsn Fdbk Mult	825	LdPsn Fdbk Div	826				
	Position Reg			Psn Error Psn Actual Psn Load Actual [755] Psn Reg Ki Psn Reg Kp	835 836 837 838 839	PReg Pos Int Lmt PReg Neg Int Lmt PsnReg IntgrlOut PsnReg Spd Out	840 841 842 843	PReg Pos Spd Lmt PReg Neg Spd Lmt Psn Reg Droop Psn Fdbk	844 845 846 847
Communication	Comm Control	Port 1 Reference Port 2 Reference Port 3 Reference	871 872 873	Port 4 Reference Port 5 Reference Port 6 Reference	874 875 876	Port13 Reference [755] Port14 Reference	877 878	Drive Logic Rslt DPI Ref Rslt DPI Ramp Rslt DPI Logic Rslt Drive Ref Rslt Drive Ramp Rslt	879 880 881 882 883 884
	Security	Port Mask Act Logic Mask Act	885 886	Write Mask Act Write Mask Cfg	887 888				
	DPI Datalinks	Data In A1 Data In A2 Data In B1 Data In B2	895 896 897 898	Data In C1 Data In C2 Data In D1 Data In D2	899 900 901 902	Data Out A1 Data Out A2 Data Out B1 Data Out B2	905 906 907 908	Data Out C1 Data Out C2 Data Out D1 Data Out D2	909 910 911 912
	Owners	Stop Owner Start Owner	919 920	Jog Owner Dir Owner	921 922	Clear Flt Owner Manual Owner	923 924	Ref Select Owner	925

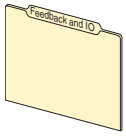
File	Group	Parameters							
Diagnostics 	Status	Speed Ref Source	930	Drive Status 1	935	IGBT Temp Pct	941	At Limit Status	945
		Last StartSource	931	Drive Status 2	936	IGBT Temp C	942	Safety Port Sts	946
		Last Stop Source	932	Condition Sts 1	937	Drive Temp Pct	943		
		Start Inhibits	933	Drive OL Count	940	Drive Temp C	944		
		Last StrtInhibit	934						
	Fault/Alarm Info	Minor Flt Cfg	950	Status1 at Fault	954	Alarm Status A	959	AlarmA at Fault	962
		Last Fault Code	951	Status2 at Fault	955	Alarm Status B	960	AlarmB at Fault	963
		Fault Status A	952	Fault Frequency	956	Type 2 Alarms	961		
		Fault Status B	953	Fault Amps	957				
				Fault Bus Volts	958				
	Peak Detection [755]	PkDtct Stpt Real	1035	PkDtct1PresetSel	1038	PeakDetect1 Out	1041	Peak2 Cfg	1044
		PkDtct Stpt DInt	1036	Peak1 Cfg	1039	PkDtct2 In Sel	1042	Peak 2 Change	1045
		PkDtct1 In Sel	1037	Peak 1 Change	1040	PkDtct2PresetSel	1043	PeakDetect2 Out	1046

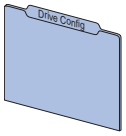
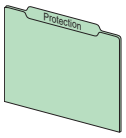
File	Group	Parameters							
Applications 	Process PID	PID Cfg	1065	PID Fdbk Sel	1072	PID Output Sel	1079	PID Prop Gain	1086
		PID Control	1066	PID Fdbk AnIgHi	1073	PID Output Mult	1080	PID Int Time	1087
		PID Ref Sel	1067	PID Fdbk AnIgLo	1074	PID Upper Limit	1081	PID Deriv Time	1088
		PID Ref AnIgHi	1068	PID FBLoss SpSel	1075	PID Lower Limit	1082	PID Status	1089
		PID Ref AnIgLo	1069	PID FBLoss TqSel	1076	PID Deadband	1083	PID Ref Meter	1090
		PID Setpoint	1070	PID Fdbk	1077	PID LP Filter BW	1084	PID Fdbk Meter	1091
		PID Ref Mult	1071	PID Fdbk Mult	1078	PID Preload	1085	PID Error Meter	1092
								PID Output Meter	1093
	Torque Prove	Trq Prove Cfg	1100	Trq Lmt SlewRate	1104	Brk Release Time	1107	Float Tolerance	1111
		Trq Prove Setup	1101	Speed Dev Band	1105	Brk Set Time	1108	MicroPsnScalePct	1112
		DI FloatMicroPsn	1102	SpdBand Intgrtr	1106	Brk Alarm Travel	1109	ZeroSpdFloatTime	1113
		Trq Prove Status	1103			Brk Slip Count	1110	Brake Test Torq[755]	1114
	Fibers Function	Fiber Control	1120	Traverse Inc	1123	P Jump	1126	DI Fiber SyncEna	1129
		Fiber Status	1121	Traverse Dec	1124			DI Fiber TravDis	1130
		Sync Time	1122	Max Traverse	1125				
	Adjustable Vltg	Adj Vltg Config	1131	Adj Vltg TrimSel	1136	Adj Vltg Preset1	1142	Adj Vltg RefMult	1149
		Adj Vltg Select	1133	Adj Vltg Trim Hi	1137	Adj Vltg Preset2	1143	Adj Vltg Scurve	1150
		Adj Vltg Ref Hi	1134	Adj Vltg Trim Lo	1138	Adj Vltg Preset3	1144	Adj Vltg TrimPct	1151
		Adj Vltg Ref Lo	1135	Adj Vltg Command	1139	Adj Vltg Preset4	1145	Min Adj Voltage	1152
				Adj Vltg AccTime	1140	Adj Vltg Preset5	1146		
				Adj Vltg DecTime	1141	Adj Vltg Preset6	1147		
						Adj Vltg Preset7	1148		
	Pump Jack	Rod Speed	1165	TorqAlarm Action	1168	Total Gear Ratio	1174	Gearbox Limit	1181
		Rod Torque	1166	TorqAlarm Config	1169	Max Rod Speed	1175	Gearbox Rating	1182
		Rod Speed Cmd	1167	TorqAlarm Dwell	1170	Max Rod Torque	1176	Gearbox Ratio	1183
				TorqAlarm Level	1171	Min Rod Speed	1177	Gearbox Sheave	1184
				TorqAlm Timeout	1172	Motor Sheave	1178		
				TorqAlarm TOActn	1173	OilWell Pump Cfg	1179		
						PCP Pump Sheave	1180		
	Pump Off	Pump Off Config	1187	Pump Cycle Store	1192	Pct Cycle Torque	1198	Pump Off Count	1203
		Pump Off Setup	1188	Set Top ofStroke	1193	Pct Lift Torque	1199	PumpOff SleepCnt	1204
		Pump Off Action	1189	Torque Setpoint	1194	Pct Drop Torque	1200	Day Stroke Count	1205
		Pump Off Control	1190	Pump Off Level	1195	Stroke Pos Count	1201	DI PumpOff Disbl	1206
		Pump Off Status	1191	Pump Off Speed	1196	Stroke Per Min	1202	Pump OffSleepLvl	1207
				Pump Off Time	1197				
	Profiling[755]	Profile Status	1210	DI Vel Override	1221	Step 1…16 Type		1230, 1240, 1250…1380	
		Units Traveled	1212	DI StrtStep Sel0	1222	Step 1…16 Velocity		1231, 1241, 1251…1381	
		Profile Command	1213	DI StrtStep Sel1	1223	Step 1…16 Accel		1232, 1242, 1252…1382	
		Counts Per Unit	1215	DI StrtStep Sel2	1224	Step 1…16 Decel		1233, 1243, 1253…1383	
		ProfVel Override	1216	DI StrtStep Sel3	1225	Step 1…16 Value		1234, 1244, 1254…1384	
		Prof DI Invert	1217	DI StrtStep Sel4	1226	Step 1…16 Dwell		1235, 1245, 1255…1385	
		DI Hold Step	1218			Step 1…16 Batch		1236, 1246, 1256…1386	
		DI Abort Step	1219			Step 1…16 Next		1237, 1247, 1257…1387	
		DI Abort Profile	1220			Step 1…16 Action		1238, 1248, 1258…1388	
						Step 1…16 Dig In		1239, 1249, 1259…1389	
	Camming[755]	PCAM Control	1390	PCAM Span X	1396	PCAM Main Pt X 0…15		1407, 1409, 1411…1437	
		PCAM Mode	1391	PCAM Scale X	1397	PCAM Main Pt Y 0…15		1408, 1410, 1412…1438	
		PCAM Psn Select	1392	PCAM Span Y	1398	PCAM Aux EndPnt		1439	
		PCAM Psn Stpt	1393	PCAM ScaleY Sel	1399	PCAM Aux Types		1440	
		PCAM Psn Ofst	1394	PCAM ScaleYSetPt	1400	PCAM Aux Pt X 1…15		1441, 1443, 1445…1469	
		PCAM PsnOfst Eps	1395	PCAM VelScaleSel	1401	PCAM Aux Pt Y 1…15		1442, 1444, 1446…1470	
				PCAM VelScaleSP	1402	PCAM Status		1471	
				PCAM Slope Begin	1403	PCAM Vel Out		1472	
				PCAM Slope End	1404	PCAM Psn Out		1473	
				PCAM Main EndPnt	1405	DI PCAM Start		1474	
				PCAM Main Types	1406				

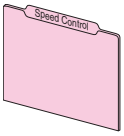
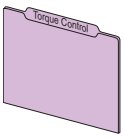
Expert Parameter View

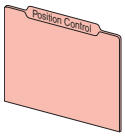
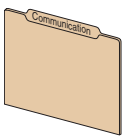
Parameter 301 [Access Level] set to option 2 "Expert."

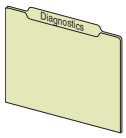
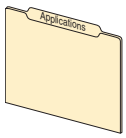
File	Group	Parameters							
Monitor 	Metering	Output Frequency	1	Torque Cur Fdbk	5	Output Power	9	Elapsed MWH	13
		Commanded SpdRef	2	Flux Cur Fdbk	6	Output Powr Fctr	10	Elapsed kWH	14
		Mtr Vel Fdbk	3	Output Current	7	DC Bus Volts	11	Elapsed Run Time	15
		Commanded Trq	4	Output Voltage	8	DC Bus Memory	12	Elpsd Mtr MWHrs	16
								Elpsd Rgn MWHrs	17
								Elpsd Mtr kWHrs	18
								Elpsd Rgn kWHrs	19
	Drive Data	Rated Volts	20	Rated Amps	21	Rated kW	22		
Motor Control 	Motor Data	Motor NP Volts	25	Motor NP Hertz	27	Mtr NP Pwr Units	29	Motor Poles	31
		Motor NP Amps	26	Motor NP RPM	28	Motor NP Power	30		
	Mtr Ctrl Options	Motor Ctrl Mode	35	Bus Utilization	42	Econ At Ref Ki	47	Stab Volt Gain	51
		Maximum Voltage	36	Flux Up Enable	43	Econ AccDec Ki	48	Stab Angle Gain	52
		Maximum Freq	37	Flux Up Time	44	Econ AccDec Kp	49		
		PWM Frequency	38	Flux Down Ki	45	Stability Filter	50		
		Mtr Options Cfg	40	Flux Down Kp	46				
	Volts per Hertz	Start Acc Boost	60	Break Voltage	62	SVC Boost Filter	64		
		Run Boost	61	Break Frequency	63	VHz Curve	65		
	Autotune	Autotune	70	Total Inertia	76	PM AltEnc Offset [755]	82	PM IXq Voltage [755]	88
		Autotune Torque	71	Inertia Test Lmt	77	PM OfstTst Cur [755]	83	PM IXd Voltage [755]	89
		IR Voltage Drop	73	EncdrIss AngComp	78	PM OfstTst CRamp [755]	84	PM Vqs Reg Kp [755]	91
		Ixo Voltage Drop	74	EncdrIss VltComp	79	PM OfstTst FRamp [755]	85	PM Vqs Reg Ki [755]	92
		Flux Current Ref	75	PM Cfg [755]	80	PM CEMF Voltage [755]	86	PM Dir Test Cur [755]	93
				PM PriEnc Offset [755]	81	PM IR Voltage [755]	87	PM IXqVoltage125	120
	Vector Regulator	VCL Cur Reg BW	95	Slip Reg Ki	101	Trq Adapt En	107	SFAdapt SlewLmt	113
		VCL Cur Reg Kp	96	Slip Reg Kp	102	Phase Delay Comp	108	SFAdapt SlewRate	114
		VCL Cur Reg Ki	97	Flux Reg Enable	103	Trq Comp Mode	109	SFAdapt CnvrgLvl	115
		VEncdIs FReg Kp	98	Flux Reg Ki	104	Trq Comp Mtring	110	SFAdapt CnvrgLmt	116
		VEncdIs FReg Ki	99	Flux Reg Kp	105	Trq Comp Regen	111		
		Slip Reg Enable	100	Trq Adapt Speed	106	Slip Adapt Iqs	112		

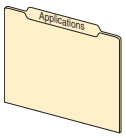
File	Group	Parameters							
Feedback & I/O 	Feedback	Pri Vel Fdbk Sel	125	Alt Vel Feedback	130	Psn Fdbk Sel	135	Delayed Spd Ref [755]	139
		Pri Vel FdbkFltr	126	Active Vel Fdbk	131	Load Psn FdbkSel [755]	136	Virtual EncDelay [755]	140
		Pri Vel Feedback	127	Aux Vel Fdbk Sel	132	Open Loop Fdbk	137	Virtual Enc EPR [755]	141
		Alt Vel Fdbk Sel	128	Aux Vel FdbkFltr	133	Simulator Fdbk	138	Virtual Enc Psn [755]	142
		Alt Vel FdbkFltr	129	Aux Vel Feedback	134				
	Digin Functions	Digital In Cfg	150	DI Jog 1	166	DI Accel 2	179	DI PID Reset	193
		DI Enable	155	DI Jog 1 Forward	167	DI Decel 2	180	DI PID Invert	194
		DI Clear Fault	156	DI Jog 1 Reverse	168	DI SpTqPs Sel 0	181	DI Torque StptA	195
		DI Aux Fault	157	DI Jog 2	169	DI SpTqPs Sel 1	182	DI Fwd End Limit	196
		DI Stop	158	DI Jog 2 Forward	170	DI Stop Mode B	185	DI Fwd Dec Limit	197
		DI Cur Lmt Stop	159	DI Jog 2 Reverse	171	DI BusReg Mode B	186	DI Rev End Limit	198
		DI Coast Stop	160	DI Manual Ctrl	172	DI PwrLoss ModeB	187	DI Rev Dec Limit	199
		DI Start	161	DI Speed Sel 0	173	DI Pwr Loss	188	DI PHdwr OvrTrvl	200
		DI Fwd Reverse	162	DI Speed Sel 1	174	DI Precharge	189	DI NHdwr OvrTrvl	201
		DI Run	163	DI Speed Sel 2	175	DI Prchrg Seal	190		
		DI Run Forward	164	DI MOP Inc	177	DI PID Enable	191		
		DI Run Reverse	165	DI MOP Dec	178	DI PID Hold	192		
	Control Board IO	Digital In Sts	220						
	Digital Inputs [753]	Dig In Filt Mask	222	Dig In Filt	223				
	Digital Outputs [753]	Dig Out Sts	225	RO0 Sel	230	TO0 Sel	240		
		Dig Out Invert	226	RO0 Level Sel	231	TO0 Level Sel	241		
		Dig Out Setpoint	227	RO0 Level	232	TO0 Level	242		
				RO0 Level CmpSts	233	TO0 Level CmpSts	243		
				RO0 On Time	234	TO0 On Time	244		
				RO0 Off Time	235	TO0 Off Time	245		
	Motor PTC [753]	PTC Cfg	250	PTC Status	251				
	Analog Inputs [753]	Anlg In Type	255	Anlg In0 Value	260	Anlg In0 LssActn	263	Anlg In0 Filt Gn	265
		Anlg In Sqrt	256	Anlg In0 Hi	261	Anlg In0 Raw Val	264	Anlg In0 Filt BW	266
		Anlg In Loss Sts	257	Anlg In0 Lo	262				
	Analog Outputs [753]	Anlg Out Type	270	Anlg Out0 Sel	275	Anlg Out0 Data	277	Anlg Out0 Hi	280
		Anlg Out Abs	271	Anlg Out0 Stpt	276	Anlg Out0 DataHi	278	Anlg Out0 Lo	281
						Anlg Out0 DataLo	279	Anlg Out0 Val	282
	R0 Predict Main [753]	R0 PredMaint Sts	285	RO0 Load Amps	287	RO0 ElapsedLife	289	RO0 LifeEvntLvl	291
		RO0 Load Type	286	RO0 TotalLife	288	RO0 RemainLife	290	RO0 LifeEvntActn	292

File	Group	Parameters							
Drive Cfg 	Preferences	Speed Units	300	Access Level	301	Language	302		
	Control Cfg	Voltage Class	305	SpdTrqPsn Mode A	309	Actv SpTqPs Mode	313	Prchrg Control	321
		Duty Rating	306	SpdTrqPsn Mode B	310	SLAT Err Stpt	314	Prchrg Delay	322
		Direction Mode	308	SpdTrqPsn Mode C	311	SLAT Dwell Time	315	Prchrg Err Cfg	323
				SpdTrqPsn Mode D	312				
	Auto Manual Ctrl	Logic Mask	324	Alt Man Ref Sel	328	Manual Preload	331		
		Auto Mask	325	Alt Man Ref AnHi	329				
		Manual Cmd Mask	326	Alt Man Ref AnLo	330				
		Manual Ref Mask	327						
	Drive Memory	Reset Meters	336						
	Start Features	Start At PowerUp	345	Sleep Wake Mode	350	FlyingStart Mode	356	FS Excitation Ki	361
		PowerUp Delay	346	SleepWake RefSel	351	FS Gain	357	FS Excitation Kp	362
		Auto Retry Fault	347	Sleep Level	352	FS Ki	358	FS Reconnect Dly	363
		Auto Rstrt Tries	348	Sleep Time	353	FS Speed Reg Ki	359	FS Msrmnt CurLvl	364
		Auto Rstrt Delay	349	Wake Level	354	FS Speed Reg Kp	360		
				Wake Time	355				
	Braking Features	Stop Mode A	370	Bus Reg Ki	380	Flux Braking Ki	390	DC Brk Vq Fltr	398
		Stop Mode B	371	Bus Reg Kp	381	Flux Braking Kp	391	DC Brk Vd Fltr	399
		Bus Reg Mode A	372	DB Resistor Type	382	DC Brake Lvl Sel	393	Fast Braking Ki	400
		Bus Reg Mode B	373	DB Ext Ohms	383	DC Brake Level	394	Fast Braking Kp	401
		Bus Reg Lvl Cfg	374	DB Ext Watts	384	DC Brake Time	395	Brake Off Adj 1	402
		Bus Reg Level	375	DB ExtPulseWatts	385	DC Brake Ki	396	Brake Off Adj 2	403
		Bus Limit Kp	376	Flux Braking En	388	DC Brake Kp	397	Dec Inhibit Actn	409
		Bus Limit Kd	377	Flux Braking Lmt	389				
		Bus Limit ACR Ki	378						
		Bus Limit ACR Kp	379						
Protection 	Motor Overload	Motor OL Actn	410	Mtr OL Factor	413	Mtr OL Reset Lvl	415	Mtr OL Counts	418
		Mtr OL at Pwr Up	411	Mtr OL Hertz	414	MtrOL Reset Time	416	Mtr OL Trip Time	419
		Mtr OL Alarm Lvl	412						
	Load Limits	Drive OL Mode	420	Motor Power Lmt	427	Shear Pin Cfg	434	Load Loss Action	441
		Current Lmt Sel	421	Current Limit Kd	428	Shear Pin 1 Actn	435	Load Loss Level	442
		Current Limit 1	422	Current Limit Ki	429	Shear Pin1 Level	436	Load Loss Time	443
		Current Limit 2	423	Current Limit Kp	430	Shear Pin 1 Time	437	OutPhaseLossActn	444
		Active Cur Lmt	424	Id Lo FreqCur Kp	431	Shear Pin 2 Actn	438	Out PhaseLossLvl	445
		Current Rate Lmt	425	Iq Lo FreqCur Kp	432	Shear Pin2 Level	439		
		Regen Power Lmt	426	Jerk Gain	433	Shear Pin 2 Time	440		
	Power Loss	Power Loss Actn	449	Pwr Loss Mode B	453	PwrLoss RT BusKp	456	UnderVltg Action	460
		Pwr Loss Mode A	450	Pwr Loss B Level	454	PwrLoss RT BusKd	457	UnderVltg Level	461
		Pwr Loss A Level	451	Pwr Loss B Time	455	PwrLoss RT ACRKp	458	InPhase LossActn	462
		Pwr Loss A Time	452			PwrLoss RT ACRKi	459	InPhase Loss Lvl	463
								DC Bus Mem Reset	464
	Ground Fault	Ground Warn Actn	466						
		Ground Warn Lvl	467						
	Predictive Main	PredMaint Sts	469	HSFan Derate	488	MtrBrngTotalLife	502	MchBrngTotalLife	511
		PredMaintAmbTemp	470	HSFan TotalLife	489	MtrBrngElpsdLife	503	MchBrngElpsdLife	512
		PredMaint Rst En	471	HSFan ElpsdLife	490	MtrBrngRemainLif	504	MchBrngRemainLif	513
		PredMaint Reset	472	HSFan RemainLife	491	MtrBrngEventLvl	505	MchBrngEventLvl	514
		CbFan Derate(1)	481	HSFan EventLevel	492	MtrBrngEventActn	506	MchBrngEventActn	515
		CbFan TotalLife(1)	482	HSFan EventActn	493	MtrBrng ResetLog	507	MchBrngResetLog	516
		CbFan ElpsdLife(1)	483	HSFan ResetLog	494	MtrLubeElpsdHrs	508	MchLubeElpsdHrs	517
		CbFan RemainLife(1)	484	InFan Derate	495	MtrLubeEventLvl	509	MchLube EventLvl	518
		CbFan EventLevel(1)	485	InFan TotalLife	496	MtrLubeEventActn	510	MchLubeEventActn	519
		CbFan EventActn(1)	486	InFan ElpsdLife	497				
				InFan RemainLife	498				
		(1) 755 Frame 8 drives and larger only.		InFan EventLevel	499				
				InFan EventActn	500				
				InFan ResetLog	501				

File	Group	Parameters							
Speed Control 	Speed Limits	Max Fwd Speed	520	Min Fwd Speed	522	Overspeed Limit	524	Skip Speed 1	526
		Max Rev Speed	521	Min Rev Speed	523	Zero Speed Limit	525	Skip Speed 2	527
								Skip Speed 3	528
								Skip Speed Band	529
	Speed Ramp Rates	Accel Time 1	535	Decel Time 1	537	Jog Acc Dec Time	539	S Curve Accel	540
		Accel Time 2	536	Decel Time 2	538			S Curve Decel	541
	Speed Reference	Spd Ref A Sel	545	Spd Ref Scale	555	Preset Speed 1	571	Selected Spd Ref	592
		Spd Ref A Stpt	546	Jog Speed 1	556	Preset Speed 2	572	Limited Spd Ref	593
		Spd Ref A AnIgHi	547	Jog Speed 2	557	Preset Speed 3	573	Ramped Spd Ref	594
		Spd Ref A AnIgLo	548	MOP Reference	558	Preset Speed 4	574	Filtered Spd Ref	595
		Spd Ref A Mult	549	Save MOP Ref	559	Preset Speed 5	575	Speed Rate Ref	596
		Spd Ref B Sel	550	MOP Rate	560	Preset Speed 6	576	Final Speed Ref	597
		Spd Ref B Stpt	551	MOP High Limit	561	Preset Speed 7	577		
		Spd Ref B AnIgHi	552	MOP Low Limit	562	Spd Ref Filter	588		
		Spd Ref B AnIgLo	553	DI ManRef Sel	563	Spd Ref Fltr BW	589		
		Spd Ref B Mult	554	DI ManRef AnIgHi	564	Spd Ref FltrGain	590		
				DI ManRef AnIgLo	565	Spd Ref Sel Sts	591		
	Speed Trim	Trim Ref A Sel	600	Trim Ref B Sel	604	TrmPct RefA Sel	608	TrmPct RefB Sel	612
		Trim Ref A Stpt	601	Trim Ref B Stpt	605	TrmPct RefA Stpt	609	TrmPct RefB Stpt	613
		Trim RefA AnIgHi	602	Trim RefB AnIgHi	606	TrmPct RefA AnHi	610	TrmPct RefB AnHi	614
		Trim RefA AnIgLo	603	Trim RefB AnIgLo	607	TrmPct RefA AnLo	611	TrmPct RefB AnLo	615
								SpdTrimPrcRefSrc	616
								Spd Trim Source	617
	Slip/Droop Comp	Droop RPM at FLA	620						
		Slip RPM at FLA	621						
		Slip Comp BW	622						
		VHzSV SpdTrimReg	623						
	Speed Regulator	Spd Options Ctrl	635	Speed Reg Kp	645	SReg Trq Preset	652	VHzSV Spd Reg Kp	663
		Speed Reg BW	636	Speed Reg Max Kp	646	Spd Loop Damping	653	VHzSV Spd Reg Ki	664
		SReg FB Fltr Sel	637	Speed Reg Ki	647	Spd Reg Int Out	654		
		SReg FB FltrGain	638	Alt Speed Reg BW	648	Spd Reg Pos Lmt	655		
		SReg FB Fltr BW	639	Alt Speed Reg Kp	649	Spd Reg Neg Lmt	656		
		Filtered SpdFdbk	640	Alt Speed Reg Ki	650	SReg OutFltr Sel	657		
		Speed Error	641	AltSpdErr FltrBW	651	SReg OutFltrGain	658		
		Servo Lock Gain [755]	642			SReg OutFltr BW	659		
		SpdReg AntiBckup	643			SReg Output	660		
		Spd Err Fltr BW	644						
	Speed Comp	Speed Comp Sel	665						
		Speed Comp Gain	666						
		Speed Comp Out	667						
Torque Control 	Torque Limits	Pos Torque Limit	670						
		Neg Torque Limit	671						
	Torque Reference	Trq Ref A Sel	675	Trq Ref B Sel	680	Selected Trq Ref	685	Torque Step	686
		Trq Ref A Stpt	676	Trq Ref B Stpt	681			Notch Fltr Freq	687
		Trq Ref A AnIgHi	677	Trq Ref B AnIgHi	682			Notch Fltr Atten	688
		Trq Ref A AnIgLo	678	Trq Ref B AnIgLo	683			Filtered Trq Ref	689
		Trq Ref A Mult	679	Trq Ref B Mult	684			Limited Trq Ref	690
	Inertia Comp [755]	Inertia CompMode	695	Inertia Acc Gain	696	Inert Comp LPFBW	698	Ext Ramped Ref	700
				Inertia Dec Gain	697	Inertia Comp Out	699		
	Inertia Adaption [755]	InAdp LdObs Mode	704	Load Estimate	707	IA LdObs Delay	709	Load Observer BW	711
		Inertia Adapt BW	705	InertiaTrqAdd	708	InertAdptFltrBW	710		
		InertiaAdaptGain	706						
	Friction Comp [755]	FrctnComp Mode	1560	FrctnComp Hyster	1562	FrctnComp Stick	1564	FrctnComp Rated	1566
		FrctnComp Trig	1561	FrctnComp Time	1563	FrctnComp Slip	1565	FrctnComp Out	1567

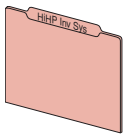
File	Group	Parameters							
Position Control 	Position Cfg/Sts	PTP PsnRefStatus	720	Psn Selected Ref	722	Psn Reg Status	724	In Pos Psn Band	726
		Position Control	721	Psn Command	723	Zero Position	725	In Pos Psn Dwell	727
	Position Homing	Homing Status	730	DI Find Home	732	Find Home Speed	735	Actual Home Psn	737
		Homing Control	731	DI Redefine Psn	733	Find Home Ramp	736	User Home Psn	738
				DI OL Home Limit	734				
	Position Watch [755]	PsnWatch1 Select	745	PsnWatch2 Select	748				
		PsnWatch1 DtctIn	746	PsnWatch2 DtctIn	749				
		PsnWatch1 Stpt	747	PsnWatch2 Stpt	750				
	Interpolator	Interp Control	755	Interp Psn Input	756	Interp Psn Out	759		
				Interp Vel Input	757	Interp Vel Out	760		
				Interp Trq Input	758	Interp Trq Out	761		
	Direct	Psn Ref Select	765	Psn Direct Stpt	766				
				Psn Direct Ref	767				
	Point to Point	PTP Control	770	PTP Ref Sel	775	PTP Setpoint	780	PTP Fwd Vel Lmt	785
		PTP Mode	771	PTP Reference	776	PTP Accel Time	781	PTP Rev Vel Lmt	786
		DI Indx Step	772	PTP Feedback	777	PTP Decel Time	782	PTP S Curve	787
		DI Indx StepRev	773	PTP Ref Scale	778	PTP Speed FwdRef	783	PTP Vel Override	788
		DI Indx StepPrst	774	PTP Index Preset	779	PTP Command	784	PTP EGR Mult	789
								PTP EGR Div	790
	Phase Lock Loop [755]	PLL Control	795	PLL Psn Ref Sel	799	PLL EPR Input	804	PLL Enc Out	809
		PLL Ext Spd Sel	796	PLL Psn Stpt	800	PLL Rvls Input	805	PLL Enc Out Adv	810
		PLL Ext Spd Stpt	797	PLL BW	801	PLL Psn Out Fltr	806	PLL EPR Output	811
		PLL Ext SpdScale	798	PLL LPFilter BW	802	PLL Speed Out	807	PLL Rvls Output	812
				PLL Virt Enc RPM	803	PLL Speed OutAdv	808		
	Electronic Gear	Psn Ref EGR Out	815	Psn EGR Mult	816				
				Psn EGR Div	817				
	Position Offset	Psn Offset 1 Sel	820	Psn Offset 2 Sel	822	Psn Offset Vel	824		
		Psn Offset 1	821	Psn Offset 2	823				
	Ld Psn Fdbk Scal [755]	LdPsn Fdbk Mult	825	LdPsn Fdbk Div	826				
	Position Reg	PsnNtchFltrFreq	830	Psn Error	835	PReg Pos Int Lmt	840	PReg Pos Spd Lmt	844
		PsnNtchFltrDepth	831	Psn Actual	836	PReg Neg Int Lmt	841	PReg Neg Spd Lmt	845
		Psn Out Fltr Sel	832	Psn Load Actual [755]	837	PsnReg IntgrlOut	842	Psn Reg Droop	846
		Psn Out FltrGain	833	Psn Reg Ki	838	PsnReg Spd Out	843	Psn Fdbk	847
		Psn Out Fltr BW	834	Psn Reg Kp	839			Psn Gear Ratio	848
Communication 	Comm Control	Port 1 Reference	871	Port 4 Reference	874	Port13 Reference [755]	877	Drive Logic Rslt	879
		Port 2 Reference	872	Port 5 Reference	875	Port14 Reference	878	DPI Ref Rslt	880
		Port 3 Reference	873	Port 6 Reference	876			DPI Ramp Rslt	881
								DPI Logic Rslt	882
								Drive Ref Rslt	883
								Drive Ramp Rslt	884
	Security	Port Mask Act	885	Write Mask Act	887				
		Logic Mask Act	886	Write Mask Cfg	888				
	DPI Datalinks	Data In A1	895	Data In C1	899	Data Out A1	905	Data Out C1	909
		Data In A2	896	Data In C2	900	Data Out A2	906	Data Out C2	910
		Data In B1	897	Data In D1	901	Data Out B1	907	Data Out D1	911
		Data In B2	898	Data In D2	902	Data Out B2	908	Data Out D2	912
	Owners	Stop Owner	919	Jog Owner	921	Clear Flt Owner	923	Ref Select Owner	925
		Start Owner	920	Dir Owner	922	Manual Owner	924		

File	Group	Parameters							
Diagnostics 	Status	Speed Ref Source	930	Drive Status 1	935	IGBT Temp Pct	941	At Limit Status	945
		Last StartSource	931	Drive Status 2	936	IGBT Temp C	942	Safety Port Sts	946
		Last Stop Source	932	Condition Sts 1	937	Drive Temp Pct	943		
		Start Inhibits	933	Drive OL Count	940	Drive Temp C	944		
		Last StrtInhibit	934						
	Fault/Alarm Info	Minor Flt Cfg	950	Status1 at Fault	954	Alarm Status A	959	AlarmA at Fault	962
		Last Fault Code	951	Status2 at Fault	955	Alarm Status B	960	AlarmB at Fault	963
		Fault Status A	952	Fault Frequency	956	Type 2 Alarms	961		
		Fault Status B	953	Fault Amps	957				
				Fault Bus Volts	958				
	Testpoints	Testpoint Sel 1	970	Testpoint Sel 2	974	Testpoint Sel 3	978	Testpoint Sel 4	982
		Testpoint Fval 1	971	Testpoint Fval 2	975	Testpoint Fval 3	979	Testpoint Fval 4	983
		Testpoint Lval 1	972	Testpoint Lval 2	976	Testpoint Lval 3	980	Testpoint Lval 4	984
	Peak Detection [755]	PkDtct Stpt Real	1035	PkDtct1PresetSel	1038	PeakDetect1 Out	1041	Peak2 Cfg	1044
		PkDtct Stpt DInt	1036	Peak1 Cfg	1039	PkDtct2 In Sel	1042	Peak 2 Change	1045
		PkDtct1 In Sel	1037	Peak 1 Change	1040	PkDtct2PresetSel	1043	PeakDetect2 Out	1046
Applications 	Process PID	PID Cfg	1065	PID Fdbk Sel	1072	PID Output Sel	1079	PID Prop Gain	1086
		PID Control	1066	PID Fdbk AnIgHi	1073	PID Output Mult	1080	PID Int Time	1087
		PID Ref Sel	1067	PID Fdbk AnIgLo	1074	PID Upper Limit	1081	PID Deriv Time	1088
		PID Ref AnIgHi	1068	PID FBLoss SpSel	1075	PID Lower Limit	1082	PID Status	1089
		PID Ref AnIgLo	1069	PID FBLoss TqSel	1076	PID Deadband	1083	PID Ref Meter	1090
		PID Setpoint	1070	PID Fdbk	1077	PID LP Filter BW	1084	PID Fdbk Meter	1091
		PID Ref Mult	1071	PID Fdbk Mult	1078	PID Preload	1085	PID Error Meter	1092
								PID Output Meter	1093
	Torque Prove [755]	Trq Prove Cfg	1100	Trq Lmt SlewRate	1104	Brk Release Time	1107	Float Tolerance	1111
		Trq Prove Setup	1101	Speed Dev Band	1105	Brk Set Time	1108	MicroPsnScalePct	1112
		DI FloatMicroPsn	1102	SpdBand Intgrtr	1106	Brk Alarm Travel	1109	ZeroSpdFloatTime	1113
		Trq Prove Status	1103			Brk Slip Count	1110	Brake Test Torq[755]	1114
	Fibers Function	Fiber Control	1120	Traverse Inc	1123	P Jump	1126	DI Fiber SyncEna	1129
		Fiber Status	1121	Traverse Dec	1124			DI Fiber TravDis	1130
		Sync Time	1122	Max Traverse	1125				
	Adjustable Vltg	Adj Vltg Config	1131	Adj Vltg TrimSel	1136	Adj Vltg Preset1	1142	Adj Vltg RefMult	1149
		Adj Vltg Select	1133	Adj Vltg Trim Hi	1137	Adj Vltg Preset2	1143	Adj Vltg Scurve	1150
		Adj Vltg Ref Hi	1134	Adj Vltg Trim Lo	1138	Adj Vltg Preset3	1144	Adj Vltg TrimPct	1151
		Adj Vltg Ref Lo	1135	Adj Vltg Command	1139	Adj Vltg Preset4	1145	Min Adj Voltage	1152
				Adj Vltg AccTime	1140	Adj Vltg Preset5	1146	Dead Time Comp	1153
				Adj Vltg DecTime	1141	Adj Vltg Preset6	1147	DC Offset Ctrl	1154
						Adj Vltg Preset7	1148		

File	Group	Parameters							
Applications 	Pump Jack	Rod Speed	1165	TorqAlarm Action	1168	Total Gear Ratio	1174	Gearbox Limit	1181
		Rod Torque	1166	TorqAlarm Config	1169	Max Rod Speed	1175	Gearbox Rating	1182
		Rod Speed Cmd	1167	TorqAlarm Dwell	1170	Max Rod Torque	1176	Gearbox Ratio	1183
				TorqAlarm Level	1171	Min Rod Speed	1177	Gearbox Sheave	1184
				TorqAlm Timeout	1172	Motor Sheave	1178		
				TorqAlarm TOActn	1173	OilWell Pump Cfg	1179		
						PCP Pump Sheave	1180		
	Pump Off	Pump Off Config	1187	Pump Cycle Store	1192	Pct Cycle Torque	1198	Pump Off Count	1203
		Pump Off Setup	1188	Set Top ofStroke	1193	Pct Lift Torque	1199	PumpOff SleepCnt	1204
		Pump Off Action	1189	Torque Setpoint	1194	Pct Drop Torque	1200	Day Stroke Count	1205
		Pump Off Control	1190	Pump Off Level	1195	Stroke Pos Count	1201	DI PumpOff Disbl	1206
		Pump Off Status	1191	Pump Off Speed	1196	Stroke Per Min	1202	Pump OffSleepLvl	1207
				Pump Off Time	1197				
	Profiling [755]	Profile Status	1210	DI Vel Override	1221	Step 1…16 Type		1230, 1240, 1250…1380	
		Units Traveled	1212	DI StrtStep Sel0	1222	Step 1…16 Velocity		1231, 1241, 1251…1381	
		Profile Command	1213	DI StrtStep Sel1	1223	Step 1…16 Accel		1232, 1242, 1252…1382	
		Counts Per Unit	1215	DI StrtStep Sel2	1224	Step 1…16 Decel		1233, 1243, 1253…1383	
		ProfVel Override	1216	DI StrtStep Sel3	1225	Step 1…16 Value		1234, 1244, 1254…1384	
		Prof DI Invert	1217	DI StrtStep Sel4	1226	Step 1…16 Dwell		1235, 1245, 1255…1385	
		DI Hold Step	1218			Step 1…16 Batch		1236, 1246, 1256…1386	
		DI Abort Step	1219			Step 1…16 Next		1237, 1247, 1257…1387	
		DI Abort Profile	1220			Step 1…16 Action		1238, 1248, 1258…1388	
						Step 1…16 Dig In		1239, 1249, 1259…1389	
	Camming [755]	PCAM Control	1390	PCAM Span X	1396	PCAM Main Pt X 0…15		1407, 1409, 1411…1437	
		PCAM Mode	1391	PCAM Scale X	1397	PCAM Main Pt Y 0…15		1408, 1410, 1412…1438	
		PCAM Psn Select	1392	PCAM Span Y	1398	PCAM Aux EndPnt			1439
		PCAM Psn Stpt	1393	PCAM ScaleY Sel	1399	PCAM Aux Types			1440
		PCAM Psn Ofst	1394	PCAM ScaleYSetPt	1400	PCAM Aux Pt X 1…15		1441, 1443, 1445…1469	
		PCAM PsnOfst Eps	1395	PCAM VelScaleSel	1401	PCAM Aux Pt Y 1…15		1442, 1444, 1446…1470	
				PCAM VelScaleSP	1402	PCAM Status			1471
				PCAM Slope Begin	1403	PCAM Vel Out			1472
				PCAM Slope End	1404	PCAM Psn Out			1473
				PCAM Main EndPnt	1405	DI PCAM Start			1474
				PCAM Main Types	1406				
	Roll Position	Roll Psn Config	1500	Roll Psn Preset	1504	RP Rvls Input	1507	RP Unit Scale	1510
		Roll Psn Status	1501	Roll Psn Offset	1505	RP Rvls Output	1508	RP Psn Output	1511
		RP Psn Fdbk Stpt	1502	RP EPR Input	1506	RP Unwind	1509	RP Unit Out	1512
		RP Psn Fdbk Sel	1503						
	Torque Boost	PsnTrqBst Ctrl	1515	PsnTrqBst Ps X1	1520	PsnTrqBst Trq Y2	1525	PsnTrqBst TrqOut	1528
		PsnTrqBst Sts	1516	PsnTrqBst Ps X2	1521	PsnTrqBst Trq Y3	1526		
		PsnTrqBst RefSel	1517	PsnTrqBst Ps X3	1522	PsnTrqBst Trq Y4	1527		
		PsnTrqBstPsnOfst	1518	PsnTrqBst Ps X4	1523				
		PsnTrqBst UNWCnt	1519	PsnTrqBst Ps X5	1524				
	Spindle Orient	SO Config	1580	SO EPR Input	1584	SO Unit Scale	1588	SO Accel Time	1591
		SO Status	1581	SO Rvls Input	1585	SO Position Out	1589	SO Decel Time	1592
		SO Setpoint	1582	SO Rvls Output	1586	SO Unit Out	1590	SO Fwd Vel Lmt	1593
		SO Offset	1583	SO Cnts per Rvls	1587			SO Rev Vel Lmt	1594
	Id Compensation	Id Comp Enbl	1600	Id Comp Mtrng 1	1601	Id Comp Regen 1	1613		
				IdCompMtrng 1 Iq	1602	IdCompRegen 1 Iq	1614		
				Id Comp Mtrng 2	1603	Id Comp Regen 2	1615		
				IdCompMtrng 2 Iq	1604	IdCompRegen 2 Iq	1616		
				Id Comp Mtrng 3	1605	Id Comp Regen 3	1617		
				IdCompMtrng 3 Iq	1606	IdCompRegen 3 Iq	1618		
				Id Comp Mtrng 4	1607	Id Comp Regen 4	1619		
				IdCompMtrng 4 Iq	1608	IdCompRegen 4 Iq	1620		
				Id Comp Mtrng 5	1609	Id Comp Regen 5	1621		
				IdCompMtrng 5 Iq	1610	IdCompRegen 5 Iq	1622		
				Id Comp Mtrng 6	1611	Id Comp Regen 6	1623		
				IdCompMtrng 6 Iq	1612	IdCompRegen 6 Iq	1624		

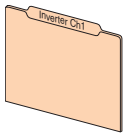
Inverter Common

Parameter descriptions begin on page 191.

File	Group	Parameters							
Inverter Common 	System Ratings	Sys Rated Amps	1	Sys Rated Volts	2	I1 Rated Amps	3		
	Status	Online Status	10	Fault Status	12	Alarm Status	13		
	Metering	Ground Current	18						
	Testpoints	Testpoint Sel 1 Testpoint Val 1	30 31	Testpoint Sel 2 Testpoint Val 2	32 33				

Inverter 1

Parameter descriptions begin on page 193.

File	Group	Parameters							
Inverter 1 	Status	I1 Fault Status	105	I1 Alarm Status	107				
	Metering	I1 U Phase Curr I1 V Phase Curr I1 W Phase Curr	115 116 117	I1 Gnd Current I1 DC Bus Volt	118 119	I1 Heatsink Temp I1 IGBT Temp	120 121	I1 HSFan Speed I1 InFan 1 Speed I1 InFan 2 Speed	124 125 126
	Predictive Main	I1 PredMainReset	127	I1 HSFanElpsdLif	128	I1 InFanElpsdLif	129		
	Testpoints	I1 Testpt Sel 1 I1 Testpt Val 1	140 141	I1 Testpt Sel 2 I1 Testpt Val 2	142 143				

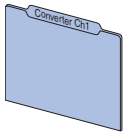
Converter Common

Parameter descriptions begin on page 196.

File	Group	Parameters							
Converter Common	System Ratings	Sys Rated Amps	1	Sys Rated Volts	2	C1 Rated Amps	3		
	Status	Online Status	10	Fault Status	12	Alarm Status	13		
	Configuration	Gnd Cur Flt Lvl	16						
	Metering	L1 Phase Curr L2 Phase Curr L3 Phase Curr	20 21 22	Heatsink Temp SCR Temp Gate Board Temp	23 24 25				
	Testpoints	Testpoint Sel 1 Testpoint Val 1	30 31	Testpoint Sel 2 Testpoint Val 2	32 33				

Converter 1

Parameter descriptions begin on page 199.

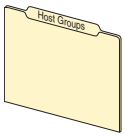
File	Group	Parameters							
Converter 1 	Status	C1 Fault Status1	105	C1 Fault Status2	106	C1 Alarm Status1	107		
	Metering	C1 L1 Phase Curr C1 L2 Phase Curr C1 L3 Phase Curr	115 116 117	C1 Gnd Current C1 DC Bus Volt	118 119	C1 Heatsink Temp C1 SCR Temp C1 GateBoardTemp	120 121 122	C1 AC Line Freq C1 L12 Line Volt C1 L23 Line Volt C1 L31 Line Volt	123 125 126 127
	Predictive Main	C1 PredMainReset	137	C1 CbFanElpsdLif	138				
	Testpoints	C1 Testpt Sel 1 C1 Testpt Val 1	140 141	C1 Testpt Sel 2 C1 Testpt Val 2	142 143				

How Option Module Parameters are Organized

Option module parameters are only available when that option is installed in a host drive. To view and edit option module parameters, select the port number of the device you want to access from the Status Screen.

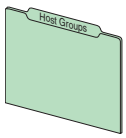
I/O Modules

Parameter descriptions begin on page 202.

File	Group	Parameters							
Host Groups 	Digital Inputs	Dig In Sts	1	Dig In Filt Mask	2	Dig In Filt	3		
	Digital Outputs	Dig Out Sts	5	RO0 Sel	10	RO1 Sel	20	TO1 Sel	30
		Dig Out Invert	6	RO0 Level Sel	11	TO0 Sel	20	TO1 Level Sel	31
		Dig Out Setpoint	7	RO0 Level	12	RO1 Level Sel	21	TO1 Level	32
				RO0 Level CmpSts	13	TO0 Level Sel	21	TO1 Level CmpSts	33
				RO0 On Time	14	RO1 Level	22	TO1 On Time	34
				RO0 Off Time	15	TO0 Level	22	TO1 Off Time	35
						RO1 Level CmpSts	23		
						TO0 Level CmpSts	23		
						RO1 On Time	24		
						TO0 On Time	24		
						RO1 Off Time	25		
						TO0 Off Time	25		
	Motor PTC	PTC Cfg	40	PTC Sts	41	PTC Raw Value	42		
	Analog Inputs	Anlg In Type	45	Anlg In0 Value	50	Anlg In1 Value	60		
		Anlg In Sqrt	46	Anlg In0 Hi	51	Anlg In1 Hi	61		
		Anlg In Loss Sts	47	Anlg In0 Lo	52	Anlg In1 Lo	62		
				Anlg In0 LssActn	53	Anlg In1 LssActn	63		
				Anlg In0 Raw Val	54	Anlg In1 Raw Val	64		
				Anlg In0 Filt Gn	55	Anlg In1 Filt Gn	65		
				Anlg In0 Filt BW	56	Anlg In1 Filt BW	66		
	Analog Outpts	Anlg Out Type	70	Anlg Out0 Sel	75	Anlg Out1 Sel	85		
		Anlg Out Abs	71	Anlg Out0 Stpt	76	Anlg Out1 Stpt	86		
				Anlg Out0 Data	77	Anlg Out1 Data	87		
				Anlg Out0 DataHi	78	Anlg Out1 DataHi	88		
				Anlg Out0 DataLo	79	Anlg Out1 DataLo	89		
				Anlg Out0 Hi	80	Anlg Out1 Hi	90		
				Anlg Out0 Lo	81	Anlg Out1 Lo	91		
				Anlg Out0 Val	82	Anlg Out1 Val	92		
	Predictive Main	PredMaint Sts	99	RO0 Load Type	100	RO1 Load Type	110		
				RO0 Load Amps	101	RO1 Load Amps	111		
				RO0 TotalLife	102	RO1 TotalLife	112		
				RO0 ElapsedLife	103	RO1 ElapsedLife	113		
				RO0 RemainLife	104	RO1 RemainLife	114		
				RO0 LifeEvntLvl	105	RO1 LifeEvntLvl	115		
				RO0 LifeEvntActn	106	RO1 LifeEvntActn	116		

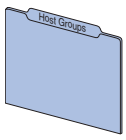
Safe Speed Monitor Module

Parameter descriptions begin on page 213.

File	Group	Parameters							
Host Groups 	Security	Password	1	Reset Defaults	7	Password Command	17	Config Flt Code	70
		Lock State	5	Signature ID	10	Security Code	18		
		Operating Mode	6	New Password	13	Vendor Password	19		
	General	Cascaded Config	20	Reset Type	22	SS Out Mode	72		
		Safety Mode	21	OverSpd Response	24	SLS Out Mode	73		
	Feedback	Fbk Mode	27	Fbk 1 Type	28	Fbk 2 Units	34	Fbk Speed Ratio	39
				Fbk 1 Units	29	Fbk 2 Polarity	35	Fbk Speed Tol	40
				Fbk 1 Polarity	30	Fbk 2 Resolution	36	Fbk Pos Tol	41
				Fdk 1 Resolution	31	Fbk 2 Volt Mon	37	Direction Mon	42
				Fbk 1 Volt Mon	32	Fbk 2 Speed	38	Direction Tol	43
				Fbk 1 Speed	33				
	Stop	Safe Stop Input	44	Stop Mon Delay	46	Standstill Speed	48	Decel Ref Speed	50
		Safe Stop Type	45	Max Stop Time	47	Standstill Pos	49	Stop Decel Tol	51
	Limited Speed	Lim Speed Input	52	Enable SW Input	54	Safe Speed Limit	55	Speed Hysteresis	56
		LimSpd Mon Delay	53						
	Door Control	Door Out Type	57	DM Input	58	Lock Mon Enable	59	Door Out Mode	74
						Lock Mon Input	60		
	Max Speed	Max Speed Enable	61	Max Spd Stop Typ	63	Safe Accel Limit	65		
		Safe Max Speed	62	Max Accel Enable	64	Max Acc Stop Typ	66		
	Faults	Fault Status	67	Guard Status	68	IO Diag Status	69	Config Flt Code	70

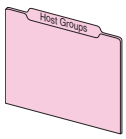
Single Incremental Encoder Module

Parameter descriptions begin on page 225.

File	Group	Parameters							
Host Groups 	N/A	Encoder Cfg	1	Fdbk Loss Cfg	3	Encoder Status	5	Phase Loss Count	7
		Encoder PPR	2	Encoder Feedback	4	Error Status	6	Quad Loss Count	8

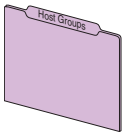
Dual Incremental Encoder Module

Parameter descriptions begin on page 227.

File	Group	Parameters							
Host Groups 	Encoder 0	Enc 0 Cfg	1	Enc 0 FB Lss Cfg	3	Enc 0 Sts	5	Enc 0 PhsLss Cnt	7
		Enc 0 PPR	2	Enc 0 FB	4	Enc 0 Error Sts	6	Enc 0 QuadLssCnt	8
	Encoder 1	Enc 1 Cfg	11	Enc 1 FB Lss Cfg	13	Enc 1 Sts	15	Enc 1 PhsLss Cnt	17
		Enc 1 PPR	12	Enc 1 FB	14	Enc 1 Error Sts	16	Enc 1 QuadLssCnt	18
	Homing Cfg	Homing Cfg	20						
	Module Status	Module Sts	21						

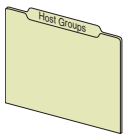
Universal Feedback Module

Parameter descriptions begin on page 232.

File	Group	Parameters							
Host Groups 	Module	Module Sts	1						
		Module Err Reset	2						
	Feedback 0	FB0 Position	5	FB0 Cfg	8	FB0 Inc Cfg	16	FB0 SSI Turns	22
		FB0 Device Sel	6	FB0 Loss Cfg	9	FB0 Inc Sts	17	FB0 Lin CPR	25
		FB0 Identify	7	FB0 Sts	10	FB0 SSI Cfg	20	FB0 Lin Upd Rate	26
				FB0 IncAndSC PPR	15	FB0 SSI Resol	21	FB0 LinStahl Sts	27
	Feedback 1	FB1 Position	35	FB1 Cfg	38	FB1 Inc Cfg	46	FB1 SSI Turns	52
		FB1 Device Sel	36	FB1 Loss Cfg	39	FB1 Inc Sts	47	FB1 Lin CPR	55
		FB1 Identify	37	FB1 Sts	40	FB1 SSI Cfg	50	FB1 Lin Upd Rate	56
				FB1 IncAndSC PPR	45	FB1 SSI Resol	51	FB1 LinStahl Sts	57
	Encoder Out	Enc Out Sel	80	Enc Out FD PPR	82	Enc Out Z Offset	83		
		Enc Out Mode	81			Enc Out Z PPR	84		
	Registration	Rgsn Arm	90	Rgsn Latch1 Cfg	100	Rgsn Latch1 Psn	101	Rgsn Latch1 Time	102
		Rgsn In 0 Filter	91	Rgsn Latch2 Cfg	103	Rgsn Latch2 Psn	104	Rgsn Latch2 Time	105
		Rgsn In 1 Filter	92	Rgsn Latch3 Cfg	106	Rgsn Latch3 Psn	107	Rgsn Latch3 Time	108
		Rgsn Hmln Filter	93	Rgsn Latch4 Cfg	109	Rgsn Latch4 Psn	110	Rgsn Latch4 Time	111
		Rgsn Sts	94	Rgsn Latch5 Cfg	112	Rgsn Latch5 Psn	113	Rgsn Latch5 Time	114
				Rgsn Latch6 Cfg	115	Rgsn Latch6 Psn	116	Rgsn Latch6 Time	117
				Rgsn Latch7 Cfg	118	Rgsn Latch7 Psn	119	Rgsn Latch7 Time	120
				Rgsn Latch8 Cfg	121	Rgsn Latch8 Psn	122	Rgsn Latch8 Time	123
				Rgsn Latch9 Cfg	124	Rgsn Latch9 Psn	125	Rgsn Latch9 Time	126
				Rgsn Latch10 Cfg	127	Rgsn Latch10 Psn	128	Rgsn Latch10 Time	129

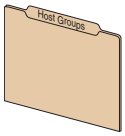
Embedded EtherNet/IP

Parameter descriptions begin on page 247.

File	Group	Parameters							
Host Groups 	N/A	DL From Net 01	1	Port Number	33	Flt Cfg DL 01	60	DLs Fr Peer Cfg	76
		DL From Net 02	2	DLs From Net Act	34	Flt Cfg DL 02	61	DLs Fr Peer Act	77
		DL From Net 03	3	DLs To Net Act	35	Flt Cfg DL 03	62	Logic Src Cfg	78
		DL From Net 04	4	BOOTP	36	Flt Cfg DL 04	63	Ref Src Cfg	79
		DL From Net 05	5	Net Addr Src	37	Flt Cfg DL 05	64	Fr Peer Timeout	80
		DL From Net 06	6	IP Addr Cfg 1	38	Flt Cfg DL 06	65	Fr Peer Addr 1	81
		DL From Net 07	7	IP Addr Cfg 2	39	Flt Cfg DL 07	66	Fr Peer Addr 2	82
		DL From Net 08	8	IP Addr Cfg 3	40	Flt Cfg DL 08	67	Fr Peer Addr 3	83
		DL From Net 09	9	IP Addr Cfg 4	41	Flt Cfg DL 09	68	Fr Peer Addr 4	84
		DL From Net 10	10	Subnet Cfg 1	42	Flt Cfg DL 10	69	Fr Peer Enable	85
		DL From Net 11	11	Subnet Cfg 2	43	Flt Cfg DL 11	70	Fr Peer Status	86
		DL From Net 12	12	Subnet Cfg 3	44	Flt Cfg DL 12	71	DLs To Peer Cfg	87
		DL From Net 13	13	Subnet Cfg 4	45	Flt Cfg DL 13	72	DLs To Peer Act	88
		DL From Net 14	14	Gateway Cfg 1	46	Flt Cfg DL 14	73	To Peer Period	89
		DL From Net 15	15	Gateway Cfg 2	47	Flt Cfg DL 15	74	To Peer Skip	90
		DL From Net 16	16	Gateway Cfg 3	48	Flt Cfg DL 16	75	To Peer Enable	91
		DL To Net 01	17	Gateway Cfg 4	49				
		DL To Net 02	18	Net Rate Cfg	50				
		DL To Net 03	19	Net Rate Act	51				
		DL To Net 04	20	Web Enable	52				
		DL To Net 05	21	Web Features	53				
		DL To Net 06	22	Comm Flt Action	54				
		DL To Net 07	23	Idle Flt Action	55				
		DL To Net 08	24	Peer Flt Action	56				
		DL To Net 09	25	Msg Flt Action	57				
		DL To Net 10	26	Flt Cfg Logic	58				
		DL To Net 11	27	Flt Cfg Ref	59				
		DL To Net 12	28						
		DL To Net 13	29						
		DL To Net 14	30						
		DL To Net 15	31						
		DL To Net 16	32						

Embedded DeviceLogix

Parameter descriptions begin on page 407.

File	Group	Parameters							
Host Groups 	Analog Outputs	DLX Out 01	1	DLX Out 05	5	DLX Out 09	9	DLX Out 13	13
		DLX Out 02	2	DLX Out 06	6	DLX Out 10	10	DLX Out 14	14
		DLX Out 03	3	DLX Out 07	7	DLX Out 11	11	DLX Out 15	15
		DLX Out 04	4	DLX Out 08	8	DLX Out 12	12	DLX Out 16	16
	Analog Inputs	DLX In 01	17	DLX In 05	21	DLX In 09	25	DLX In 13	29
		DLX In 02	18	DLX In 06	22	DLX In 10	26	DLX In 14	30
		DLX In 03	19	DLX In 07	23	DLX In 11	27	DLX In 15	31
		DLX In 04	20	DLX In 08	24	DLX In 12	28	DLX In 16	32
	Digital Inputs	DLX DIP 01	33	DLX DIP 05	37	DLX DIP 09	41	DLX DIP 13	45
		DLX DIP 02	34	DLX DIP 06	38	DLX DIP 10	42	DLX DIP 14	46
		DLX DIP 03	35	DLX DIP 07	39	DLX DIP 11	43	DLX DIP 15	47
		DLX DIP 04	36	DLX DIP 08	40	DLX DIP 12	44	DLX DIP 16	48
	Status & Cntl	DLX DigIn Sts	49	DLX DigOut Sts	50	DLX Prog Cond	52	DLX Operation	53
				DLX DigOut Sts2	51				
	Internal Regs	DLX Real SP1	54	DLX DINT SP1	70	DLX Real InSP1	82	DLX DINT InSP1	98
		DLX Real SP2	55	DLX DINT SP2	71	DLX Real InSP2	83	DLX DINT InSP2	99
		DLX Real SP3	56	DLX DINT SP3	72	DLX Real InSP3	84	DLX DINT InSP3	100
		DLX Real SP4	57	DLX DINT SP4	73	DLX Real InSP4	85	DLX DINT InSP4	101
		DLX Real SP5	58	DLX DINT SP5	74	DLX Real InSP5	86	DLX DINT OutSP1	102
		DLX Real SP6	59	DLX DINT SP6	75	DLX Real InSP6	87	DLX DINT OutSP2	103
		DLX Real SP7	60	DLX DINT SP7	76	DLX Real InSP7	88	DLX DINT OutSP3	104
		DLX Real SP8	61	DLX DINT SP8	77	DLX Real InSP8	89	DLX DINT OutSP4	105
		DLX Real SP9	62	DLX Bool SP1	78	DLX Real OutSP1	90		
		DLX Real SP10	63	DLX Bool SP2	79	DLX Real OutSP2	91		
		DLX Real SP11	64	DLX Bool SP3	80	DLX Real OutSP3	92		
		DLX Real SP12	65	DLX Bool SP4	81	DLX Real OutSP4	93		
		DLX Real SP13	66			DLX Real OutSP5	94		
		DLX Real SP14	67			DLX Real OutSP6	95		
		DLX Real SP15	68			DLX Real OutSP7	96		
		DLX Real SP16	69			DLX Real OutSP1	97		

Drive Monitor File

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
MONITOR	Metering	1	**Output Frequency** Output Frequency Output frequency present at terminals T1, T2, and T3 (U, V & W)	Units: Default: Min/Max:	Hz 0.00 –/+650.00	RO	Real
		2	**Commanded SpdRef** Commanded Speed Reference Value of the active Speed/Frequency Reference. Displayed in Hz or RPM, depending on the value of P300 [Speed Units].	Units: Default: Min/Max:	Hz RPM 0.00 –/+P27 [Motor NP Hertz] x 8 –/+P28 [Motor NP RPM] x 8	RO	Real
		3	**Mtr Vel Fdbk** Motor Velocity Feedback Estimated or actual motor speed, with feedback. Displayed in Hz or RPM, depending on the value of P300 [Speed Units].	Units: Default: Min/Max:	Hz RPM 0.00 –/+P27 [Motor NP Hertz] x 8 –/+P28 [Motor NP RPM] x 8	RO	Real
		4	**Commanded Trq** Commanded Torque Final torque reference value after limits and filtering are applied. Percent of motor rated torque.	Units: Default: Min/Max:	% 0.00 –/+800.00	RO	Real
		5	**Torque Cur Fdbk** Torque Current Feedback Based on the motor, the amount of current that is in phase with the fundamental voltage component.	Units: Default: Min/Max:	Amps Based on Drive Rating –/+P21 [Rated Amps] x 2	RO	Real
		6	**Flux Cur Fdbk** Flux Current Feedback Amount of current that is out of phase with the fundamental voltage component.	Units: Default: Min/Max:	Amps Based on Drive Rating –/+P21 [Rated Amps] x 2	RO	Real
		7	**Output Current** Output Current The total output current present at terminals T1, T2, and T3 (U, V & W).	Units: Default: Min/Max:	Amps Based on Drive Rating 0.00 / P21 [Rated Amps] x 2	RO	Real
		8	**Output Voltage** Output Voltage Output voltage present at terminals T1, T2, and T3 (U, V & W).	Units: Default: Min/Max:	VAC Based on Drive Rating 0.00 / P20 [Rated Volts] x 1.15	RO	Real
		9	**Output Power** Output Power Output power present at terminals T1, T2, and T3 (U, V & W).	Units: Default: Min/Max:	kW 0.00 0.00 / 3000.00	RO	Real
		10	**Output Powr Fctr** Output Power Factor Output power factor.	Default: Min/Max:	0.00 0.00 / 1.00	RO	Real
		11	**DC Bus Volts** Direct Current Bus Volts DC bus voltage.	Units: Default: Min/Max:	VDC Based on Drive Rating 0.00 / P20 [Rated Volts] x 2	RO	Real
		12	**DC Bus Memory** Direct Current Bus Memory A six-minute average of P11 [DC Bus Volts] used to estimate the DC equivalent of the input voltage. Automatically initialized upon power-up or precharge, continually updated during normal operation, and is used to trigger a power loss condition.	Units: Default: Min/Max:	VDC Based on Drive Rating 0.00 / P20 [Rated Volts] x 2	RO	Real
		13	**Elapsed MWH** Elapsed Megawatt Hour Accumulated output energy of the drive. Use P336 [Reset Meters] to reset this parameter.	Units: Default: Min/Max:	MWh 0.000 0.000 / 4294967296.000	RO	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
MONITOR	Metering	14	**Elapsed kWH** Elapsed Kilowatt Hour Accumulated output energy of the drive. Use P336 [Reset Meters] to reset this parameter.	Units: Default: Min/Max:	kWh 0.000 0.000 / 4294967296.000	RO	Real
		15	**Elapsed Run Time** Elapsed Run Time Accumulated time drive is outputting power. Use P336 [Reset Meters] to reset this parameter.	Units: Default: Min/Max:	Hrs 0.000 0.000 / 220000000.000	RO	Real
		16	**Elpsd Mtr MWHrs** Elapsed Motor Megawatt Hours Accumulated output energy to the motor.	Units: Default: Min/Max:	MWh 0.0 0.0 / 220000000.0	RO	Real
		17	**Elpsd Rgn MWHrs** Elapsed Regenerated Motor Megawatt Hours Accumulated input energy from the motor.	Units: Default: Min/Max:	MWh 0.0 0.0 / 220000000.0	RO	Real
		18	**Elpsd Mtr kWHrs** Elapsed Motor Kilowatt Hours Accumulated output energy to the motor.	Units: Default: Min/Max:	kWh 0.0000 0.0000 / 220000000.0000	RO	Real
		19	**Elpsd Rgn kWHrs** Elapsed Regenerated Motor Kilowatt Hours Accumulated input energy from the motor.	Units: Default: Min/Max:	kWh 0.0000 0.0000 / 220000000.0000	RO	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
MONITOR	Drive Data	20	**Rated Volts** Rated Voltage Input voltage class (208, 240, 400 etc.) of the drive.	Units: Default: Min/Max:	VAC Based on Drive Rating 0.00 / 690.00	RO	Real
		21	**Rated Amps** Rated Amperage Continuous current rating of drive.	Units: Default: Min/Max:	Amps Based on Drive Rating 0.00 / 500.00	RO	Real
		22	**Rated kW** Rated Kilowatts Continuous power rating of drive.	Units: Default: Min/Max:	kW Based on Drive Rating 0.00 / 400.00	RO	Real

Drive Motor Control File

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
MOTOR CONTROL	Motor Data	25	**Motor NP Volts** Motor Nameplate Volts Rated volts shown on the motor nameplate.	Units: Default: Min/Max:	VAC P20 [Rated Volts] x 0.3913 0.10 / P20 [Rated Volts] (P305 = 0) 0.10 / 1.5 x P20 [Rated Volts] (P305 = 1)	RW	Real
		26	**Motor NP Amps** Motor Nameplate Amps Rated full load amps shown on the motor nameplate.	Units: Default: Min/Max:	Amps Based on Drive Rating 0.01 / 7400.00	RW	Real
		27	**Motor NP Hertz** Motor Nameplate Hertz Rated frequency shown on the motor nameplate.	Units: Default: Min/Max:	Hz Based on Drive Rating 2.00 / 650.00	RW	Real
		28	**Motor NP RPM** Motor Nameplate Revolutions Per Minute Rated RPM shown on the motor nameplate.	Units: Default: Min/Max:	RPM Based on Drive Rating 1.0 / 40000.0	RW	Real
		29	**Mtr NP Pwr Units** Motor Nameplate Power Units Power units shown on the motor nameplate.	Default: Options:	Based on Drive Rating 0 = "HP" 1 = "kW"	RW	32-bit Integer
		30	**Motor NP Power** Motor Nameplate Power Rated power shown on the motor nameplate.	Units: Default: Min/Max:	HP (P29 = 0) kW (P29 = 1) Based on Drive Rating 0.00 / 2000.00	RW	Real
		31	**Motor Poles** Motor Poles Number of poles in the motor.	Units: Default: Min/Max:	Pole 4 2 / 200	RW	32-bit Integer

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
MOTOR CONTROL	Mtr Ctrl Options	**35**	**Motor Ctrl Mode** Motor Control Mode Motor type and motor control mode.	Default: Options:	1 = "Induction SV" 0 = "InductionVHz" 1 = "Induction SV" 2 = "Induct Econ" 3 = "Induction FV" 4 = "PM VHz" 5 = "PM SV" 6 = "PM FV" 7 = "SyncRel VHz" 8 = "SyncRel SV" 9 = "Adj VltgMode"	RW	32-bit Integer
		36	**Maximum Voltage** Maximum Voltage The highest voltage the drive will output.	Units: Default: Min/Max:	VAC Based on Drive Rating Based on Drive Rating	RW	Real
		37	**Maximum Freq** Maximum Frequency The frequency the drive will output at P36 [Maximum Voltage] when a "VHz" mode is selected by P35 [Motor Ctrl Mode]. Refer to diagram for P524 [Overspeed Limit].	Units: Default: Min/Max:	Hz P27 [Motor NP Hertz] x 2 + 10 Hz P27 [Motor NP Hertz] + 10 Hz / 420.00	RW	Real
		38	**PWM Frequency** Pulse Width Modulation Frequency Pulse Width Modulated frequency (power transistor switching frequency). Drive derating may occur with increased values.	Units: Default: Min/Max:	kHz Based on Drive Rating Based on Drive Rating	RW	Real

File	Group	No.	Display Name Full Name Description	Values	Read-Write	Data Type
MOTOR CONTROL	Mtr Ctrl Options	40	**Mtr Options Cfg** Motor Options Configuration Configuration of motor control-related functions.			

Options	Jerk Select	Not Used	Common Mode	Xsistor Diag	Elect Stab	DB WhileStop	PWM FreqLock	AsyncPWMLock	PWM Type Sel	RS Adaption	Reflect Wave	Mtr Lead Rev	EncIsTrqProv [1]	Trq ModeJog	Trq ModeStop	Zero TrqStop
Default	1	0	0	1	1	0	0	0	1	1	1	0	0	1	1	1
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Condition False
1 = Condition True

(1) 755 drives only.

Bit 0 "Zero TrqStop" – Configures stopped condition when in torque mode. 0 = wait for zero speed before shutting off drive output, 1 = wait for zero torque before shutting off drive output.

Bit 1 "Trq ModeStop" – Configures stopping behavior when in torque mode. 0 = remain in torque mode, 1 = switch to speed mode

Bit 2 "Trq ModeJog" – Configures jogging behavior when in torque mode. 0 = remain in torque mode, 1 = switch to speed mode

Bit 3 "EncIsTrqProv" – Enables encoderless mode when using the torque prove function. 0 = Disabled, 1 = Enabled. Bits 0 and 1 of P1100 [Trq Prove Cfg] must also be set to use this mode.

Bit 4 "Mtr Lead Rev" – Reverses the phase rotation of the applied voltage, effectively reversing the motor leads. 0 = Not Reversed, 1 = Reversed

Bit 5 "Reflect Wave" – Enables reflected wave voltage protection for long motor cables. 0 = Disabled, 1 = Enabled

Bit 6 "RS Adaption" – Adapts for changes in motor stator resistance due to motor temperature. Active only in FV motor control mode with feedback. 0 = Disabled, 1 = Enabled

Bit 7 "PWM Type Sel" – Configures 3 Phase / 2 Phase switching of the power devices. 0 = 3 Phase modulation with auto switchover to 2 phase modulation. 1 = Full time 3 phase modulation (no switchover)

Bit 8 "AsyncPWMLock" – Configures Synchronous / Asynchronous switching of the power devices. 0 = Automatically changes between synchronous and asynchronous. 1 = Synchronous switching only.

Bit 9 "PWM FreqLock" – Configures switching frequency of the power devices while in FV motor control mode without feedback. 0 = switching frequency automatically reduces to 2 kHz at low speeds (best performance), 1 = switching frequency does not reduce (setting used when switching frequency reduction is undesirable)

Bit 10 "DB WhileStop" – Enables operation of the dynamic brake transistor while the drive is stopped. 0 = Disabled, 1 = Enabled

Bit 11 "Elect Stab" – Enables stability control for Sensorless Vector and V/Hz motor control modes. 0 = Disabled, 1 = Enabled

Bit 12 "Xsistor Diag" – Enables power transistor diagnostic test at each start command. 0 = Disabled, 1 = Enabled

Bit 13 "Common Mode" – Enables the common mode reduction modulator to reduce the common mode voltage generated by the pulse width modulated inverter.

Bit 15 "Jerk Select" – Limits the rate of change to the velocity reference for improved current limiting. This setting applies only to Sensorless Vector and V/Hz motor control modes. 0 = Disabled (0.0 second ramp time achievable), 1 = Enabled (0.0 second ramp time prevented)

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
MOTOR CONTROL	Mtr Ctrl Options	42	**Bus Utilization** Bus Utilization The maximum allowed bus voltage utilization for the Motor Control. Do not change this value without consulting Technical Support. Higher values may result in control instability or over-current faults.	Units: Default: Min/Max:	% 95.00 85.00 / 100.00	RW	Real
		43	**Flux Up Enable** Flux Up Enable "Manual" (0) – Flux is established for P44 [Flux Up Time] before initial acceleration. "Automatic" (1) – Flux is established for a calculated time period based on motor nameplate data before acceleration. P44 [Flux Up Time] is not used.	Default: Options:	1 = "Automatic" 0 = "Manual" 1 = "Automatic"	RW	32-bit Integer
		44	**Flux Up Time** Flux Up Time The amount of time the drive will use to try to achieve full motor stator flux. When a Start command is issued, DC current at P26 [Motor NP Amps] level is used to build stator flux before accelerating.	Units: Default: Min/Max:	Secs 0.0000 0.0000 / 5.0000	RW	Real
		45	**Flux Down Ki** Flux Down Ki The integral term used in the voltage regulator which controls the removal of flux in the motor.	Default: Min/Max:	0.20 0.00 / 100.00	RW	Real
		46	**Flux Down Kp** Flux Down Kp The proportional term used in the voltage regulator which controls the removal of flux in the motor.	Default: Min/Max:	150.0 0.0 / 10000.0	RW	Real
		47	**Econ At Ref Ki** Economize At Reference Ki Integral gain that determines the response of the output voltage when P35 [Motor Ctrl Mode] option 2 "Induct Econ" is selected and the output frequency is at its reference.	Default: Min/Max:	305.0 0.0 / 100000.0	RW	Real
		48	**Econ AccDec Ki** Economize Acceleration/Deceleration Ki Integral gain that determines the response of the output voltage when P35 [Motor Ctrl Mode] option 2 "Induct Econ" is selected and the output frequency is either accelerating or decelerating to a reference.	Default: Min/Max:	200.0 0.0 / 100000.0	RW	Real
		49	**Econ AccDec Kp** Economize Acceleration/Deceleration Kp Proportional gain that determines the response of the output voltage when P35 [Motor Ctrl Mode] option 2 "Induct Econ" is selected and the output frequency is either accelerating or decelerating to a reference.	Units: Default: Min/Max:	V/A 100.0 0.0 / 1000000.0	RW	Real
		50	**Stability Filter** Stability Filter The filter time constant for the angle and voltage stability control.	Units: Default: Min/Max:	Secs 5162.22 0.00 / 1000000.00	RW	Real
		51	**Stab Volt Gain** Stability Voltage Gain The gain of the voltage stability control function. Not active when any FV motor control mode is selected with speed feedback.	Default: Min/Max:	5322.22 0.00 / 10000000.00	RW	Real
		52	**Stab Angle Gain** Stability Angle Gain The gain of the electrical angle stability control function. Not active when any FV motor control mode is selected in P35 [Motor Ctrl Mode] with speed feedback.	Default: Min/Max:	790.43 0.00 / 10000000.00	RW	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
MOTOR CONTROL	Volts per Hertz	**60**	**Start Acc Boost** Start/Acceleration Boost The voltage boost level for starting and acceleration when a "VHz" mode is selected, according to P35 [Motor Ctrl Mode]. Refer to diagram for P524 [Overspeed Limit].	Units: Default: Min/Max:	VAC Based on Drive Rating 0.00 / Based on Drive Rating	RW	Real
		61	**Run Boost** Run Boost The boost level for steady state and deceleration when a "VHz" mode is selected, according to P35 [Motor Ctrl Mode]. Refer to diagram for P524 [Overspeed Limit].	Units: Default: Min/Max:	VAC Based on Drive Rating 0.00 / Based on Drive Rating	RW	Real
		62	**Break Voltage** Break Voltage The voltage the drive will output at P63 [Break Frequency] when a "VHz" mode is selected, according to P35 [Motor Ctrl Mode]. Refer to diagram for P524 [Overspeed Limit].	Units: Default: Min/Max:	VAC Based on Drive Rating 0.00 / P25 [Motor NP Volts] x 1.5	RW	Real
		63	**Break Frequency** Break Frequency The frequency the drive will output at P62 [Break Voltage] when a "VHz" mode is selected, according to P35 [Motor Ctrl Mode]. Refer to diagram for P524 [Overspeed Limit].	Units: Default: Min/Max:	Hz P27 [Motor NP Hertz] x 0.25 0.00 / P27 [Motor NP Hertz]	RW	Real
		64	**SVC Boost Filter** SVC Boost Filter The voltage boost filter time constant when a "SVC" mode is selected, according to P35 [Motor Ctrl Mode].	Units: Default: Min/Max:	Secs 0.1000 0.0001 / 1000.0000	RW	Real
		65	**VHz Curve** VHz Curve Selects either a predefined curve (e.g. Fan/Pump), or a custom curve when a "VHz" mode is selected, according to P35 [Motor Cntl Mode]. Refer to diagram for P524 [Overspeed Limit].	Default: Options:	0 = "Custom V/Hz" 0 = "Custom V/Hz" 1 = "Fan/Pump"	RW	32-bit Integer

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
MOTOR CONTROL	Autotune	**70**	**Autotune** Autotune Provides a manual or automatic method for setting P73 [IR Voltage Drop], P74 [Ixo Voltage Drop] and P75 [Flux Current Ref]. Valid only when parameter P35 [Motor Ctrl Mode] is set to 1 "Induction SV", 2 "Induct Econ", or 3 "Induction FV". "Ready" (0) – Parameter returns to this setting following a "Static Tune" or "Rotate Tune", at which time another start transition is required to operate the drive in normal mode. It also permits manually setting P73 [IR Voltage Drop], P74 [Ixo Voltage Drop] and P75 [Flux Current Ref]. "Calculate" (1) – Uses motor nameplate data to automatically set P73 [IR Voltage Drop], P74 [Ixo Voltage Drop], P75 [Flux Current Ref] and P621 [Slip RPM @ FLA]. "Static Tune" (2) – A temporary command that initiates a non-rotational motor stator resistance test for the best possible automatic setting of P73 [IR Voltage Drop] in all valid modes and a non-rotational motor leakage inductance test for the best possible automatic setting of P74 [Ixo Voltage Drop] in a Flux Vector (FV) mode. A start command is required following initiation of this setting. Used when motor cannot be rotated. "Rotate Tune" (3) – A temporary command that initiates a "Static Tune" followed by a rotational test for the best possible automatic setting of P75 [Flux Current Ref]. In Flux Vector (FV) mode, with encoder feedback, a test for the best possible automatic setting of P621 [Slip RPM @ FLA] is also run. A start command is required following initiation of this setting. **Important:** If using rotate tune for a Sensorless Vector (SV) mode, the motor should be uncoupled from the load or results may not be valid. With a Flux Vector (FV) mode, either a coupled or uncoupled load will produce valid results. **ATTENTION:** Rotation of the motor in an undesired direction can occur during this procedure. To guard against possible injury and/or equipment damage, it is recommended that the motor be disconnected from the load before proceeding. "Inertia Tune" (4) – A temporary command that initiates an inertia test of the motor/load combination. The motor will ramp up and down while the drive measures the amount of inertia.	Default: Options:	1 = "Calculate" 0 = "Ready" 1 = "Calculate" 2 = "Static Tune" 3 = "Rotate Tune" 4 = "Inertia Tune"	RW	32-bit Integer
		71	**Autotune Torque** Autotune Torque The motor torque applied to the motor during the flux current and inertia tests.	Units: Default: Min/Max:	% 50.00 0.00 / 200.00	RW	Real
		73	**IR Voltage Drop** IR Voltage Drop Value of voltage drop across the resistance of the motor stator at rated motor current. Used only when P35 [Motor Ctrl Mode] is set to 1 "Induction SV", 2 "Induct Econ", or 3 "Induction FV".	Units: Default: Min/Max:	Volt Based on Drive Rating 0.00 / Based on Drive Rating	RW	Real
		74	**Ixo Voltage Drop** Ixo Voltage Drop Value of voltage drop across the leakage inductance of the motor at rated motor current. Used only when P35 [Motor Ctrl Mode] is set to 3 "Induction FV".	Units: Default: Min/Max:	VAC P25 [Motor NP Volts] x 0.25 0.00 / P25 [Motor NP Volts]	RW	Real
		75	**Flux Current Ref** Flux Current Reference Value of amps for full motor flux.	Units: Default: Min/Max:	Amps P26 [Motor NP Amps] x 0.35 0.00 / P26 [Motor NP Amps] x 0.995	RW	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
MOTOR CONTROL	Autotune	76	**Total Inertia** Total Inertia Time in seconds for a motor coupled to a load to accelerate from zero to base speed at rated motor torque. Calculated during auto-tune.	Units: Default: Min/Max:	Secs 2.00 0.01 / 600.00	RW	Real
		77	**Inertia Test Lmt** Inertia Test Limit Maximum number of revolutions the motor rotates during the Inertia AutoTune test. When the value is zero, the limit is not active.	Units: Default: Min/Max:	Revs 0.0 0.0 / 65535.0	RW	Real
		78	**EncdrIss AngComp** Encoderless Angle Compensation Represents electrical angle compensation dependent on motor cable and PWM Frequency. Determined during autotuning when P35 [Motor Ctrl Mode] is set to one of the FV modes without speed feedback.	Units: Default: Min/Max:	Rad 0.0000 –/+6.2831	RW	Real
		79	**EncdrIss VltComp** Encoderless Voltage Compensation Represents voltage compensation dependent on motor cable and PWM Frequency. Determined during autotuning when P35 [Motor Ctrl Mode] is set to one of the FV modes without speed feedback.	Units: Default: Min/Max:	VAC Based on Drive Rating 0.00 / P25 [Motor NP Volts] x 0.25	RW	Real
		80	755 **PM Cfg** Permanent Magnet Motor Configuration This parameter includes two options for PM FV mode selected by P35 [Motor Ctrl Mode]. When Bit 0 = 1 - PM Offset test will be executed before the drive runs normal operation only after a power cycle or drive reset. Required when the feedback device is not an absolute feedback device. When Bit 1 = 1 - Vqs regulator will be enabled.				
		81	755 **PM PriEnc Offset** Permanent Magnet Motor Primary Encoder Offset The amount of offset between the primary feedback encoder counts, and the rotor flux center position of the PM motor. A value of 1024 is equal to 360 electrical degrees. This parameter is updated during the PM Offset test which runs at the first start after a power cycle/ system reset (P80 [PM Cfg] Bit 0 = 1) and during autotune in PM FV mode.	Default: Min/Max:	0 0 / 1023	RW	32-bit Integer
		82	755 **PM AltEnc Offset** Permanent Magnet Motor Alternate Encoder Offset The amount of offset between the alternate feedback encoder counts, and the rotor flux center position of the PM motor. A value of 1024 is equal to 360 electrical degrees. This parameter is updated during the PM Offset test which runs at the first start after a power cycle/ system reset (P80 [PM Cfg] Bit 0 = 1) and during autotune in PM FV mode. Active only when Alternate Velocity Feedback is being used during Auto Tach Loss Switchover (see P635 [Spd Options Ctrl]).	Default: Min/Max:	0 0 / 1023	RW	32-bit Integer
		83	755 **PM OfstTst Cur** Permanent Magnet Motor Offset Test Current Amplitude of the current command in percent of the motor rated current during the PM Offset Test, which is one of the auto tune tests in PM FV mode.	Units: Default: Min/Max:	% 40.00 0.00 / 200.00	RW	Real

Options

	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	PMStabAnglEn	StaticTestEn	Vqs Reg En	AutoOfstTest
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Condition False
1 = Condition True

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
MOTOR CONTROL	Autotune	84	755 **PM OfstTst CRamp** Permanent Magnet Motor Offset Test Current Ramp Ramp time of the current command during the PM Offset Test in PM FV mode, which is defined as ramp time to reach the P80 [PM Cfg] current command amplitude.	Units: Default: Min/Max:	Secs 3.00 0.00 / 100.00	RW	Real
		85	755 **PM OfstTst FRamp** Permanent Magnet Motor Offset Test Frequency Ramp Defines the frequency ramp time of the current command during the PM Offset Test in PM FV mode, which is defined as ramp time in seconds from 0 to 3 Hz.	Units: Default: Min/Max:	Secs 60.00 0.00 / 1000.00	RW	Real
		86	755 **PM CEMF Voltage** Permanent Magnet Motor Counter Electro Motive Force Counter electromotive force (CEMF) voltage displayed in line-to-line rms value, which is normalized to the base motor speed. Updated after the completion of the auto tune in PM FV mode.	Units: Default: Min/Max:	Volt P25 [Motor NP Volts] x 0.0675 0.00 / P25 [Motor NP Volts] x 1.5	RW	Real
		87	755 **PM IR Voltage** Permanent Magnet Motor Stator Voltage Drop Voltage across the stator resistance of the PM motor at the rated motor current displayed in line-to-line rms value. Updated after the completion of the auto tune in PM FV mode.	Units: Default: Min/Max:	Volt Based on Drive Rating 0.00 / P25 [Motor NP Volts] x 0.25	RW	Real
		88	755 **PM IXq Voltage** Permanent Magnet Motor Q-Axis Stator Inductance Voltage Drop Voltage across the q-axis stator inductance of the PM motor at the rated motor current and the rated motor frequency displayed in line-to-line rms value. This parameter is updated after the completion of the auto tune in PM FV mode.	Units: Default: Min/Max:	Volt P25 [Motor NP Volts] x 0.0435 0.00 / P25 [Motor NP Volts] x 1.5	RW	Real
		89	755 **PM IXd Voltage** Permanent Magnet Motor D-Axis Stator Inductance Voltage Drop Voltage across the d-axis stator inductance of the PM motor at the rated motor current and the rated motor frequency displayed in line-to-line rms value. Updated after the completion of the auto tune in PM FV mode.	Units: Default: Min/Max:	Volt P25 [Motor NP Volts] x 0.0435 0.00 / P25 [Motor NP Volts] x 1.5	RW	Real
		91	755 **PM Vqs Reg Kp** Permanent Magnet Motor Vqs Regulator Proportional Gain Proportional gain of the vqs regulator in PM FV mode. When P80 [PM Cfg] Bit 1 = 1, the vqs regulator will be active either when the motor voltage exceeds the voltage limited by the DC bus voltage or when the motor voltage exceeds the value set by P36 [Maximum Voltage].	Default: Min/Max:	2.50 0.00 / 1000.00	RW	Real
		92	755 **PM Vqs Reg Ki** Permanent Magnet Motor Vqs Regulator Integral Gain Integral gain of the vqs regulator in PM FV mode.	Default: Min/Max:	0.50 0.00 / 1000.00	RW	Real
		93	755 **PM Dir Test Cur** Permanent Magnet Motor Direction Test Current Amount of current commanded during the direction test when P35 [Motor Ctrl Mode] option 6 "PM FV" is selected. When the Start-Up feature is used, this value is automatically set to 10% of the motor rated current.	Units: Default: Min/Max:	Amps P26 [Motor NP Amps]/10 0.00 / P26 [Motor NP Amps]	RW	Real
		120	755 **PM IXqVoltage125** Permanent Magnet Motor Q-Axis Stator Inductance Voltage Drop 125% Voltage across the q-axis stator inductance of the PM motor at 125% rated motor current and the rated motor frequency displayed in line-to-line rms value. This parameter is updated after the completion of the auto tune in PM FV mode.	Units: Default: Min/Max:	Volt P25 [Motor NP Volts] x 0.0435 0.0000 / P25 [Motor NP Volts] x 1.5	RW	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
MOTOR CONTROL	Vector Regulator	**95**	**VCL Cur Reg BW** Vector Closed Loop Current Regulator Bandwidth Sets the bandwidth of the current regulator by automatically adjusting the gains (P96 and P97) based on motor autotune results. When the value of bandwidth is zero (default) the current regulator gains can be manually adjusted. The default values for P95, P96, and P97 typically provide excellent performance, and do not normally need to be adjusted.	Units: Default: Min/Max:	R/S 0.0 0.0 / 9999.0	RW	Real
		96	**VCL Cur Reg Kp** Vector Closed Loop Current Regulator Proportional Gain Proportional gain of the current regulator. Can be adjusted when P95 is set to zero. The default values for P95, P96, and P97 typically provide excellent performance, and do not normally need to be adjusted.	Default: Min/Max:	1250.0 0.0 / 10000.0	RW	Real
		97	**VCL Cur Reg Ki** Vector Closed Loop Current Regulator Integral Gain Integral gain of the current regulator. Can be adjusted when P95 is set to zero. The default values for P95, P96, and P97 typically provide excellent performance, and do not normally need to be adjusted.	Default: Min/Max:	60.0 0.0 / 10000.0	RW	Real
		98	**VEncdls FReg Kp** Encoderless Vector Frequency Regulator Proportional Gain Represents electrical angle compensation dependent on motor cable and PWM Frequency. Determined during autotuning when P35 [Motor Ctrl Mode] is set to one of the FV modes without speed feedback.	Units: Default: Min/Max:	Hz/A 524.0 0.0 / 100000.0	RW	Real
		99	**VEncdls FReg Ki** Encoderless Vector, Frequency Regulator Integral Gain Determined during autotuning when P35 [Motor Ctrl Mode] is set to one of the FV modes without speed feedback. Represents voltage compensation dependent on motor cable and PWM Frequency.	Units: Default: Min/Max:	Hz/A 9080.0 0.0 / 100000.0	RW	Real
		100	**Slip Reg Enable** Slip Regulator Enable Enables or disables the slip frequency regulator. This selection is active only in motor control mode flux vector induction (P35 [Motor Cntl Mode] = 3 "Induction FV") and encoder feedback is used.	Default: Options:	1 = "Enabled" 0 = "Disabled" 1 = "Enabled"	RW	32-bit Integer
		101	**Slip Reg Ki** Slip Regulator Integral Gain Integral gain for the slip frequency regulator.	Default: Min/Max:	10.00 0.00 / 10000.00	RW	Real
		102	**Slip Reg Kp** Slip Regulator Proportional Gain Proportional gain for the slip frequency regulator.	Default: Min/Max:	0.50 0.00 / 10000.00	RW	Real
		103	**Flux Reg Enable** Flux Regulator Enable Enables or disables the flux regulator. This selection is active only in motor control mode flux vector induction (P35 [Motor Cntl Mode] = 3 "Induction FV").	Default: Options:	1 = "Enabled" 0 = "Disabled" 1 = "Enabled"	RW	32-bit Integer
		104	**Flux Reg Ki** Flux Regulator Integral Gain Integral gain for the flux regulator.	Default: Min/Max:	30.00 0.00 / 10000.00	RW	Real
		105	**Flux Reg Kp** Flux Regulator Proportional Gain Proportional gain for the flux regulator.	Default: Min/Max:	1.00 0.00 / 10000.00	RW	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
MOTOR CONTROL	Vector Regulator	**106**	**Trq Adapt Speed** Torque Adaption Speed Operating frequency (speed) at which the adaptive torque control regulators become active as a percent of motor nameplate frequency. This selection is active only in motor control mode flux vector induction (P35 [Motor Cntl Mode] = 3 "Induction FV").	Units: Default: Min/Max:	% 10.00 0.00 / 100.00	RW	Real
		107	**Trq Adapt En** Torque Adaption Enable Enables or disables the adaptive torque control. This selection is active only in motor control mode flux vector induction (P35 [Motor Cntl Mode] = 3 "Induction FV").	Default: Options:	1 = "Enabled" 0 = "Disabled" 1 = "Enabled"	RW	32-bit Integer
		108	**Phase Delay Comp** Phase Delay Compensation Used to adjust the sample delay compensation gain for the current feedback. The gain compensation is scaled to the sample time (for example, +1.0 would be a compensation of positive 1 sample time).	Default: Min/Max:	0.00 –/+100.00	RW	Real
		109	**Trq Comp Mode** Torque Compensation Mode Automatic: Updates the torque compensation gains (P110 [Trq Comp Mtring] and P111 [Torque Comp Regen]) after autotune.	Default: Options:	1 = "Auto" 0 = "Manual" 1 = "Auto"	RW	32-bit Integer
		110	**Trq Comp Mtring** Torque Compensation Motoring Motor torque compensation applied to the torque command for motoring power. This parameter can be set manually or determined automatically during autotune. (See P109 [Trq Comp Mode].) In manual mode, a value of 5% will increase the commanded torque by 5% (gain of 1.05). This is used for flux vector motor control mode (P35 [Motor Ctrl Mode] = 3 "Induction FV").	Units: Default: Min/Max:	% 0.00 –/+50.00	RW	Real
		111	**Trq Comp Regen** Torque Compensation Regeneration Motor torque compensation applied to the torque command for regenerating torque. This parameter can be set manually or determined automatically during autotune. (See P109 [Trq Comp Mode].) In manual mode, a value of -3% will decrease the commanded torque by 3% (gain of 0.97). This is used for flux vector motor control modes (P35 [Motor Ctrl Mode]).	Units: Default: Min/Max:	% 0.00 –/+50.00	RW	Real
		112	**Slip Adapt Iqs** Slip Adaption Iqs Level of per unit Iqs at which the adaptive slip frequency regulator becomes active. Active when P35 [Motor Ctrl Mode] = 3 "Induction FV."	Default: Min/Max:	0.05 0.00 / 1.00	RW	Real
		113	**SFAdapt SlewLmt** Slip and Flux Adaption Slew Limit Time that the slip, flux, and torque regulators are allowed to converge before the regulators are turned on after the motor speed reaches the level set in P106 [Trq Adapt Speed]. Active when P35 [Motor Ctrl Mode] = 3 "Induction FV."	Units: Default: Min/Max:	Secs 0.00 0.00 / 60.00	RW	Real
		114	**SFAdapt SlewRate** Slip and Flux Adaption Slew Rate Rate that the slip and flux regulators can converge before the regulators are enabled. Active when P35 [Motor Ctrl Mode] = 3 "Induction FV."	Default: Min/Max:	0.004999 0.000009 / 1.000000	RW	Real
		115	**SFAdapt CnvrgLvl** Slip and Flux Adaption Converge Level Slip and flux regulator error level that indicates convergence. Active when P35 [Motor Ctrl Mode] = 3 "Induction FV."	Default: Min/Max:	0.009999 0.000009 / 1.000000	RW	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
MOTOR CONTROL	Vector Regulator	116	**SFAdapt CnvrgLmt** Slip and Flux Adaption Converge Limit Duration of convergence before the adaption regulators are enabled after the error has decreased below the level set in P115 [SFAdapt CnvrgLvl]. Active when P35 [Motor Ctrl Mode] = 3 "Induction FV."	Default: Min/Max:	0.500 0.000 / 5.000	RW	Real

Drive Feedback & I/O File

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
FEEDBACK & I/O	Feedback	125	**Pri Vel Fdbk Sel** Primary Velocity Feedback Select Selects the source of the P3 [Mtr Vel Fdbk] and P131 [Active Vel Fdbk] that will be used when the drive is in operation without an Auto Tach Loss Switchover. Possible selections include: Port 0 – Open Loop Fdbk, Port 0 – Simulator Fdbk, and any Port that contains a feedback module (for example, Encoder). The Disabled and Open Loop Fdbk selections are functionally equivalent, with Open Loop being the default setting. Open Loop velocity feedback is estimated based on P1 [Output Frequency] and P5 [Torque Cur Fdbk], adjusted using P621 [Slip RPM @ FLA]. Simulator Fdbk is available in the Flux Vector selections for P35 [Motor Ctrl Mode]. Simulator velocity feedback is calculated based on P690 [Limited Trq Ref] and P76 [Total Inertia]. This selection is useful for drive operational checkout and test when motor movement is undesired. In simulation mode, gating of the power inverter section of the drive is disabled. Selection of any option module port that contains an encoder module results in P3 [Mtr Vel Fdbk] based on a measured value. Data obtained from the selected feedback module will be used to determine motor velocity feedback.	Default: Min/Max:	137 1 / 159999	RW	32-bit Integer
		126	**Pri Vel FdbkFltr** Primary Velocity Feedback Filter Adjusts a filter setting that is applied to the motor velocity feedback source that is selected by P125 [Pri Vel Fdbk Sel]. The purpose of this filter is to reduce the level of noise in the feedback signal. This is moving average type filter that has a delay setting of N, where N is an integer number (0, 1, 2 …). A setting of zero provides no filtering and no delay. Larger values of N result in more filtering and more delay. The best setting for this filter depends on the level of noise in the feedback signal and the bandwidth setting of the velocity regulator. In the Flux Vector selections for P35 [Motor Ctrl Mode], setting P636 [Speed Reg BW] to a non-zero setting places the drive in an automatic gain/filter adjustment mode. When the drive is in this automatic adjustment mode, the value of P666 [Speed Comp Gain] and possibly P644 [Spd Err Filt BW] are adjusted, based on the setting of P126 [Pri Vel FdbkFltr]. The automatic setting of P644 [Spd Err Filt BW] becomes independent of the feedback filter setting when P704 [InAdp LdObs Mode] is set to 1 "InertiaAdapt."	Default: Options:	3 = "50R/S Noise" 0 = "190R/S Noise" 1 = "160R/S Noise" 2 = "100R/S Noise" 3 = "50R/S Noise" 4 = "25R/S Noise" 5 = "12R/S Noise" 6 = "6R/S Noise" 7 = "3R/S Noise"	RW	32-bit Integer

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
FEEDBACK & I/O	Feedback	**127**	**Pri Vel Feedback** Primary Velocity Feedback Output of the Primary Velocity Feedback Delay filter, in units of Hz or RPM, depending on the value of P300 [Speed Units]. Adjustment of the delay filter is made using P126 [Pri Vel FdbkFltr]. The Primary Velocity Feedback is used when the drive is operating without an auto Tach Loss Switchover.	Units: Default: Min/Max:	Hz RPM 0.00 –/+P27 [Motor NP Hertz] x 8 –/+P28 [Motor NP RPM] x 8	RO	Real
		128	**Alt Vel Fdbk Sel** Alternate Velocity Feedback Select Selects the source of the P3 [Mtr Vel Fdbk] and P131 [Active Vel Fdbk] to be used when the drive is in operation with an auto Tach Loss Switchover.	Default: Min/Max:	137 1 / 159999	RW	32-bit Integer
		129	**Alt Vel FdbkFltr** Alternate Velocity Feedback Filter Adjusts a filter setting that is applied to the motor velocity feedback source that is selected by P128 [Alt Vel Fdbk Sel]. The purpose of this filter is to reduce the level of noise in the feedback signal. Filter adjustment and operation is similar to P126 [Pri Vel FdbkFltr].	Default: Options:	3 = "50R/S Noise" 0 = "190R/S Noise" 1 = "160R/S Noise" 2 = "100R/S Noise" 3 = "50R/S Noise" 4 = "25R/S Noise" 5 = "12R/S Noise" 6 = "6R/S Noise" 7 = "3R/S Noise"	RW	32-bit Integer
		130	**Alt Vel Feedback** Alternate Velocity Feedback Output of the Alternate Velocity Feedback Delay filter, displayed in units of Hz or RPM, depending on the value of P300 [Speed Units]. Adjustment of the delay filter is made using P126 [Pri Vel FdbkFltr]. The Alternate Velocity Feedback is used when the drive is operating with an auto Tach Loss Switchover.	Units: Default: Min/Max:	Hz RPM 0.00 –/+P27 [Motor NP Hertz] x 8 –/+P28 [Motor NP RPM] x 8	RO	Real
		131	**Active Vel Fdbk** Active Velocity Feedback Active motor velocity feedback value that used by the Flux Vector control's velocity regulator. This value in use is the result of the Primary/Alternate feedback selection. When the drive is operating without an auto Tach Loss Switchover, then P127 [Pri Vel Feedback] is selected. When the drive is operating with an auto Tach Loss Switchover, then the P130 [Alt Vel Feedback] will be selected. Status Bit 5 "FdbkLoss Sw0" will become set in P936 [Drive Status 2] when an Auto Tach Switchover has occurred.	Units: Default: Min/Max:	Hz RPM 0.00 –/+P27 [Motor NP Hertz] x 8 –/+P28 [Motor NP RPM] x 8	RO	Real
		132	**Aux Vel Fdbk Sel** Auxiliary Velocity Feedback Select Selects the source of the drive's P134 [Aux Vel Feedback]. Possible selections are the same as for P125 [Pri Vel Fdbk Sel].	Default: Min/Max:	137 1 / 159999	RW	32-bit Integer
		133	**Aux Vel FdbkFltr** Auxiliary Velocity Feedback Filter Adjusts a filter setting that is applied to the P134 [Aux Vel Feedback] that is selected by P132 [Aux Vel Fdbk Sel]. The purpose of this filter is to reduce the level of noise present in the feedback signal. Filter adjustment and operation is similar to P126 [Pri Vel FdbkFltr].	Default: Options:	3 = "50R/S Noise" 0 = "190R/S Noise" 1 = "160R/S Noise" 2 = "100R/S Noise" 3 = "50R/S Noise" 4 = "25R/S Noise" 5 = "12R/S Noise" 6 = "6R/S Noise" 7 = "3R/S Noise"	RW	32-bit Integer
		134	**Aux Vel Feedback** Auxiliary Velocity Feedback Output of the Auxiliary Velocity Feedback Delay filter, in units of Hz or RPM, depending on the value of P300 [Speed Units]. Adjustment of the delay filter is made using P126 [Pri Vel FdbkFltr]. Typically used as a speed reference source. This selection is available in P545 [Spd Ref A Sel] and P550 [Spd Ref B Sel].	Units: Default: Min/Max:	Hz RPM 0.00 –/+P27 [Motor NP Hertz] x 8 –/+P28 [Motor NP RPM] x 8	RO	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
FEEDBACK & I/O	Feedback	**127**	**Pri Vel Feedback** Primary Velocity Feedback Output of the Primary Velocity Feedback Delay filter, in units of Hz or RPM, depending on the value of P300 [Speed Units]. Adjustment of the delay filter is made using P126 [Pri Vel FdbkFltr]. The Primary Velocity Feedback is used when the drive is operating without an auto Tach Loss Switchover.	Units: Default: Min/Max:	Hz RPM 0.00 –/+P27 [Motor NP Hertz] x 8 –/+P28 [Motor NP RPM] x 8	RO	Real
		128	**Alt Vel Fdbk Sel** Alternate Velocity Feedback Select Selects the source of the P3 [Mtr Vel Fdbk] and P131 [Active Vel Fdbk] to be used when the drive is in operation with an auto Tach Loss Switchover.	Default: Min/Max:	137 1 / 159999	RW	32-bit Integer
		129	**Alt Vel FdbkFltr** Alternate Velocity Feedback Filter Adjusts a filter setting that is applied to the motor velocity feedback source that is selected by P128 [Alt Vel Fdbk Sel]. The purpose of this filter is to reduce the level of noise in the feedback signal. Filter adjustment and operation is similar to P126 [Pri Vel FdbkFltr].	Default: Options:	3 = "50R/S Noise" 0 = "190R/S Noise" 1 = "160R/S Noise" 2 = "100R/S Noise" 3 = "50R/S Noise" 4 = "25R/S Noise" 5 = "12R/S Noise" 6 = "6R/S Noise" 7 = "3R/S Noise"	RW	32-bit Integer
		130	**Alt Vel Feedback** Alternate Velocity Feedback Output of the Alternate Velocity Feedback Delay filter, displayed in units of Hz or RPM, depending on the value of P300 [Speed Units]. Adjustment of the delay filter is made using P126 [Pri Vel FdbkFltr]. The Alternate Velocity Feedback is used when the drive is operating with an auto Tach Loss Switchover.	Units: Default: Min/Max:	Hz RPM 0.00 –/+P27 [Motor NP Hertz] x 8 –/+P28 [Motor NP RPM] x 8	RO	Real
		131	**Active Vel Fdbk** Active Velocity Feedback Active motor velocity feedback value that used by the Flux Vector control's velocity regulator. This value in use is the result of the Primary/Alternate feedback selection. When the drive is operating without an auto Tach Loss Switchover, then P127 [Pri Vel Feedback] is selected. When the drive is operating with an auto Tach Loss Switchover, then the P130 [Alt Vel Feedback] will be selected. Status Bit 5 "FdbkLoss Sw0" will become set in P936 [Drive Status 2] when an Auto Tach Switchover has occurred.	Units: Default: Min/Max:	Hz RPM 0.00 –/+P27 [Motor NP Hertz] x 8 –/+P28 [Motor NP RPM] x 8	RO	Real
		132	**Aux Vel Fdbk Sel** Auxiliary Velocity Feedback Select Selects the source of the drive's P134 [Aux Vel Feedback]. Possible selections are the same as for P125 [Pri Vel Fdbk Sel].	Default: Min/Max:	137 1 / 159999	RW	32-bit Integer
		133	**Aux Vel FdbkFltr** Auxiliary Velocity Feedback Filter Adjusts a filter setting that is applied to the P134 [Aux Vel Feedback] that is selected by P132 [Aux Vel Fdbk Sel]. The purpose of this filter is to reduce the level of noise present in the feedback signal. Filter adjustment and operation is similar to P126 [Pri Vel FdbkFltr].	Default: Options:	3 = "50R/S Noise" 0 = "190R/S Noise" 1 = "160R/S Noise" 2 = "100R/S Noise" 3 = "50R/S Noise" 4 = "25R/S Noise" 5 = "12R/S Noise" 6 = "6R/S Noise" 7 = "3R/S Noise"	RW	32-bit Integer
		134	**Aux Vel Feedback** Auxiliary Velocity Feedback Output of the Auxiliary Velocity Feedback Delay filter, in units of Hz or RPM, depending on the value of P300 [Speed Units]. Adjustment of the delay filter is made using P126 [Pri Vel FdbkFltr]. Typically used as a speed reference source. This selection is available in P545 [Spd Ref A Sel] and P550 [Spd Ref B Sel].	Units: Default: Min/Max:	Hz RPM 0.00 –/+P27 [Motor NP Hertz] x 8 –/+P28 [Motor NP RPM] x 8	RO	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
FEEDBACK & I/O	Feedback	135	**Psn Fdbk Sel** Position Feedback Select Selects the source of P847 [Psn Fdbk]. Possible selections include: Port 0 – Simulator Fdbk, and any Port that contains a feedback module (for example, Encoder). Open Loop Feedback is not available as a Position feedback source. The default setting is P138 [Simulator Fdbk]. This is a test mode where position feedback is calculated based on P690 [Limited Trq Ref] and P76 [Total Inertia]. When position control is used, a valid position feedback source must be selected.	Default: Min/Max:	138 1 / 159999	RW	32-bit Integer
		136	755 **Load Psn FdbkSel** Load Position Feedback Select Selects a position load feedback source for the position control. The position load feedback P847 [Psn Fdbk] indicates the selected position feedback value. The value forms the primary feedback for the position regulator integration channel.	Default: Min/Max:	847 1 / 159999	RW	32-bit Integer
		137	**Open Loop Fdbk** Open Loop Feedback An estimated motor feedback source that is available to any of the Velocity Feedback Selection parameters – P125 [Pri Vel Fdbk Sel], P128 [Alt Vel Fdbk Sel], and P132 [Aux Vel Fdbk Sel]. Open Loop Feedback is not available as a Position feedback source. The Open Loop Feedback's parameter value has units of encoder counts as established by P141 [Virtual Enc EPR]. Open Loop feedback is estimated based on P1 [Output Frequency] and P5 [Torque Cur Fdbk], adjusted using P621 [Slip RPM @ FLA].	Default: Options:	0 –2147483648 / 2147483647	RO	32-bit Integer
		138	**Simulator Fdbk** Simulator Feedback Simulator Feedback is a calculated motor feedback source. It can be used when operating in any of the Flux Vector control modes that are selected in P35 [Motor Ctrl Mode]. Simulator Feedback is available to any of the Velocity Feedback Selection parameters: P125 [Pri Vel Fdbk Sel], P128 [Alt Vel Fdbk Sel], and P132 [Aux Vel Fdbk Sel]. Simulator Feedback is also available as a Position feedback source as selected by P135 [Mtr Psn Fdbk Sel]. The Simulator Feedback's parameter value has units of encoder counts, as established by P141 [Virtual Enc EPR]. Simulator velocity feedback is calculated based on P690 [Limited Trq Ref] and P76 [Total Inertia]. This selection is useful for drive operational checkout and test when motor movement is undesired. In simulation mode, gating of the power inverter section of the drive is disabled.	Default: Options:	0 –2147483648 / 2147483647	RO	32-bit Integer
		139	755 **Delayed Spd Ref** Delayed Speed Reference One sample period delayed output of P594 [Ramped Spd Ref]. Used in some applications to synchronize the speed reference value when controlling multiple drives. In these applications, the drive that supplies the master speed reference would use the [Delayed Spd Ref] value. Setting P635 [Spd Options Ctrl] Bit 8 "Delayed Ref" will select the delayed reference in the master drive. P594 [Ramped Spd Ref] would then be transmitted to the slave drives over a communication link.	Units: Default: Min/Max:	Hz RPM 0.00 –/+P27 [Motor NP Hertz] x 8 –/+P28 [Motor NP RPM] x 8	RO	Real
		140	755 **Virtual EncDelay** Virtual Encoder Delay One sample period delayed output of P142 [Virtual Enc Psn]. Used in some applications to phase synchronize position reference though a drive communications link. The master is delayed one sample while the downstream drives update their position references – then all drives sample position simultaneously. The downstream drives do not select a delay. The selection of the delayed or non-delayed position reference is made by choosing the desired parameter in P766 [Psn Direct Stpt].	Default: Options:	0 –2147483648 / 2147483647	RO	32-bit Integer

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
FEEDBACK & I/O	Feedback	141	755 **Virtual Enc EPR** Virtual Encoder Edges Per Revolution Equivalent Edges Per Revolution (EPR) or line count of a virtual encoder. A virtual encoder is a position reference whose input is derived from the speed reference. It accumulates pulses at the same rate as a real encoder of identical Pulses Per Revolution (PPR). Enter the equivalent PPR. For example, enter 1024 PPR to match an encoder with 1024 EPR.	Default: Min/Max:	4096 10 / 67108864	RW	32-bit Integer
		142	755 **Virtual Enc Psn** Virtual Encoder Position A 32 bit pulse accumulator of the virtual encoder. The accumulated pulse count is equivalent to the hardware accumulator of a real encoder. It accumulates at a rate of 4x the value placed in P141 [Virtual Enc EPR]. The accumulator starts at zero upon position enable.	Default: Min/Max:	0 –/+32767	RO	32-bit Integer

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
FEEDBACK & I/O	Digin Functions	150	**Digital In Cfg** Digital Input Configure Defines operation for DI Run type parameters. "Run Edge" (0) – Control function requires a rising edge (open to close transition) in order for the drive to run. "Run Level" (1) – As long as a separate "Stop" command is not issued, the level alone (no rising edge required) determines whether or not the drive will run.	Default: Options:	0 = "Run Edge" 0 = "Run Edge" 1 = "Run Level"	RW	32-bit Integer
			ATTENTION: Equipment damage and/or personal injury may result if this parameter is used in an inappropriate application. Do not use this function without considering applicable local, national and international codes, standards, regulations, or industry guidelines.				
		155	**DI Enable** Digital Input Enable Assigns a digital input used to enable the drive.	Default: Min/Max:	0.00 0.00 / 159999.15	RW	32-bit Integer
		156	**DI Clear Fault** Digital Input Clear Fault Assigns a digital input used to clear faults.	Default: Min/Max:	0.00 0.00 / 159999.15	RW	32-bit Integer
		157	**DI Aux Fault** Digital Input Auxiliary Fault Assigns a digital input used to force an external auxiliary fault.	Default: Min/Max:	0.00 0.00 / 159999.15	RW	32-bit Integer
		158	**DI Stop** Digital Input Stop Assigns a digital input used to issue a stop command.	Default: Min/Max:	0.00 0.00 / 159999.15	RW	32-bit Integer
		159	**DI Cur Lmt Stop** Digital Input Current Limit Stop Assigns a digital input used to perform a current limited stop.	Default: Min/Max:	0.00 0.00 / 159999.15	RW	32-bit Integer
		160	**DI Coast Stop** Digital Input Coast Stop Assigns a digital input used to perform a coast-to-stop.	Default: Min/Max:	0.00 0.00 / 159999.15	RW	32-bit Integer

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
FEEDBACK & I/O	Digin Functions	161	**DI Start** Digital Input Start Assigns a digital input used to start the drive (3-wire control).	Default: Min/Max:	0.00 0.00 / 159999.15	RW	32-bit Integer
		162	**DI Fwd Reverse** Digital Input Forward Reverse Assigns a digital input used to command reverse direction.	Default: Min/Max:	0.00 0.00 / 159999.15	RW	32-bit Integer
		163	**DI Run** Digital Input Run Assigns a digital input used to run the drive (2-wire control).	Default: Min/Max:	0.00 0.00 / 159999.15	RW	32-bit Integer
		164	**DI Run Forward** Digital Input Run Forward Assigns a digital input used to run the drive (2 wire control) and command forward direction.	Default: Min/Max:	0.00 0.00 / 159999.15	RW	32-bit Integer
		165	**DI Run Reverse** Digital Input Run Reverse Assigns a digital input used to run the drive (2 wire control) and command reverse direction.	Default: Min/Max:	0.00 0.00 / 159999.15	RW	32-bit Integer
		166	**DI Jog 1** Digital Input Jog 1 Assigns a digital input used to jog the drive at the speed of P556 [Jog Speed 1].	Default: Min/Max:	0.00 0.00 / 159999.15	RW	32-bit Integer
		167	**DI Jog 1 Forward** Digital Input Jog 1 Forward Assigns a digital input used to jog the drive in the forward direction at the speed of P556 [Jog Speed 1].	Default: Min/Max:	0.00 0.00 / 159999.15	RW	32-bit Integer
		168	**DI Jog 1 Reverse** Digital Input Jog 1 Reverse Assigns a digital input used to jog the drive in the reverse direction at the speed of P556 [Jog Speed 1].	Default: Min/Max:	0.00 0.00 / 159999.15	RW	32-bit Integer
		169	**DI Jog 2** Digital Input Jog 2 Assigns a digital input used to jog the drive at the speed of P557 [Jog Speed 2].	Default: Min/Max:	0.00 0.00 / 159999.15	RW	32-bit Integer
		170	**DI Jog 2 Forward** Digital Input Jog 2 Forward Assigns a digital input used to jog the drive in the forward direction at the speed of P557 [Jog Speed 2].	Default: Min/Max:	0.00 0.00 / 159999.15	RW	32-bit Integer
		171	**DI Jog 2 Reverse** Digital Input Jog 2 Reverse Assigns a digital input used to jog the drive in the reverse direction at the speed of P557 [Jog Speed 2].	Default: Min/Max:	0.00 0.00 / 159999.15	RW	32-bit Integer
		172	**DI Manual Ctrl** Digital Input Manual Control Assigns a digital input used to command manual control.	Default: Min/Max:	0.00 0.00 / 159999.15	RW	32-bit Integer

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
FEEDBACK & I/O	Digin Functions	**173** **174** **175**	**DI Speed Sel 0** **DI Speed Sel 1** **DI Speed Sel 2** Digital Input Speed Select 0, 1, 2 Assigns digital inputs used to select between speed references as follows: Input Status (1 = Input Actuated) / Auto Reference Source DI Speed Sel 2 | DI Speed Sel 1 | DI Speed Sel 0 | Auto Reference Source 0 | 0 | 0 | Reference A 0 | 0 | 1 | Reference A 0 | 1 | 0 | Reference B 0 | 1 | 1 | Preset Speed 3 1 | 0 | 0 | Preset Speed 4 1 | 0 | 1 | Preset Speed 5 1 | 1 | 0 | Preset Speed 6 1 | 1 | 1 | Preset Speed 7	Default: Min/Max:	0.00 0.00 / 159999.15	RW	32-bit Integer
		177	**DI MOP Inc** Digital Input Motor Operated Potentiometer Increment Assigns a digital input used to increment the MOP speed reference.	Default: Min/Max:	0.00 0.00 / 159999.15	RW	32-bit Integer
		178	**DI MOP Dec** Digital Input Motor Operated Potentiometer Decrement Assigns a digital input used to decrement the MOP speed reference.	Default: Min/Max:	0.00 0.00 / 159999.15	RW	32-bit Integer
		179	**DI Accel 2** Digital Input Acceleration 2 Assigns a digital input used to activate P536 [Accel Time 2].	Default: Min/Max:	0.00 0.00 / 159999.15	RW	32-bit Integer
		180	**DI Decel 2** Digital Input Deceleration 2 Assigns a digital input used to activate P538 [Decel Time 2].	Default: Min/Max:	0.00 0.00 / 159999.15	RW	32-bit Integer
		181 **182**	**DI SpTqPs Sel 0** **DI SpTqPs Sel 1** Digital Input Speed Torque Position Select 0, 1 Assigns digital inputs used to select between speed, torque, and position modes.	Default: Min/Max:	0.00 0.00 / 159999.15	RW	32-bit Integer
		185	**DI Stop Mode B** Digital Input Stop Mode B Assigns a digital input used to activate P371 [Stop Mode B].	Default: Min/Max:	0.00 0.00 / 159999.15	RW	32-bit Integer
		186	**DI BusReg Mode B** Digital Input Bus Regulation Mode B Assigns a digital input used to activate P373 [Bus Reg Mode B].	Default: Min/Max:	0.00 0.00 / 159999.15	RW	32-bit Integer
		187	**DI PwrLoss ModeB** Digital Input Power Loss Mode B Assigns a digital input used to activate P453 [Pwr Loss Mode B].	Default: Min/Max:	0.00 0.00 / 159999.15	RW	32-bit Integer
		188	**DI Pwr Loss** Digital Input Power Loss Assigns a digital input used to force a power loss condition.	Default: Min/Max:	0.00 0.00 / 159999.15	RW	32-bit Integer
		189	**DI Precharge** Digital Input Precharge Assigns a digital input used to force the drive into precharge (normally only used in common bus applications).	Default: Min/Max:	0.00 0.00 / 159999.15	RW	32-bit Integer

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
FEEDBACK & I/O	Digin Functions	190	**DI Prchrg Seal** Digital Input Precharge Seal Assigns a digital input used to force a unique fault when an external precharge circuit opens.	Default: Min/Max:	0.00 0.00 / 159999.15	RW	32-bit Integer
		191	**DI PID Enable** Digital Input Proportional Integral Derivative Enable Assigns a digital input used to activate the Process PID control.	Default: Min/Max:	0.00 0.00 / 159999.15	RW	32-bit Integer
		192	**DI PID Hold** Digital Input Proportional Integral Derivative Hold Assigns a digital input used to hold the Process PID integrator.	Default: Min/Max:	0.00 0.00 / 159999.15	RW	32-bit Integer
		193	**DI PID Reset** Digital Input Proportional Integral Derivative Reset Assigns a digital input used to reset the Process PID integrator.	Default: Min/Max:	0.00 0.00 / 159999.15	RW	32-bit Integer
		194	**DI PID Invert** Digital Input Proportional Integral Derivative Invert Assigns a digital input used to invert the output of the Process PID control.	Default: Min/Max:	0.00 0.00 / 159999.15	RW	32-bit Integer
		195	**DI Torque StptA** Digital Input Torque Setpoint A Assigns a digital input used to force P676 [Trq Ref A Stpt] as the source for Torque Reference A, regardless of the setting in P675 [Trq Ref A Sel]. Used when the drive is in a mode that is commanding torque (see P309…P312).	Default: Min/Max:	0.00 0.00 / 159999.15	RW	32-bit Integer
		196	**DI Fwd End Limit** Digital Input Forward End Limit Assigns a digital input used to trigger a Forward End Limit. The resulting action is to execute a "Fast Stop" command. After the drive stops in this case, it will only restart in the opposite direction. This function is usually used with a limit switch near the point at which the drive should stop.	Default: Min/Max:	0.00 0.00 / 159999.15	RW	32-bit Integer
		197	**DI Fwd Dec Limit** Digital Input Forward Deceleration Limit Assigns a digital input used to trigger a Forward Decel Limit. The resulting action is to override the speed reference and decelerate to Preset Speed 1. This function is usually used with a limit switch and initiates the slowing down process prior to encountering the End Limit.	Default: Min/Max:	0.00 0.00 / 159999.15	RW	32-bit Integer
		198	**DI Rev End Limit** Digital Input Reverse End Limit Assigns a digital input used to trigger a Reverse End Limit. The resulting action is to execute a "Fast Stop" command. After the drive stops in this case, it will only restart in the opposite direction. This function is usually used with a limit switch near the point at which the drive should stop.	Default: Min/Max:	0.00 0.00 / 159999.15	RW	32-bit Integer
		199	**DI Rev Dec Limit** Digital Input Reverse Deceleration Limit Assigns a digital input used to trigger a Reverse Decel Limit. The resulting action is to override the speed reference and decelerate to Preset Speed 1. This function is usually used with a limit switch and initiates the slowing down process prior to encountering the End Limit.	Default: Min/Max:	0.00 0.00 / 159999.15	RW	32-bit Integer
		200	**DI PHdwr OvrTrvl** Digital Input Positive Hardware Over Travel Assigns a digital input used to trigger a Positive Hardware Over-travel. The resulting action is to immediately fault and produce zero torque. After the drive stops in this case, the fault will need to be reset, and the drive will only restart in the opposite direction. This function is usually used with a limit switch in a position beyond the "End Limit," as an extra safety limit to prevent torque from damaging the machine in an over-travel situation.	Default: Min/Max:	0.00 0.00 / 159999.15	RW	32-bit Integer

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
FEEDBACK & I/O	Digin Functions	201	**DI NHdwr OvrTrvl** Digital Input Negative Hardware Over Travel Assigns a digital input used to trigger a Negative Hardware Over-travel. The resulting action is to immediately fault and produce zero torque. After the drive stops in this case, the fault will need to be reset, and the drive will only restart in the opposite direction. This function is usually used with a limit switch in a position beyond the "End Limit," as an extra safety limit to prevent torque from damaging the machine in an over-travel situation.	Default: Min/Max:	0.00 0.00 / 159999.15	RW	32-bit Integer

File	Group	No.	Display Name Full Name Description	Values	Read-Write	Data Type
FEEDBACK & I/O	Control Board IO	220	**Digital In Sts** Digital Input Status Status of the digital input(s) resident on the main control board (Port 0).			

Options	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Digital In 2 (1)	Digital In 1 (1)	Digital In 0
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Condition False
1 = Condition True

(1) 753 drives only.

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
FEEDBACK & I/O	Digital Inputs	222	753 **Dig In Fltr Mask** Digital Input Filter Mask Filters the selected digital input. **Important:** Only used by the PowerFlex 753 main control board.				

Options	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Input 2	Input 1	Reserved
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Condition False
1 = Condition True

		223	753 **Dig In Filt** Digital Input Filter Sets the amount of filtering on the digital inputs. **Important:** Only used by the PowerFlex 753 main control board.	Units: Default: Min/Max:	mS 4 2 / 10	RW	Real

File	Group	No.	Display Name Full Name Description	Values	Read-Write	Data Type
FEEDBACK & I/O	Digital Outputs	225	753 **Dig Out Sts** Digital Output Status Status of the digital outputs. Options: Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Trans Out 0, Relay Out 0 Default: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 Bit: 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0 0 = Condition False 1 = Condition True			
		226	753 **Dig Out Invert** Digital Output Invert Inverts the selected digital output. Options: Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Trans Out 0, Relay Out 0 Default: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 Bit: 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0 0 = Condition False 1 = Condition True			
		227	753 **Dig Out Setpoint** Digital Output Setpoint Controls Relay or Transistor Outputs when chosen as the source. Can be used to control outputs from a communication device using DataLinks. Options: Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Trans Out 0, Relay Out 0 Default: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 Bit: 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0 0 = Condition False 1 = Condition True			
		230	753 **RO0 Sel** Relay Output 0 Select Selects the source that will energize the relay output. Any status parameter bit can be used as an output source. For example P935 [Drive Status 1] bit 7 “Faulted”.	Default: 0 Min/Max: 0 / 159999.15	RW	32-bit Integer
		231	753 **RO0 Level Sel** Relay Output 0 Level Select Selects the source of the level that will be compared.	Default: 0 Min/Max: 0 / 159999	RW	32-bit Integer
		232	753 **RO0 Level** Relay Output 0 Level Sets the level compare value.	Default: 0.0 Min/Max: –/+1000000.0	RW	Real

File	Group	No.	Display Name Full Name Description	Values	Read-Write	Data Type
FEEDBACK & I/O	Digital Outputs	233	753 **RO0 Lvl CmpSts** Relay Output 0 Level Compensation Status Status of the level compare, and a possible source for a relay or transistor output. Relay Output X Select or Transistor Output X Select must have this selected to energize the output. Can be used without a physical output as status information only. Options: Reserved (15–4), Grt Than Equ (1), Less Than (0) Default: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 Bit: 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0 0 = Condition False 1 = Condition True			
		234	753 **RO0 On Time** Relay Output 0 On Time Sets the "ON Delay" time for the digital outputs. This is the time between the occurrence of a condition and activation of the relay.	Units: Secs Default: 0.00 Min/Max: 0.00 / 600.00	RW	Real
		235	753 **RO0 Off Time** Relay Output 0 Off Time Sets the "OFF Delay" time for the digital outputs. This is the time between the disappearance of a condition and de-activation of the relay.	Units: Secs Default: 0.00 Min/Max: 0.00 / 600.00	RW	Real
		240	753 **TO0 Sel** Transistor Output 0 Select Selects the source that will energize the relay or transistor output. Any status parameter bit can be used as an output source. For example P935 [Drive Status 1] bit 7 "Faulted".	Default: 0 Min/Max: 0 / 159999.15	RW	32-bit Integer
		241	753 **TO0 Level Sel** Transistor Output 0 Level Select Selects the source of the level that will be compared.	Default: 0 Min/Max: 0 / 159999	RW	32-bit Integer
		242	753 **TO0 Level** Transistor Output 0 Level Sets the level compare value.	Default: 0.0 Min/Max: –/+1000000.0	RW	Real
		243	753 **TO0 Level CmpSts** Transistor Output 0 Level Compensation Status Status of the level compare, and a possible source for the transistor output. Transistor Output 0 Select must have this selected to energize the output. Can be used without a physical output as status information only. Options: Reserved (15–4), Grt Than Equ (1), Less Than (0) Default: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 Bit: 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0 0 = Condition False 1 = Condition True			
		244	753 **TO0 On Time** Transistor Output 0 On Time Sets the "ON Delay" time for the digital outputs. This is the time between the occurrence of a condition and activation of the relay or transistor.	Default: 0 Min/Max: 0 / 159999	RW	32-bit Integer
		245	753 **TO0 Off Time** Transistor Output 0 Off Time Sets the "OFF Delay" time for the digital outputs. This is the time between the disappearance of a condition and de-activation of the relay or transistor.	Default: 0.0 Min/Max: –/+1000000.0	RW	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
FEEDBACK & I/O	Motor PTC	250	753 **PTC Cfg** Positive Temperature Coefficient Configuration Sets the action that will be taken when the PTC is not Ok. "Ignore" (0) – No action is taken "Alarm" (1) – Alarm occurs "Flt Minor" (2) – Minor Fault occurs if enabled, otherwise Fault Coast Stop "FltCoastStop" (3) – Fault Coast Stop occurs "Flt RampStop" (4) – Fault Ramp Stop occurs "Flt CL Stop" (5) – Fault Current Limit Stop occurs	Default: Options:	0 = "Ignore" 0 = "Ignore" 1 = "Alarm" 2 = "Flt Minor" 3 = "FltCoastStop" 4 = "Flt RampStop" 5 = "Flt CL Stop"	RW	32-bit Integer
		251	753 **PTC Status** Positive Temperature Coefficient Status Status of the PTC. Bit 0 "PTC Ok" – PTC is OK Bit 2 "Over Temp" – PTC is indicating over temperature				

Options	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Over Temp	Reserved	PTC Ok
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Condition False
1 = Condition True

File	Group	No.	Display Name Full Name Description	Values	Read-Write	Data Type
FEEDBACK & I/O	Analog Inputs	255	753 **Anlg In Type** Analog Input Type Status of the analog input mode set by Jumper J4 on the main control board.			
		256	753 **Anlg In Sqrt** Analog Input Square Root Enables/disables the square root function for each input.			

Options	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Analog 0
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Voltage Mode
1 = Current Mode

Options	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Analog 0
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Disabled
1 = Enabled

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
FEEDBACK & I/O	Analog Inputs	**257**	753 **Anlg In Loss Sts** Analog Input Loss Status Status of the analog input loss. Options: Reserved Reserved Reserved Reserved Reserved Reserved Reserved Reserved Reserved Reserved Reserved Reserved Reserved Reserved Loss 0 Reserved Default: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 Bit: 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0 0 = No Loss 1 = Loss Detected				
		260	753 **Anlg In0 Value** Analog Input 0 Value Value of the Analog input after filter, square root, and loss action.	Units: Default: Min/Max:	Volt mA 0.000 Volts 0.000 mA –/+10.000 Volts 0.000 / 20.000 mA	RO	Real
		261	753 **Anlg In0 Hi** Analog Input 0 High Sets the highest input value to the analog input scaling block.	Units: Default: Min/Max:	Volt mA 0.000 Volts 0.000 mA –/+10.000 Volts 0.000 / 20.000 mA	RW	Real
		262	753 **Anlg In0 Lo** Analog Input 0 Low Sets the lowest input value to the analog input scaling block.	Units: Default: Min/Max:	Volts mA 0.000 Volts 0.000 mA –/+10.000 Volts 0.000 / 20.000 mA	RW	Real
		263	753 **Anlg In0 LssActn** Analog Input 0 Loss Action Selects drive action when an analog signal loss is detected. Signal loss is defined as an analog signal less than 1V or 2mA. The signal loss event ends and normal operation resumes when the input signal level is greater than or equal to 1.5V or 3mA. "Ignore" (0) – No action is taken "Alarm" (1) – Alarm occurs "Flt Minor" (2) – Minor Fault occurs if enabled, otherwise Fault Coast Stop "FltCoastStop" (3) – Fault Coast Stop occurs "Flt RampStop" (4) – Fault Ramp Stop occurs "Flt CL Stop" (5) – Fault Current Limit Stop occurs "Hold Input" (6) – Holds input at last value "Set Input Lo" (7) – Sets input to P262 [Anlg In0 Lo] "Set Input Hi" (8) – Sets input to P261 [Anlg In0 Hi]	Default: Options:	0 = "Ignore" 0 = "Ignore" 1 = "Alarm" 2 = "Flt Minor" 3 = "FltCoastStop" 4 = "Flt RampStop" 5 = "Flt CL Stop" 6 = "Hold Input" 7 = "Set Input Lo" 8 = "Set Input Hi"	RW	32-bit Integer
		264	753 **Anlg In0 Raw Val** Analog Input 0 Raw Value Raw Value of the analog input.	Units: Default: Min/Max:	Volt mA 0.000 Volts 0.000 mA –/+10.000 Volts 0.000 / 20.000 mA	RO	Real
		265	753 **Anlg In0 Filt Gn** Analog Input 0 Filter Gain Sets the analog input filter gain.	Default: Min/Max:	1.00 –/+5.00	RW	Real
		266	753 **Anlg In0 Filt BW** Analog Input 0 Filter Bandwidth Sets the analog input filter bandwidth.	Default: Min/Max:	0.0 0.0 / 500.0	RW	Real

File	Group	No.	Display Name Full Name Description	Values	Read-Write	Data Type
FEEDBACK & I/O	Analog Outputs	270	753 **Anlg Out Type** Analog Output Type Select the analog output mode for each analog output. Options: Reserved (15–1), Analog Out 0 (0) Default: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 Bit: 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0 0 = Voltage Mode 1 = Current Mode			
		271	753 **Anlg Out Abs** Analog Output Absolute Selects whether the signed value or absolute value of a parameter is used before being scaled to drive the analog output. Options: Reserved (15–1), Analog Out 0 (0) Default: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 Bit: 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0 0 = Voltage Mode 1 = Current Mode			
		275	753 **Anlg Out0 Sel** Analog Output 0 Select Selects the source for the analog output.	Default: 3 Min/Max: 0 / 159999	RW	32-bit Integer
		276	753 **Anlg Out0 Stpt** Analog Output 0 Setpoint A possible source for an analog output. Can be used to control an analog output from a communication device using a DataLink. Not affected by analog output scaling.	Units: Volt Default: 0 Min/Max: –10/20	RW	Real
		277	753 **Anlg Out0 Data** Analog Output 0 Data Displays the value of the source selected by P275 [Anlg Out0 Sel].	Default: 0 Min/Max: –/+100000	RO	Real
		278	753 **Anlg Out0 DataHi** Analog Output 0 Data High Sets the high value for the data range of analog out scale.	Default: 1 Min/Max: –/+214748000	RW	Real
		279	753 **Anlg Out0 DataLo** Analog Output 0 Data Low Sets the low value for the data range of analog out scale.	Default: 1 Min/Max: –/+214748000	RW	Real
		280	753 **Anlg Out0 Hi** Analog Output 0 High Sets the high value for the analog output value when the data value is at its maximum.	Units: Volt mA Default: 10.000 Volts 20.000 mA Min/Max: –/+10.000 Volts 0.000 / 20.000 mA	RW	Real
		281	753 **Anlg Out0 Lo** Analog Output 0 Low Sets the low value for the analog output value when the data value is at its minimum.	Units: Volt mA Default: 0.000 Volts 0.000 mA Min/Max: –/+10.000 Volts 0.000 / 20.000 mA	RW	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
FEEDBACK & I/O	Analog Outputs	282	753 **Anlg Out0 Val** Analog Output 0 Value Displays the analog output value.	Units: Default: Min/Max:	Volt mA 10.000 Volts 20.000 mA –/+10.000 Volts 0.000 / 20.000 mA	RO	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
FEEDBACK & I/O	R0 Predict Main	285	753 **RO PredMaint Sts** Relay Output Predictive Maintenance Status Status of relay 0 predictive maintenance.				
		286	753 **RO0 Load Type** Relay Output 0 Load Type Sets the type of load that will be applied to the relay. Must be properly set for the Predictive Maintenance function to predict the relay life.	Default: Options:	1 = "DC Inductive" 0 = "DC Resistive" 1 = "DC Inductive" 2 = "AC Resistive" 3 = "AC Inductive"	RW	32-bit Integer
		287	753 **RO0 Load Amps** Relay Output 0 Load Amps Load current that will be applied to the relay contacts. Must be properly set for the Predictive Maintenance function to approximate the relay life.	Units: Default: Min/Max:	Amps 2.000 0.000 / 2.000	RW	Real
		288	753 **RO0 TotalLife** Relay Output 0 Total Life Total life cycles of the relay based on programmed load type and amps.	Units: Default: Min/Max:	Cycl 0 0 / 2147483647	RO	32-bit Integer
		289	753 **RO0 ElapsedLife** Relay Output 0 Elapsed Life Non-resettable, total accumulated cycles of the relay.	Units: Default: Min/Max:	Cycl 0 0 / 2147483647	RO	32-bit Integer
		290	753 **RO0 RemainLife** Relay Output 0 Remaining Life The difference between the Total Life and the Elapsed Life.	Units: Default: Min/Max:	Cycl 0 –/+2147483647	RO	32-bit Integer
		291	753 **RO0 LifeEvntLvl** Relay Output 0 Life Event Level Sets the percentage of relay life cycles before action is taken.	Units: Default: Min/Max:	% 80.000 0.000 / 100.000	RW	Real

Options

	Master	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Relay Out 0
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	

0 = Condition False
1 = Condition True

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
FEEDBACK & I/O	R0 Predict Main	292	753 **R00 LifeEvntActn** Relay Output 0 Life Event Action Sets the action that will be taken when the percentage of relay life cycles has been reached. "Ignore" (0) – No action is taken "Alarm" (1) – Alarm occurs "Flt Minor" (2) – Minor Fault occurs if enabled, otherwise Fault Coast Stop "FltCoastStop" (3) – Fault Coast Stop occurs "Flt RampStop" (4) – Fault Ramp Stop occurs "Flt CL Stop" (5) – Fault Current Limit Stop occurs	Default: Options:	1 = "Alarm" 0 = "Ignore" 1 = "Alarm" 2 = "Flt Minor" 3 = "FltCoastStop" 4 = "Flt RampStop" 5 = "Flt CL Stop"	RW	32-bit Integer

Drive Cfg File

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
DRIVE CFG	Preferences	300	**Speed Units** Speed Units Selects the units to be used for all speed related parameters. Options 0 and 1 do not convert other parameter values (e.g. a 60 Hz reference becomes 60 rpm). This parameter is only reset when Set Defaults "All" (not recommended) is executed.	Default: Options:	Current Selection 0 = "Hz" 1 = "RPM"	RW	32-bit Integer
		301	**Access Level** Access Level Sets the access level for parameters and option choices. "Basic" (0) – Provides the smallest, simplest, and most user friendly view. "Advanced" (1) – May be required to use advanced features. "Expert" (2) – Not normally recommended (makes the list very long), and shows extra parameters that should rarely be required. When the access level is changed, PC-based tools (e.g. Drive Tools and Drive Explorer) will require a reconnect. This parameter is only reset when Set Defaults "All" (not recommended) is executed.	Default: Options:	Current Selection 0 = "Basic" 1 = "Advanced" 2 = "Expert"	RW	32-bit Integer
		302	**Language** Language Select display language. This parameter is only reset when Set Defaults "All" (not recommended) is executed.	Default: Options:	0 = "Not Selected" 0 = "Not Selected" 1 = "English" 2 = "French" 3 = "Spanish" 4 = "Italian" 5 = "German" 6 = "Japanese" 7 = "Portuguese" 8 = "Chinese" 9 = "Reserved" 10 = "Reserved" 11 = "Korean"	RW	32-bit Integer

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
DRIVE CFG	Control Cfg	**305**	**Voltage Class** Voltage Class Selects the voltage class operation of the drive (e.g. for 400 / 480V drives, "Low Voltage" = 400V, "High Voltage" = 480V). This setting affects how the drive will appear as a node on a system (e.g. 400V or 480V), and also affects the drive's current rating (Rated Amps). This parameter is only reset (to original factory setting) when Set Defaults "All" (not recommended) is executed.	Default: Options:	0 = Based on Factory Setting 0 = "Low Voltage" 1 = "High Voltage"	RW	32-bit Integer
		306	**Duty Rating** Duty Rating Selects the continuous and overload capacity of the drive. "Normal Duty" (0) – Provides the highest continuous rating, but smaller overload ratings (110% for 60 sec, 150% for 3 sec). "Heavy Duty" (1) – Provides a smaller continuous rating, but larger overload ratings (150% for 60 sec, 180% for 3 sec). "Light Duty" (2) – Only used by Frame 8 drives and lager, provides an overload rating of 110% for 60 sec. This parameter is only reset when Set Defaults "All" (not recommended) is executed.	Default: Options:	0 = "Normal Duty" 0 = "Normal Duty" 1 = "Heavy Duty" 2 = "Light Duty" 755 (8+)	RW	32-bit Integer
		308	**Direction Mode** Direction Mode Selects method for changing direction. Mode – Direction Change Unipolar – Drive Logic (Forward/Reverse bit.) Bipolar – Sign of Reference Rev Disable – Not Changeable	Default: Options:	0 = "Unipolar" 0 = "Unipolar" 1 = "Bipolar" 2 = "Rev Disable"	RW	32-bit Integer

ATTENTION: Enabling the Bipolar Direction Mode can cause unexpected direction changes. Equipment damage and/or personal injury can result if this parameter is used in an inappropriate application. Do Not use this function without considering all applicable local, national, and international codes standards, regulations, or industry guidelines.

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
DRIVE CFG	Control Cfg	**309** **310** **311** **312**	**SpdTrqPsn Mode A** **SpdTrqPsn Mode B** **SpdTrqPsn Mode C** **SpdTrqPsn Mode D** Speed Torque Position Mode A Applies only to the Flux Vector control modes in P35 [Motor Ctrl Mode]. It selects between speed regulation, torque regulation, or position regulation operation of the drive. The source of P685 [Selected Trq Ref] will be determined by the selection in this parameter when P181 [DI SpTqPs Sel 0] and P182 [DI SpTqPs Sel 1] have selected "Disabled" or selected bits that are logic low. In P935 [Drive Status 1] three bits are provided that indicate the regulation mode of the drive when it is running. Bit 21 "Speed Mode" will become set when the drive is running with the speed regulator active. Similarly, Bit 22 "PositionMode" and Bit 23 "Torque Mode" indicate when their respective regulation modes are active. Under some conditions, the active torque mode may be forced into speed mode regardless of the setting of Speed/Torque/Position. The P313 [Actv SpTqPs Mode] parameter will indicate this and will reflect the mode selection that is in use. Possible selections for Speed/Torque/Position are: "Zero Torque" (0) – Drive operates as a torque regulator with P685 [Selected Trq Ref] forced to a constant value of zero torque. "Speed Reg" (1) – Drive operates as a speed regulator. P685 [Selected Trq Ref] comes from P660 [SReg Output] plus P699 [Inertia Comp Out]. "Torq Ref" (2) – Drive operates as a torque regulator. P685 [Selected Trq Ref] comes from P4 [Commanded Trq]. Under some conditions such as jogging or performing a ramp to stop operation, the drive will automatically bypass this selection and temporarily switch to speed regulation mode. "SLAT Min" (3) – Drive operates in "Speed Limited Adjustable Torque – Minimum select" mode. This is a special mode of operation used primarily in web handling applications. The drive will typically operate as a torque regulator, provided that the P4 [Commanded Trq] value is algebraically smaller in value than the speed regulator's output. The drive may automatically enter speed regulation mode, based on conditions within the speed regulator and the magnitude of the speed regulator's output relative to the torque reference. "SLAT Max" (4) – Drive operates in "Speed Limited Adjustable Torque – Maximum select" mode. This is a special mode of operation used primarily in web handling applications. The drive will typically operate as a torque regulator, provided that the P4 [Commanded Trq] value is algebraically larger in value than the speed regulator's output. The drive may automatically enter speed regulation mode, based on conditions within the speed regulator and the magnitude of the speed regulator's output relative to the torque reference. "Sum" (5) – Drive operates as a speed regulator. P685 [Selected Trq Ref] comes from P660 [SReg Output] plus torque adders summed with P4 [Commanded Trq]. "Profilier" (6) – Drive uses the Speed Profiler / Position Indexer function. The drive operates as either a speed or position regulator. Mode of operation will depend on the configuration of the Step Types in the Profiler / Indexer table. "Psn PTP" (7) – Drive operates as a position regulator. P685 [Selected Trq Ref] has the same source as in Sum mode. The position control is active in Point-to-Point mode and uses its Point-to-point position reference. "Psn Camming" (8) – Drive operates as a position regulator. P685 [Selected Trq Ref] has the same source as in Sum mode. The position control is active in Position CAM mode and uses its PCAM Planner position and speed reference. "Psn PLL" (9) – Drive operates as a position regulator. P685 [Selected Trq Ref] has the same source as in Sum mode. The position control is active in Position Phase Lock Loop mode and uses its PLL Planner position and speed reference. "Psn Direct" (10) – Drive operates as a position regulator. P685 [Selected Trq Ref] has the same source as in Sum mode. The position control is active in Direct mode and uses its Direct Position Reference. "Psn SpdlOrnt" (11) – Drive operates in the positioning mode to position the load side of a machine to P1582 [SO Setpoint]	Default: Options:	1 = "Speed Reg" 0 = "Zero Torque" 1 = "Speed Reg" 2 = "Torque Reg" 3 = "SLAT Min" 4 = "SLAT Max" 5 = "Sum" 6 = "Profilier" 755 7 = "Psn PTP" 8 = "Psn Camming" 755 9 = "Psn PLL" 755 10 = "Psn Direct" 11 = "Psn SpdlOrnt" 755	RW	32-bit Integer

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
DRIVE CFG	Control Cfg	**313**	**Actv SpTqPs Mode** Active Speed Torque Position Mode Displays the Speed, Torque, Position Mode that is active, based on the dynamic selection of modes A, B, C, and D, per P309…P312, and digital input conditions programmed via P181 and P182. In some cases, such as operation in the SLAT min/max modes, the final regulation mode may be forced into Speed Regulation. Refer to the Speed, Torque, and Position mode bits in P935 [Drive Status 1] that indicate the final regulation mode of the drive when it is running.	Default: Options:	1 = "Speed Reg" 0 = "Zero Torque" 1 = "Speed Reg" 2 = "Torque Reg" 3 = "SLAT Min" 4 = "SLAT Max" 5 = "Sum" 6 = "Profilier" 755 7 = "Psn PTP" 8 = "Psn Camming" 755 9 = "Psn PLL" 755 10 = "Psn Direct" 11 = "Psn SpdlOrnt" 755	RO	32-bit Integer
		314	**SLAT Err Stpt** Speed Limited Adjustable Torque, Error Setpoint Sets the magnitude of P641 [Speed Error] at which the SLAT function will release its Forced Speed Mode signal. This condition must exist for the time specified by P315 [SLAT Dwell Time]. Once released, the drive can operate as a torque regulator, depending on the relative levels of P660 [SReg Output] and P4 [Commanded Trq]. This parameter will be entered in units of Hz or RPM, depending on the value of P300 [Speed Units].	Units: Default: Min/Max:	Hz RPM 0.00 0.00 / P27 [Motor NP Hertz] 0.00 / P28 [Motor NP RPM]	RW	Real
		315	**SLAT Dwell Time** Speed Limited Adjustable Torque, Dwell Time Sets the time period that P641 [Speed Error] must exceed the P314 [SLAT Err Stpt] magnitude in order to return to min/max torque mode.	Units: Default: Min/Max:	Secs 0.00 0.00 / 2.00	RW	Real
		321	**Prchrg Control** Precharge Control When disabled, the drive will stay in the precharge mode and will not be able to run. When enabled, the normal precharge operation is run. This parameter allows programmable control of the completion of the precharge function and may be used to coordinate the precharge of a system of drives or to reset P12 [DC Bus Memory] in the drive.	Default: Options:	1 = "Enabled" 0 = "Disabled" 1 = "Enabled"	RW	32-bit Integer
		322	**Prchrg Delay** Precharge Delay Adjustable delay between the time all other precharge conditions have been met and the time the drive leaves the precharge state. This can be used to control the sequences of precharge completion in a drive system.	Units: Default: Min/Max:	Secs 0.50 0.10 / 30.00	RW	Real
		323	**Prchrg Err Cfg** Precharge Error Confirguration Selects the action to take when P190 [DI Prchrg Seal] is used to indicate that an external precharge circuit has opened.	Default: Options:	3 = "FltCoastStop" 3 = "FltCoastStop" 4 = "Flt RampStop" 5 = "Flt CL Stop"	RW	32-bit Integer

File	Group	No.	Display Name Full Name Description	Values	Read-Write	Data Type
DRIVE CFG	Auto Manual Ctrl	324	**Logic Mask** Logic Mask Enables/disables ports to control the logic command (such as start and direction). Does not mask Stop commands.			

Options	Reserved	Port 14	Port 13	Reserved	Port 11 (1)	Port 10 (1)	Port 9	Port 8	Port 7	Port 6	Port 5	Port 4	Port 3	Port 2	Port 1	Digital In
Default	0	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Condition False
1 = Condition True

(1) 755 Frame 8 drives and larger only.

	325	**Auto Mask** Automatic Mask Enables/disables ports to control the logic command (such as start and direction), while in Auto mode. Does not mask Stop commands.				

Options	Reserved	Port 14	Port 13 (1)	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Port 6	Port 5	Port 4	Port 3	Port 2	Port 1	Digital In
Default	0	1	1	0	0	0	0	0	0	1	1	1	1	1	1	1
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Disabled
1 = Enabled

(1) 755 drives only.

	326	**Manual Cmd Mask** Manual Command Mask Enables/disables ports to control the logic command (such as start and direction), while in Manual Mode. Does not mask Stop commands.				

Options	Reserved	Port 14	Port 13 (1)	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Port 6	Port 5	Port 4	Port 3	Port 2	Port 1	Digital In
Default	0	1	1	0	0	0	0	1	1	1	1	1	1	1	1	1
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Disabled
1 = Enabled

(1) 755 drives only.

	327	**Manual Ref Mask** Manual Reference Mask Enables/disables ports to control the speed reference while in Manual Mode. When a port is commanding manual mode, the reference is forced to the commanding port (or alternate source selected by P328 [Alt Man Ref Sel]), if the respective bit in this parameter is set.				

Options	Reserved	Port 14	Port 13	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Port 6	Port 5	Port 4	Port 3	Port 2	Port 1	Digital In
Default	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Condition False
1 = Condition True

	328	**Alt Man Ref Sel** Alternate Manual Reference Select Provides a way to select a speed reference source when in manual mode, that is different than the port which is actuating the manual request. Specifies the port to be used for the reference. The default setting (0) results in the actuating port being the one that is used for the manual reference.	Default: Min/Max:	0 0 / 159999	RW	32-bit Integer

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
DRIVE CFG	Auto Manual Ctrl	329	**Alt Man Ref AnHi** Alternate Manual Reference Analog High Hi scale for the alternate manual speed reference when P328 [Alt Man Ref Sel] is connected to an Analog Input.	Units: Default: Min/Max:	Hz RPM P520 P521 / P520	RW	Real
		330	**Alt Man Ref AnLo** Alternate Manual Reference Analog Low Lo scale for the alternate manual speed reference when P328 [Alt Man Ref Sel] is connected to an Analog Input.	Units: Default: Min/Max:	Hz RPM 0 P521 / P520	RW	Real
		331	**Manual Preload** Manual Preload Enables/disables automatic preloading of the "Auto" speed reference into a HIM when the HIM has been granted Manual control.				

Options	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Port 3	Port 2	Port 1	Reserved
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Disabled
1 = Enabled

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
DRIVE CFG	Drive Memory	336	**Reset Meters** Reset Meters Resets selected meters to zero. The value will automatically be returned to 0. "MWH and kWh" (1) – Resets P13 [Elapsed MWH], P14 [Elapsed kWH], P16 [Elpsd Mtr MWHrs], P17 [Elpsd Rgn MWHrs], P18 [Elpsd Mtr kWHrs], and P19 [Elpsd Rgn kWHrs]. "Elapsed Time" (2) – Resets P15 [Elapsed Run Time].	Default: Options:	0 = "Ready" 0 = "Ready" 1 = "MWH and kWh" 2 = "Elapsed Time"	RW	32-bit Integer

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
DRIVE CFG	Start Features	345	**Start At PowerUp** Start At Power Up Enables/disables a feature to issue a Start or Run command and automatically resume running at commanded speed after drive input power is restored. Requires a digital input configured for Run or Start and a valid start contact.	Default: Options:	0 = "Disabled" 0 = "Disabled" 1 = "Enabled"	RW	32-bit Integer

ATTENTION: Equipment damage and/or personal injury may result if this parameter is used in an inappropriate application. Do not use this function without considering applicable local, national and international codes, standards, regulations or industry guidelines.

		346	**PowerUp Delay** Power Up Delay Defines the programmed delay time, in seconds, before a start command is accepted after power up.	Units: Default: Min/Max:	Secs 0.00 0.00 / 10800.00	RW	Real

File	Group	No.	Display Name Full Name Description	Values	Read-Write	Data Type
DRIVE CFG	Start Features	347	**Auto Retry Fault** Automatic Retry Fault Enables Retries Exhausted fault action.			
		348	**Auto Rstrt Tries** Automatic Restart Tries Sets the maximum number of times the drive attempts to reset a fault and restart.	Default: 0 (Disabled) Min/Max: 0 / 9	RW	32-bit Integer
		349	**Auto Rstrt Delay** Automatic Restart Delay Sets the time between restart attempts when 348 [Auto Rstrt Tries] is set to a value other than zero.	Units: Secs Default: 1.00 Min/Max: 0.50 / 30.00	RW	Real

Options

	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	AttmpsExhstd
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Condition False
1 = Condition True

ATTENTION: Equipment damage and/or personal injury may result if this parameter is used in an inappropriate application. Do not use this function without considering applicable local, national and international codes, standards, regulations or industry guidelines.

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
DRIVE CFG	Start Features	**350**	**Sleep Wake Mode** Sleep Wake Mode Enables/disables the Sleep/Wake function. **Important:** When enabled, the following conditions must be met: • A proper value must be programmed for 352 [Sleep Level] and 354 [Wake Level]. • A sleep / wake reference must be selected in 351 [SleepWake RefSel]. • At least one of the following must be programmed (and input closed) in P155 [DI Enable], P158 [DI Stop], P163 [DI Run], P164 [DI Run Forward], or P165 [DI Run Reverse].	Default: Options:	0 = "Disabled" 0 = "Disabled" 1 = "Direct" (Enabled) 2 = "Invert" (Enabled) (7)	RW	32-bit Integer
		351	**SleepWake RefSel** Sleep Wake Reference Select Selects the source of the input controlling the Sleep-Wake function.	Default: Min/Max:	0 (Disabled) 0 / 159999	RW	32-bit Integer
		352	**Sleep Level** Sleep Level Defines the analog input level that will stop the drive.	Units: Default: Min/Max:	Volt, P351 = 0 (Disabled) Volt or mA, P351 = not 0 (Port Device Jumper Setting) 5.00 Volt (P351 = 0) 5.00 Volt / 0.00 mA (Port X Device Jumper Setting) 0.00 / 10.00 Volt 0.00 / 20.00 mA	RW	Real

ATTENTION: Enabling the Sleep/Wake function can cause unexpected machine operation during the Wake mode. Equipment damage and/or personal injury can result if this parameter is used in an inappropriate application. Do Not use this function without considering the information below. In addition, all applicable local, national, and international codes, standards, regulations, or industry guidelines must be considered.

Conditions Required to Start Drive (1) (2) (3)

Input	After Power-Up	After a Drive Fault		After a Stop Command
		Reset by Stop-CF, HIM or TB	Reset by Clear Faults (TB)	HIM or TB
Stop	Stop Closed Wake Signal New Start or Run Cmd.(4)	Stop Closed Wake Signal New Start or Run Cmd.(4)	Stop Closed Wake Signal	Stop Closed Direct Mode Analog Sig. > Sleep Level(6) Invert Mode Analog Sig. < Sleep Level(6) New Start or Run Cmd.(4)
Enable	Enable Closed Wake Signal(4)	Enable Closed Wake Signal New Start or Run Cmd.(4)	Enable Closed Wake Signal	Enable Closed Direct Mode Analog Sig. > Sleep Level(6) Invert Mode Analog Sig. < Sleep Level(6) New Start or Run Cmd.(4)
Run Run For. Run Rev.	Run Closed Wake Signal	New Run Cmd.(5) Wake Signal	Run Closed Wake Signal	New Run Cmd.(5) Wake Signal

(1) When power is cycled, if all of the above conditions are present after power is restored, restart will occur.

(2) If all of the above conditions are present when [Sleep-Wake Mode] is "enabled," the drive will start.

(3) The active speed reference. The Sleep/Wake function and the speed reference may be assigned to the same input.

(4) Command must be issued from HIM, TB, or network.

(5) Run Command must be cycled.

(6) Signal does not need to be greater than wake level.

(7) For Invert function, refer to P53/63 [Anlg InX LssActn] on the I/O module.

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
DRIVE CFG	Start Features	**353**	**Sleep Time** Sleep Time Defines the amount of time at or below 352 [Sleep Level] before a Stop is issued.	Units: Default: Min/Max:	Secs 0.00 0.00 / 1000.00	RW	Real
		354	**Wake Level** Wake Level Defines the analog input level that will start the drive.	Units: Default: Min/Max:	Volt, P351 = 0 (Disabled) Volt or mA, P351 = not 0 (Port X Device Jumper Setting) 6.00 Volt (P351 = 0) 6.00 Volt / 12.00 mA (Port X Device Jumper Setting) 0.00 / 10.00 Volt 0.00 / 20.00 mA	RW	Real
		355	**Wake Time** Wake Time Defines the amount of time at or above 354 [Wake Level] before a Start is issued.	Units: Default: Min/Max:	Secs 0.00 0.00 / 1000.00	RW	Real
		356	**FlyingStart Mode** Flying Start Mode Enables/disables the function which reconnects to a spinning motor at actual RPM when a start command is issued.	Default: Options:	0 = "Disabled" 0 = "Disabled" 1 = "Enhanced" 2 = "Sweep" 753	RW	32-bit Integer
		357	**FS Gain** Flying Start Gain P356 [FlyingStart Mode] = 1 "Enhanced": Proportional term used in the current regulator which controls the reconnect function. P356 [FlyingStart Mode] = 2 "Sweep": Time required for the speed detection signal to remain at the programmed level (P360). Units of 50 µs.	Default: Min/Max:	1200.0 0.0 / 10000.0	RW	Real
		358	**FS Ki** Flying Start Intergal Gain P356 [FlyingStart Mode] = 1 "Enhanced": Integral term used in the current regulator which controls the reconnect function. P356 [FlyingStart Mode] = 2 "Sweep": Integral term used in the voltage recovery to the normal V/Hz level.	Default: Min/Max:	60.0 0.0 / 1000.0	RW	Real
		359	**FS Speed Reg Ki** Flying Start Speed Regulator Integral Gain P356 [FlyingStart Mode] = 1 "Enhanced": Integral term used in the speed regulator which controls the reconnect function. P356 [FlyingStart Mode] = 2 "Sweep": Time to sweep frequency in one direction. Units of 10 µs.	Default: Min/Max:	100.0 0.0 / 10000.0	RW	Real
		360	**FS Speed Reg Kp** Flying Start Speed Regulator Proportional Gain P356 [FlyingStart Mode] = 1 "Enhanced": Proportional term used in the speed regulator which controls the reconnect function. P356 [FlyingStart Mode] = 2 "Sweep": Programmed level for the speed detection signal. The monitored signal needs to drop below this level to indicate motor speed.	Default: Min/Max:	75.0 0.0 / 100000.0	RW	Real
		361	**FS Excitation Ki** Flying Start Excitation Integral Gain P356 [FlyingStart Mode] = 1 "Enhanced": Integral term used in the current regulator which controls the excitation function when the need is determined by the reconnect function. P356 [FlyingStart Mode] = 2 "Sweep": Integral term used to control initial output voltage.	Default: Min/Max:	60.0 0.0 / 32767.0	RW	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
DRIVE CFG	Start Features	362	**FS Excitation Kp** Flying Start Excitation Proportional Gain P356 [FlyingStart Mode] = 1 “Enhanced”: Proportional term used in the current regulator which controls the excitation function when the need is determined by the reconnect function. P356 [FlyingStart Mode] = 2 “Sweep”: Proportional term used to control initial output voltage.	Default: Min/Max:	1200.00 0.0 / 32767.0	RW	Real
		363	**FS Reconnect Dly** Flying Start Reconnect Delay Delay time used between the issued start command and the start of the reconnect function.	Units: Default: Min/Max:	Secs 50.00 0.10 / 10000.00	RW	Real
		364	**FS Msrmnt CurLvl** Flying Start Measurement Current Level P356 [FlyingStart Mode] = 1 “Enhanced”: Level of the current used during the measurement stage of the reconnect function. P356 [FlyingStart Mode] = 2 “Sweep”: Adjustment for the V/Hz end point. Used to change the slope of the V/Hz curve during the frequency sweep.	Default: Min/Max:	44.97 0.00 / 4096.00	RW	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
DRIVE CFG	Braking Features	**370** **371**	**Stop Mode A** **Stop Mode B** Stop Mode A, B Method of stopping the drive when a stop command is given. Normal Stop command and the RUN input changing from true to false will command a Normal Stop. "Coast" (0) – Power removed from motor, motor coasts to zero. "Ramp" (1) – Decelerates to zero speed at the decel rate. Power is removed when zero speed is reached. "Ramp to Hold" (2) – Decelerates to zero speed at the decel rate, followed by DC braking until the next start sequence. "DC Brake" (3) – DC braking is immediately applied (does not follow programmed decel ramp). "DCBrkAutoOff" (4) – Applies DC braking until zero speed is reached or DC brake time is reached, whichever is shorter. "Current Lmt" (5) – Max torque / current applied until zero speed "Fast Brake" (6) – High slip braking for maximum braking performance above base speed.	Default Options:	1 = "Ramp" 0 = "Coast" 0 = "Coast" 1 = "Ramp" 2 = "Ramp to Hold" 3 = "DC Brake" 4 = "DCBrkAutoOff" 5 = "Current Lmt" 6 = "Fast Brake"	RW	32-bit Integer
		372 **373**	**Bus Reg Mode A** **Bus Reg Mode B** Bus Regulation Mode A, B Method and sequence of the DC bus regulator voltage. Choices are dynamic brake, frequency adjust or both. Sequence is determined by programming or digital input to the terminal block. Dynamic Brake Setup If a dynamic brake resistor is connected to the drive, both of these parameters must be set to either option 2, 3 or 4. When using any of the dynamic braking settings increase P426 [Regen Power Lmt] from its default setting of 50%. A setting of 200% will result in more effective breaking.	Default: Options:	1 = "Adjust Freq" 4 = "Both-Frq 1st" 0 = "Disabled" 1 = "Adjust Freq" 2 = "Dyn Brake" 3 = "Both DB 1st" 4 = "Both Frq 1st"	RW	32-bit Integer

ATTENTION: The drive does not offer protection for externally-mounted brake resistors. A risk of fire exists if external braking resistors are not protected. External resistor packages must be self-protected from over-temperature or the protective circuit shown in Figure 1 on page 365 (or equivalent) must be supplied.

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
DRIVE CFG	Braking Features	**374**	**Bus Reg Lvl Cfg** Bus Regulation Level Configuration Selects the reference used to determine the bus voltage regulation level for the bus voltage regulator and the reference used for the dynamic brake. "Bus Memory" (0) – References are determined based on P12 [DC Bus Memory]. "BusReg Level" (1) – References are determined based on the voltage set in the bus regulator level parameter P375 [Bus Reg Level]. If coordinated operation of the dynamic brakes of a common bus system is desired, use this selection and set the P375 [Bus Reg Level] to coordinate the brake operation of the common bus drives.	Default: Options:	0 = "Bus Memory" 0 = "Bus Memory" 1 = "BusReg Level"	RW	32-bit Integer
		375	**Bus Reg Level** Bus Regulation Level Sets the "turn-on" bus voltage level for the bus voltage regulator and the dynamic brake.	Units: Default: Min/Max:	VDC P20 < 252V DC: 375 P20 = 252…503V DC: 750 P20 = 504…629V DC: 937 P20 > 629V DC: 1076 P20 < 252V DC: 375/389 P20 = 252…503V DC: 750/779 P20 = 504…629V DC: 937/974 P20 > 629V DC: 1076/1118	RW	Real
		376	**Bus Limit Kp** Bus Limit Proportional Gain Not functional when any of the FV motor control modes are selected.	Units: Default: Min/Max:	A/V 1170.0 0.0 / 1000000.0	RW	Real
		377	**Bus Limit Kd** Bus Limit Derivative Gain Not functional when any of the FV motor control modes are selected.	Units: Default: Min/Max:	Secs 152.0 0.0 / 1000000.0	RW	Real
		378	**Bus Limit ACR Ki** Bus Limit Active Current Regulator Integral Gain Not functional when any of the FV motor control modes are selected.	Default: Min/Max:	2045.0 0.0 / 50000.0	RW	Real
		379	**Bus Limit ACR Kp** Bus Limit Active Current Regulator Proportional Gain Not functional when any of the FV motor control modes are selected.	Units: Default: Min/Max:	Hz/A 524.0 0.0 / 100000.0	RW	Real
		380	**Bus Reg Ki** Bus Regulator Integral Gain Integral gain for the bus voltage regulator. Sets the responsiveness of the bus voltage regulator.	Default: Min/Max:	100.000 0.000 / 65535.000	RW	Real
		381	**Bus Reg Kp** Bus Regulator Proportional Gain Proportional gain for the bus voltage regulator. Sets the responsiveness of the bus voltage regulator.	Default: Min/Max:	10.000 0.000 / 65535.000	RW	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
DRIVE CFG	Braking Features	**382**	**DB Resistor Type** Dynamic Brake Resistor Type Selects whether the internal or external DB protection will be used. **Important:** Only one DB resistor can be connected to Frame 2 drives. If an external dynamic brake is used with a Frame 2 drive, the internal dynamic brake resistor must be disconnected. Connecting both an internal and external resistor is likely to cause drive damage. If a dynamic brake resistor is connected to the drive, P372 [Bus Reg Mode A] and P373 [Bus Reg Mode B] must be set to either option 2, 3, or 4; otherwise the dynamic brake will not turn on.	Default: Options:	0 = "Internal" 0 = "Internal" 1 = "External"	RW	32-bit Integer
			ATTENTION: Equipment damage may result if a drive mounted (internal) resistor is installed and this parameter is set to "External." Thermal protection for the internal resistor will be disabled, resulting in possible device damage. **ATTENTION:** The drive does not offer protection for externally-mounted brake resistors. A risk of fire exists if external braking resistors are not protected. External resistor packages must be self-protected from over-temperature or the protective circuit shown in Figure 1 on page 365 (or equivalent) must be supplied.				
		383	**DB Ext Ohms** Dynamic Brake External Ohms Calculates the maximum negative torque available from the dynamic brake and is used for the external resistor dynamic brake protection.	Units: Default: Min/Max:	Ohms Based on Drive Rating Internal / 10000.00	RW	Real
		384	**DB Ext Watts** Dynamic Brake External Watts Sets the continuous rated power reference for the external dynamic brake resistor. Only valid when an external dynamic brake resistor is selected (P382 [DB Resistor Type] = 1 "External"). The DB continuous watts are used in the dynamic brake thermal protection algorithm. **Important:** If customer-supplied protection is to be used in place of the drive's calculated resistor thermal protection, set the [DB Ext Watts] to its maximum value.	Units: Default: Min/Max:	Watt 100.00 1.00 / 500000.00	RW	Real
		385	**DB ExtPulseWatts** Dynamic Brake External Pulse Watts Sets the thermal transient response of the external dynamic brake resistor defined by the maximum allowable power to the dynamic brake resistor for 1 second without exceeding the resistor's element temperature. This parameter is only valid when an external dynamic brake resistor is selected (P382 [DB Resistor Type] = 1 "External"). If this value is not available from the resistor vendor it can be approximated by 1 or 2 below: 1. [DB ExtPulseWatts] = 75,000 x weight (lbs), where weight is the weight of the resistor wire in pounds (not the weight of the entire resistor). 2. [DB ExtPulseWatts] = Time Constant x Brake Watts, where the Time Constant equals the amount of time to reach 63% of its rated temperature while the maximum power is applied to the resistor and Brake Watts is the maximum continuous power rating of the resistor. **Important:** If customer supplied protection is to be used in place of the drive's calculated resistor thermal protection, set the [DB ExtPulse Watts] to its maximum value.	Units: Default: Min/Max:	Watt 2000.00 1.00 / 100000000.00	RW	Real
		388	**Flux Braking En** Flux Braking Enable Enables/disables flux braking.	Default: Options:	0 = "Disabled" 0 = "Disabled" 1 = "Enabled"	RW	32-bit Integer
		389	**Flux Braking Lmt** Flux Braking Limit Sets the limit on the desired motor voltage during flux braking as a percent of P25 [Motor NP Volts].	Units: Default: Min/Max:	% 125.00 100.00 / 250.00	RW	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
DRIVE CFG	Braking Features	**390**	**Flux Braking Ki** Flux Braking Integral Gain Flux braking controller integral gain.	Default: Min/Max:	10000.0 0.0 / 1000000.0	RW	Real
		391	**Flux Braking Kp** Flux Braking Proportional Gain Flux braking controller proportional gain.	Units: Default: Min/Max:	V/A 100.0 0.0 / 1000000.0	RW	Real
		393	**DC Brake Lvl Sel** DC Brake Level Select Sets link to source used for P394 [DC Brake Level].	Default: Min/Max:	394 1 / 159999	RW	32-bit Integer
		394	**DC Brake Level** DC Brake Level Defines the DC brake current level injected into the motor when [Stop Mode x] = 3 "DC Brake." This also sets the braking current level when 6 "Fast Stop" is selected. The DC braking voltage used in this function is created by a PWM algorithm and may not generate the smooth holding force needed for some applications.	Units: Default: Min/Max:	Amps [Rated Amps] P21 [Rated Amps] x 0.01 / Based on Drive Rating	RW	Real
			ATTENTION: If a hazard of injury due to movement of equipment or material exists, an auxiliary mechanical braking device must be used. **ATTENTION:** This feature should not be used with synchronous or permanent magnet motors. Motors may be demagnetized during braking.				
		395	**DC Brake Time** DC Brake Time Sets the amount of time DC brake current is "injected" into the motor. When the active stop mode, P370/371 [Stop Mode X] = 2 "Ramp to Hold," this parameter is ignored and DC braking is applied continuously.	Units: Default: Min/Max:	Secs 0.00 0.00 / 90.00	RW	Real
		396	**DC Brake Ki** DC Brake Integral Gain Sets the integral term used in the current regulator which controls the DC Brake function.	Default: Min/Max:	10.0 0.0 / 1000.0	RW	Real
		397	**DC Brake Kp** DC Brake Proportional Gain Sets the proportional term used in the current regulator which controls the DC Brake function.	Default: Min/Max:	1000.0 0.0 / 10000.0	RW	Real
		398	**DC Brk Vq Fltr** DC Brake Vq Filter Sets the level of filtering used on the Vq signal when the active stop mode P370/371 [Stop Mode X] = 4 "DCBrkAutoOff."	Default: Min/Max:	250.0 50.0 / 2000.0	RW	Real
		399	**DC Brk Vd Fltr** DC Brake Vd Filter Sets the level of filtering used on the Vd signal when the active stop mode P370/371 [Stop Mode X] = 4 "DCBrkAutoOff."	Default: Min/Max:	250.0 50.0 / 2000.0	RW	Real
		400	**Fast Braking Ki** Fast Braking Integral Gain Sets the integral term used in the speed regulator which controls the Fast Braking function.	Default: Min/Max:	0.10 0.00 / 10.00	RW	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
DRIVE CFG	Braking Features	**401**	**Fast Braking Kp** Fast Braking Proportional Gain Sets the proportional term used in the speed regulator which controls the Fast Braking function.	Default: Min/Max:	0.0015 0.0000 / 10.0000	RW	Real
		402	**Brake Off Adj 1** Brake Off Adjustment 1 When Fast Braking is the selected Stop Mode, this parameter sets the power sensitivity to transition from Fast Braking to DC Brake. When DC Brake w/Auto ShutOff is selected, this parameter sets the level sensitivity for shut off.	Default: Min/Max:	1.00 0.01 / 5.00	RW	Real
		403	**Brake Off Adj 2** Brake Off Adjustment 2 When Fast Braking is the selected Stop Mode, this parameter sets the frequency sensitivity to transition from Fast Braking to DC Brake. When DC Brake w/Auto ShutOff is selected, this parameter sets the time sensitivity for shut off.	Default: Min/Max:	1.00 0.01 / 5.00	RW	Real
		409	**Dec Inhibit Actn** Deceleration Inhibit Action Configures the response to a Decel Inhibit condition, which occurs when the drive is not decelerating. One possible cause could be bus voltage regulation.	Default: Options:	3 = "FltCoastStop" 0 = "Ignore" 1 = "Alarm" 2 = "Flt Minor" 3 = "FltCoastStop"	RW	32-bit Integer

Drive Protection File

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
PROTECTION	Motor Overload	410	**Motor OL Actn** Motor Overload Action Configures the response to a motor overload condition. If "Flt Minor" (2) is selected, enable P950 [Minor Flt Cfg] bit 0.	Default: Options:	3 = "FltCoastStop" 0 = "Ignore" 1 = "Alarm" 2 = "Flt Minor" 3 = "FltCoastStop" 4 = "Flt RampStop" 5 = "Flt CL Stop"	RW	32-bit Integer
		411	**Mtr OL at Pwr Up** Motor Overload At Power Up Selects the mode to use for initial value of the motor overload counter, upon drive power-up.	Default: Options:	0 = "Assume Cold" 0 = "Assume Cold" 1 = "UseLastValue" 2 = "RealTimeClk"	RW	32-bit Integer
		412	**Mtr OL Alarm Lvl** Motor Overload Alarm Level Sets the level of P418 [Mtr OL Counts] for which a motor overload alarm will occur. Useful to provide warning prior to the drive taking action that is selected by P410 [Motor OL Actn]. This alarm level is different than, and independent of, the "Alarm" action selected by P410 [Motor OL Actn].	Units: Default: Min/Max:	% 0.00 0.00 / 100.00	RW	Real
		413	**Mtr OL Factor** Motor Overload Factor Sets the minimum level of current (in percent or P26 [Motor NP Amps]) that causes the motor overload counter to increment. Current levels below this value will decrement the overload counter. For example, a service factor of 1.15 implies continuous operation up to 115% of nameplate motor current.	Default: Min/Max:	1.00 0.20 / 2.00	RW	Real
		414	**Mtr OL Hertz** Motor Overload Hertz Selects the output frequency below which the motor operating current is derated (more sensitive) to account for the reduced self-cooling capability of typical motors, operating at slower speeds. For motors with extra low speed cooling capacity (e.g. 10:1 or blower cooled), reduce this setting to take full advantage of the motor being used.	Units: Default: Min/Max:	Hz 20.00 0.00 / 4096.00	RW	Real
		415	**Mtr OL Reset Lvl** Motor Overload Reset Level Sets the level that resets a motor overload condition, and allows a fault (if selected as the motor overload action) to be manually reset.	Units: Default: Min/Max:	% 0.00 0.00 / 100.00	RW	Real
		416	**MtrOL Reset Time** Motor Overload Reset Time Displays the time it will take to restart the drive after a motor overload fault has occurred and the value in P418 [Mtr OL Counts] is less than the P415 [Mtr OL Reset Lvl].	Units: Default: Min/Max:	Secs 0.00 –/+99999.00	RW	Real
		418	**Mtr OL Counts** Motor Overload Counts Accumulated percentage of motor overload. Continuously operating the motor over 100% of the motor overload setting will increase this value to 100% and cause the action selected in P410 [Motor OL Actn] to be taken.	Units: Default: Min/Max:	% 0.00 0.00 / 100.00	RO	Real
		419	**Mtr OL Trip Time** Motor Overload Trip time Displays the inverse of the motor overload time, equal to the number of seconds before P418 [Mtr OL Counts] reaches 100%, and the motor overload action is taken.	Units: Default: Min/Max:	Secs 99999 0 / 99999	RO	32-bit Integer

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
PROTECTION	Load Limits	**420**	**Drive OL Mode** Drive Overload Mode Selects the action to take when the drive detects that it is being overloaded. Reducing current limit and / or PWM frequency may allow the drive to continue running without faulting. When using a sine wave output filter, set this parameter to 1 "Reduce CLmt" or 0 "Disabled."	Default: Options:	3 = "Both PWM 1st" 0 = "Disabled" 1 = "Reduce CLmt" 2 = "Reduce PWM" 3 = "Both PWM 1st"	RW	32-bit Integer
		421	**Current Lmt Sel** Current Limit Select Selects the source for the current limit value. When the load is large enough to cause current that equals or exceeds this value, the output frequency will automatically adjust (increase or decrease, as required) to attempt limiting the output current to this value.	Default: Options:	422 1 / 159999	RW	32-bit Integer
		422 **423**	**Current Limit 1** **Current Limit 2** Current Limit 1, 2 Constant values that can be used as sources for P421 [Current Lmt Sel].	Units: Default: Min/Max:	Amps Based on Drive Rating Based on Drive Rating	RW	Real
		424	**Active Cur Lmt** Active Current Limit Displays the current that is actively being used, including the automatic foldback effect from the drive overload function (see P420 [Drive OL Mode]).	Units: Default: Min/Max:	Amps 0.00 –/+P26 [Motor NP Amps] x 8	RO	Real
		425	**Current Rate Lmt** Current Rate Limit Sets the largest allowable rate of change for the torque producing current reference (Iq). This number is scaled in percent of rated motor current for every 250 microseconds.	Units: Default: Min/Max:	% 400.00 1.00 / 800.00	RW	Real
		426	**Regen Power Lmt** Regenerative Power Limit Sets the limit for power flow from the motor to the drive (regenerating).	Units: Default: Min/Max:	% –50.00 –800.00 / 0.00	RW	Real
		427	**Motor Power Lmt** Motor Power Limit Sets the limit for power flow from the drive to the motor (motoring).	Units: Default: Min/Max:	% 200.00 0.00 / 800.00	RW	Real
		428	**Current Limit Kd** Current Limit Derivative Gain Derivative gain for the current limit function. This parameter is not functional when any of the FV motor control modes are selected.	Units: Default: Min/Max:	Secs 760.0 0.0 / 1000000.0	RW	Real
		429	**Current Limit Ki** Current Limit Integral Gain Integral gain for the current limit function. This parameter is not functional when any of the FV motor control modes are selected.	Default: Min/Max:	680.0 0.0 / 10000.0	RW	Real
		430	**Current Limit Kp** Current Limit Proportional Gain Proportional gain for the current limit function. This parameter is not functional when any of the FV motor control modes are selected.	Units: Default: Min/Max:	Hz/A 290.0 0.0 / 1000000.0	RW	Real
		431	**Id Lo FreqCur Kp** Id Low Frequency Current Kp Current limit proportional gain active at very low operating frequencies. This parameter is not functional when any of the FV motor control modes are selected.	Units: Default: Min/Max:	V/A 50.0 0.0 / 100000.0	RW	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
PROTECTION	Load Limits	**432**	**Iq Lo FreqCur Kp** Iq Low Frequency Current Kp Current limit proportional gain active at very low operating frequencies. This parameter is not functional when any of the FV motor control modes are selected.	Units: Default: Min/Max:	V/A 50.0 0.0 / 100000.0	RW	Real
		433	**Jerk Gain** Jerk Gain Allows you to adjust the amount of S Curve or "Jerk" applied to the Accel/Decel rate.	Default: Min/Max:	5200.0 0.0 / 1000000000.0	RW	Real
		434	**Shear Pin Cfg** Shear Pin Configure Configures operation of the shear pin function. Options: Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Shear2NoAcc, Shear1NoAcc Default: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 Bit: 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0 Bit 0 "Shear1NoAcc" – 0 = Active during acceleration, 1 = Ignore during acceleration Bit 1 "Shear2NoAcc" – 0 = Active during acceleration, 1 = Ignore during acceleration				
		435 **438**	**Shear Pin 1 Actn** **Shear Pin 2 Actn** Shear Pin 1 Action Shear Pin 2 Action Configures the action to take when the output current is greater than or equal to [Shear PinX Level] for the amount of time set in [Shear Pin X Time]. These two independent shear pin functions can be set up to achieve the equivalent of external overloads that have "stall" and "jam" indication.	Default: Options:	0 = "Ignore" 0 = "Ignore" 1 = "Alarm" 2 = "Flt Minor" 3 = "FltCoastStop" 4 = "Flt RampStop" 5 = "Flt CL Stop"	RW	32-bit Integer
		436 **439**	**Shear Pin1 Level** **Shear Pin2 Level** Shear Pin 1 Level Shear Pin 2 Level Sets the value of current which will activate the shear pin function (see [Shear Pin X Actn]).	Units: Default: Min/Max:	Amps P21 [Rated Amps] 0.0 / P21 [Rated Amps] x 1.5	RW	Real
		437 **440**	**Shear Pin 1 Time** **Shear Pin 2 Time** Shear Pin 1 Time Shear Pin 2 Time Sets the time associated with activation of the shear pin function (see [Shear Pin X Actn]).	Units: Default: Min/Max:	Secs 0.00 0.00 / 30.00	RW	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
PROTECTION	Load Limits	**441**	**Load Loss Action** Load Loss Action Configures the action to take when the load is less than or equal to P442 [Load Loss Level] for the amount of time set in P443 [Load Loss Time].	Default: Options:	0 = "Ignore" 0 = "Ignore" 1 = "Alarm" 2 = "Flt Minor" 3 = "FltCoastStop" 4 = "Flt RampStop" 5 = "Flt CL Stop"	RW	32-bit Integer
		442	**Load Loss Level** Load Loss Level Sets the percentage of motor nameplate torque (absolute value) associated with activation of the load loss function (see P441 [Load Loss Action]).	Units: Default: Min/Max:	% 200.00 0.00 / 800.00	RW	Real
		443	**Load Loss Time** Load Loss Time Sets the time associated with activation of the load loss function (see P441 [Load Loss Action]).	Units: Default: Min/Max:	Secs 0.00 0.00 / 300.00	RW	Real
		444	**OutPhaseLossActn** Output Phase Loss Action Selects action to take if output phase loss is detected.	Default: Options:	0 = "Ignore" 0 = "Ignore" 1 = "Alarm" 2 = "Flt Minor" 3 = "FltCoastStop" 4 = "Flt RampStop" 5 = "Flt CL Stop"	RW	32-bit Integer
		445	**Out PhaseLossLvl** Output Phase Loss Level Sets the threshold level which is used to determine an output phase loss condition.	Default: Min/Max:	200 0 / 1000	RW	32-bit Integer

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
PROTECTION	Power Loss	**449**	**Power Loss Actn** Power Loss Action Configures the drive's response to a power loss timeout condition. Time is set in P452 or P455.	Default: Options:	1 = "Alarm" 0 = "Ignore" 1 = "Alarm" 2 = "Flt Minor" 3 = "FltCoastStop"	RW	32-bit Integer
		450 **453**	**Pwr Loss Mode A** **Pwr Loss Mode B** Power Loss Mode A, B Configures the drive's response to a loss of input power as sensed by a drop in bus voltage. The bus voltage drop is specified in [Pwr Loss X Level] and compared to the bus voltage memory P12 [DC Bus Memory].	Default: Options:	0 = "Coast" 0 = "Coast" 1 = "Decel" 2 = "Continue"	RW	32-bit Integer

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
PROTECTION	Power Loss	**451** **454**	**Pwr Loss A Level** **Pwr Loss B Level** Power Loss Mode A, B Level Sets the bus voltage level at which ride-through begins and modulation ends. When bus voltage falls below this level, the drive prepares for an automatic restart. Enter a percentage of the bus voltage derived from the high voltage setting for the voltage class. For example: on a 400/480V drive, $0.221 \times 480VAC \times \sqrt{2} = 150VDC$	Units: Default: Min/Max:	VDC P20 [Rated Volts] x 0.3913 0.0 / P20 [Rated Volts] x 1.41	RW	Real
		452 **455**	**Pwr Loss A Time** **Pwr Loss B Time** Power Loss Mode A, B Time Sets the time that the drive will remain in power loss mode before a fault is detected.	Units: Default: Min/Max:	Secs 2.00 0.00 / 60.00	RW	Real
		456	**PwrLoss RT BusKp** Power Loss Ride Through Bus Kp Proportional gain that adjusts the response of the bus regulator when power loss ride through is enabled and detected. This parameter is not functional when any of the FV motor control modes are selected.	Units: Default: Min/Max:	A/V 585.0 0.0 / 1000000.0	RW	Real
		457	**PwrLoss RT BusKd** Power Loss Ride Through Bus Kd Derivative gain that adjusts the response of the bus regulator when power loss ride through is enabled and detected. This parameter is not functional when any of the FV motor control modes are selected.	Units: Default: Min/Max:	Secs 50.0 0.0 / 1000000.0	RW	Real
		458	**PwrLoss RT ACRKp** Power Loss Ride Through Active Current Regulator Kp Proportional gain that adjusts the response of the active current regulator portion of the bus regulator when power loss ride through is enabled and detected. This parameter is not functional when any of the FV motor control modes are selected.	Units: Default: Min/Max:	Hz/A 524.0 0.0 / 100000.0	RW	Real
		459	**PwrLoss RT ACRKi** Power Loss Ride Through Active Current Regulator Ki Integral gain that adjusts the response of the active current regulator portion of the bus regulator when power loss ride through is enabled and detected. This parameter is not functional when any of the FV motor control modes are selected.	Units: Default: Min/Max:	Hz/A 2045.0 0.0 / 50000.0	RW	Real
		460	**UnderVltg Action** Under Voltage Action Configures the drive's response to an under voltage event configured in P461.	Default: Options:	3 = "FltCoastStop" 0 = "Ignore" 1 = "Alarm" 2 = "Flt Minor" 3 = "FltCoastStop" 4 = "Flt RampStop" 5 = "Flt CL Stop"	RW	32-bit Integer
		461	**UnderVltg Level** Under Voltage Level AC line voltage level below which an undervoltage event occurs.	Units: Default: Min/Max:	VAC P20 [Rated Volts] x 0.625 0.00 / P20 [Rated Volts] x 1.41	RW	Real
		462	**InPhase LossActn** Input Phase Loss Action Selects action to take if an Input Phase loss is detected. **Important:** Operating in a phase loss condition will seriously degrade the reliability of the drive.	Default: Options:	3 = "FltCoastStop" 0 = "Ignore" 1 = "Alarm" 2 = "Flt Minor" 3 = "FltCoastStop" 4 = "Flt RampStop" 5 = "Flt CL Stop"	RW	32-bit Integer

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
PROTECTION	Power Loss	**463**	**InPhase Loss Lvl** Input Phase Loss Level Sets the threshold at which the DC bus voltage ripple triggers an Input Phase Loss fault. Input phase loss is assumed when the DC bus voltage ripple exceeds the tolerance set by this parameter. Setting a larger value permits a higher bus voltage ripple without causing the drive to fault. The default value of 325 is equal to the expected ripple level for a full rated motor running at half load with single phase input.	Default: Min/Max:	325 10 / 32767	RW	32-bit Integer
		464	**DC Bus Mem Reset** Direct Current Bus Memory Reset Forces a manual update to P12 [DC Bus Memory], which is automatically initialized upon power-up and continually updated during normal operation. A manual reset is rarely required, but may occur when input voltage is abnormally high or low for an extended period of time followed by a fast return to a nominal value. A transition from 0 to 1 will cause an update, only if the drive is not regenerating and not firing the dynamic brake. The update will be ignored or not completed with 30 seconds of the command.	Default: Options:	0 = "Disabled" 0 = "Disabled" 1 = "Enabled"	RW	32-bit Integer

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
PROTECTION	Ground Fault	**466**	**Ground Warn Actn** Ground Warning Action Selects ground current event configuration.	Default: Options:	0 = "Ignore" 0 = "Ignore" 1 = "Alarm" 2 = "Flt Minor" 3 = "FltCoastStop" 4 = "Flt RampStop" 5 = "Flt CL Stop"	RW	32-bit Integer
		467	**Ground Warn Lvl** Ground Warning Level Sets the level at which a ground warning alarm will occur.	Units: Default: Min/Max:	Amps 4.00 1.00 / 5.00	RW	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
PROTECTION	Predictive Main	469	**PredMaint Sts** Predictive Maintenance Status Status of predictive maintenance elapsed life relative to the programmed event level. A value of 1 = event level has been exceeded. Bit 15 is a master bit which = 1 when 1 or more individual bits = 1.				
		470	**PredMaintAmbTemp** Predictive Maintenance Ambient Temperature Used to predict cooling fan life, and possibly the life of other temperature dependent components in the future. Changes to this parameter affect the total life and remaining life, meaning that only one temperature can be programmed for the entire life of the drive.	Units: Default: Min/Max:	DegC 50.00 0.00 / 50.00	RW	Real

Options

	Master	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Mch Lube	Mch Bearing	Mtr Lube	Mtr Bearing	Internal Fan	Heatsink Fan
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = False
1 = True

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
PROTECTION	Predictive Main	**471**	**PredMaint Rst En** Predictive Maintenance Reset Enable Enables P472 [PredMaint Reset] to execute a reset of the selected elapsed life parameter. Any single reset in P472 [PredMaint Reset] will force this parameter back to 0 (disabled), so that only one elapsed life parameter can be reset at a time. This parameter is only reset when Set Defaults "All" (not recommended) is executed.	Default: Options:	Current Selection 0 = "Disable" 1 = "Enable"	RW	32-bit Integer
		472	**PredMaint Reset** Predictive Maintenance Reset Resets predictive maintenance elapsed life parameters, one at a time. Enabled by P471 [PredMaint Rst En]. This parameter is only reset when Set Defaults "All" (not recommended) is executed.	Default: Options:	Current Selection 0 = "Ready" 1 = "HS Fan Life" (1) 2 = "In Fan Life" (1) 3 = "MtrBrng Life" 4 = "MtrLube Hrs" 5 = "MchBrng Life" 6 = "MchLube Hrs" (1) Frames 2…7 only.	RW	32-bit Integer
		481	755 (8+) **CbFan Derate** Cabinet Fan Derate Derating factor applied to P482 [CbFan TotalLife]. Used to adjust total fan life for poor air quality or vibration.	Default: Min/Max:	1.00 0.01 / 1.00	RW	Real
		482	755 (8+) **CbFan TotalLife** Cabinet Fan Total Life Total number of hours expected over the life of the cabinet fans. Calculated as a function of fan manufacturer's life data (from frame rating table), P470 [PredMaintAmbTemp], and P481 [CbFan Derate].	Units: Default: Min/Max:	Hrs 0.00 0.00 / 21474836.47 (31 bits)	RO	32-bit Integer
		483	755 (8+) **CbFan ElpsdLife** Cabinet Fan Elapsed Life Accumulated hours of cabinet fan run time.	Units: Default: Min/Max:	Hrs 0.00 0.00 / 21474836.47 (31 bits)	RO	32-bit Integer
		484	755 (8+) **CbFan RemainLife** Cabinet Fan Remaining Life Remaining number of hours until estimated end of life for cabinet fans, and is the difference between P482 [CbFan TotalLife] and P483 [CbFan ElpsdLife]. All negative values of this parameter need to be treated as excessive use (> 100%), and trigger the appropriate action chosen by P486 [CbFan EventActn].	Units: Default: Min/Max:	Hrs 0.00 –21474836.48 / 21474836.47	RO	32-bit Integer
		485	755 (8+) **CbFan EventLevel** Cabinet Fan Event Level Percent of total expected cabinet fan life for which an early warning alarm or fault can be programmed.	Units: Default: Min/Max:	% 80.000 0.000 / 100.000	RW	Real
		486	755 (8+) **CbFan EventActn** Cabinet Fan Event Action Configures the response to a cabinet fan event, which occurs when P485 [CbFan EventLevel] is met or exceeded.	Default: Options:	0 = "Ignore" 0 = "Ignore" 1 = "Alarm" 2 = "Flt Minor" 3 = "FltCoastStop" 4 = "Flt RampStop" 5 = "Flt CL Stop"	RW	32-bit Integer
		488	**HSFan Derate** Heatsink Fan Derate Derating factor applied to P489 [HSFan TotalLife]. Used to adjust total fan life for poor air quality or vibration.	Default: Min/Max:	1.00 0.01 / 1.00	RW	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
PROTECTION	Predictive Main	**489**	**HSFan TotalLife** Heatsink Fan Total Life Total number of hours expected over the life of the heatsink fans. Calculated as a function of fan manufacturer's life data (from frame rating table), P470 [PredMaintAmbTemp], and P488 [HSFan Derate].	Units: Default: Min/Max:	Hrs 0.00 0.00 / 21474836.47 (31 bits)	RO	32-bit Integer
		490	**HSFan ElpsdLife** Heatsink Fan Elapsed Life Accumulated hours of heatsink fan run time. Use P472 [PredMaint Reset] to reset this parameter.	Units: Default: Min/Max:	Hrs 0.00 0.00 / 21474836.47 (31 bits)	RO	32-bit Integer
		491	**HSFan RemainLife** Heatsink Fan Remaining Life Remaining number of hours until estimated end of life for heatsink fans, and is the difference between P489 [HSFan TotalLife] and P490 [HSFan ElpsdLife]. All negative values of this parameter need to be treated as excessive use (> 100%), and trigger the appropriate action chosen by P493 [HSFan EventActn]. Use P472 [PredMaint Reset] to reset this parameter.	Units: Default: Min/Max:	Hrs 0.00 –21474836.48 / 21474836.47	RO	32-bit Integer
		492	**HSFan EventLevel** Heatsink Fan Event Level Percent of total expected heatsink fan life for which an early warning alarm or fault can be programmed.	Units: Default: Min/Max:	% 80.000 0.000 / 100.000	RW	Real
		493	**HSFan EventActn** Heatsink Fan Event Action Configures the response to a heatsink fan event, which occurs when P492 [HSFan EventLevel] is met or exceeded.	Default: Options:	0 = "Ignore" 0 = "Ignore" 1 = "Alarm" 2 = "Flt Minor" 3 = "FltCoastStop" 4 = "Flt RampStop" 5 = "Flt CL Stop"	RW	32-bit Integer
		494	**HSFan ResetLog** Heatsink Fan Reset Log Total number of resets performed on the P490 [HSFan ElpsdLife] parameter. **Note:** This parameter is not used by PowerFlex 755 Frame 8 drives and larger.	Default: Min/Max:	0 0 / 255 (unsigned 8 bits)	RO	32-bit Integer
		495	**InFan Derate** Internal Fan Derate Derating factor applied to P496 [InFan TotalLife]. Used to adjust total fan life for poor air quality or vibration.	Default: Min/Max:	1.00 0.01 / 1.00	RW	Real

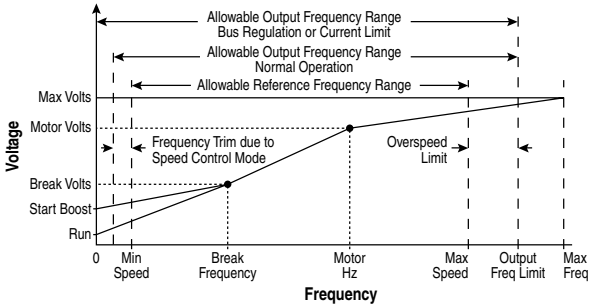
File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
PROTECTION	Predictive Main	**496**	**InFan TotalLife** Internal Fan Total Life Total number of hours expected over the life of the internal stirring fan(s). Calculated as a function of fan manufacturer's life data (from frame rating table) and P470 [PredMaintAmbTemp].	Units: Default: Min/Max:	Hrs 0.00 0.00 / 21474836.47 (31 bits)	RO	32-bit Integer
		497	**InFan ElpsdLife** Internal Fan Elapsed Life Accumulated hours of internal stirring fan run time (Note that frames 6 and 7 run continuously. Frames 2 through 5 are controlled by firmware). Use P472 [PredMaint Reset] to reset this parameter.	Units: Default: Min/Max:	Hrs 0.00 0.00 / 21474836.47 (31 bits)	RO	32-bit Integer
		498	**InFan RemainLife** Internal Fan Remaining Life Remaining number of hours until estimated end of life for internal stirring fans, and is the difference between P496 [InFan TotalLife] and P497 [InFan ElpsdLife]. All negative values of this parameter need to be treated as excessive use (> 100%), and trigger the appropriate action chosen by P500 [InFan EventActn]. Use P472 [PredMaint Reset] to reset this parameter.	Units: Default: Min/Max:	Hrs 0.00 –21474836.48 / 21474836.47	RO	32-bit Integer
		499	**InFan EventLevel** Internal Fan Event Level Percent of total expected internal stirring fan life for which an early warning alarm or fault can be programmed.	Units: Default: Min/Max:	% 80.000 0.000 / 100.000	RW	Real
		500	**InFan EventActn** Internal Fan Event Action Configures the response to an internal stirring fan event, which occurs when P499 [InFan EventLevel] is met or exceeded.	Default: Options:	0 = "Ignore" 0 = "Ignore" 1 = "Alarm" 2 = "Flt Minor" 3 = "FltCoastStop" 4 = "Flt RampStop" 5 = "Flt CL Stop"	RW	32-bit Integer
		501	**InFan ResetLog** Internal Fan Reset Log Total number of resets performed on the P497 [InFan ElpsdLife] parameter. **Note:** This parameter is not used by PowerFlex 755 Frame 8 drives and larger.	Default: Min/Max:	0 0 / 255 (unsigned 8 bits)	RO	32-bit Integer
		502	**MtrBrngTotalLife** Motor Bearing Total Life Total number of hours expected over the life of the motor bearings.	Units: Default: Min/Max:	Hrs 0.00 0.00 / 21474836.47 (31 bits)	RW	32-bit Integer
		503	**MtrBrngElpsdLife** Motor Bearing Elapsed Life Accumulated hours of motor bearing run time. Hours are accumulated any time drive is running greater than zero speed. Use P472 [PredMaint Reset] to reset this parameter.	Units: Default: Min/Max:	Hrs 0.00 0.00 / 21474836.47 (31 bits)	RO	32-bit Integer
		504	**MtrBrngRemainLif** Motor Bearing Remaining Life Remaining number of hours until estimated end of life for motor bearings, and is the difference between P502 [MtrBrngTotalLife] and P503 [MtrBrngElpsdLife]. Use P472 [PredMaint Reset] to reset this parameter.	Units: Default: Min/Max:	Hrs 0.00 –21474836.48 / 21474836.47	RO	32-bit Integer
		505	**MtrBrngEventLvl** Motor Bearing Event Level Percent of total expected motor bearing life for which an early warning alarm or fault can be programmed.	Units: Default: Min/Max:	% 80.000 0.000 / 100.000	RW	Real

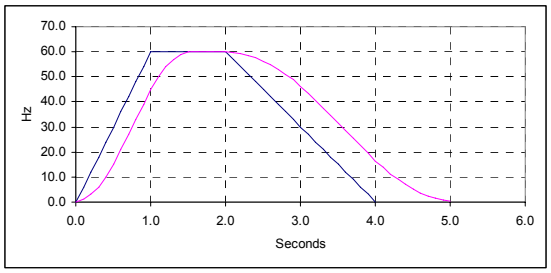
File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
PROTECTION	Predictive Main	**506**	**MtrBrngEventActn** Motor Bearing Event Action Configures the response to a motor bearing event, which occurs when P505 [MtrBrngEventLvl] is met or exceeded.	Default: Options:	0 = "Ignore" 0 = "Ignore" 1 = "Alarm" 2 = "Flt Minor" 3 = "FltCoastStop" 4 = "Flt RampStop" 5 = "Flt CL Stop"	RW	32-bit Integer
		507	**MtrBrng ResetLog** Motor Bearing Reset Log Total number of resets performed on the P503 [MtrBrngElpsdLife] parameter.	Default: Min/Max:	0 0 / 255 (unsigned 8 bits)	RO	32-bit Integer
		508	**MtrLubeElpsdHrs** Motor Lubricant Elapsed Hours Accumulated hours since the most recent lubrication of the motor bearings. Can be reset without restriction. Use P472 [PredMaint Reset] to reset this parameter.	Units: Default: Min/Max:	Hrs 0.00 0.00 / 21474836.47	RO	32-bit Integer
		509	**MtrLubeEventLvl** Motor Lubricant Event Level Number of hours between scheduled lubrications of the motor bearings. Used for an early warning alarm or fault according to P510 [MtrLubeEventActn]. Event is disabled when set to 0.	Units: Default: Min/Max:	Hrs 0.000 0.000 / 2147483648.000	RW	Real
		510	**MtrLubeEventActn** Motor Lubricant Event Action Configures the response to a motor bearing lubrication event, which occurs when P509 [MtrLubeEventLvl] is met or exceeded.	Default: Options:	0 = "Ignore" 0 = "Ignore" 1 = "Alarm" 2 = "Flt Minor" 3 = "FltCoastStop" 4 = "Flt RampStop" 5 = "Flt CL Stop"	RW	32-bit Integer
		511	**MchBrngTotalLife** Machine Bearing Total Life Total number of hours expected over the life of the machine bearings.	Units: Default: Min/Max:	Hrs Current Value 0.00 / 21474836.47	RW	32-bit Integer
		512	**MchBrngElpsdLife** Machine Bearing Elapsed Life Accumulated hours of machine bearing run time. Use P472 [PredMaint Reset] to reset this parameter.	Units: Default: Min/Max:	Hrs 0.00 0.00 / 21474836.47	RO	32-bit Integer
		513	**MchBrngRemainLif** Machine Bearing Remaining Life Remaining number of hours until estimated end of life for machine bearings, and is the difference between Machine Bearing Total Life and Machine Bearing Elapsed Life. Use P472 [PredMaint Reset] to reset this parameter.	Units: Default: Min/Max:	Hrs 0.00 –21474836.48 / 21474836.47	RO	32-bit Integer
		514	**MchBrngEventLvl** Machine Bearing Event Level Percent of total expected machine bearing life for which an early warning alarm or fault can be programmed.	Units: Default: Min/Max:	% 80.000 0.000 / 100.000	RW	Real
		515	**MchBrngEventActn** Machine Bearing Event Action Configures the response to a machine bearing event, which occurs when P518 [MchBrngEventLvl] is met or exceeded.	Default: Options:	0 = "Ignore" 0 = "Ignore" 1 = "Alarm" 2 = "Flt Minor" 3 = "FltCoastStop" 4 = "Flt RampStop" 5 = "Flt CL Stop"	RW	32-bit Integer

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
PROTECTION	Predictive Main	516	**MchBrngResetLog** Machine Bearing Reset Log Total number of resets performed on the P512 [MchBrngElpsdLife] parameter.	Default: Min/Max:	0 0 / 255	RO	32-bit Integer
		517	**MchLubeElpsdHrs** Machine Lubricant Elapsed Hours Accumulated machine hours since the most recent lubrication of the machine bearings. Can be reset without restriction. Use P472 [PredMaint Reset] to reset this parameter.	Units: Default: Min/Max:	Hrs 0.00 0.00 / 21474836.47	RO	32-bit Integer
		518	**MchLube EventLvl** Machine Lubricant Event Level Number of hours between scheduled lubrications of the machine bearings. Used for an early warning alarm or fault according to P519 [MchLubeEventActn]. Event is disabled when set to 0.	Units: Default: Min/Max:	Hrs 0.000 0.000 / 2147483648.000	RW	Real
		519	**MchLubeEventActn** Machine Lubricant Event Action Configures the response to a machine bearing lubrication event, which occurs when P518 [MchLube EventLvl] is met or exceeded.	Default: Options:	0 = "Ignore" 0 = "Ignore" 1 = "Alarm" 2 = "Flt Minor" 3 = "FltCoastStop" 4 = "Flt RampStop" 5 = "Flt CL Stop"	RW	32-bit Integer

Drive Speed Control File

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
SPEED CONTROL	Speed Limits	520	**Max Fwd Speed** Maximum Forward Speed Sets the forward speed high limit. Refer to P524 [Overspeed Limit]. When using an analog input for the speed reference, this parameter is scaled to P51/61 [Anlg InX Hi] on the I/O module.	Units: Default: Min/Max:	Hz RPM P27 [Motor NP Hertz] P28 [Motor NP RPM] [Motor NP Hertz] x 0.05 / [Motor NP Hertz] x 16.00 [Motor NP RPM] x 0.05 / [Motor NP RPM] x 16.00	RW	Real
		521	**Max Rev Speed** Maximum Reverse Speed Sets the reverse speed high limit. Refer to P524 [Overspeed Limit]. When using an analog input for the speed reference, this parameter is scaled to P51/61 [Anlg In X Hi] on the I/O module.	Units: Default: Min/Max:	Hz RPM P27 [Motor NP Hertz] x –1.00 P28 [Motor NP RPM] x –1.00 [Motor NP Hertz] x –16.00 / 0.00 [Motor NP RPM] x –16.00 / 0.00	RW	Real
		522	**Min Fwd Speed** Minimum Forward Speed Sets the low limit for speed reference after scaling is applied. Refer to P524 [Overspeed Limit]. When using an analog input for the speed reference, this parameter is scaled to P52/62 [Anlg InX Lo] on the I/O module.	Units: Default: Min/Max:	Hz RPM 0.00 0.00 / [Motor NP Hertz] x 16.00 0.00 / [Motor NP RPM] x 16.00	RW	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
SPEED CONTROL	Speed Limits	**523**	**Min Rev Speed** Minimum Reverse Speed Sets the low limit for speed reference after scaling is applied. Refer to P524 [Overspeed Limit]. When using an analog input for the speed reference, this parameter is scaled to P52/62 [Anlg InX Lo] on the I/O module.	Units: Default: Min/Max:	Hz RPM 0.00 [Motor NP Hertz] x –16.00 / 0.00 [Motor NP RPM] x –16.00 / 0.00	RW	Real
		524	**Overspeed Limit** Overspeed Limit Sets the incremental amount of the output frequency (above maximum speed: either P520 [Max Fwd Speed] or P521 [Max Rev Speed]) allowable for functions such as slip compensation. Maximum speed + P524 [Overspeed Limit] must be ≤P37 [Maximum Freq]  	Units: Default: Min/Max:	Hz RPM P27 [Motor NP Hertz] / 6 P28 [Motor NP RPM] / 6 0.00 / (P27 [Motor NP Hertz] / 3) 0.00 / (P28 [Motor NP RPM] / 6)	RW	Real
		525	**Zero Speed Limit** Zero Speed Limit Establishes a band around zero speed that is used to determine when the drive considers the motor to be at zero speed.	Units: Default: Min/Max:	Hz RPM P27 [Motor NP Hertz] x 0.001 P28 [Motor NP RPM] x 0.001 0.00 / P27 [Motor NP Hertz] x 0.5 0.00 / P28 [Motor NP RPM] x 0.5	RW	Real
		526 **527** **528**	**Skip Speed 1** **Skip Speed 2** **Skip Speed 3** Skip Speed 1, 2, 3 Sets a frequency at which the drive will not operate. Parameters are disabled if set to 0.	Units: Default: Min/Max:	Hz RPM 0.00 P521 [Max Rev Speed] / P520 [Max Fwd Speed]	RW	Real
		529	**Skip Speed Band** Skip Speed Band Sets the bandwidth around a skip speed. [Skip Speed Band] is split, applying 1/2 above and 1/2 below the skip speed. The same bandwidth applies to all skip speeds. Parameter is disabled if set to 0.	Units: Default: Min/Max:	Hz RPM 0.00 0.00 / P27 [Motor NP Hertz] x 0.5 0.00 / P28 [Motor NP RPM] x 0.5	RW	Real

File	Group	No.	Name Description	Values		Read-Write	Data Type
SPEED CONTROL	Speed Ramp Rates	**535** **536**	**Accel Time 1** **Accel Time 2** Acceleration Time 1, 2 Sets the acceleration rate for all speed changes. Defined as the time to accelerate from 0 to P27 [Motor NP Hertz] or P28 [Motor NP RPM], according to the setting in P300 [Speed Units]. Selection between Acceleration Time 1 and Acceleration Time 2 is controlled by a digital input function (see Digin Functions) or by Logic Command (sent over a communication network or DeviceLogix).	Units: Default: Min/Max:	Secs 10.00 0.00 / 3600.00	RW	Real
		537 **538**	**Decel Time 1** **Decel Time 2** Deceleration Time 1, 2 Sets the deceleration rate for all speed changes. Defined as the time to decelerate from P27 [Motor NP Hertz] or P28 [Motor NP RPM] to 0, according to the setting in P300 [Speed Units]. Selection between Deceleration Time 1 and Deceleration Time 2 is controlled by a digital input function (see Digin Functions) or by Logic Command (sent over a communication network or DeviceLogix). Some stop modes (see P370 and P371) will cause the programmed decel time to be ignored during a stop command.	Units: Default: Min/Max:	Secs 10.00 0.00 / 3600.00	RW	Real
		539	**Jog Acc Dec Time** Jog Acceleration Deceleration Time Acceleration and deceleration rates while commanding jog (uses a jog speed reference).	Units: Default: Min/Max:	Secs 10.00 0.00 / 3600.00	RW	Real
		540	**S Curve Accel** S Curve Acceleration Sets the percentage of accel time applied to the ramp to soften (reduce jerk) the acceleration. Time is added, 1/2 at the beginning and 1/2 at the end of the ramp.  	Units: Default: Min/Max:	% 0.000 0.000 / 100.000	RW	Real
		541	**S Curve Decel** S Curve Deceleration Sets the percentage of decel time applied to the ramp to soften (reduce jerk) the deceleration. Time is added, 1/2 at the beginning and 1/2 at the end of the ramp.	Units: Default: Min/Max:	% 0.000 0.000 / 100.000	RW	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
SPEED CONTROL	Speed Reference	**545** **550**	**Spd Ref A Sel** **Spd Ref B Sel** Speed Reference A Select Speed Reference B Select Selects the source for speed references while in "Auto" (typical) mode. When the drive is in "Manual" mode, these sources are overridden (see P327). [Spd Ref A Sel] is the drive's main speed reference. [Spd Ref B Sel] is an alternate speed reference. Selecting between Reference A and Reference B is controlled by a digital input function (see Digin Functions) or by Logic Command (sent over a communication network).	Default: Min/Max:	871 551 0 / 159999	RW	32-bit Integer
		546 **551**	**Spd Ref A Stpt** **Spd Ref B Stpt** Speed Reference A Setpoint Speed Reference B Setpoint A constant speed value (similar to a preset speed) to be used a possible source for P545 and P550.	Units: Default: Min/Max:	Hz RPM 0.0000 Hz –/+P27 [Motor NP Hertz] x 8 –/+P27 [Motor NP RPM] x 8	RW	Real
		547 **552**	**Spd Ref A AnlgHi** **Spd Ref B AnlgHi** Speed Reference A Analog High Speed Reference B Analog High Used only when an analog input is selected as a speed reference according to P546 or P551. Sets the speed that corresponds to [Anlg InX Hi] on an I/O module. This establishes scaling throughout the range.	Units: Default: Min/Max:	Hz P520 [Max Fwd Speed] P521 [Max Rev Speed] / P520 [Max Fwd Speed]	RW	Real
		548 **553**	**Spd Ref A AnlgLo** **Spd Ref B AnlgLo** Speed Reference A Analog Low Speed Reference B Analog Low Used only when an analog input is selected as a speed reference according to P546 or P551. Sets the speed that corresponds to [Anlg InX Lo] on an I/O module. This establishes scaling throughout the range.	Units: Default: Min/Max:	Hz 0.00 P521 [Max Rev Speed] / P520 [Max Fwd Speed]	RW	Real
		549 **554**	**Spd Ref A Mult** **Spd Ref B Mult** Speed Reference A Multiplier Speed Reference B Multiplier Applies multipliers to speed references A and B respectively.	Default: Min/Max:	1.00 –/+22000.00	RW	Real
		555	**Spd Ref Scale** Speed Reference Scale Applies only in Flux Vector (FV) modes according to P35 [Motor Ctrl Mode]. Applies a multiplier to P595 [Filtered Spd Ref] after it has been offset by the PID function (P1093 [PID Output Meter]). The scaled result, once limited, will become the primary component of the value of P597 [Final Speed Ref].	Default: Min/Max:	1.000 0.000 / 1000.000	RW	Real
		556 **557**	**Jog Speed 1** **Jog Speed 2** Jog Speed 1, 2 The speed used for jogging when the Jog 1 or Jog 2 function (respectively) is activated by a digital input function or by Logic Command (sent over a communication network).	Units: Default: Min/Max:	Hz P27 [Motor NP Hertz] / 6 P27 [Motor NP RPM] / 6 –/+P27 [Motor NP Hertz] x 8 –/+P27 [Motor NP RPM] x 8	RW	Real
		558	**MOP Reference** Motor Operated Potentiometer Reference Value of the MOP (Motor Operated Potentiometer) Reference to be used as a possible source for P545 and P550. The MOP Reference is activated (incremented or decremented) by digital input functions.	Units: Default: Min/Max:	% 0.00 –/+800.00	RO	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
SPEED CONTROL	Speed Reference	**559**	**Save MOP Ref** Save Motor Operated Potentiometer Reference Enables/disables the feature that saves the present MOP Ref value at power down or stop. Options: Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, At Stop, At Pwr Down Default: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 Bit: 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0 0 = False 1 = True				
		560	**MOP Rate** Motor Operated Potentiometer Rate Sets the rate of change of the MOP reference when an increasing or decreasing MOP signal is present.	Units: Default: Min/Max:	%/s 1.0000 0.0100 / 100.0000	RW	Real
		561	**MOP High Limit** Motor Operated Potentiometer High Limit Sets the upper limit for the MOP Reference.	Units: Default: Min/Max:	% 100.000 0.000 / 800.000	RW	Real
		562	**MOP Low Limit** Motor Operated Potentiometer low Limit Sets the lower limit for the MOP Reference.	Units: Default: Min/Max:	% –100.000 –800.000 / 0.000	RW	Real
		563	**DI ManRef Sel** Digital Input Manual Reference Select Selects a speed reference to be used when a digital input activates Manual control, according to the operation described by P172 [DI Manual Ctrl].	Default: Min/Max:	872 1 / 159999	RW	32-bit Integer
		564	**DI ManRef AnlgHi** Digital Input Manual Reference Analog High Hi scale for the manual speed reference that is activated by a digital input when P563 [DI ManRef Sel] is connected to an Analog Input.	Units: Default: Min/Max:	Hz RPM P520 [Max Fwd Speed] P521 [Max Rev Speed] / P520 [Max Fwd Speed]	RW	Real
		565	**DI ManRef AnlgLo** Digital Input Manual Reference Analog Low Used only when P563 [DI ManRef Sel] has selected an analog input as the source of the speed reference. Specifies the speed reference value that will be associated with the Analog In Lo parameter for the I/O Module. Example, P563 [DI ManRef Sel] has selected P50 [Anlg In0 Value] on an I/O Module. The P51 [Anlg In0 Hi] parameter on the I/O Module is set to -10 volts. P564 [DI ManRef AnlgHi] will specify the speed reference value that will correspond with a -10 volt analog input signal.	Units: Default: Min/Max:	Hz RPM 0.000 P521 [Max Rev Speed] / P520 [Max Fwd Speed]	RW	Real
		571 **572** **573** **574** **575** **576** **577**	**Preset Speed 1** **Preset Speed 2** **Preset Speed 3** **Preset Speed 4** **Preset Speed 5** **Preset Speed 6** **Preset Speed 7** Preset Speed 1, 2, 3, 4, 5, 6, 7 Discrete speed references that are activated by a digital input function (see Digin Functions) or by Logic Command (sent over a communication network or DeviceLogix).	Units: Default: Min/Max:	Hz RPM 1/12 x P27 or P28 (Preset Speed 1) 1/6 x P27 or P28 (Preset Speed 2) 1/3 x P27 or P28 (Preset Speed 3) 1/2 x P27 or P28 (Preset Speed 4) 2/3 x P27 or P28 (Preset Speed 5) 5/6 x P27 or P28 (Preset Speed 6) P27 or P28 (Preset Speed 7) P521 [Max Rev Speed] / P520 [Max Fwd Speed]	RW	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
SPEED CONTROL	Speed Reference	**588**	**Spd Ref Filter** Speed Reference Filter Selects the amount of filtering applied to the ramped speed reference (P594), and is only active in FV motor control modes (P35). When set to any of the custom settings (3, 4, or 5) the filter is configured using the values set in P589 [Spd Ref Fltr BW] and P590 [Spd Ref FltrGain]. Settings 4 and 5 initialize the values for light and heavy respectively.	Default: Options:	0 = "Off" 0 = "Off" 1 = "Light" 2 = "Heavy" 3 = "Custom" 4 = "SetCustLight" 5 = "SetCustHeavy"	RW	32-bit Integer
		589	**Spd Ref Fltr BW** Speed Reference Filter Bandwidth Sets the bandwidth of the speed reference filter when P588 [Spd Ref Filter] is set to one of the "Custom" settings (3, 4, or 5) A value of zero will disable (bypass) the filter.	Units: Default: Min/Max:	R/S 0.00 0.00 / 500.00	RW	Real
		590	**Spd Ref FltrGain** Speed Reference Filter Gain Sets the gain (kn) of the speed reference filter when P588 [Spd Ref Filter] is set to one of the "Custom" settings (3, 4, or 5). A gain value of zero results in a filter characteristic that behaves as a first order low pass. A gain value ranging between zero and one results in a lag type filter. A gain value greater than one results in a lead type filter. A gain value of one will disable (bypass) the filter. This is the default setting. This parameter has no units.	Default: Min/Max:	1.000 –/+5.000	RW	Real

File	Group	No.	Display Name Full Name Description	Values	Read-Write	Data Type
SPEED CONTROL	Speed Reference	591	**Spd Ref Sel Sts** Speed Reference Select Status			

Options	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Skip Band	End Lmt Sw	Decel Lmt Sw	Unipolar Ref	Rev Disable	Bipolar Ref	Sel Override	Manual	Preset Auto	Trim Ref	Trim Pct Ref	MicroPsnMult	Ref B Mult	Ref A Mult	Ref B Auto	Ref A Auto
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = False
1 = True

Displays the operating status of the speed referencing section of the drive. Individual bits are provided to represent the following conditions:

Bit 0 "Ref A Auto" – When set, the Reference A Auto path is active.

Control Logic has selected the Speed Reference source A. The exact origin of this speed reference is determined by the parameter specified in P545 [Spd Ref A Sel]. This parameter should also be reported in P930 [Speed Ref Source].

Bit 1 "Ref B Auto" – When set, the Reference B Auto path is active.

Control Logic has selected the Speed Reference source B. The exact origin of this speed reference is determined by the value specified in P550 [Spd Ref B Sel]. This parameter should also be reported in P930 [Speed Ref Source].

Bit 2 "Ref A Mult" – When set, speed reference A is being modified by P549 [Spd Ref A Mult]. When clear, either the multiplier is 1 or is not affecting the speed reference because the Ref A Auto path is inactive.

Bit 3 "Ref B Mult" – When set, the speed reference B is being modified by P554 [Spd Ref B Mult]. When clear, either the multiplier is 1 or is not affecting the speed reference because the "Ref B Auto" path is inactive.

Bit 4 "MicroPsnMult" – When set, P592 [Selected Spd Ref] is being multiplied by P1112 [MicroPsnScalePct].

Bit 5 "Trim Pct Ref" – When set, the speed reference is being multiplied by one plus the value of the parameter indicated in P616 [SpdTrimPrcRefSrc].

Bit 6 "Trim Ref" – When set, the speed reference is being offset by the value of the parameter indicated in P617 [Spd Trim Source].

Bit 7 "Preset Auto" – When set, Control Logic has selected a preset auto speed reference. The P930 [Speed Ref Source] parameter will indicate the source of this reference.

Bit 8 "Manual" – When set, the speed reference selection is in one of the Manual positions due to P879 [Drive Logic Rslt] bit 6 "Manual" being set. When P879, bit 6 is clear, the speed reference selection is in one of the Auto positions. The result of the Auto/Manual speed reference selection can be seen in P592 [Selected Spd Ref].

Bit 9 "Sel Override" – The Selected Speed Reference parameter has been overridden by another reference. Refer to P930 [Speed Ref Source] for the cause of the override.

Bit 10 "Bipolar Ref" – When set, P308 [Direction Mode] = 1 "Bipolar." When in bipolar mode, the sign of the speed reference value will determine the direction of motor rotation.

Bit 11 "Rev Disable" – When set, P308 [Direction Mode] = 2 "Rev Disable." When in reverse disable mode, negative speed reference values are rejected and a zero speed value is used in their place.

Bit 12 "Unipolar Ref" – When set, P308 [Direction Mode] = 0 "Unipolar." When in unipolar mode, the sign of the speed reference value (and therefore direction of motor rotation) is determined by P879 [Drive Logic Rslt] Bit 4 "Forward" and Bit 5 "Reverse."

Bit 13 "Decel Lmt Sw" – When set, the Torque Proving function's control logic has detected a decel limit switch active and has selected P571 [Preset Speed 1] for the speed reference value.

Bit 14 "End Lim Sw" – When set, the Torque Proving function's control logic has detected an end limit switch active and has selected zero speed for the speed reference value.

Bit 15 "Skip Band" – When set, the Skip Band function has modified P2 [Commanded SpdRef]. When clear, the Skip Band function has not changed P2 [Commanded SpdRef].

		592	**Selected Spd Ref** Selected Speed Reference Displays the value of the active speed reference.	Units: Hz, RPM Default: 0.00 Min/Max: –/+P27 [Motor NP Hertz], –/+P28 [Motor NP RPM]	RO	Real
		593	**Limited Spd Ref** Limited Speed Reference Displays the value of the speed reference after the following limits have been applied: P520 [Max Fwd Speed], P521 [Max Rev Speed], P522 [Min Fwd Speed] and P523 [Min Rev Speed].	Units: Hz, RPM Default: 0.00 Min/Max: –/+P27 [Motor NP Hertz], –/+P28 [Motor NP RPM]	RO	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
SPEED CONTROL	Speed Reference	**594**	**Ramped Spd Ref** Ramped Speed Reference Displays the output of the speed reference ramp and S-curve functions, but prior to any corrections added by slip comp, PI, etc.	Units: Default: Min/Max:	Hz RPM 0.00 –/+P27 [Motor NP Hertz] –/+P28 [Motor NP RPM]	RO	Real
		595	**Filtered Spd Ref** Filtered Speed Reference Displays the output of the filter that is applied by P588.	Units: Default: Min/Max:	Hz RPM 0.00 –/+P27 [Motor NP Hertz] –/+P28 [Motor NP RPM]	RO	Real
		596	**Speed Rate Ref** Speed Rate Reference This parameter is shared by both the Inertia Compensation and Speed Compensation functions. These functions are only available in the Flux Vector selections for P35 [Motor Ctrl Mode]. A value shared by both the Inertia Compensation and Speed Compensation functions (active only in FV motor control modes), typically supplied by an external controller that is also providing a rate limited speed reference. The Speed Rate Reference corresponds to the derivative with respect to time of the speed reference signal. Units of time are in seconds. For example, if the controller provides a 10 second reference ramp, the controller would also supply a Speed Rate Ref value of 1 pu / 10 sec = 0.1 sec-1 while the reference is accelerating. When the reference is constant, Speed Rate Ref should be zero.	Units: Default: Min/Max:	Hz RPM 0.00 –/+P27 [Motor NP Hertz] –/+P28 [Motor NP RPM]	RW	Real
		597	**Final Speed Ref** Final Speed Reference Displays the speed reference value, after all reference modifications (including ramps), that is used as a final reference by the speed regulator. In Open Loop, Sensorless Vector mode, this value represents the anticipated motor operating speed, and may differ slightly from the output frequency value due to slip compensation.	Units: Default: Min/Max:	Hz / RPM 0.00 –/+P27 [Motor NP Hertz] –/+P28 [Motor NP RPM]	RO	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
SPEED CONTROL	Speed Trim	**600** **604** 	**Trim Ref A Sel** **Trim Ref B Sel** Trim Reference A Select Trim Reference B Select Selects a trim source (in Hz or RPM) for Speed Reference A or Speed Reference B, respectively. For trim in % instead of Hz or RPM, use P608 and P612 (TrimPct RefX Sel).	Default: Min/Max:	P601 [Trim Ref A Sel] P605 [Trim Ref B Stpt] 0 / 159999	RW	32-bit Integer
		601 **605**	**Trim Ref A Stpt** **Trim Ref B Stpt** Trim Reference A Setpoint Trim Reference B Setpoint A digital value to be used as a possible trim source for P600 or P604, respectively	Units: Default: Min/Max:	Hz / RPM 0.00 –/+P27 [Motor NP Hertz] –/+P28 [Motor NP RPM]	RW	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
SPEED CONTROL	Speed Trim	602 606	**Trim RefA AnIgHi** **Trim RefB AnIgHi** Trim Reference A Analog High Trim Reference B Analog High Used only when an analog input is selected as a trim source according to P600 or P604. Sets the amount of trim that corresponds to [Anlg InX Hi] on an I/O module or on the main control (product dependent). This establishes scaling throughout the range.	Units: Default: Min/Max:	Hz / RPM P520 [Max Fwd Speed] P521 [Max Rev Speed] / P520 [Max Fwd Speed]	RW	Real
		603 607	**Trim RefA AnIgLo** **Trim RefB AnIgLo** Trim Reference A Analog Low Trim Reference B Analog Low Used only when an analog input is selected as a trim source according to P600 or P604. Sets the amount of trim that corresponds to [Anlg InX Lo] on an I/O module or on the main control (product dependent). This establishes scaling throughout the range.	Units: Default: Min/Max:	Hz / RPM 0.00 P521 [Max Rev Speed] / P520 [Max Fwd Speed]	RW	Real
		608 612	**TrmPct RefA Sel** **TrmPct RefB Sel** Trim Percent Reference A Select Trim Percent Reference B Select Selects a trim source (in %) for Speed Reference A or Speed Reference B, respectively. For trim in Hz or RPM instead of %, use P600 and P604 (Trim Ref X Sel).	Default: Min/Max:	P609 [TrmPct RefA Stpt] P613 [TrmPct RefB Stpt] 0 / 159999	RW	32-bit Integer
		609 613	**TrmPct RefA Stpt** **TrmPct RefB Stpt** Trim Percent Reference A Setpoint Trim Percent Reference B Setpoint A digital value to be used a possible trim source for P608 or P612, respectively.	Units: Default: Min/Max:	% 0.000 –/+800.000	RW	Real
		610 614	**TrmPct RefA AnHi** **TrmPct RefB AnHi** Trim Percent Reference A Analog High Trim Percent Reference B Analog High Used only when an analog input is selected as a percent trim source according to P608 or P612. Sets the amount of trim that corresponds to [Anlg InX Hi] on an I/O module or on the main control (product dependent). This establishes scaling throughout the range.	Units: Default: Min/Max:	% 100.00 –/+800.00	RW	Real
		611 615	**TrmPct RefA AnLo** **TrmPct RefB AnLo** Trim Percent Reference A Analog Low Trim Percent Reference B Analog Low Used only when an analog input is selected as a percent trim source according to P608 or P612. Sets the amount of trim that corresponds to [Anlg InX Lo] on an I/O module or on the main control (product dependent). This establishes scaling throughout the range.	Units: Default: Min/Max:	% 0.00 –/+800.00	RW	Real
		616	**SpdTrimPrcRefSrc** Speed Trim Percent Reference Source Displays the source of Motor Speed Reference Trim Percent, in the format SSPPPP, where SS indicates the source port number other than Port 0 and PPPP indicates the source parameter number. A value of zero indicates that a source has not been assigned.	Default: Min/Max:	0 0 / 159999	RO	32-bit Integer
		617	**Spd Trim Source** Speed Trim Source Displays the source of Motor Speed Reference Trim, in the format SSPPPP, where SS indicates the source port number other than Port 0 and PPPP indicates the source parameter number. A value of zero indicates that a source has not been assigned.	Default: Min/Max:	0 0 / 159999	RO	32-bit Integer

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
SPEED CONTROL	Slip/Droop Comp	620	**Droop RPM at FLA** Droop Revolutions Per Minute at Full Load Amps Selects amount of droop that the speed reference is reduced when at full load torque. Zero disables the droop function.	Units: Default: Min/Max:	RPM 0.00 0.00 / 900.00	RW	Real
		621	**Slip RPM at FLA** Slip Revolutions Per Minute at Full Load Amps For open loop modes, this parameter sets the amount of slip (in rpm) that the motor is expected to experience at full load. A setting of zero disables slip compensation (not used in closed loop modes with encoder feedback). If the value of P70 [Autotune] is set to "Calculate", this value (in addition to others) is automatically calculated, and cannot be manually adjusted.	Units: Default: Min/Max:	RPM (P27 [Motor NP Hz] x 120) / (P31 [Motor Poles] – P28 [Motor NP RPM]) 0.00 / 1200.00	RW	Real
		622	**Slip Comp BW** Slip Compensation Bandwidth Adjusts the bandwidth of a low pass filter used for slip compensation. The response time of slip compensation will vary inversely with the setting of this filter.	Units: Default: Min/Max:	R/S 10.00 1.00 / 50.00	RW	Real
		623	**VHzSV SpdTrimReg** Volts per Hertz Sensorless Vector Speed Trim Regulator Displays the amount of trim that the slip compensation function dynamically adds (based on load) to final speed reference for improved open loop speed control. Not used in Flux Vector (FV) modes.	Units: Default: Min/Max:	Hz / RPM 0.00 –/+P27 [Motor NP Hertz] x 8 –/+P28 [Motor NP RPM] x 8	RO	Real

File	Group	No.	Display Name Full Name Description	Values	Read-Write	Data Type
SPEED CONTROL	Speed Regulator	635	**Spd Options Ctrl** Speed Options Control			

Options	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Delayed Ref	Auto Tach SW	Jog No Integ	SpdErrFilter	SpdRegIntHld	SpdRegIntRes	StpNoSCrvAcc	Ramp Disable	Ramp Hold
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = False
1 = True

Configures options related to Speed Control as follows:

Bit 0 "Ramp Hold" – The output of the speed reference ramp will stop changing and hold its output constant while this bit is set. When this bit is clear, the ramp output will be allowed to change. If this bit becomes set while P594 [Ramped Spd Ref] is in the S Curve region, the S Curve will be allowed to complete before the output is held.

Bit 1 "Ramp Disable" – When set, the speed reference ramp will be bypassed. P594 [Ramped Spd Ref] will track the ramp input.

Bit 2 "StpNoSCrvAcc" – There are some conditions where the drive may continue to accelerate briefly following a request to stop. This will occur if the drive was in the process of accelerating on an S Curve when the stop request occurred. This bit enables an option to discontinue acceleration immediately when the stop request occurs. The S Curve profile that was in process will then change to a linear decel ramp.

Bit 3 "SpdRegIntRes" – When set, the P654 [Spd Reg Int Out] which is the output of the Vector mode speed regulator's integral term will be forced to zero. The same result can be achieved by setting the regulator's integral gain to zero.

Bit 4 "SpdRegIntHld" – When set, the P654 [Spd Reg Int Out] which is the output of the Vector mode speed regulator's integral term will stop changing and be held constant. Other conditions in the drive such as a limit condition in P945 [At Limit Status] may have the same result.

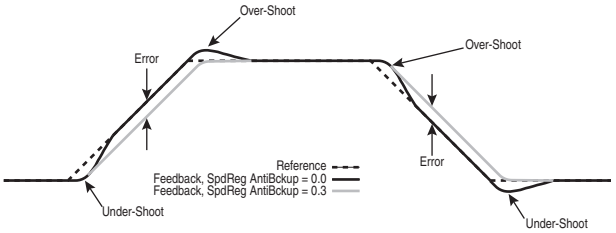
Bit 5 "SpdErrFilter" – When set, the speed error filter in the drive's Vector mode speed regulator will be configured for a single stage low pass filter. When clear, the error filter will be configured for a two stage low pass filter. The two stage configuration is the normal or default setting for the error filter.

Bit 6 "Jog No Integ" – When set, the P654 [Spd Reg Int Out] which is the output of the Vector mode speed regulator's integral term will be forced to zero while jogging.

Bit 7 "Auto Tach SW" – This bit is used to enable the Automatic Tach Switchover feature. This feature is used to switch motor velocity feedback sources from the Primary to Alternate source in the event that the primary source fails. This switchover can take place while the drive is running. The P936 [Drive Status 2] Bit 5 "FdbkLoss Sw0" will indicate clear when the Primary source is active and set when the alternate source is active. Clearing the (Auto Tach SW) bit when the alternate source is active will restore control to the Primary source, provided that the primary source is functioning. If the (Auto Tach SW) bit remains off, then the Automatic Tach Switchover feature will be disabled.

Bit 8 "Delayed Ref" – When this bit is set, an additional processor scan delay period is inserted between the P594 [Ramped Spd Ref] and the input to the Speed Reference filter. This delay is intended to be used in applications where multiple, coordinated drives are used. A drive that supplies the speed reference for use by other drives to follow would typically use this delay. The delay would allow time for the speed reference to reach the other units before it is acted upon by the sourcing unit, thereby synchronizing the speed reference among all units. When this bit is clear, no speed reference delay is inserted.

		636	**Speed Reg BW** Speed Regulator Bandwidth Sets the speed loop bandwidth and determines the dynamic behavior of the speed loop. As bandwidth increases, the speed loop becomes more responsive and can track a faster changing speed reference. A change to this parameter will cause an automatic update of P645 [Speed Reg Kp], P647 [Speed Reg Ki] and P644 [Spd Err Filt BW]. The configuration settings for Inertia Adaption (product dependent) will also be automatically selected when this feature is enabled. To disable the automatic gain and filter update, set this parameter to a value of zero. The maximum allowable value of this parameter will be limited by the ratio of P646 [Spd Reg Max Kp] to P76 [Total Inertia], and the type of speed feedback source in use (encoder vs. open loop). For operation following an automatic tach switchover, the bandwidth specified in P648 [Alt Speed Reg BW] will be used.	Units: Default: Min/Max:	R/S Calculated 0.00 / Calculated	RW	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
SPEED CONTROL	Speed Regulator	**637**	**SReg FB Fltr Sel** Speed Regulator Feedback Filter Select Selects the amount of filtering applied to the feedback channel of the speed regulator, and is only active in FV motor control modes (P35). When set to any of the custom settings (3, 4, or 5) the filter is configured using the values set in P638 [Spd Ref Fltr BW] and P639 [Spd Ref FltrGain]. Settings 4 and 5 initialize the values for light and heavy respectively.	Default: Options:	0 = "Off" 0 = "Off" 1 = "Light" 2 = "Heavy" 3 = "Custom" 4 = "SetCustLight" 5 = "SetCustHeavy"	RW	32-bit Integer
		638	**SReg FB FltrGain** Speed Regulator Feedback Filter Gain Sets the gain of the speed regulator feedback filter when P637 [SReg FB Fltr Sel] is set to one of the "Custom" settings (3, 4, or 5). A gain value of zero results in a filter characteristic that behaves as a first order low pass. A gain value ranging between zero and one results in a lag type filter. A gain value greater than one results in a lead type filter. A gain value of one will disable (bypass) the filter.	Default: Min/Max:	0.700 –5.000 / 20.000	RW	Real
		639	**SReg FB Fltr BW** Speed Regulator Feedback Filter Bandwidth Sets the bandwidth of the speed regulator feedback filter when P637 [SReg FB Fltr Sel] is set to one of the "Custom" settings (3, 4, or 5). A value of zero will disable (bypass) the filter.	Units: Default: Min/Max:	R/S 35.00 0.00 / 3760.00	RW	Real
		640	**Filtered SpdFdbk** Filtered Speed Feedback Displays the output of the filter that is applied by P637.	Units: Default: Min/Max:	Hz RPM 0.00 –/+P27 [Motor NP Hertz] x 8 –/+P28 [Motor NP RPM] x 8	RO	Real
		641	**Speed Error** Speed Error Displays the error (difference) between the P597 [Final Speed Ref] (+) and the P640 [Filtered SpdFdbk] (–). This error signal is the primary input for the Vector control mode speed regulator.	Units: Default: Min/Max:	Hz RPM 0.00 –/+P27 [Motor NP Hertz] x 8 –/+P28 [Motor NP RPM] x 8	RO	Real
		642	755 **Servo Lock Gain** Servo Lock Gain Sets the gain of an additional integrator in the Vector control mode speed regulator. The effect of Servo Lock is to increase stiffness of the speed response to a load disturbance. It behaves like a position regulator with velocity feed forward, but without the pulse accuracy of a true position regulator. Gain should normally be set to less than 1/3 speed regulator bandwidth, or for the desired response. A value of zero disables this feature.	Units: Default: Min/Max:	/Sec 0.000 0.000 / 300.000	RW	Real
		643	**SpdReg AntiBckup** Speed Regulator Anti-backup Allows control of over-shoot/under-shoot in the step response of the Vector control mode speed regulator. Over-shoot/under-shoot can be effectively eliminated with a setting of 0.3, which will remove backup of the motor shaft when zero speed is reached. This parameter has no affect on the drive's response to load changes. A value of zero disables this feature.  	Default: Min/Max:	0.0000 0.0000 / 0.5000	RW	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
SPEED CONTROL	Speed Regulator	**644**	**Spd Err Fltr BW** Speed Error Filter Bandwidth Sets the bandwidth of a 2nd order Butterworth low pass filter that is located in the proportional gain section of the speed regulator (in FV motor control modes). It filters a signal that is derived from P641 [Speed Error]. The purpose of this filter is to reduce quantization noise. When P636 [Speed Reg BW] is set to a non-zero value, this filter will be automatically set. If P636 [Speed Reg BW] is set to zero, this filter setting must be manually adjusted. It is normally set to at least 3 to 5 times the value of P636 [Speed Reg BW]. A value of zero disables the filter. The rules that are used to set the error filter bandwidth in automatic mode are as follows: 1. If the primary motor velocity feedback is Open Loop, then the error filter is set to 5 times P636 [Speed Reg BW]. 2. If a primary motor velocity feedback device has been selected and P704 [InAdp LdObs Mode] = 1 "InertiaAdapt," then the error filter is set to 3 times P636 [Speed Reg BW]. 3. If a primary motor velocity feedback device has been selected and P704 [InAdp LdObs Mode] = 0 "Disabled" or 2 "LoadObserver" then the error filter is using a table look up value determined by the setting of P126 [Pri Vel FdbkFltr]. **Important:** When Auto Tach Switchover is enabled through P635 [Spd Options Cntl], this filter adjustment applies only to the primary feedback source. The filter setting P651 [AltSpdErr FltrBW] is used for the alternate feedback source.	Units: Default: Min/Max:	R/S 50.00 0.00 / 8000.00	RW	Real
		645	**Speed Reg Kp** Speed Regulator Kp Sets the proportional gain of the speed regulator (in FV motor control modes). This value is automatically calculated based on the bandwidth setting in P636 [Speed Reg BW] and P76 [Total Inertia]. The proportional gain may be manually adjusted by setting P636 [Speed Reg BW] to a value of zero. Proportional gain has effective scaling of (per unit torque) / (per unit speed). The maximum allowable value of this parameter is limited by P76 [Total Inertia] and P646 [Spd Reg Max Kp].	Default: Min/Max:	20.00 0.00 / P646 [Speed Reg Max Kp]	RW	Real
		646	**Speed Reg Max Kp** Speed Regulator Maximum Kp Limits the maximum value of P645 [Speed Reg Kp] and P649 [Alt Speed Reg Kp]. When gains are automatically calculated, this parameter is necessary to limit the amplification of noise with increased inertia.	Default: Min/Max:	3000.00 0.00 / 3000.00	RW	Real
		647	**Speed Reg Ki** Speed Regulator Ki Sets the integral gain of the speed regulator (in FV motor control modes). This value is automatically calculated based on the bandwidth setting in P636 [Speed Reg BW], P645 [Speed Reg Kp] and P653 [Spd Loop Damping]. Integral gain may be manually adjusted by setting P636 [Speed Reg BW] to a value of zero. Integral gain has effective scaling of (per unit torque/sec) / (per unit speed).	Units: Default: Min/Max:	/Sec 50.00 0.00 / 100000.00	RW	Real
		648	**Alt Speed Reg BW** Alternate Speed Regulator Bandwidth Provides an independent setting for the same function as P636 [Speed Reg BW], but is active only when Automatic Feedback Loss Switchover occurs (indicated by bit 5 of P936 [Drive Status 2]). A change to this parameter will cause an automatic update of P649 [Alt Speed Reg Kp], P650 [Alt Speed Reg Ki] and P651 [Alt Spd Err Filt BW]. See P636 for additional information regarding speed regulator bandwidth. Also see P635 [Spd Options Ctrl] to enable the Auto Tach Switchover feature.	Units: Default: Min/Max:	R/S 10.00 0.00 / Calculated	RW	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
SPEED CONTROL	Speed Regulator	**649**	**Alt Speed Reg Kp** Alternate Speed Regulator Kp Provides an independent setting for the same function as P645 [Speed Reg Kp], but is active only when Automatic Feedback Loss Switchover occurs (indicated by bit 5 of P936 [Drive Status 2]). This value is automatically calculated based on the bandwidth setting in P648 [Alt Speed Reg BW] and P76 [Total Inertia]. The proportional gain may be manually adjusted by setting P648 [Alt Speed Reg BW] to a value of zero.	Default: Min/Max:	20.00 0.00 / Calculated	RW	Real
		650	**Alt Speed Reg Ki** Alternate Speed Regulator Ki Provides an independent setting for the same function as P647 [Speed Reg Ki], but is active only when Automatic Feedback Loss Switchover occurs (indicated by bit 5 of P936 [Drive Status 2]). This value is automatically calculated based on the bandwidth setting in P648 [Alt Speed Reg BW], P649 [Alt Speed Reg Kp] and P653 [Spd Loop Damping]. Integral gain may be manually adjusted by setting P648 [Alt Speed Reg BW] to a value of zero.	Default: Min/Max:	50.00 0.00 / 100000.00	RW	Real
		651	**AltSpdErr FltrBW** Alternate Speed Error Filter Bandwidth Provides an independent setting for the same function as P644 [Spd Err Filt BW], but is active only when Automatic Feedback Loss Switchover occurs (indicated by bit 5 of P936 [Drive Status 2]) When P648 [Alt Speed Reg BW] is set to a non-zero value, this filter setting will be automatically selected. If P648 [Alt Speed Reg BW] is set to zero, then this filter setting must be manually adjusted. An error filter value of 0 will disable the filter. This filter is normally set to at least 3 to 5 times the value of P648 [Alt Speed Reg BW]. Units for the error filter are rad/sec (R/S). The rules that are used to set the error filter bandwidth in automatic mode are as follows: 1. If the alternate motor velocity feedback is Open Loop, then the error filter is set to 5 times P648 [Alt Speed Reg BW]. 2. If an alternate motor velocity feedback device has been selected and P704 [InAdp LdObs Mode] = 1 "InertiaAdapt," then the error filter is set to 3 times P648 [Alt Speed Reg BW]. 3. If an alternate motor velocity feedback device has been selected and P704 [InAdp LdObs Mode] 0 "Disabled" or 2 "LoadObserver" then the error filter is using a table look up value determined by the setting of P129 [Alt Vel FdbkFltr].	Units: Default: Min/Max:	R/S 50.00 0.00 / 8000.00	RW	Real
		652	**SReg Trq Preset** Speed Regulator Torque Preset Sets the initial value of P654 [Spd Reg Int Out]. This is the output of the vector speed regulator's integral channel, and will be present in P654 [Spd Reg Int Out] when the regulator is first enabled (for example, upon rise of start or jog). The normal, default setting for this parameter is zero. In some applications, it may be necessary to preset the speed regulator integrator to a non-zero setting. This will result in the regulator's output reaching its final steady state value sooner than it would if the integrator started from zero.	Units: Default: Min/Max:	% 0.00 –/+800.00	RW	Real
		653	**Spd Loop Damping** Speed Loop Damping Sets the damping factor of the vector speed loop's characteristic equation. Damping will affect the integral gain when a non-zero bandwidth has been entered. A damping factor of 1.0 is considered critical damping. Lowering the damping will produce faster load disturbance rejection, but may cause a more oscillatory response. When the speed regulator bandwidth is zero, gains are set manually and damping factor has no effect.	Default: Min/Max:	1.0000 0.5000 / 65.0000	RW	Real

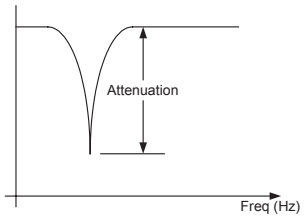
File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
SPEED CONTROL	Speed Regulator	654	**Spd Reg Int Out** Speed Regulator Integrator Output Displays the current value of the vector speed regulator's integral channel.	Units: Default: Min/Max:	% 0.00 –/+800.00	RO	Real
		655	**Spd Reg Pos Lmt** Speed Regulator Positive Limit Adjusts the upper limit of the vector speed regulator's output.	Units: Default: Min/Max:	% 300.00 0.00 / 600.00	RW	Real
		656	**Spd Reg Neg Lmt** Speed Regulator Negative Limit Adjusts the lower limit of the vector speed regulator's output.	Units: Default: Min/Max:	% –300.00 –600.00 / 0.00	RW	Real
		657	**SReg OutFltr Sel** Speed Regulator Output Filter Select Selects the amount of filtering applied to the vector speed regulator's output. When set to any of the custom settings (3, 4, or 5) the filter is configured using the values set in P658 [SReg OutFltrGain] and P659 [SReg Out FltrBW]. Settings 4 and 5 initialize the values for light and heavy respectively.	Default: Options:	0 = "Off" 0 = "Off" 1 = "Light" 2 = "Heavy" 3 = "Custom" 4 = "SetCustLight" 5 = "SetCustHeavy"	RW	32-bit Integer
		658	**SReg OutFltrGain** Speed Regulator Output Filter Gain Sets the gain of the vector speed regulator's output filter when P657 [SReg Out Fltr Sel] is set to one of the "Custom" settings (3, 4, or 5). A gain value of zero results in a filter characteristic that behaves as a first order low pass. A gain value ranging between zero and one results in a lag type filter. A gain value greater than one results in a lead type filter. A gain value of one will disable (bypass) the filter.	Default: Min/Max:	1.000 –/+5.000	RW	Real
		659	**SReg OutFltr BW** Speed Regulator Output Filter Bandwidth Sets the bandwidth of the speed regulator's output filter when P657 [SReg Out Fltr Sel] is set to one of the "Custom" settings (3, 4, or 5). A value of zero will disable (bypass) the filter.	Units: Default: Min/Max:	R/S 35.00 0.00 / 3760.00	RW	Real
		660	**SReg Output** Speed Regulator Output Displays the output of the vector speed regulator. This signal will be routed to the P685 [Selected TorqRef] when P313 [Actv SpTqPs Mode] has selected the output of the speed regulator.	Units: Default: Min/Max:	% 0.00 –/+ 800.00	RO	Real
		663	**VHzSV Spd Reg Kp** Volts per Hertz Sensorless Vector Speed Regulator Proportional Gain Adjusts the proportional gain of the Speed Regulator used in non-vector modes according to P35 [Motor Cntl Mode]. The output of this regulator will adjust P623 [VHzSV SpdTrimReg] when P131 [Active Vel Fdbk] originates from a feedback device.	Default: Min/Max:	20.00 0.00 / 3000.00	RW	Real
		664	**VHzSV Spd Reg Ki** Volts per Hertz Sensorless Vector Speed Regulator Integral Gain Adjusts the integral gain of the Speed Regulator used in non-vector modes according to P35 [Motor Cntl Mode]. The output of this regulator will adjust P623 [VHzSV SpdTrimReg] when P131 [Active Vel Fdbk] originates from a feedback device.	Units: Default: Min/Max:	/Sec 50.00 0.00 / 100000.00	RW	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
SPEED CONTROL	Speed Comp	**665**	**Speed Comp Sel** Speed Compensation Select Configures the Speed Compensation function, which is used in Vector Control modes to create a feed forward compensation that is added into the speed reference. This helps compensate for position tracking errors during acceleration. These tracking errors are caused by the sample and hold process and delays caused by the position to velocity FIR filter. Speed Compensation will help reduce position error in position follower applications. Available settings for this parameter are: "Disabled" (0) – Function is disabled, speed compensation does not affect the speed reference. "Ramped Ref" (1) – Speed compensation function is enabled and uses an internally generated ramped speed reference signal. The rate of change (derivative) of the speed reference becomes the input to the Speed Compensation function. This is the most common setting when speed compensation is in use. "Rate Ref" (2) – Speed compensation function is enabled and uses an externally generated speed rate signal. The rate of change or derivative of the speed reference is supplied by P596 [Speed Rate Ref]. This signal is typically supplied by an external controller when the speed reference ramp is generated external to the drive.	Default: Options:	0 = "Disabled" 0 = "Disabled" 1 = "Ramped Ref" 2 = "Rate Ref"	RW	32-bit Integer
		666	**Speed Comp Gain** Speed Compensation Gain The Speed Compensation Gain adjusts the magnitude of P667 [Speed Comp Out]. This gain can be either manually set or automatically determined as part of automatic gain mode for Vector speed control. Automatic mode can be activated by selecting a motor speed feedback device in P125 [Pri Vel Fdbk Sel] and setting a non-zero speed regulator bandwidth in P636 [Speed Reg BW]. In automatic mode, the gain is calculated internally using a table lookup from the interrupt times and delays of the speed feedback FIR filter. For any other case – non-vector control, open loop speed feedback, or zero bandwidth setting, the speed compensation gain must be manually adjusted.	Default: Min/Max:	–2.50 –/+32767.00	RW	Real
		667	**Speed Comp Out** Speed Compensation Output Displays the output of the Speed Compensation function. This value will be summed with the speed reference, following the application of P555 [Spd Ref Scale].	Units: Default: Min/Max:	Hz RPM 0.00 –/+P27 [Motor NP Hertz] x 8 –/+P28 [Motor NP RPM] x 8	RO	Real

Drive Torque Control File

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
TORQUE CONTROL	Torque Limits	**670**	**Pos Torque Limit** Positive Torque Limit Defines the torque limit for the positive torque reference value. The reference will not be allowed to exceed this value.	Units: Default: Min/Max:	% 200.00 0.00 / 800.00	RW	Real
		671	**Neg Torque Limit** Negative Torque Limit Defines the torque limit for the negative torque reference value. The reference will not be allowed to exceed this value.	Units: Default: Min/Max:	% –200.00 –800.00 / 0.00	RW	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
TORQUE CONTROL	Torque Reference	**675** **680**	**Trq Ref A Sel** **Trq Ref B Sel** Torque Reference A Select Torque Reference B Select Selects the source for a torque reference, used when the drive is configured to command torque according to P309-312 [SpdTrqPsn Mode X]. The values of the torque reference sources are added together to provide a single torque reference.	Default: Min/Max:	676 681 0 / 159999	RW	32-bit Integer
		676 **681**	**Trq Ref A Stpt** **Trq Ref B Stpt** Torque Reference A Setpoint Torque Reference B Setpoint A digital torque value to be used as a possible source for P675 and P680 respectively.	Units: Default: Min/Max:	% 0.00 –/+800.00	RW	Real
		677 **682**	**Trq Ref A AnlgHi** **Trq Ref B AnlgHi** Torque Reference A Analog High Torque Reference B Analog High Used only when an analog input is selected as a torque reference according to P676 or P681. Sets the torque value that corresponds to [Anlg InX Hi] on an I/O module or on the main control (product dependent). This establishes scaling throughout the range.	Units: Default: Min/Max:	% 100.00 –/+800.00	RW	Real
		678 **683**	**Trq Ref A AnlgLo** **Trq Ref B AnlgLo** Torque Reference A Analog Low Torque Reference B Analog Low Used only when an analog input is selected as a torque reference according to P676 or P681. Sets the torque value that corresponds to [Anlg InX Lo] on an I/O module or on the main control (product dependent). This establishes scaling throughout the range.	Units: Default: Min/Max:	% 0.00 –/+800.00	RW	Real
		679 **684**	**Trq Ref A Mult** **Trq Ref B Mult** Torque Reference A Multiplier Torque Reference B Multiplier A multiplier that is applied to the values referenced by P675 and P680 respectively. A value of 1 leaves the reference unaffected. Negative values invert the reference.	Default: Min/Max:	1.000 –/+1000.000	RW	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
TORQUE CONTROL	Torque Reference	685	**Selected Trq Ref** Selected Torque Reference Displays the torque value of the selected torque reference (dynamic selection according to P313 [Actv SpTqPs Mode]). This value will be summed with P686 [Torque Step]. The result is then applied to the input of the notch filter located in the Vector torque reference section.	Units: Default: Min/Max:	% 0.00 –/+800.00	RO	Real
		686	**Torque Step** Torque Step Defines the amount of torque reference step change to simulate a load disturbance, used to test the response. This value is added to the main torque reference P685 [Selected Torq Ref], and then applied to the input of the notch filter located in the Vector control torque reference section.	Units: Default: Min/Max:	% 0.00 –/+800.00	RW	Real
		687	**Notch Fltr Freq** Notch Filter Frequency The center frequency for the Notch filter located in the Vector control torque reference section. To disable, set to zero (0).	Units: Default: Min/Max:	Hz 0.00 0.00 / 500.00	RW	Real
		688	**Notch Fltr Atten** Notch Filter Attenuation Sets the attenuation of the notch filter located in the Vector control torque reference section. Attenuation is the ratio of the notch filter input signal to its output at the P687 [Notch Fltr Freq]. An attenuation of 30 means that the notch output is 1/30th of the input at the specified frequency.  	Default: Min/Max:	50.000 0.000 / 500.000	RW	Real
		689	**Filtered Trq Ref** Filtered Torque Reference Displays the output of the notch filter defined by P687 and P688. If P704 [InAdp LdObs Mode] indicates that either the Inertia Adaption or Load Estimate functions are active, then the filtered torque reference will also be modified by these functions.	Units: Default: Min/Max:	% 0.00 –/+800.00	RO	Real
		690	**Limited Trq Ref** Limited Torque Reference Displays the torque reference value after filtering (P689), power limits, torque limits, and current limits have been applied. Motor power limits are set by P426 [Regen Power Lmt] and P427 [Motor Power Lmt]. Motor torque limits are set by P670 [Pos Torque Limit] and P671 [Neg Torque Limit]. Motor current limit is set by P422 [Current Limit 1] or P423 [Current Limit 2].	Units: Default: Min/Max:	% 0.00 –/+800.00	RO	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
TORQUE CONTROL	Inertia Comp	**695**	755 **Inertia CompMode** Inertia Compensation Mode The inertia compensation function calculates a feed forward torque signal P699 [Inertia Comp Out]. Inertia compensation attempts to predict the motor torque required to accelerate and decelerate an inertial load. The P699 [Inertia Comp Out] signal is summed with P660 [SReg Output] and becomes an input available to the P313 [Actv SpTqPs Mode] selector. The inputs to the inertia comp function are the rate of change of motor speed reference and P76 [Total Inertia]. This parameter enables the inertia comp function and selects possible sources of motor speed reference as follows: "Disabled" (0) – Inertia compensation function is disabled. P699 [Inertia Comp Out] is zero so the motor torque reference is not affected. "Int Ramp Ref" (1) – Inertia compensation is enabled. The function is configured to use the rate of change of P595 [Filtered Spd Ref]. This is the typical setting that should be used for inertia compensation on a stand-alone drive. "Ext Ramp Ref" (2) – Inertia compensation is enabled. The function is configured to use the rate of change of P700 [Ext Ramped Ref]. This setting is available for applications that supply a ramped speed reference external to the drive. "Spd Rate Ref" (3) – Inertia compensation is enabled. The function is configured to use the P596 [Speed Rate Ref]. This parameter should contain a value that represents the rate of change of the motor speed reference. This setting is available for applications that supply a ramped speed reference external to the drive.	Default: Options:	0 = "Disabled" 0 = "Disabled" 1 = "Int Ramp Ref" 2 = "Ext Ramp Ref" 3 = "Spd Rate Ref"	RW	32-bit Integer
		696	755 **Inertia Acc Gain** Inertia Acceleration Gain Sets the acceleration gain for the inertia compensation function. A value of 1 produces 100% compensation.	Default: Min/Max:	1.0000 0.0000 / 2.0000	RW	Real
		697	755 **Inertia Dec Gain** Inertia Deceleration Gain Sets the deceleration gain for the inertia compensation function. A value of 1 produces 100% compensation.	Default: Min/Max:	1.0000 0.0000 / 2.0000	RW	Real
		698	755 **Inert Comp LPFBW** Inertia Compensation Low Pass Filter Bandwidth Sets the bandwidth of a low pass filter for the inertia compensation function. The output of this filter supplies P699 [Inertia Comp Out].	Units: Default: Min/Max:	R/S 35.00 0.00 / 2000.00	RW	Real
		699	755 **Inertia Comp Out** Inertia Compensation Output Displays the output of the inertia compensation function. The P699 [Inertia Comp Out] signal is summed with P660 [Spd Reg Out] and becomes an input available to the P313 [Actv SpTqPs Mode] selector. Inertia compensation provides a torque feed forward signal during changes in motor speed reference.	Units: Default: Min/Max:	% 0.00 –/+800.00	RO	Real
		700	755 **Ext Ramped Ref** External Ramped Reference This parameter is meant for an external motor speed ramp input signal. This signal will be used by the inertia compensation function when P695 [InertiaComp Mode] = 2 "Ext Ramp Ref". This parameter will be entered in units of Hz or RPM, depending on the value of P300 [Speed Units].	Units: Default: Min/Max:	Hz RPM 0.00 –/+P27 [Motor NP Hertz] x 8 –/+P28 [Motor NP RPM] x 8	RW	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
TORQUE CONTROL	Inertia Adaption	**704**	755 **InAdp LdObs Mode** Inertia Adaption Load Observer Mode Used to enable operation of either Inertia Adaption or Load Observer. These System Control modes are only available in Vector Control mode when using a motor speed feedback device. The value of P76 [Total Inertia] must be valid in order for these features to work correctly. The P70 [Autotune] setting 4 "Inertia Tune" can be used to measure the System Inertia. Regardless of the Sys Control mode used, the parameter P707 [Load Estimate] is updated for monitoring purposes. The possible settings for Sys Control Sel are: "Disabled" (0) – Both Inertia Adaption and Load Observer functions are disabled. P708 [InertiaTrqAdd] is zero so the motor torque reference is not affected. P707 [Load Estimate] is still valid, provided that the drive is in Vector Mode, using a motor speed feedback device, and a valid P76 [Total Inertia] is used. "InertiaAdapt" (1) – Inertia Adaption function is enabled. The Inertia Adaption function will provide enhanced stability, higher bandwidths and dynamic stiffness. Inertia Adaption is especially useful in systems with a gear-box that become, in effect, disconnected from the load. Inertia Adaption may also be used for motors with very little inertia that otherwise would lack dynamic stiffness, even at high bandwidths. The output of the Inertia Adaption function P708 [InertiaTrqAdd], will subtract from the motor torque reference. "LoadObserver" (2) – Load Observer function is enabled. The Load Observer function removes or greatly reduces the effects of load disturbances and provides quicker system response. The output of the Load Observer function is similar to P707 [Load Estimate], but has a filter setting determined by P711 [Load Observer BW]. The Load Observer's output signal will add to the motor torque reference.	Default: Options:	0 = "Disabled" 0 = "Disabled" 1 = "InertiaAdapt" 2 = "LoadObserver"	RW	32-bit Integer
		705	755 **Inertia Adapt BW** Inertia Adapt Bandwidth Sets the bandwidth of a low pass filter located in the output of the Inertia Adaption function. This parameter should typically be set to match the bandwidth of the drive's speed regulator. This matching setting is automatically made when the Inertia Adaption function is active and the speed regulator bandwidth (P636 [Speed Reg BW]), is set to a non-zero value. If the speed regulator bandwidth is set to zero, then this filter setting must be manually adjusted.	Units: Default: Min/Max:	R/S 10.00 1.00 / 1000.00	RW	Real
		706	755 **InertiaAdaptGain** Inertia Adaption Gain Sets a multiplier of system inertia used when the Inertia Adaption function is selected P704 [InAdp LdObs Mode] = 1 "InertiaAdapt." This gain has no effect on the parameter P707 [Load Estimate]. Higher gain values may cause high frequency ringing, while smaller values may cause fundamental load instability. This gain should typically range from 0.3 to 1.0 with 0.5 nominal best. The gain setting of 0.5 is automatically made when the speed regulator bandwidth (P636 [Speed Reg BW]), is set to a non-zero value. If the speed regulator bandwidth is set to zero, then this gain setting must be manually adjusted.	Default: Min/Max:	0.500 0.300 / 1.000	RW	Real
		707	755 **Load Estimate** Load Estimate Displays an estimated load torque value for the drive. This value is only available in Vector Control mode when using a motor speed feedback device. The load estimate does not include any torque required to accelerate or decelerate the motor. In order to be accurate, the parameter P76 [Total Inertia] must contain a reasonably accurate value.	Units: Default: Min/Max:	% 0.00 –/+800.00	RO	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
TORQUE CONTROL	Inertia Adaption	**708**	755 **InertiaTrqAdd** Inertia Torque Adaption Displays the output of the Inertia Adaption function. This value will be subtracted from the motor torque reference, with the result displayed as P689 [Filtered Trq Ref]. The inertia adaption function will be active when operating in Vector Control mode with a motor speed feedback device and P704 [InAdp LdObs Mode] = 1 "InertiaAdapt." A value of 100% represents rated motor torque.	Units: Default: Min/Max:	% 0.00 –/+800.00	RO	Real
		709	755 **IA LdObs Delay** Inertia Adaption Load Observer Delay Adjusts a filter setting that is applied to the active motor velocity feedback source. The purpose of this filter is to reduce the level of noise present in the feedback signal. Note that this filter is the same type but separate from the filters used to provide P127 [Pri Vel Feedback] and P130 [Alt Vel Feedback]. The derivative of the Sys Control Delay filtered motor velocity signal will be a Motor Acceleration Feedback signal. The Motor Acceleration Feedback is applied to the Inertia Adaption and Load Observer/ Load Estimate functions. This is moving average type filter that has a delay setting of N, where N is an integer number (0, 1, 2 …). A setting of zero provides no filtering and no delay. Larger values of N result in more filtering and more delay. The best setting for this filter will depend on the level of noise present in the feedback signal and the bandwidth setting of the velocity regulator.	Default: Options:	3 = "50R/S Noise" 0 = "190R/S Noise" 1 = "160R/S Noise" 2 = "100R/S Noise" 3 = "50R/S Noise" 4 = "25R/S Noise" 5 = "12R/S Noise" 6 = "6R/S Noise" 7 = "3R/S Noise"	RW	32-bit Integer
		710	755 **InertAdptFltrBW** Inertia Adaption Filter Bandwidth Sets the bandwidth of a low pass filter located in the output of the vector control speed regulator and used in connection with the Inertia Adaption function. The bandwidth of this filter should typically be set to five times the bandwidth of the speed regulator. This setting is automatically made when the Inertia Adaption function is active and the speed regulator bandwidth (P636 [Speed Reg BW]), is set to a non-zero value. If the speed regulator bandwidth is set to zero, then this filter setting must be manually adjusted.	Units: Default: Min/Max:	R/S 50.00 0.00 / 1000.00	RW	Real
		711	755 **Load Observer BW** Load Observer Bandwidth Sets the bandwidth of a low pass filter located in the output of the Load Observer function. Typical filter settings range from 10 radians/sec to 150 radians/sec with the higher values being more responsive to disturbances but with increased system noise. There is no nominal best setting, but 40 rad/sec is a suggested starting point. This selection may not function well in sloppy geared systems.	Units: Default: Min/Max:	R/S 40.00 1.00 / 1000.00	RW	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
TORQUE CONTROL	Friction Comp	**1560**	755 **FrctnComp Mode** Friction Compensation Mode The friction compensation function calculates a feed forward torque signal P1567 [FrctnComp Out]. Friction compensation attempts to predict the motor torque required to counteract load friction. The [FrctnComp Out] signal is summed with P685 [Selected Trq Ref] and P686 [Torque Step]. This parameter enables the friction comp function and selects possible sources of motor speed reference as follows: "Disabled" (0) – Friction compensation function is disabled. P1567 [FrctnComp Out] is zero so the motor torque reference is not affected. "Int Ramp Ref" (1) – Friction compensation is enabled. The function is configured to use the P595 [Filtered Spd Ref] summed with the position reference speed feed forward. This is the typical setting that should be used for friction compensation on a stand-alone drive when operating in position or speed mode. "Ext Ramp Ref" (2) – Friction compensation is enabled. The function is configured to use P700 [Ext Ramped Ref]. This setting is available for applications that supply a ramped speed reference external to the drive. "Speed Fdbk" (3) – Friction compensation is enabled. The function is configured to use P640 [Filtered SpdFdbk]. A feedback device must be used – the speed feedback source cannot be open loop feedback. This setting should be used when operating in torque mode (min/max/torque).	Default: Options:	0 = "Disabled" 0 = "Disabled" 1 = "Int Ramp Ref" 2 = "Ext Ramp Ref" 3 = "Speed Fdbk"	RW	32-bit Integer
		1561	755 **FrctnComp Trig** Friction Compensation Trigger Sets the starting speed or trigger speed at which the friction compensation will be applied when leaving the region near zero speed. The initial value for P1567 [FrctnComp Out] at this speed will be P1564 [FrctnComp Stick]. Friction compensation will remain active until the speed reference drops below the trigger speed minus P1562 [FrctnComp Hyst] speed. At these low speeds, 1567 [FrctnComp Out] returns to zero.	Units: Default: Min/Max:	Hz / RPM 0.15 0.00 / 7.94	RW	Real
		1562	755 **FrctnComp Hyst** Friction Compensation Hysteresis This parameter together with 1561 [FrctnComp Trig] establishes a speed band around zero speed. Friction compensation will be inactive (zero output) when the speed reference is inside this band and active when outside. The points at which friction comp becomes active and inactive differ by the amount of speed set in this parameter.	Units: Default: Min/Max:	Hz / RPM 0.06 0.00 / 7.94	RW	Real
		1563	755 **FrctnComp Time** Friction Compensation Time Sets the time interval that the stiction torque will be applied. When initially leaving the zero speed region, the value in P1564 [FrctnComp Stick] will be used for the non-viscous friction term. After the time period set in this parameter, the non-viscous friction will ramp down to the value set in P1565 [FrctnComp Slip]. For the remainder of the time that [FrctnComp Out] remains non-zero, the non-viscous friction will remain constant at the value of [FrctnComp Slip].	Units: Default: Min/Max:	mSec 6 0 / 18	RW	Real
		1564	755 **FrctnComp Stick** Friction Compensation Stiction Sets the level for the stiction or static friction torque. This is the torque level required to break away from zero speed. When initially leaving the zero speed region, this level will be used for the non-viscous friction term. After the time period set in P1563 [FrctnComp Time], the non-viscous friction will ramp down to the value set in P1565 [FrctnComp Slip].	Units: Default: Min/Max:	% 15.00 0.00 / 800.00	RW	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
TORQUE CONTROL	Friction Comp	**1565**	755 **FrctnComp Slip** Friction Compensation Slip Sets the torque level that will be maintained at very low speed once "break away" has been achieved. This value should always be set less than the level in P1564 [FrctnComp Stick]. After the time period set in P1563 [FrctnComp Time], the non-viscous friction will ramp down to this value.	Units: Default: Min/Max:	% 10.00 0.00 / 800.00	RW	Real
		1566	755 **FrctnComp Rated** Friction Compensation Rated Sets the torque level that will be output at rated motor speed. The friction compensation routine assumes a linear viscous component that varies in direct proportion to speed reference. The 1567 [FrctnComp Out] value will increase with speed and will equal the level set in this parameter at rated motor speed.	Units: Default: Min/Max:	% 20.00 0.00 / 800.00	RW	Real
		1567	755 **FrctnComp Out** Friction Compensation Out Displays the torque reference output of the Friction Compensation function. This value is summed with P660 [SReg Output] and P699 [Inertia Comp Out] in the torque control section of the drive.	Units: Default: Min/Max:	% 0.00 –/+800.00	RO	Real

Drive Position Control File

File	Group	No.	Display Name Full Name Description	Values	Read-Write	Data Type
POSITION CONTROL	Position Cfg/Sts	**720**	**PTP PsnRefStatus** Point-To-Point Position Reference Status Displays the current operating status of the Point-To-Point Position Planner in the Position Referencing.			

Options	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	SpdFFRef En	PTP Int Hold	Ref Complete	ZeroFFSpdRef
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = False
1 = True

Bit 0 "ZeroFFSpdRef" – Indicates the speed feed forward reference P783 [PTP Speed FwdRef] is zero.

Bit 1 "Ref Complete" – Indicates the position point-to-point feedback P777 [PTP Feedback] reaches the position point-to-point reference P784 [PTP Command], and the speed forward reference P783 [PTP Speed FwdRef] reaches zero.

Bit 2 "P2P Int Hold" – Indicates the position point-to-point planner integrator is holding. Read back of the point-to-point integral hold bit P770 [PTP Control] Bit 4 "Intgrtr Hold".

Bit 3 "SpdFFRef En" – Indicates the speed feed forward reference P783 [PTP Speed FwdRef] is active.

File	Group	No.	Display Name Full Name Description	Values	Read-Write	Data Type
POSITION CONTROL	Position Cfg/Sts	721	**Position Control** Position Control Sets bits to enable various position control functions.			

Options	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Add Spd Ref	PsnWatch2Dir (1)	PsnWtch2Arm (1)	PsnWatch1Dir (1)	PsnWtch1Arm (1)	Intgrtr Hold	Zero Psn	OffsetVel En	Offset ReRef	Intgrtr En	Reserved
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	

(1) 755 drives only.

0 = False
1 = True

Bit 1 "Intgrtr En" – Enables integrator operation. Resetting it resets the integrator.

Bit 2 "Offset ReRef" – Permits changing the value of position offsets without changing actual position.

Bit 3 "OffsetVel En" – Uses the offset velocity P824 [Psn Offset Vel] for the position offset integrator. Sets the offset integrator bit, P724 [Psn Reg Status] Bit 0 "OffsetIntgtr" when this bit is on.

Bit 4 "Zero Psn" – Puts P836 [Psn Actual] in absolute mode with zero position offset. P836 [Psn Actual] sets value of P847 [Psn Fdbk] - the position P725 [Zero Position].

Bit 5 "Intgrtr Hold" – Holds the position integrator in present state.

Bit 6 "PsnWtch1Arm" – Enables the position watch 1. Resetting this bit clears the position watch 1 detection P724 [Psn Reg Status] Bit 9 "PsnW1Detect".

Bit 7 "PsnWatch1Dir" – Causes the position watch 1 output to be set when P746 [PsnWatch 1 DtctIn] is greater than a set-point selected by the position watch 1 selection P745 [PsnWatch1 Select]. Resetting this bit causes the position watch 1 output to be set when P746 [PsnWatch 1 DtctIn] is less than a set-point selected by the position watch 1 selection P745 [PsnWatch1 Select].

Bit 8 "PsnWtch2Arm" – Enables the position watch 2. Resetting this bit clears the position watch 2 detection P724 [Psn Reg Status] Bit 10 "PsnW2Detect".

Bit 9 "PsnWatch2Dir" – Causes the position watch 2 output to be set when P749 [PsnWatch2 DtctIn] is greater than a set-point selected by the position watch 2 selection P748 [PsnWatch2 DtctIn]. Resetting this bit causes the position watch 2 output to be set when P749 [PsnWatch2 DtctIn] is less than a set-point selected by the position watch 2 selection P748 [PsnWatch2 DtctIn].

Bit 10 "Add Spd Ref" – Adds the speed reference to the output of the position control, when in position control mode.

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
		722	**Psn Selected Ref** Position Selected Reference Indicates output of the position referencing. When the Spd/Torq/Pos mode P313 [Actv SpTqPs Mode] is the position direct mode (Option 10), the value of the position direct reference P767 [Psn Direct Ref] appears on this parameter. When the Spd/Torq/Pos mode P313 [Actv SpTqPs Mode] is the position point-to-point mode (Option 7) or the speed/position profiler mode (Option 6), the position point-to-point reference P776 [PTP Reference] appears on this parameter.	Default: Min/Max:	0 –2147483648 / 2147483647	RO	32-bit Integer
		723	**Psn Command** Position Command Indicates final accumulated command to the position regulator. When the position regulator is not active, this parameter is initialized to P836 [Psn Actual].	Default: Min/Max:	0 –2147483648 / 2147483647	RO	32-bit Integer

File	Group	No.	Display Name Full Name Description	Values	Read-Write	Data Type
POSITION CONTROL	Position Cfg/Sts	724	**Psn Reg Status** Position Regulator Status Indicates status of position control logic.			

Options	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	InPsn Detect	PsnW2Detect (1)	PsnW1Detect (1)	Intgrtr Hold	Psn Reg Actv	Spd Lmt Hi	Spd Lmt Lo	Integ Lmt Hi	Integ Lmt Lo	Psn Intgrtr	Offset ReRef	OffsetIntgtr
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

(1) 755 drives only.

0 = False
1 = True

Bit 0 "OffsetIntgtr" – Indicates the position offset Integrator is active with the position offset integrator bit P721 [Position Control] Bit 3 "OffsetVel En" is on.
Bit 1 "Offset ReRef" – Indicates the position offset re-referencing is active with the position offset re-referencing bit P721 [Position Control] Bit 2 "Offset ReRef" is on.
Bit 2 "Psn Intgrtr" – Indicates the position integrator is active with the position integrator bit P721 [Position Control] Bit 1 "Intgrtr En" is on.
Bit 3 "Integ Lmt Lo" – Indicates the position integrator is at the low limit.
Bit 4 "Integ Lmt Hi" – Indicates the position integrator is at the high limit.
Bit 5 "Spd Lmt Lo" – Indicates the position regulator output (speed) is at the low limit.
Bit 6 "Spd Lmt Hi" – Indicates the position regulator output (speed) is at the high limit.
Bit 7 "Psn Reg Actv" – Indicates the position regulator is active
Bit 8 "Intgrtr Hold" – Indicates the position Integrator is held in present state
Bit 9 "PsnW1Detect" – Indicates the position watch 1 has detected motor position equal to its setpoint, from the proper direction.
Bit 10 "PsnW2Detect" – Indicates the position watch 2 has detected motor position equal to its setpoint, from the proper direction.
Bit 11 "InPsn Detect" – Indicates P835 [Psn Error] is within the position band specified by the in-position band P726 [In Pos Psn Band]

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
POSITION CONTROL	Position Cfg/Sts	725	**Zero Position** Zero Position Sets the absolute user zero position. When the zero position bit P721 [Position Control] Bit 4 "Zero Psn" is set, P836 [Psn Actual] accumulates the value of P847 [Psn Fdbk] - the P725 [Zero Position], and P836 [Psn Actual] becomes zero when P847 [Psn Fdbk] is at the zero position. The homing function also sets the value after homing process is completed.	Default: Min/Max:	0 –2147483648 / 2147483647	RW	32-bit Integer
POSITION CONTROL	Position Cfg/Sts	726	**In Pos Psn Band** In Positive Position Bandwidth Sets the overall bandwidth of the in position detector. The detector sets the in-position detect bit P724 [Psn Reg Status] Bit 11 "InPsn Detect" when P835 [Psn Error] is within this position band for a sufficient time specified by the in-position dwell time P727 [In Pos Psn Dwell]. A modest hysteresis count is added to the position bandwidth after the position error is within specified limits.	Default: Min/Max:	200 0 / 2147483647	RW	32-bit Integer
POSITION CONTROL	Position Cfg/Sts	727	**In Pos Psn Dwell** In Positive Position Dwell Sets dwell time for the in position detector. Position error must be within the value specified by the in-position band P726 [In Pos Psn Band] for this amount of time before the in-position detector sets the in-position detect bit P724 [Psn Reg Status] Bit 11 "InPsn Detect". A momentary out-of-position indication will reset the internal timer and clear the in-position detect bit P724 [Psn Reg Status] Bit 11 "InPsn Detect".	Default: Min/Max:	0.0040 0.0001 / 10.0000	RW	Real

File	Group	No.	Display Name Full Name Description	Values	Read-Write	Data Type
POSITION CONTROL	Position Homing	730	**Homing Status** Homing Status Indicates status of position control logic. Options: Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, At Home, Homing, Home Enabled, Home Request Default: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 Bit: 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0 0 = Disabled 1 = Enabled Bit 0 "Home Request" – Indicates the homing function is requested. The homing function is requested by the homing configuration bits P731 [Homing Control]. Bit 1 "Home Enabled" – Indicates the homing function is enabled. This bit is set when the homing function is requested and the drive starts. Bit 2 "Homing" – Indicates the drive is heading to home position. Bit 3 "At Home" – Indicates the drive is at home position.			
		731	**Homing Control** Homing Control Sets bits to configure the homing function. Options: Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Hold At Home, Home DI Inv, Homing Alarm, Psn Redefine, Return Home, Home Marker, Home DI, Find Home Default: 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 Bit: 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0 0 = Disabled 1 = Enabled Bit 0 "Find Home" – Puts the drive in the homing mode. Setting this bit requests the homing function and sets homing request bit P730 [Homing Status] Bit 0 "Home Request". This bit needs a toggle to reset the the homing function. Bit 1 "Home DI" – Configures the homing function to use a switch (digital input). When this bit is on and Bit 2 "Home Marker" is off, the homing function is configured as home switch mode. When this bit is on and Bit 2 "Home Marker" is on, the homing function is configured as home marker-switch mode. Bit 2 "Home Marker" – Configures the homing function to use a marker input. When this bit is on and Bit 1 "Home DI" is off, the homing function is configured as home marker mode. When this bit is on and Bit 1 "Home DI" is on, the homing function is configured as home marker-switch mode. Bit 3 "Return Home" – Configures the homing function as return home mode. The drive returns to the actual home position P737 [Actual Home Psn]. Bit 4 "Psn Redefine" – Sets the position feedback P847 [Psn Fdbk] to the actual home position P737 [Actual Home Psn]. Bit 5 "Homing Alarm" – Enables the home running alarm when the homing function is active. Bit 6 "Home DI Inv" – Changes polarity of the switch input (digital input). Bit 7 "Hold At Home" – Configures the drive to return to the home position after completing the homing function. A start command is required for the drive to run again.			
		732	**DI Find Home** Digital Input Find Home Sets a digital input port for the "Find Home" function.	Default: 0.00 Min/Max: 0.00 / 159999.15	RW	32-bit Integer
		733	**DI Redefine Psn** Digital Input Redefine Position Sets a digital input port for the redefine position function. The digital input assigned by this parameter is equivalent to P731 [Homing Control] Bit 4 "Psn Redefine".	Units: Min/Max: 0.00 0.00 / 159999.15	RW	32-bit Integer

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
POSITION CONTROL	Position Homing	734	**DI OL Home Limit** Digital Input Open Loop Home Limit Sets a digital input port for the limit switch of open loop homing function. Polarity of digital input (rising or falling edge) is specified by P731 [Homing Control] Bit 6 "Home DI Inv."	Units: Min/Max:	0.00 0.00 / 159999.15	RW	32-bit Integer
		735	**Find Home Speed** Find Home Speed Sets the speed and direction that are active when P731 [Homing Control] Bit 0 "Find Home" is active. The sign of the value defines direction ("+" = Forward, "–" = Reverse).	Units: Default: Min/Max:	Hz RPM P27 [Motor NP Hz] x 0.1 P28 [Motor NP RPM] x 0.1 P27 [Motor NP Hz] x 0.5 P28 [Motor NP RPM] x 0.5	RW	Real
		736	**Find Home Ramp** Find Home Ramp Sets the rate of acceleration and deceleration of the Find Home moves.	Units: Default: Min/Max:	Secs 10.00 0.01 / 6554.00	RW	Real
		737	**Actual Home Psn** Actual Home Position Indicates actual home position after the homing function is complete. The value in this parameter displays the raw position feedback data at home position.	Default: Min/Max:	0 –2147483648 / 2147483647	RW	32-bit Integer
		738	**User Home Psn** User Home Position Sets user-defined home position. After the homing function is completed, the following parameters are updated with this parameter value; P723 [Psn Command], P815 [Psn Ref EGR Out], P836 [Psn Actual], P837 [Psn Load Actual].	Default: Min/Max:	0 –2147483648 / 2147483647	RW	32-bit Integer

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
POSITION CONTROL	Position Watch	**745** **748**	755 **PsnWatch1 Select** 755 **PsnWatch2 Select** Position Watch 1 Select Position Watch 2 Select Selects a position feedback source that is compared to the position watch detect-input P746 [PsnWatch1 DtctIn], P749 [PsnWatch2 DtctIn].	Default: Min/Max:	847 1 / 159999	RW	32-bit Integer
		746 **749**	755 **PsnWatch1 DtctIn** 755 **PsnWatch2 DtctIn** Position Watch 1 Detect Input Position Watch 2 Detect Input Provides position feedback source for the position watch function. The position watch function is enabled and configured by the position control configuration P721 [Position Control]. The position watch function compares this value to the position watch set point P747 [PsnWatch1 Stpt], P750 [PsnWatch2 Stpt] when this parameter P746, P749 is selected by the position watch select P745 [PsnWatch1 Select], P748 [PsnWatch2 Select]. The position detect bit P724 [Psn Reg Status] Bit 9 “PsnW1Detect”, Bit 10 “PsnW2Detect” is set when the appropriate condition is satisfied.	Default: Min/Max:	0 –2147483648 / 2147483647	RW	32-bit Integer
		747 **750**	755 **PsnWatch1 Stpt** 755 **PsnWatch2 Stpt** Position Watch 1 Setpoint Position Watch 2 Setpoint Provides set point for the position watch function. The position watch function is enabled and configured by P721 [Position Control]. The position watch function compares this value to the position feedback source selected by the position watch select P745 [PsnWatch1 Select], P748 [PsnWatch2 Select]. The position detect bit P724 [Psn Reg Status] Bit 9 “PsnW1Detect”, Bit 10 “PsnW2Detect” is set when the appropriate condition is satisfied.	Default: Min/Max:	0 –2147483648 / 2147483647	RW	32-bit Integer

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
POSITION CONTROL	Interpolator	**755**	**Interp Control** Interpolator Control Reserved for future use.	Default: Options:	0 1 / 2147483647	RW	32-bit Integer
		756	**Interp Psn Input** Interpolator Position Input Input value to the Command Position fine interpolator.	Default: Min/Max:	0 –2147483648 / 2147483647	RW	32-bit Integer
		757	**Interp Vel Input** Interpolator Velocity Input Input value to the Command Velocity fine interpolator.	Units: Default: Min/Max:	Hz / RPM 0.00 –/+1000000.00	RW	32-bit Integer
		758	**Interp Trq Input** Interpolator Velocity Input Input value to the Command Torque fine interpolator.	Default: Min/Max:	0.00 –/+1000000.00	RW	32-bit Integer
		759	**Interp Psn Out** Interpolator Position Output Output value from the Command Position fine interpolator.	Default: Min/Max:	0 –2147483648 / 2147483647	RW	32-bit Integer
		760	**Interp Vel Out** Interpolator Velocity Output Output value from the Command Velocity fine interpolator. When no Command Velocity signal is present when performing position control, this signal can be derived by scaling the Differential Position output value of the Command Position fine interpolator.	Units: Default: Min/Max:	Hz / RPM 0.00 –/+1000000.00	RW	32-bit Integer
		761	**Interp Trq Out** Interpolator Velocity Output Command torque output from fine interpolator (if active) into torque input summing junction when configured for toque control.	Default: Min/Max:	0.00 –/+1000000.00	RW	32-bit Integer

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
POSITION CONTROL	Direct	**765**	**Psn Ref Select** Position Reference Select Selects a source data for the direct position reference.	Default: Options:	766 1 / 159999	RW	32-bit Integer
		766	**Psn Direct Stpt** Position Direct Setpoint Provides set point for the direct position reference. This parameter provides position reference to the position regulator when the Spd/Torq/Pos mode P313 [Actv SpTqPs Mode] is the position direct mode (Option 10) and the position reference select P765 [Psn Ref Select] is the set point.	Default: Min/Max:	0 –2147483648 / 2147483647	RW	32-bit Integer
		767	**Psn Direct Ref** Position Direct Reference Indicates position direct reference selected by the position reference select P765 [Psn Ref Select].	Default: Min/Max:	0 –2147483648 / 2147483647	RO	32-bit Integer

File	Group	No.	Display Name Full Name Description	Values	Read-Write	Data Type
POSITION CONTROL	Point to Point	**770**	**PTP Control** Point-To-Point Control Sets bits to configure the point-to-point position control.			

Options	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Ref Sync	Ref Pause	Intgrtr Hold	Preset Psn	Reverse Move	Move	Vel Override
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = False
1 = True

Bit 0 "Vel Override" – Applies the velocity overload P788 [PTP Vel Override] to the forward velocity limit P785 [PTP Fwd Vel Lmt] and the reverse velocity limit P786 [PTP Rev Vel Lmt] as a gain. When the velocity overload P788 [PTP Vel Override] is 1.1 and the forward velocity limit P785 [PTP Fwd Vel Lmt] is 30 Hz, the bit sets the maximum forward velocity to 33 Hz.

Bit 1 "Move" – Sets scaled point-to-point position reference to the point-to-point position command P784 [PTP Command]. When the point-to-point mode selection P771 [PTP Mode] is absolute mode (Option 0), the absolute position is set to the point-to-point position command P784 when the bit rises. When the point-to-point mode selection P771 [PTP Mode] is index mode (Option 1), the index position is set to the point-to-point position command P784 when the bit rises.

Bit 2 "Reverse Move" – Changes direction of the index position when the point-to-point mode selection P771 [PTP Mode] is index mode (Option 1).

Bit 3 "Preset Psn" – Sets index preset P779 [PTP Index Preset] to the point-to-point position command P784 [PTP Command] when the point-to-point mode selection P771 [PTP Mode] is index mode (Option 1).

Bit 4 "Intgrtr Hold" – Holds integrator in the velocity control.

Bit 5 "Ref Pause" – Pauses functioning of the point-to-point control. The point-to-point speed forward reference becomes zero, and the position selected reference P722 [Psn Selected Ref] keeps current position.

Bit 6 "Ref Sync" – Sets initial value to the point-to-point feedback P777 [PTP Feedback].

		771	**PTP Mode** Point-To-Point Mode Selects point-to-point position mode. The point-to-point position control is configured with the following selections. "Absolute" (0) – Absolute position mode "Index" (1) – Index position mode "Immediate" (2) – Absolute immediate position mode	Default: Options: 	0 = "Absolute" 0 = "Absolute" 1 = "Index" 2 = "Immediate"	RW	32-bit Integer
		772	**DI Indx Step** Digital Input Index Step Sets a digital input port for the index position move. The digital input assigned by this parameter is equivalent to the point-to-point move bit P770 [PTP Control] Bit 1 "Move" when the point-to-point mode P771 [PTP Mode] is selected to the index position mode (Option 1).	Default: Min/Max:	0.00 0.00 / 159999.15	RW	32-bit Integer
		773	**DI Indx StepRev** Digital Input Index Step Reverse Sets a digital input port for the index position reverse move. The digital input assigned by this parameter is equivalent to the point-to-point reverse move bit P770 [PTP Control] Bit 2 "Reverse Move" when the point-to-point mode P771 [PTP Mode] is selected to the index position mode (Option 1).	Default: Min/Max:	0.00 0.00 / 159999.15	RW	32-bit Integer
		774	**DI Indx StepPrst** Digital Input Index Step Preset Sets a digital input port for the index preset position. The digital input assigned by this parameter is equivalent to the point-to-point preset position bit P770 [PTP Control] Bit 3 "Preset Psn" when the point-to-point mode P771 [PTP Mode] is selected to the index position mode (Option 1).	Default: Min/Max:	0.00 0.00 / 159999.15	RW	32-bit Integer

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
POSITION CONTROL	Point to Point	**775**	**PTP Ref Sel** Point-To-Point Reference Select Selects a point-to-point reference source that applies to the point-to-point position control.	Default: Min/Max:	780 1 / 159999	RW	32-bit Integer
		776	**PTP Reference** Point-To-Point Reference Indicates output of the point-to-point position control as a reference of the position control. When the speed/torque/position mode P313 [Actv SpTqPs Mode] is selected to the point-to-point mode (Option 7) or the profiler mode (Option 6), this parameter value appears on the position selected reference P722 [Psn Selected Ref].	Default: Min/Max:	0 –2147483648 / 2147483647	RO	32-bit Integer
		777	**PTP Feedback** Point-To-Point Feedback Indicates position feedback in the point-to-point position control.	Default: Min/Max:	0 –2147483648 / 2147483647	RO	32-bit Integer
		778	**PTP Ref Scale** Point-To-Point Reference Scale Provides count per scale value for the point-to-point position reference. The value is a multiplier for the point-to-point reference source selected by the reference selection P775 [PTP Ref Sel].	Default: Min/Max:	1.00 –/+220000000.00	RW	Real
		779	**PTP Index Preset** Point-To-Point Index Preset Provides pre-set index value. The value sets to the point-to-point position command P784 [PTP Command] when the point-to-point mode is index mode P771 [PTP Mode] and the preset position bit P770 [PTP Control] Bit 3 “Preset Psn” is on.	Default: Min/Max:	0 –2147483648 / 2147483647	RW	32-bit Integer
		780	**PTP Setpoint** Point-To-Point Setpoint Provides set point for the point-to-point position control. The value applies to the point-to-point control when the point-to-point reference selection P775 [PTP Ref Sel] is P780.	Default: Min/Max:	0 –2147483648 / 2147483647	RW	32-bit Integer
		781	**PTP Accel Time** Point-To-Point Acceleration Time Provides the ramp time for acceleration (time to go from zero to speed limit).	Units: Default: Min/Max:	Secs 10.00 0.00 / 3600.00	RW	Real
		782	**PTP Decel Time** Point-To-Point Deceleration Time Provides the ramp time for deceleration (time to go from speed limit to zero).	Units: Default: Min/Max:	Secs 10.00 0.00 / 3600.00	RW	Real
		783	**PTP Speed FwdRef** Point-To-Point Speed Forward Reference Indicates speed reference output from the point-to-point position control. Typically this parameter is used by the drive speed loop.	Units: Default: Min/Max:	Hz RPM 0.00 –/+P27 [Motor NP Hertz] x 8 –/+P28 [Motor NP RPM] x 8	RO	Real
		784	**PTP Command** Point-To-Point Command Indicates position command for the point-to-point position control. The source of the position command is selected by the speed/torque/position mode P313 [Actv SpTqPs Mode].	Default: Min/Max:	0 –2147483648 / 2147483647	RO	32-bit Integer
		785	**PTP Fwd Vel Lmt** Point-To-Point Forward Velocity Limit Provides the maximum forward speed reference limit from the PTP regulator.	Units: Default: Min/Max:	Hz RPM P27 [Motor NP Hertz] x 0.5 P28 [Motor NP RPM] x 0.5 0.00/P27 [Motor NP Hertz] 0.00/P28 [Motor NP RPM]	RW	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
POSITION CONTROL	Point to Point	**786**	**PTP Rev Vel Lmt** Point-To-Point Reverse Velocity Limit Provides the maximum reverse speed reference limit from the PTP regulator.	Units: Default: Min/Max:	Hz RPM P27 [Motor NP Hertz] x 0.5 P28 [Motor NP RPM] x 0.5 0.00/P27 [Motor NP Hertz] 0.00/P28 [Motor NP RPM]	RW	Real
		787	**PTP S Curve** Point-To-Point S Curve Provides the amount of time that is applied to the S Curve from the PTP regulator.	Units: Default: Min/Max:	Secs 0.500 0.000 / 4.000	RW	Real
		788	**PTP Vel Override** Point-To-Point Velocity Override Provides multiplier to both forward P785 [PTP Fwd Vel Lmt] and reverse P786 [PTP Rev Vel Lmt] speed limits. This parameter applies to the speed limits when the override bit P770 [PTP Control] Bit 0 "Vel Override" is on.	Default: Min/Max:	1.00 0.20 / 1.50	RW	Real
		789	**PTP EGR Mult** Point-To-Point Electronic Gear Ratio Multiply EGR multiplier (numerator) for position index output. The output applies to the point-to-point command P784 [PTP Command].	Default: Min/Max:	1 –/+2000000	RW	32-bit Integer
		790	**PTP EGR Div** Point-To-Point Electronic Gear Ratio Divide EGR divider (denominator) for position index output. The output applies to the point-to-point command P784 [PTP Command].	Default: Min/Max:	1 1 / 2000000	RW	32-bit Integer

File	Group	No.	Display Name Full Name Description	Values	Read-Write	Data Type
POSITION CONTROL	Phase Lock Loop	**795**	755 **PLL Control** Phase Locked Loop Control Sets bits to configure the phase locked loop control.			
		796	755 **PLL Ext Spd Sel** Phase Locked Loop External Speed Select Selects an external speed reference source.	Default: Options: 797 1 / 159999	RW	32-bit Integer

Options

	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Prof Enable	PTP Enable	PCAM Enable	Accel Comp	Ext Vel FF	Velocity FF	PLL Enable
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = False
1 = True

Bit 0 "PLL Enable" – enables the phase locked loop control.
Bit 1 "Velocity FF" – enables the velocity feed forward path.
Bit 2 "Ext Vel FF" – enables the external velocity feed forward through the PLL external speed reference selected by the PLL external speed selection P796 [PLL Ext Spd Sel].
Bit 3 "Accel Comp" – enables providing an element of acceleration compensation to the feed forward branch. This is not recommended for use with external inputs because of increased noise.
Bit 4 "PCAM Enable" – enables PCAM function with the PLL function.
Bit 5 "PTP Enable" – enables point-to-point function with the PLL function.
Bit 6 "Prof Enable" – enables profiler function with the PLL function.
Only bits 4, 5, and 6 allow associating with the PLL function.

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
POSITION CONTROL	Phase Lock Loop	**797**	755 **PLL Ext Spd Stpt** Phase Locked Loop External Speed Setpoint Provides external speed reference. This parameter is a velocity feed forward input that is selected by the external speed select P796 [PLL Ext Spd Sel].	Default: Min/Max:	0.00 –/+220000000.00	RW	Real
		798	755 **PLL Ext SpdScale** Phase Locked Loop External Speed Scale Sets scale factor to the external speed reference selected by the external speed select P796 [PLL Ext Spd Sel]. This parameter is used to properly scale the velocity feed forward. Adjust for zero average at the filtered position output P806 [PLL Psn Out Fltr] while running at moderate speed.	Default: Min/Max:	1.00 –/+220000000.00	RW	Real
		799	755 **PLL Psn Ref Sel** Phase Locked Loop Position Reference Select Selects a position reference source.	Default: Min/Max:	800 1 / 159999	RW	32-bit Integer
		800	755 **PLL Psn Stpt** Phase Locked Loop Position Setpoint Provides position reference when the position reference select P799 [PLL Psn Ref Sel] selects this parameter.	Default: Min/Max:	0 –2147483648 / 2147483647	RW	32-bit Integer
		801	755 **PLL BW** Phase Locked Loop Bandwidth Sets internal bandwidth of the PLL function response. The setting for very noisy mechanical systems could range from 1 to 10 (r/s) while well-behaved high line count input devices could range upwards of 100 (r/s). Higher bandwidths will quickly resolve tracking errors while the lower bandwidths will take longer to settle into a steady state. Some adjustment will be necessary to effect the best compromise between noise and tracking response.	Units: Default: Min/Max:	R/S 20.00 0.00 / 8000.00	RW	Real
		802	755 **PLL LPFilter BW** Phase Locked Loop Low Pass Filter Bandwidth Sets low pass filter bandwidth. The filter has two functions: • Basic noise reduction of input velocity. • Timed delay of input when feed forward is provided to an external master reference other than an input encoder. The filter low pass bandwidth should be set for best tracking which occurs when the filter output coincides with the loop filter output of PLL. Usually that means setting its bandwidth to the bandwidth of the master reference drive.	Units: Default: Min/Max:	R/S 50.00 0.00 / 8000.00	RW	Real
		803	755 **PLL Virt Enc RPM** Phase Locked Loop Virtual Encoder Revolutions Per Minute Sets RPM of the virtual output device. The value determines the 1 P.U. velocity for the speed out P807 [PLL Speed Out] and does not affect performance.	Units: Default: Min/Max:	RPM 1750.00 1.00 / 40000.00	RW	Real
		804	755 **PLL EPR Input** Phase Locked Loop Edges Per Revolution Input Sets edges per revolution of the physical input device. Using the highest line count device possible smooths PLL operation.	Default: Min/Max:	1048576 1 / 67108864	RW	32-bit Integer
		805	755 **PLL Rvls Input** Phase Locked Loop Revolutions Input Sets revolution of the input encoder. This parameter must be coordinated with the revolution of the output encoder P812 [PLL Rvls Output] to resolve the gear-ratio between input revolutions and output (virtual) revolutions. The ratio of input to output revolutions can always be resolved into integer values and should be reduced to their lowest common factor.	Default: Min/Max:	1 1 / 1000000	RW	32-bit Integer

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
POSITION CONTROL	Phase Lock Loop	806	755 **PLL Psn Out Fltr** Phase Locked Loop Position Output Filter Indicates internal low pass filter output. This parameter is normally used to properly scale an external velocity reference. See description of the external speed scale P798 [PLL Ext SpdScale].	Default: Min/Max:	0.00 –/+220000000.00	RO	Real
		807	755 **PLL Speed Out** Phase Locked Loop Speed Output Indicates velocity output. This parameter is used as a velocity feed forward. It is precisely in phase with the physical input device. The virtual encoder RPM P803 [PLL Virt Enc RPM] determines the RPM at 1 P.U. of this parameter.	Default: Min/Max:	0.00 –/+220000000.00	RO	Real
		808	755 **PLL Speed OutAdv** Phase Locked Loop Speed Output Advanced Indicates velocity advanced output. This parameter is one velocity reference sample in advance of the speed output P807 [PLL Speed Out].	Default: Min/Max:	0.00 –/+220000000.00	RO	Real
		809	755 **PLL Enc Out** Phase Locked Loop Encoder Output Indicates position output. This parameter is precisely in phase with the input physical device.	Default: Min/Max:	0 –2147483648 / 2147483647	RO	32-bit Integer
		810	755 **PLL Enc Out Adv** Phase Locked Loop Encoder Output Advanced Indicates position advanced output. This parameter is one position sample in advance of the position output P809 [PLL Enc Out].	Default: Min/Max:	0 –2147483648 / 2147483647	RO	32-bit Integer
		811	755 **PLL EPR Output** Phase Locked Loop Edges Per Revolution Output Sets edges per revolution of the physical output device.	Default: Min/Max:	1048576 1 / 67108864	RW	32-bit Integer
		812	755 **PLL Rvls Output** Phase Locked Loop Revolutions Output Sets revolution of the output encoder. This parameter must be coordinated with the revolution of the input encoder P805 [PLL Rvls Input] to resolve the gear-ratio between input revolutions and output (virtual) revolutions. The ratio of input to output revolutions can always be resolved into integer values and should be reduced to their lowest common factor.	Default: Min/Max:	1 1 / 2000000	RW	32-bit Integer

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
POSITION CONTROL	Electronic Gear	815	**Psn Ref EGR Out** Position Reference Electronic Gear Ratio Output Indicates accumulated output of the position reference electronic gear ratio (EGR) function. When the position regulator is not enabled, this parameter is initialized to P836 [Psn Actual].	Default: Min/Max:	0 –2147483648 / 2147483647	RO	32-bit Integer
		816	**Psn EGR Mult** Position Electronic Gear Ratio Multiplier Sets integer value in the numerator of the EGR function that is precision multiplied by the position reference. A negative value will effect a change in polarity.	Default: Min/Max:	1 –/+2000000	RW	32-bit Integer
		817	**Psn EGR Div** Position Electronic Gear Ratio Division Sets integer value in the denominator of the EGR function that divides into the product of the numerator and the position reference. Remainders are accumulated and not lost.	Default: Min/Max:	1 1 / 2000000	RW	32-bit Integer

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
POSITION CONTROL	Position Offset	**820**	**Psn Offset 1 Sel** Position Offset 1 Select Selects a Position Offset 1 source.	Default: Min/Max:	821 1 / 159999	RW	32-bit Integer
		821	**Psn Offset 1** Position Offset 1 Provides position reference offset, which is summed after the EGR and used to trim the phase of the position reference. A step in the offset position will be internally rate limited and added to the reference position. The rate of correction is set by the offset velocity P824 [Psn Offset Vel]. The initial value of this parameter is latched upon position enable without causing a change in reference. Subsequent changes to this value will be relative to the latched value. See the offset re-referencing bit P721 [Position Control] Bit 2 "Offset ReRef".	Default: Min/Max:	0 –2147483648 / 2147483647	RW	32-bit Integer
		822	**Psn Offset 2 Sel** Position Offset 2 Select Selects a Position Offset 2 source.	Default: Min/Max:	823 1 / 159999	RW	32-bit Integer
		823	**Psn Offset 2** Position Offset 2 Select Provides another position reference offset, which is summed with the position offset 1 P821 [Psn Offset 1] and used to trim the phase of the position reference. The rate of correction is set by the offset velocity P824 [Psn Offset Vel].	Default: Min/Max:	0 –2147483648 / 2147483647	RW	32-bit Integer
		824	**Psn Offset Vel** Position Offset Velocity Sets speed of position offset. A position offset command will not exceed this speed. The actual speed of offset is limited to a maximum value of 1/(inertia * pos gain) so as not to cause a torque pulse greater than 1 per unit. The speed will change exponentially.	Units: Default: Min/Max:	Hz RPM P27 [Motor NP Hertz] x 0.005 P28 [Motor NP RPM] x 0.005 0.00/P27 [Motor NP Hertz] 0.00/P28 [Motor NP RPM]	RW	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
POSITION CONTROL	Ld Psn Fdbk Scal	**825**	755 **LdPsn Fdbk Mult** Load Position Feedback Multiplier Sets numerator of the load EGR function. It is multiplied by the position load feedback selected by the load feedback select P136 [Load Psn FdbkSel] and divided by the load feedback divider P826 [LdPsn Fdbk Div] to reflect the load pulse count to the motor (effectively removing the gear box ratio). The accumulated position values P836 [Psn Actual] and the position load actual P837 [Psn Load Actual] - will be equal if the ratio is set properly. There may be some difference due to lost motion in the gear train, but there should not be an accumulated difference. It is often necessary to count gear teeth as gear box manufacturers often approximate exact ratios with decimal numbers. Enter a negative value in the numerator to account for reversed motor rotation.	Default: Min/Max:	1 –/+1000000	RW	32-bit Integer
		826	755 **LdPsn Fdbk Div** Load Position Feedback Division Sets denominator of the load EGR function.	Default: Min/Max:	1 1 / 2000000	RW	32-bit Integer

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
POSITION CONTROL	Position Reg	**830**	**PsnNtchFltrFreq** Position Notch Filter Frequency Sets the center frequency of the position notch filter.	Units: Default: Min/Max:	Hz 0.00 0.00 / 500.00	RW	Real
		831	**PsnNtchFltrDepth** Position Notch Filter Depth Sets the depth for the position notch filter. Attenuation is the ratio of the output to the input at the notch frequency P830 [PsnNtchFltrFreq]. The attenuation of 30 means that the notch output is 1/30th of the input at the specified frequency. Calculation: Attenuation = Input / Output	Default: Min/Max:	50.00 0.00 / 500.00	RW	Real
		832	**Psn Out Fltr Sel** Position Output Filter Select Selects a type of lead-lag filter for position regulator speed output. This parameter sets filter gain P833 [Psn Out Fltr Sel] and bandwidth P834 [Psn Out Fltr BW] according to the selected type. "Off" (0) – P833 = 1.000, P834 = 0.00 "Custom" (1) – P833 = user setting, P834 = user setting	Default: Options:	0 = "Off" 0 = "Off" 1 = "Custom"	RW	32-bit Integer
		833	**Psn Out FltrGain** Position Output Filter Gain Sets lead-lag filter gain. A default value is sets when the filter type selection P832 [Psn Out Fltr Sel] is not Custom (Option 1). See the filter type selection P832.	Default: Min/Max:	3.000 –/+5.000	RW	Real
		834	**Psn Out Fltr BW** Position Output Filter Bandwidth Sets lead-lag bandwidth. A default value is sets when the filter type selection P832 [Psn Out Fltr Sel] is not Custom (Option 1). See the filter type selection P832.	Units: Default: Min/Max:	R/S 50.00 0.00 / 500.00	RW	Real
		835	**Psn Error** Position Error Indicates actual position error in motor pulse counts as a 32-bit integer. When the position regulator is not enabled, the value is initialized to zero. When the position regulator is enabled, the value contains the running value of position error between the position command P723 [Psn Command] and P836 [Psn Actual].	Default: Min/Max:	0 –2147483648 / 2147483647	RO	32-bit Integer
		836	**Psn Actual** Position Actual Indicates accumulated motor position as a 32-bit integer. It tracks the position feedback P847 [Psn Fdbk]. When P721 [Position Control] Bit 4 "Zero Psn" is set, this parameter accumulates the value of P847 [Psn Fdbk] - the P725 [Zero Position]. When P721 [Position Control] Bit 4 "Zero Psn" is off, this parameter accumulates the value of P847 [Psn Fdbk].	Default: Min/Max:	0 –2147483648 / 2147483647	RO	32-bit Integer
		837	755 **Psn Load Actual** Position Load Actual Indicates accumulated output of the load gear ratio as a 32-bit integer and forms the primary feedback for the position regulator integral channel. It is very important that the load gear ratio be precisely set such that the delta pulse count of one motor revolution equals the delta pulse count of this parameter.	Default: Min/Max:	0 –2147483648 / 2147483647	RO	32-bit Integer

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
POSITION CONTROL	Position Reg	**838**	**Psn Reg Ki** Position Regulator Ki Sets position regulator integral gain as measured from position error to velocity reference. The value has gain units of (P.U. velocity/sec) / (P.U. position) and is unit compatible with the position regulator proportional gain P839 [Psn Reg Kp]. An integral gain of 25 means that a per unit position error of 0.1 sec will effect a 2.5 P.U. speed change per sec.	Default: Min/Max:	4.00 0.00 / 1000.00	RW	Real
		839	**Psn Reg Kp** Position Regulator Kp Sets position regulator gain as measured from position error to speed reference. The gain number is identically equal to position regulator bandwidth in rad/sec. For example: A gain of 10 means that a P.U. position error of 0.1 sec. will effect a 1.0 P.U. speed change (1 per unit position error is the distance traveled in 1 sec. at base motor speed). The typical value of this parameter is typically 1/3 of the speed bandwidth (rad/sec) but may be set considerably higher with careful tuning of the speed regulator output lead/lag filter.	Units: Default: Min/Max:	R/S 4.00 0.00 / 200.00	RW	Real
		840	**PReg Pos Int Lmt** Position Regulation Positive Integral Limit Sets positive limit of the position regulator integral output.	Units: Default: Min/Max:	% 100.00 0.00 / 800.00	RW	Real
		841	**PReg Neg Int Lmt** Position Regulation Negative Integral Limit Sets negative limit of the position regulator integral output.	Units: Default: Min/Max:	% –100.00 –800.00 / 0.00	RW	Real
		842	**PsnReg IntgrlOut** Position Regulation Integral Output Indicates output of the position regulator integral channel after the limit function.	Units: Default: Min/Max:	Hz RPM 0.00 –/+P27 [Motor NP Hertz] x 8 –/+P28 [Motor NP RPM] x 8	RO	Real
		843	**PsnReg Spd Out** Position Regulation Speed Output Indicates final output of the position regulator.	Units: Default: Min/Max:	Hz RPM 0.00 –/+P27 [Motor NP Hertz] x 8 –/+P28 [Motor NP RPM] x 8	RO	Real
		844	**PReg Pos Spd Lmt** Position Regulation Positive Speed Limit Sets positive speed limit of total position regulator output.	Units: Default: Min/Max:	% 10.00 0.00 / 800.00	RW	Real
		845	**PReg Neg Spd Lmt** Position Regulation Negative Speed Limit Sets negative speed limit of total position regulator output.	Units: Default: Min/Max:	% –10.00 –800.00 / 0.00	RW	Real
		846	**Psn Reg Droop** Position Regulation Droop Sets position droop which limits the low frequency gain of the position regulators integral channel to a value of (1/droop). This parameter provides a means to fine tune the stability for load mounted feedback devices where lost motion may cause a problem. Typically, the position droop will have a value that is less than (1/position gain), perhaps even zero for tightly coupled loads. The position droop has a gain value of (P.U. position) / (P.U. speed). Note: 1 P.U. position is the distance traveled in 1 sec. at base motor speed.	Units: Default: Min/Max:	Secs 0.00 0.00 / 25.00	RW	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
POSITION CONTROL	Position Reg	**847**	**Psn Fdbk** Position Feedback Indicates the accumulated pulse count of the position feedback selected by the position feedback select [P135].	Default: Min/Max:	0 –2147483648 / 2147483647	RO	32-bit Integer
		848	**Psn Gear Ratio** Position Gear Ratio Sets the load side gear ratio for position control. Adjust this parameter's value when the load side encoder is selected for the position feedback by P135 [Mtr Psn Fdk Sel], and the load is coupled to the motor through a gear. Calculation: Gear Ratio = (Number of teeth on Gear or driven) / (Number of teeth on Pinion or driver) When a motor (driver) and a load (driven) are coupled with a 20:1 gear box (the gear ratio = 20), the value of this parameter will be 20. This value affects the following parameters as a speed feed forward gain. P843 [Psn Reg Spd Out] P783 [PTP Speed FwdRef] P807 PLL Speed Out] P1472 [PCAM Vel Out]	Default: Min/Max:	1.0000 0.0001 / 9999.0000	RW	Real

Drive Communication File

File	Group	No.	Display Name / Full Name / Description	Values		Read-Write	Data Type
COMMUNICATION	Comm Control	871 872 873 874 875 876 877 878	**Port 1 Reference** **Port 2 Reference** **Port 3 Reference** **Port 4 Reference** **Port 5 Reference** **Port 6 Reference** 755 **Port13 Reference** **Port14 Reference** Port 1, 2, 3, 4, 5, 6, 13, 14 Reference Reference value from port devices.	Units: Default: Min/Max:	Hz RPM 0.00 –/+P27 [Motor NP Hertz] x 8 –/+P28 [Motor NP RPM] x 8	RO	Real

879 **Drive Logic Rslt**

Drive Logic Result

This is the logic output of the logic parser that combines the outputs from the DPI ports and the DeviceLogix controller to determine drive control based on the masks and owners. Used for peer to peer communication with PowerFlex 750-Series communication modules.

Options	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Jog 2	Run	Climit Stop	Coast Stop	Reserved	SpdRef Sel 2	SpdRef Sel 1	SpdRef Sel 0	Decel Time 2	Decel Time 1	Accel Time 2	Accel Time 1	Reserved	Manual	Reverse	Forward	Clear Faults	Jog 1	Start	Stop
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = False, 1 = True

880	**DPI Ref Rslt** DPI Reference Result Present speed reference scaled as a DPI reference for peer to peer communications. The value shown is the value prior to the accel/decel ramp and the corrections supplied by slip comp, PI, etc. Used for peer to peer communication with 20-COMM communication modules.	Units: Default: Min/Max:	Hz / RPM 0.000 –2147483.648 / 2147483.624	RO	32-bit Integer
881	**DPI Ramp Rslt** DPI Ramp Result Displays the speed reference value, after the limit function. This is the input to the error calculator and speed regulator. Used for peer-to-peer communication with 20-COMM communication modules.	Units: Default: Min/Max:	Hz / RPM 0.000 –2147483.648 / 2147483.624	RO	32-bit Integer

882 **DPI Logic Rslt**

DPI Logic Result

A version of P879 that is used when doing peer-to-peer control with a 20-COMM communication module. (Not for use with a 20-750 communication module).

Options	Reserved	SpdRef Sel 2	SpdRef Sel 1	SpdRef Sel 0	Decel Time 2	Decel Time 1	Accel Time 2	Accel Time 1	Reserved	Manual	Reverse	Forward	Clear Faults	Jog 1	Start	Stop	Reserved	SpdRef Sel 2	SpdRef Sel 1	SpdRef Sel 0	Decel Time 2	Decel Time 1	Accel Time 2	Accel Time 1	Reserved	Manual	Reverse	Forward	Clear Faults	Jog 1	Start	Stop
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = False, 1 = True

883	**Drive Ref Rslt** Drive Reference Result Present frequency reference scaled as a DPI reference for peer to peer communications. The value shown is the value prior to the accel/decel ramp and the corrections supplied by slip comp, PI, etc. Used for peer to peer communication with 20-COMM communication modules.	Units: Default: Min/Max:	Hz / RPM 0.000 –/+2147483648.000	RO	32-bit Integer

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
COMMUNICATION	Comm Control	884	**Drive Ramp Rslt** Drive Ramp Result Displays the speed reference value, after the limit function. This is the input to the error calculator and speed regulator. This number is scaled so that rated motor speed will read 32768. Used for peer to peer communication with 20-COMM communication modules.	Units: Default: Min/Max:	Hz / RPM 0.000 –/+2147483648.000	RO	32-bit Integer

File	Group	No.	Display Name Full Name Description	Values	Read-Write	Data Type
COMMUNICATION	Security	885	**Port Mask Act** Port Mask Active Active status for port communication.			
		886	**Logic Mask Act** Logic Mask Active Active status of the logic mask for ports. Bit 15 "Security" determines if network security is controlling the logic mask instead of this parameter.			
		887	**Write Mask Act** Write Mask Active Active status of write access for ports. Bit 15 "Security" determines if network security is controlling the write mask instead of this parameter.			
		888	**Write Mask Cfg** Write Mask Configuration Enables/disables write access (parameters, links, etc.) for DPI ports. Changes to this parameter only become effective when power is cycled, the drive is reset or bit 15 of P887 [Write Mask Actv], transitions from "1" to "0."			

885 Port Mask Act

Options	Security	Port 14	Port 13	Reserved	Port 11	Port 10	Port 9	Port 8	Port 7	Port 6	Port 5	Port 4	Port 3	Port 2	Port 1	Digital In
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = False
1 = True

886 Logic Mask Act

Options	Security	Port 14	Port 13	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Port 6	Port 5	Port 4	Port 3	Port 2	Port 1	Digital In
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = False
1 = True

887 Write Mask Act

Options	Security	Port 14	Port 13	Reserved	Port 11	Port 10	Port 9	Port 8	Port 7	Port 6	Port 5	Port 4	Port 3	Port 2	Port 1	Reserved
Default	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = False
1 = True

888 Write Mask Cfg

Options	Reserved	Port 14	Port 13	Reserved	Port 11	Port 10	Port 9	Port 8	Port 7	Port 6	Port 5	Port 4	Port 3	Port 2	Port 1	Reserved
Default	0	1	1	0	0	0	1	1	1	1	1	1	1	1	1	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = False
1 = True

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
COMMUNICATION	DPI Datalinks	**895** **896**	**Data In A1** **Data In A2** Data Input A1, A2 Parameter number whose value will be written from a communications device data table.	Default: Min/Max:	0 (0 = "Disabled") 0 / 159999	RW	32-bit Integer
		897 **898**	**Data In B1** **Data In B2** Data Input B1, B2 Parameter number whose value will be written from a communications device data table.	See [Data In A1].			
		899 **900**	**Data In C1** **Data In C2** Data Input C1, C2 Parameter number whose value will be written from a communications device data table.	See [Data In A1].			
		901 **902**	**Data In D1** **Data In D2** Data Input D1, D2 Parameter number whose value will be written from a communications device data table.	See [Data In A1].			
		905 **906**	**Data Out A1** **Data Out A2** Data Output A1, A2 Parameter number whose value will be written to a communications device data table.	Default: Min/Max:	0 (0 = "Disabled") 0 / 159999	RW	32-bit Integer
		907 **908**	**Data Out B1** **Data Out B2** Data Output B1, B2 Parameter number whose value will be written from a communications device data table.	See [Data Out A1].			
		909 **910**	**Data Out C1** **Data Out C2** Data Output C1, C2 Parameter number whose value will be written from a communications device data table.	See [Data Out A1].			
		911 **912**	**Data Out D1** **Data Out D2** Data Output D1, D2 Parameter number whose value will be written from a communications device data table.	See [Data Out A1].			

File	Group	No.	Display Name Full Name Description	Values	Read-Write	Data Type
COMMUNICATION	Owners	919	**Stop Owner** Stop Owner Indicates which port is currently issuing a valid stop command.			

Options	Reserved	Port 14	Port 13 (1)	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Port 6	Port 5	Port 4	Port 3	Port 2	Port 1	Digital In
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = False
1 = True

(1) 755 drives only.

		920	**Start Owner** Start Owner Indicates which port is currently issuing a valid start command.			

Options	Reserved	Port 14	Port 13 (1)	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Port 6	Port 5	Port 4	Port 3	Port 2	Port 1	Digital In
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = False
1 = True

(1) 755 drives only.

		921	**Jog Owner** Jog Owner Indicates which port is currently issuing a valid jog command.			

Options	Reserved	Port 14	Port 13 (1)	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Port 6	Port 5	Port 4	Port 3	Port 2	Port 1	Digital In
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = False
1 = True

(1) 755 drives only.

		922	**Dir Owner** Direction Owner Indicates which port has exclusive control of direction changes.			

Options	Reserved	Port 14	Port 13 (1)	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Port 6	Port 5	Port 4	Port 3	Port 2	Port 1	Digital In
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = False
1 = True

(1) 755 drives only.

File	Group	No.	Display Name Full Name Description	Values	Read-Write	Data Type
COMMUNICATION	Owners	923	**Clear Flt Owner** Clear Fault Owner Indicates which port is currently clearing a fault.			

Options	Reserved	Port 14	Port 13 (1)	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Port 6	Port 5	Port 4	Port 3	Port 2	Port 1	Digital In
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = False
1 = True

(1) 755 drives only.

		924	**Manual Owner** Manual Owner Adapter that has requested manual control of all drive logic and/or reference functions. If an adapter is in manual lockout, all other functions (except stop) on all other adapters are locked out and non-functional.			

Options	Reserved	Port 14	Port 13 (1)	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Port 6	Port 5	Port 4	Port 3	Port 2	Port 1	Digital In
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = False
1 = True

(1) 755 drives only.

		925	**Ref Select Owner** Reference Select Owner Indicates which port is issuing a valid reference select.			

Options	Reserved	Port 14	Port 13 (1)	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Port 6	Port 5	Port 4	Port 3	Port 2	Port 1	Digital In
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = False
1 = True

(1) 755 drives only.

Drive Diagnostics File

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
DIAGNOSTICS	Status	**930**	**Speed Ref Source** Speed Reference Source Indicates the currently selected source for value displayed in P593 [Limited Spd Ref]. The Speed Reference Source displays the parameter number that is supplying the speed reference. For example, if Speed Reference Source contains the value 546, then P546 [Spd Ref A Setpt] is the source of the speed reference.	Default: Min/Max:	0 0 / 159999	RO	32-bit Integer
		931	**Last StartSource** Last Start Source Displays the source that initiated the most recent start sequence. All bits in this parameter are refreshed each time the drive receives a start command.	Default: Options:	0 = Read Only 0 = "Pwr Removed" 1-6 = "Port 1-6" 7 = "Digital In" 8 = "Sleep" 9 = "Jog" 10 = "Profiling" 11 = "AutoRestart" 12 = "Pwr Up Start" 13 = "Fault" 14 = "Enable" 15 = "Autotune" 16 = "Precharge" 17 = "Safety" 18 = "Fast Stop" 19 = "Port 13" 20 = "Port 14"	RO	32-bit Integer
		932	**Last Stop Source** Last Stop Source Displays the source that initiated the most recent stop sequence. All bits in this parameter are refreshed each time the drive receives a stop command.	Default: Options:	0 = Read Only 0 = "Pwr Removed" 1-6 = "Port 1-6" 7 = "Digital In" 8 = "Sleep" 9 = "Jog" 10 = "Profiling" 11 = "AutoRestart" 12 = "Pwr Up Start" 13 = "Fault" 14 = "Enable" 15 = "Autotune" 16 = "Precharge" 17 = "Safety" 18 = "Fast Stop" 19 = "Port 13" 20 = "Port 14"	RO	32-bit Integer

File	Group	No.	Display Name Full Name Description	Values	Read-Write	Data Type
DIAGNOSTICS	Status	933	**Start Inhibits** Start Inhibits Indicates which condition is preventing the drive from starting or running.			

Options

	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	CommutNotCfg	Profiler [1]	Sleep	Safety	Startup	Database	Stop	Precharge	Enable	Alarm	Faulted
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

[1] 755 drives only.

0 = False
1 = True

Bit 0 “Faulted” – Drive is in a faulted state.
Bit 1 “Alarm” – A Type 2 alarm exists.
Bit 2 “Enable” – An Enable input is open.
Bit 3 “Precharge” – Drive is in precharge.
Bit 4 “Stop” – Drive is receiving a stop signal.
Bit 5 “Database” – Database is performing a download operation.
Bit 6 “Startup” – Startup is active and preventing a start.
Bit 7 “Safety” – Safety option module is preventing a start.
Bit 8 “Sleep” – Sleep function is issuing a stop.
Bit 9 “Profiler” – Profiler function is issuing a stop.
Bit 10 “CommutNotCfg” – The associated PM motor commutation function has not been configured for use.

		934	**Last StrtInhibit** Last Start Inhibit Displays the Inhibit which prevented the last Start signal from starting the drive. Bits will be cleared after the next successful start sequence.			

Options

	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	CommutNotCfg	Profiliier	Sleep	Safety	Startup	Database	Stop	Precharge	Enable	Alarm	Faulted
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = False
1 = True

File	Group	No.	Display Name Full Name Description	Values	Read-Write	Data Type
DIAGNOSTICS	Status	935	**Drive Status 1** Drive Status 1 Present operating condition of the drive.			

Options	Regen	Motor OL	Enable On	Bus Frq Reg	Cur Limit	At Limit	At Home	AtZero Speed	Torque Mode	PositionMode	Speed Mode	DB Active	DC Braking	Stopping	Jogging	Running	Reserved	SpdRef Bit 4	SpdRef Bit 3	SpdRef Bit 2	SpdRef Bit 1	SpdRef Bit 0	Manual	At Speed	Faulted	Alarm	Decelerating	Accelerating	Actual Dir	Command Dir	Active	Ready
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Condition False
1 = Condition True

Table 935A: Reference Status

Bit	14	13	12	11	10	Reference Source
	0	0	0	0	1	Auto, Ref A
	0	0	0	1	0	Auto, Ref B
	0	0	0	1	1	Auto, Preset 3
	0	0	1	0	0	Auto, Preset 4
	0	0	1	0	1	Auto, Preset 5
	0	0	1	1	0	Auto, Preset 6
	0	0	1	1	1	Auto, Preset 7
	1	0	0	0	0	MAN, Port 0, DIGIN SEL
	1	0	0	0	1	MAN, Port 1
	1	0	0	1	0	MAN, Port 2
	1	0	0	1	1	MAN, Port 3
	1	0	1	0	0	MAN, Port 4
	1	0	1	0	1	MAN, Port 5
	1	0	1	1	0	MAN, Port 6
	1	1	1	0	1	MAN, Port 13 INT. ENET
	1	1	1	1	0	MAN, Port 14 DRV LOGIX
	1	1	1	1	1	ALT MAN REF SEL

Bit 0 "Ready" – Condition is true if there are no start inhibits indicated by P933 [Start Inhibits].
Bit 1 "Active" – Condition is true if drive is modulating.

		936	**Drive Status 2** Drive Status 2 Present operating condition of the drive.																														

Options	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Decel Rate [1]	Accel Rate [1]	PID FB Loss	Autotuning	PrchrgClosed	Adj VltgMode [1]	Reserved	FdbkLoss SwO	Flux Braking	Reserved	HS Fan On	AuRstrCntDwn	AutoRstr Act
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

(1) 753 drives only.

0 = Condition False
1 = Condition True

File	Group	No.	Display Name Full Name Description	Values	Read-Write	Data Type
DIAGNOSTICS	Status	937	**Condition Sts 1** Condition Status 1 Status of conditions that may or may not result in the drive taking action (faulting), based on configuration of protective functions.			

Options	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	OW Timeout [1]	GndWarning	ExtPrchrgErr	PosFdbkLoss	AuxFdbkLoss	AltFdbkLoss	PriFdbkLoss	Shear Pin 2	Shear Pin 1	Decel Inhib	OutPhaseLoss	InPhaseLoss	Load Loss	Motor OL	UnderVoltage	Power Loss
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

[1] 753 drives only

0 = Condition False
1 = Condition True

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
DIAGNOSTICS	Status	940	**Drive OL Count** Drive Overload Count Indicates power unit overload (IT) in percentage. When the value reaches 100%, the power unit overload fault occurs.	Units: Default: Min/Max:	% 0.00 0.00 / 200.00	RO	Real
		941	**IGBT Temp Pct** Insulated-Gate Bipolar Transistor Temperature Percent Indicates IGBT junction temperature in percentage of the maximum junction temperature.	Units: Default: Min/Max:	% 0.00 –/+200.00	RO	Real
		942	**IGBT Temp C** Insulated-Gate Bipolar Transistor Temperature Celsius Indicates IGBT junction temperature in centigrade.	Units: Default: Min/Max:	DegC 0.00 –/+200.00	RO	Real
		943	**Drive Temp Pct** Drive Temperature Percent Indicates operating temperature of the drive power section (heat-sink) in percentage of the maximum heat-sink temperature.	Units: Default: Min/Max:	% 0.00 –/+200.00	RO	Real
		944	**Drive Temp C** Drive Temperature Celsius Present operating temperature of the drive power section.	Units: Default: Min/Max:	DegC 0.00 –/+200.00	RO	Real

File	Group	No.	Display Name Full Name Description	Values	Read-Write	Data Type
DIAGNOSTICS	Status	945	**At Limit Status** At Limit Status Status of dynamic conditions within the drive that are either active or a limit is being applied.			

Options	Cur Rate Lmt	TrqPrvNegLmt	TrqPrvPosLmt	Mtr Vltg Lkg	BusVltgFVLmt	Therm RegLmt	Cur Lmt FV	Regen PwrLmt	Mtrng PwrLmt	Trq Neg Lmt	Trq Pos Lmt	FlxCurNegLmt	FlxCurPosLmt	TrqCurNegLmt	TrqCurPosLmt	PsnReg HiSpd	PsnReg LoSpd	PsnReg HiLmt	PsnReg LoLmt	DB Res Limit	PWM FreqLmt	Economize	Flux Braking	FreqOSNegLmt	FreqOSPosLmt	Freq Lo Lmt	Freq Hi Lmt	Spd Reg Lmt	OverSpd Lmt	MaxSpeed Lmt	Bus Vltg Lmt	Current Lmt
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Condition False
1 = Condition True

Bit 0 “Current Lmt” – Scalar current limit is adjusting the output frequency
Bit 1 “Bus Vltg Lmt” – Scalar bus voltage limit is adjusting the output frequency
Bit 2 “MaxSpeed Lmt” – Motor speed reference is limited to maximum forward speed or maximum reverse speed
Bit 3 “OverSpd Lmt” – Motor speed reference positive (+) trim is at maximum speed limit plus or minus (+/-) the overspeed limit
Bit 4 “Spd Reg Lmt” – The output of the drive’s speed regulator has reached limit
Bit 5 “Freq Hi Lmt” – Scalar control inner ramp high limit is active
Bit 6 “Freq Lo Lmt” – Scalar control inner ramp low limit is active
Bit 7 “FreqOSPosLmt” – Scalar control inner ramp positive (+) overspeed limit is active
Bit 8 “FreqOSNegLmt” – Scalar control inner ramp negative (-) overspeed limit is active
Bit 9 “Flux Braking” – Flux braking is active
Bit 10 “Economize” – Economize is active
Bit 11 “PWM FreqLmt” – PWM frequency is reduced by the thermal regulator
Bit 12 “DB Res Limit” – Dynamic brake thermal protection is active
Bit 13 “PsnReg LoLmt” – The position integrator low limit is active
Bit 14 “PsnReg HiLmt” – The position integrator high limit is active
Bit 15 “PsnReg LoSpd” – The position regulator output (speed) is at low limit
Bit 16 “PsnReg HiSpd” – The position regulator output (speed) is at high limit
Bit 17 “TrqCurPosLmt” – The torque current positive limit is active
Bit 18 “TrqCurNegLmt” – The torque current negative limit is active
Bit 19 “FlxCurPosLmt” – The flux current positive limit is active
Bit 20 “FlxCurNegLmt” – The flux current negative limit is active
Bit 21 “Trq Pos Lmt” – The positive torque limit is active
Bit 22 “Trq Neg Lmt” – The negative torque limit is active
Bit 23 “Mtrng PwrLmt” – The motoring power limit is active
Bit 24 “Regen PwrLmt” – The regeneration power limit is active
Bit 25 “Cur Lmt FV” – The current limit parameter or analog Input current limit is active
Bit 26 “Therm RegLmt” – The thermal regulator torque limit is active
Bit 27 “BusVltgFVLmt” – The bus voltage regulator torque limit is active
Bit 28 “Mtr Vltg Lkg” – The Vds motor voltage limit is active
Bit 29 “TrqPrvPosLmt” – The torque proving positive torque limit is active
Bit 30 “TrqPrvNegLmt” – The torque proving negative torque limit is active
Bit 31 “Cur Rate Lmt” – The Iqs rate limit is active

		946	**Safety Port Sts** Safety Port Status Indicates the port location of a valid feedback option for use with the Safe Speed Monitoring Option.																															

Options	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Port 8	Port 7	Port 6	Port 5	Port 4	Reserved	Reserved	Reserved	Reserved
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Condition False
1 = Condition True

File	Group	No.	Display Name Full Name Description	Values	Read-Write	Data Type
DIAGNOSTICS	Fault/Alarm Info	950	**Minor Flt Cfg** Minor Fault Configuration Enables / Disables operation of the "Minor Fault" function, which allows the drive to continue running while some types of faults are present. In addition to setting this parameter, the "Flt Minor" action must be selected for the condition that is desired to result in a minor fault (see P410 for an example).			
		951	**Last Fault Code** Last Fault Code The fault code of the first fault since the last reset. There is often a chain of faults that occur during a breakdown. When troubleshooting, it is often helpful to know the first fault. This parameter is for convenience. A comprehensive history of fault information is available through the fault que (via HIM screens and / or software tools such as Drive Explorer).	Default: 0 Min/Max: 0 / 424648720	RO	32-bit Integer
		952	**Fault Status A** Fault Status A Indicates the occurrence of conditions that have been configured as faults. These conditions are from 937 [Condition Sts 1].			
		953	**Fault Status B** Fault Status B Indicates the occurrence of conditions that have been configured as faults.			

950 Minor Flt Cfg

Options	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Enable
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Condition False
1 = Condition True

952 Fault Status A

Options	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	ExtPrchrgErr	PosFdbkLoss	AuxFdbkLoss	AltFdbkLoss	PriFdbkLoss	Shear Pin 2	Shear Pin 1	Decel Inhib	OutPhaseLoss	InPhaseLoss	Load Loss	Motor OL	UnderVoltage	Power Loss
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Condition False
1 = Condition True

953 Fault Status B

Options	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Over Travel	OW Alarm TO	Ground Fault	TPEnclsCfg (1)	TrqPrvSpdBnd (1)	HW OverCur	SW OverCur	AuRstExhaust	IXOVoltRange	FluxAmpsRang	IRVoltsRange	SafetyBrdFlt	Prchrg Open	Overspd Lmt	Excess Load	SinkUnderTmp	TransistorOT	Heatsink OT	Drive OL	OverVoltage	Aux InputFlt
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

(1) 755 drives only.

0 = Condition False
1 = Condition True

File	Group	No.	Display Name Full Name Description	Values	Read-Write	Data Type
DIAGNOSTICS	Fault/Alarm Info	954	**Status1 at Fault** Status 1 at Fault Captures and displays P935 [Drive Status 1] bit pattern at the time of the last fault.			

Options	Regen	Motor OL	Enable On	Bus Frq Reg	Cur Limit	At Limit	At Home	AtZero Speed	Torque Mode	PositionMode	Speed Mode	DB Active	DC Braking	Stopping	Jogging	Running	Reserved	SpdRef Bit 4	SpdRef Bit 3	SpdRef Bit 2	SpdRef Bit 1	SpdRef Bit 0	Manual	At Speed	Faulted	Alarm	Decelerating	Accelerating	Actual Dir	Command Dir	Active	Ready
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Condition False
1 = Condition True

DIAGNOSTICS	Fault/Alarm Info	955	**Status2 at Fault** Status 2 at Fault Captures and displays P936 [Drive Status 2] bit pattern at the time of the last fault.			

Options	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Decel Rate	Accel Rate	PID FB Loss	Autotuning	PrchrgClosed	Reserved	Reserved	FdbkLoss SwO	Flux Braking	Reserved	HS Fan On	AuRstrCntDwn	AutoRstr Act
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Condition False
1 = Condition True

DIAGNOSTICS	Fault/Alarm Info	956	**Fault Frequency** Fault Frequency Captures and displays the output speed of the drive at the time of the last fault.	Units: Default: Min/Max:	Hz 0.00 –/+ 650.00	RO	Real
		957	**Fault Amps** Fault Amps Captures and displays motor amps at the time of the last fault.	Units: Default: Min/Max:	Amps 0.00 0.00 / P21 [Rated Amps] x 2	RO	Real
		958	**Fault Bus Volts** Fault Bus Volts Captures and displays the DC bus voltage of the drive at the time of the last fault.	Units: Default: Min/Max:	VDC 0.00 0.00 / P20 [Rated Volts] x 2	RO	Real
		959	**Alarm Status A** Alarm Status A Indicates the occurrence of conditions that have been configured as alarms. These events are from 937 [Condition Sts 1].				

Options	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Task Overrun	Gnd Warning	Reserved	PosFdbkLoss	AuxFdbkLoss	AltFdbkLoss	PriFdbkLoss	Shear Pin 2	Shear Pin 1	Decel Inhib	OutPhaseLoss	InPhaseLoss	Load Loss	Motor OL	UnderVoltage	Power Loss
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Condition False
1 = Condition True

File	Group	No.	Display Name Full Name Description	Values	Read-Write	Data Type

DIAGNOSTICS / **Fault/Alarm Info**

960 **Alarm Status B**

Alarm Status B

Indicates the occurrence of conditions that have been configured as alarms.

Options	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	PumpOff Alrm [1]	OW Alarm TO [1]	OW Level [1]	Gnd Warning	Not Home Set	Homing Actv	Profile Actv [2]	PWMFrq Reduc	CurLmt Reduc	Drive OL	StartOnPwrUp	Waking	Heatsink OT	IGBT OT
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

(1) 753 drives only.

(2) 755 drives only.

0 = Condition False
1 = Condition True

961 **Type 2 Alarms**

Type 2 Alarms

Indicates the occurrence of conditions that have been configured as alarms.

Options	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	DL Cflct	PM Off Cflct	Prchrg Open	BipolarCflct [1]	IXOVoltRange	FluxAmpsRang	IRVltg Range	DigIn Cfg C	DigIn Cfg B	AltOpenLoop	PriOpenLoop	VHz Incmpble	VHzBoostLmt	VHzNegSlope	Frq Cflct	TrqProvCflct [2]	BrakeSlipped [2]	Sleep Cfg
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

(1) 753 drives only.

(2) 755 drives only.

0 = Condition False
1 = Condition True

962 **AlarmA at Fault**

Alarm A at Fault

Captures and displays P959 [Alarm Status A] at the time of the last fault.

Options	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Task Overrun	Gnd Warning	Reserved	PosFdbkLoss	AuxFdbkLoss	AltFdbkLoss	PriFdbkLoss	Shear Pin 2	Shear Pin 1	Decel Inhib	OutPhaseLoss	InPhaseLoss	Load Loss	Motor OL	UnderVoltage	Power Loss
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Condition False
1 = Condition True

963 **AlarmB at Fault**

Alarm B at Fault

Captures and displays P960 [Alarm Status B] at the time of the last fault.

Options	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	OW Alarm TO	OW Level	Gnd Warning	Not Home Set	Homing Actv	Profile Actv [1]	PWMFrq Reduc	CurLmt Reduc	Drive OL	StartOnPwrUp	Waking	Heatsink OT	IGBT OT
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

(1) 755 drives only.

0 = Condition False
1 = Condition True

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
DIAGNOSTICS	Testpoints	**970** **974** **978** **982**	**Testpoint Sel 1** **Testpoint Sel 2** **Testpoint Sel 3** **Testpoint Sel 4** Testpoint Select 1, 2, 3, 4 Selects a source for the testpoint values ("Fval" and "Lval"). Used by the factory, typically for diagnostic purposes.	Default: Min/Max:	0 –2147483648 / 2147483647	RW	32-bit Integer
		971 **975** **979** **983**	**Testpoint Fval 1** **Testpoint Fval 2** **Testpoint Fval 3** **Testpoint Fval 4** Testpoint Float Value 1, 2, 3, 4 Displays data selected by Testpoint Sel X, if the data type is floating point.	Default: Min/Max:	0.000000 –/+ 220000000.000000	RW	Real
		972 **976** **980** **984**	**Testpoint Lval 1** **Testpoint Lval 2** **Testpoint Lval 3** **Testpoint Lval 4** Testpoint Long Value 1, 2, 3, 4 Displays data selected by Testpoint Sel X, if the data type is long integer.	Default: Min/Max:	0 –2147483648 / 2147483647	RW	32-bit Integer

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
DIAGNOSTICS	Peak Detection	**1035**	755 **PkDtct Stpt Real** Peak Detection Setpoint Real A setpoint value, in the form of a real number. Intended to be used as a potential data source for P1038 [PkDtct1PresetSel] and P1043 [PkDtct2PresetSel].	Default: Min/Max:	0.000000 –/+ 220000000.000000	RW	Real
		1036	755 **PkDtct Stpt DInt** Peak Detection Setpoint D Integer A setpoint value, in the form of an integer number. Intended to be used as a potential data source for P1038 [PkDtct1PresetSel] and P1043 [PkDtct2PresetSel].	Default: Min/Max:	0 –2147483648 / 2147483647	RW	32-bit Integer
		1037	755 **PkDtct1 In Sel** Peak Detection 1 Input Select Selects the input data source for the peak detect functions. The functions can be configured to sample and hold either the largest (maximum) or smallest (minimum) value of the input signal selected by this parameter. **Important**: Either real or integer data sources can be selected, but integer sources will be internally converted to real and displayed in the peak detect output as real numbers.	Default: Min/Max:	1035 0 / 15999931	RW	32-bit Integer
		1038	755 **PkDtct1PresetSel** Peak Detection 1 Preset Select Selects the preset data source for the peak detect functions. The output of the each peak detect function can be forced to equal the value of the input signal selected by this parameter by using the 'Peak1 Set' bit in P1039 [Peak1 Cfg]. The same integer to real number conversion applies to both the input and the preset signal.	Default: Min/Max:	0 0 / 15999931	RW	32-bit Integer

File	Group	No.	Display Name Full Name Description	Values	Read-Write	Data Type
DIAGNOSTICS	Peak Detection	1039	755 **Peak1 Cfg** Peak 1 Configure Configures operation of each peak detector. Options: Reserved (Bits 15–3), Peak1 Set (Bit 2), Peak1 Hold (Bit 1), Peak1 Peak (Bit 0) Default: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 Bit: 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0 Bit 0 "Peak1 Peak" – 0 = Capture minimum value of the input signal. 1 = Capture maximum value of the input signal. Bit 1 "Peak1 Hold" – 0 = Monitor input. 1 = Ignore input and hold output at present value. This bit is overridden by Bit 2. Bit 2 "Peak1 Set" – 0 = Resume normal capture of the input signal value (assuming Bit 1 is also = 0). The preset signal will be used as a starting value to compare against further changes in the input signal level. 1 = Force output of the peak detect function to equal the signal selected by [PkDtctXPresetSel].			
		1040	755 **Peak 1 Change** Peak 1 Change Status of the peak detectors. Options: Reserved (Bits 15–1), Peak1Change (Bit 0) Default: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 Bit: 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0 0 = Output value is held or set. 1 = Output value has changed.			
		1041	755 **PeakDetect1 Out** Peak Detection 1 Output Displays the output of the peak detector, according to the operation selected by the configuration bits, and is always displayed as a real number, regardless of the selected signal type.	Default: 0.000000 Min/Max: –/+2147483648.000000	RO	Real
		1042	755 **PkDtct2 In Sel** Peak Detection 2 Input Select Selects the input data source for the peak detect functions. The functions can be configured to sample and hold either the largest (maximum) or smallest (minimum) value of the input signal selected by this parameter. **Important**: Either real or integer data sources can be selected, but integer sources will be internally converted to real and displayed in the peak detect output as real numbers.	Default: 1035 Min/Max: 0 / 159999	RW	32-bit Integer
		1043	755 **PkDtct2PresetSel** Peak Detection 2 Preset Select Selects the preset data source for the peak detect functions. The output of the each peak detect function can be forced to equal the value of the input signal selected by this parameter by using the "Peak2 Set" bit in P1039 [Peak2 Cfg]. The same integer to real number conversion applies to both the input and the preset signal.	Default: 0 Min/Max: 0 / 159999	RW	32-bit Integer

File	Group	No.	Display Name Full Name Description	Values	Read-Write	Data Type
DIAGNOSTICS	Peak Detection	1044	755 **Peak2 Cfg** Peak 2 Configure Configures operation of each peak detector.			
		1045	755 **Peak 2 Change** Peak 2 Change Status of the peak detectors.			
		1046	755 **PeakDetect2 Out** Peak Detection 2 Output Displays the output of the peak detector, according to the operation selected by the configuration bits, and is always displayed as a real number, regardless of the selected signal type.	Default: 0.000000 Min/Max: –/+2147483648.000000	RO	Real

1044 Peak2 Cfg

Options	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Peak2 Set	Peak2 Hold	Peak2 Peak
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

Bit 0 "Peak2 Peak" – 0 = Capture minimum value of the input signal. 1 = Capture maximum value of the input signal.
Bit 1 "Peak2 Hold" – 0 = Monitor input. 1 = Ignore input and hold output at present value. This bit is overridden by Bit 2.
Bit 2 "Peak2 Set" – 0 = Resume normal capture of the input signal value (assuming Bit 1 is also = 0). The preset signal will be used as a starting value to compare against further changes in the input signal level. 1 = Force output of the peak detect function to equal the signal selected by [PkDtctXPresetSel].

1045 Peak 2 Change

Options	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Peak2Change
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Output value is held or set.
1 = Output value has changed.

Drive Applications File

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
APPLICATIONS	Process PID	**1065**	**PID Cfg** PID Configuration Main configuration of the Process PID controller.				
		1066	**PID Control** PID Control Used for dynamically controlling the Process PID controller.				
		1067	**PID Ref Sel** PID Reference Select Selects the source for the PID Reference. A zero sets the Reference to a fixed value.	Default: Min/Max:	1070 1 / 159999	RW	32-bit Integer
		1068	**PID Ref AnIgHi** PID Reference Analog High When an analog input is selected for PID Ref this sets high value of scaling.	Units: Default: Min/Max:	% 100.00 –/+100.00	RW	Real
		1069	**PID Ref AnIgLo** PID Reference Analog Low When an analog input is selected for PID Ref this sets low value of scaling.	Units: Default: Min/Max:	% 0.00 –/+100.00	RW	Real
		1070	**PID Setpoint** PID Setpoint Provides an internal fixed value for PID Ref when P1067 [PID Ref Sel] is set to this parameter.	Units: Default: Min/Max:	% 0.00 –/+100.00	RW	Real
		1071	**PID Ref Mult** PID Reference Multiplier Sets the multiplying factor which is applied to the Reference source before the Reference is used.	Units: Default: Min/Max:	% 100.00 –/+100.00	RW	Real
		1072	**PID Fdbk Sel** PID Feedback Select Selects the source for the PID Feedback. A zero sets the Feedback to a fixed value.	Default: Min/Max:	1077 1 / 159999	RW	32-bit Integer
		1073	**PID Fdbk AnIgHi** PID Feedback Analog High When an analog input is selected for PID Feedback this sets high value of scaling.	Units: Default: Min/Max:	% 100.00 –/+100.00	RW	Real
		1074	**PID Fdbk AnIgLo** PID Feedback Analog Low When an analog input is selected for PID Feedback this sets low value of scaling.	Units: Default: Min/Max:	% 0.00 –/+100.00	RW	Real

1065 PID Cfg

Options	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Percent Ref	Anti Windup	Stop Mode	Fdbk Sqrt	Zero Clamp	Ramp Ref	Preload Int
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Condition False
1 = Condition True

1066 PID Control

Options	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	PID InvError	PID Reset	PID Hold	PID Enable
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Condition False
1 = Condition True

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
APPLICATIONS	Process PID	**1075**	**PID FBLoss SpSel** PID Feedback Loss Speed Select When an analog input is selected for PID Feedback, P1079 [PID Output Sel] is set to Speed Excl/Speed Trim, and an analog signal loss is detected, sets speed to this source.	Default: Min/Max:	546 0 / 159999	RW	32-bit Integer
		1076	**PID FBLoss TqSel** PID Feedback Loss Torque Select When an analog input is selected for PID Feedback, P1079 [PID Output Sel] is set to Speed Excl/Speed Trim, and an analog signal loss is detected, sets torque to this source.	Default: Min/Max:	676 0 / 159999	RW	32-bit Integer
		1077	**PID Fdbk** PID Feedback Provides an internal fixed value for PID Feedback when [PID Fdbk Sel] is set to this parameter.	Units: Default: Min/Max:	% 0.00 –/+100.00	RW	Real
		1078	**PID Fdbk Mult** PID Feedback Multiplier Sets the multiplying factor which is applied to the Feedback source before the Feedback is used.	Units: Default: Min/Max:	% 100.00 –/+100.00	RW	Real
		1079	**PID Output Sel** PID Output Select Selects the target for the PID Output.	Default: Options:	2 = "Speed Trim" 0 = "Not Used" 1 = "Speed Excl" 2 = "Speed Trim" 3 = "Torque Excl" 4 = "Torque Trim" 5 = "Volt Excl" 6 = "Volt Trim"	RW	32-bit Integer
		1080	**PID Output Mult** PID Output Multiplier Sets the multiplying factor which is applied to the PID Output before the PID Output is used.	Units: Default: Min/Max:	% 100.00000 –/+100.00000	RW	Real
		1081	**PID Upper Limit** PID Upper Limit Sets the upper limit for the P1093 [PID Output Meter].	Units: Default: Min/Max:	% 100.00 –/+800.00	RW	Real
		1082	**PID Lower Limit** PID Lower Limit Sets the lower limit for the P1093 [PID Output Meter].	Units: Default: Min/Max:	% –100.00 –/+800.00	RW	Real
		1083	**PID Deadband** PID Deadband Determines the error (+/-) which will be ignored. Any error which falls within this band will not change the PID output.	Units: Default: Min/Max:	% 0.00 0.00 / 100.00	RW	Real
		1084	**PID LP Filter BW** PID Low Pass Filter Bandwidth Sets the level of filtering applied to the error signal. Zero will disable this filter.	Units: Default: Min/Max:	R/S 0.00 0.00 / 100.00	RW	Real
		1085	**PID Preload** PID Preload Sets the value used to preload PID Integrator when PID is enabled if configured to use this feature.	Units: Default: Min/Max:	% 0.00 –/+100.00	RW	Real
		1086	**PID Prop Gain** PID Proportional Gain Sets the value for the PI proportional component. PI Error x PI Prop Gain = PI Output	Default: Min/Max:	1.00 0.00 / 100.00	RW	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
APPLICATIONS	Process PID	**1087**	**PID Int Time** PID Integral Time Time required for the integral component to reach 100% of P1092 [PI Error Meter]. Not used when P1066 [PID Control] Bit 1 "PID Hold" = 1 (enabled).	Units: Default: Min/Max:	Secs 1.00 0.00 / 100.00	RW	Real
		1088	**PID Deriv Time** PID Derivative Time Refer to formula below: $PI_{Out} = KD\ (Sec) \times \frac{d_{PI\ Error}\ (\%)}{d_t\ (Sec)}$	Units: Default: Min/Max:	Secs 0.00 0.00 / 100.00	RW	Real
		1089	**PID Status** PID Status Status of the Process PI regulator.				
			Options: Reserved (Bits 15, 14, 13, 12, 11, 10, 9, 8, 7, 6, 5, 4); PID In Limit (Bit 3); PID Reset (Bit 2); PID Hold (Bit 1); PID Enabled (Bit 0) Default: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 Bit: 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0 0 = Condition False 1 = Condition True				
		1090	**PID Ref Meter** PID Reference Meter Present value of the PI reference signal.	Units: Default: Min/Max:	% 0.00 –/+100.00	RO	Real
		1091	**PID Fdbk Meter** PID Feedback Meter Present value of the PI feedback signal.	Units: Default: Min/Max:	% 0.00 –/+100.00	RO	Real
		1092	**PID Error Meter** PID Error Meter Present value of the PI error.	Units: Default: Min/Max:	% 0.00 –/+200.00	RO	Real
		1093	**PID Output Meter** PID Output Meter Present value of the PI output.	Units: Default: Min/Max:	% 0.00 –/+800.00	RO	Real

File	Group	No.	Display Name Full Name Description	Values	Read-Write	Data Type
APPLICATIONS	Torque Prove	**1100**	**755 Trq Prove Cfg** Torque Prove Configure Enables/disables torque/brake proving feature. When "Enabled," brake control comes from a digital output relay that is set to select Port 0, P1103 [TorqProve Status] bit 4 "Brake Set." Options: Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, BkSlp SpdLmt, Fast Stop Bk, Test Brake, BrkSlipStart, BrkSlipEncls, FW LoadLimit, Preload, Micro Psn, Encoderless, TP Enable Default: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 Bit: 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0 0 = Disabled 1 = Enabled Bit 0 "TP Enable" – Enables TorqProve features. Bit 1 "Encoderless" – Enables encoderless operation – Bit 0 must also be enabled. Bit 2 "Micro Psn" – A "1" allows the Micro Position digital input to change the speed command while the drive is running. Bit 3 "Preload" – "0" uses the last torque for preload. "1" uses "TorqRef A" if commanded direction is forward and "TorqRef B" for reverse. Bit 4 "FW LoadLimit" – Enables drive to perform load calculation at base speed. Drive will then limit operation above base speed depending on load. Bit 5 "BrkSlipEncls" – A "1" Disables the partial Brake Slip routine from the drive when encoderless is selected. Bit 6 "BrkSlipStart" – Starts drive if Brake slippage is detected. Bit 7 "Test Brake" – Tests the brake at Start. Torque is applied against the brake while movement is monitored. Bit 8 "Fast Stop Bk" – Brake is set immediately upon receiving a Fast Stop input vs. setting the brake after the ramp. Bit 9 "BkSlp SpdLmt" – When a brake slip condition is detected, the load is lowered at a fixed speed (Preset Speed 1).			
		1101	**755 Trq Prove Setup** Torque Prove Setup Allows control of specific torque proving functions through a communication device. Options: Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, NHdwrOvrTrvl, PHdwrOvrTrvl, End Stop Rev, Decel Rev, End Stop Fwd, Decel Fwd, Float Micro, Fast Stop Default: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 Bit: 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0 0 = Disabled 1 = Enabled			
		1102	**755 DI FloatMicroPsn** Digital Input Float Micro Position Selects the digital input to be used for the float / micro position functions.	Default: 0.00 Min/Max: 0.00 / 159999.15	RW	32-bit Integer
		1103	**755 Trq Prove Status** Torque Prove Status Displays the status bits for TorqProve. Options: Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Encoderless, RefLoadLmted, LoadTestActv, Brake Set, BrkSlip1 Alm, Micro Psn, DecelLmtActv, EndLimitActv Default: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 Bit: 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0 0 = Disabled 1 = Enabled			
		1104	**755 Trq Lmt SlewRate** Torque Limit Slew Rate Sets the rate to ramp the torque limits to zero during brake proving.	Units: Secs Default: 10.000 Min/Max: 0.500 / 300.000	RW	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
APPLICATIONS	Torque Prove	**1105**	755 **Speed Dev Band** Speed Deviation Band The amount of allowable deviation between the commanded speed and the actual speed (from a feedback device). When this value is exceeded for the amount of time in P1106, a fault will occur.	Units: Default: Min/Max:	Hz RPM P27 [Motor NP Hertz] x 0.0334 P28 [Motor NP RPM] x 0.0334 P27 x 0.0016 / P27 x 0.25 P28 x 0.0016 / P28 x 0.25	RW	Real
		1106	755 **SpdBand Intgrtr** Speed Band Integer The amount of time for which the actual speed is allowed to deviate from P1105 [Speed Dev Band] before a fault occurs.	Units: Default: Min/Max:	Secs 0.060 0.001 / 0.200	RW	Real
		1107	755 **Brk Release Time** Brake Release Time Sets the time between the brake release command and when the drive begins to accelerate. In Encoderless mode, this parameter sets the time to release the brake after drive starts.	Units: Default: Min/Max:	Secs 0.100 0.000 / 10.000	RW	Real
		1108	755 **Brk Set Time** Brake Set Time Defines the amount of delay time between commanding the brake to be set and the start of brake proving.	Units: Default: Min/Max:	Secs 0.100 0.000 / 10.000	RW	Real
		1109	755 **Brk Alarm Travel** Brake Alarm Travel Sets the number of motor shaft revolutions allowed during the brake slippage test. Drive torque is reduced to check for brake slippage. When slippage occurs, the drive allows this number of motor shaft revolutions before regaining control. Not used when P1100 [Trq Prove Cfg] Bit 1 “Encoderless” = 1 (enabled).	Default: Min/Max:	1.00 0.00 / 1000.00	RW	Real
		1110	755 **Brk Slip Count** Brake Slip Count Sets the number of encoder counts to define a brake slippage condition. Not used when P1100 [Trq Prove Cfg] Bit 1 “Encoderless” = 1 (enabled).	Default: Min/Max:	250.00 0.00 / 65535.00	RW	Real
		1111	755 **Float Tolerance** Float Tolerance Sets the speed level where the float timer starts. Also sets the speed level where the brake will be closed when P1100 [Trq Prove Cfg] Bit 1 “Encoderless” = 1 (enabled).	Units: Default: Min/Max:	Hz RPM P27 [Motor NP Hertz] x 0.0334 P28 [Motor NP RPM] x 0.0334 P27 x 0.0016 / P27 x 0.25 P28 x 0.0016 / P28 x 0.25	RW	Real
		1112	755 **MicroPsnScalePct** Micro Position Scale Percent Sets the percent of speed reference to be used when micropositioning has been selected in P1100 [Trq Prove Cfg]. Bit 2 of P1100 [Trq Prove Cfg], determines if the motor needs to come to a stop before this setting will take effect.	Units: Default: Min/Max:	% 10.000 0.100 / 100.000	RW	Real
		1113	755 **ZeroSpdFloatTime** Zero Speed Float Time Sets the amount of time the drive is below P1111 [Float Tolerance] before the brake is set. Not used when P1100 [Trq Prove Cfg] Bit 1 “Encoderless” = 1 (enabled).	Units: Default: Min/Max:	Secs 5.000 0.100 / 500.000	RW	Real
		1114	755 **Brake Test Torq** Brake Test Torque Sets the percent of torque applied to the motor before the brake is released when P1100 [Trq Prove Cfg] bit 7 “Test Brake’ is enabled.	Units: Default: Min/Max:	% 50 0 / 150	RW	Real

File	Group	No.	Display Name Full Name Description	Values	Read-Write	Data Type
APPLICATIONS	Fibers Function	1120	**Fiber Control** Fiber Control Controls the Sync and Traverse Fiber Application functions.			

Options	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Traverse Ena	Sync Enable
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Disabled
1 = Enabled

Bit 0 "Sync Enable" – Used in combination with an optional digital input to begin Synchronous speed change upon the falling edge of enable.
Bit 1 "Traverse Ena" – Used in combination with an optional digital input to enable/disable the speed traverse routine.

		1121	**Fiber Status** Fiber Status Status of Sync and Traverse functions.			

Options	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Traverse Dec	Traverse On	Sync Ramp	Sync Hold
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Disabled
1 = Enabled

Bit 0 "Synch Hold" – Set when the Synchronous Speed change function is holding the speed reference constant. The speed will begin ramping to its setpoint upon the falling edge of Sync Enable.
Bit 1 "Sync Ramp" – Set when the Synchronous Speed change function is ramping to its setpoint.
Bit 2 "Traverse On" – Set when the Traverse Speed function is varying the speed, either increasing or decreasing.
Bit 3 "Traverse Dec" – Set when the Traverse Speed function is decreasing the motor speed.

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
APPLICATIONS	Fibers Function	**1122**	**Sync Time** Synchronize Time The time in seconds to ramp from the "held speed reference" to the current speed reference, after the Sync input is de-energized.	Units: Default: Min/Max:	Secs 0.0 0.0 / 3600.0	RW	Real
		1123	**Traverse Inc** Traverse Increment Sets the time period in seconds of increasing speed for the Fiber Traverse function.	Units: Default: Min/Max:	Secs 0.00 0.00 / 30.00	RW	Real
		1124	**Traverse Dec** Traverse Decrement Sets the time period in seconds of decreasing speed for the Fiber Traverse function.	Units: Default: Min/Max:	Secs 0.00 0.00 / 30.00	RW	Real
		1125	**Max Traverse** Maximum Traverse Sets the amplitude of the triangle wave speed modulation for the Fiber Traverse function. The total speed variation will be twice this value, from speed ref plus Max Traverse to speed ref minus Max Traverse.	Units: Default: Min/Max:	Hz / RPM 0.00 0.00 / P520 [Max Fwd Speed]	RW	Real
		1126	**P Jump** Position Jump Sets the amplitude of the square wave speed modulation for the Fiber Traverse function. This speed is alternately added to and subtracted from the speed reference together with the [Max Traverse] triangle speed modulation.	Units: Default: Min/Max:	Hz / RPM 0.00 0.00 / P520 [Max Fwd Speed]	RW	Real
		1129	**DI Fiber SyncEna** Digital Input Fiber Synchronize Enable Selects a digital input source for the Fiber Application Function's synchronous speed change routine. Used in combination with the [Fiber Control] Sync Enable bit.	Default: Min/Max:	0.00 0.00 / 159999.15	RW	32-bit Integer
		1130	**DI Fiber TravDis** Digital Input Fiber Traverse Disable Selects a digital input source for the Fiber Application Traverse Routine. This is an inverted input, so the Traverse Routine is disabled when the input is active (set). Used in combination with the [Fiber Control] Traverse Ena bit.	Default: Min/Max:	0.00 0.00 / 159999.15	RW	32-bit Integer

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
APPLICATIONS	Adjustable Vltg	**1131**	**Adj Vltg Config** Adjustable Voltage Configuration Selects input voltage phase setting. Options: Reserved (15–1), PhaseSetting (0) Default: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 Bit: 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0 0 = 3-Phase Operation 1 = 1-Phase Operation				
		1133	**Adj Vltg Select** Adjustable Voltage Reference Select Selects the source of the voltage reference to the drive.	Default: Min/Max:	0 0 / 159999	RW	32-bit Integer
		1134	**Adj Vltg Ref Hi** Adjustable Voltage Reference High Scales the upper value of the P1133 [Adj Vltg Select] selection when the source is an analog input.	Units: Default: Min/Max:	% 0.0 –/+100.0 of Drive Rated Volts	RW	Real
		1135	**Adj Vltg Ref Lo** Adjustable Voltage Reference Low Scales the lower value of the P1133 [Adj Vltg Select] selection when the source is an analog input.	Units: Default: Min/Max:	% 0.0 –/+100.0 of Drive Rated Volts	RW	Real
		1136	**Adj Vltg TrimSel** Adjustable Voltage Trim Select Selects the source of the voltage trim that is added to or subtracted from the voltage reference.	Default: Min/Max:	0 0 / 159999	RW	32-bit Integer
		1137	**Adj Vltg Trim Hi** Adjustable Voltage Trim High Scales the upper value of the P1136 [Adj Vltg TrimSel] selection when the source is an analog input.	Units: Default: Min/Max:	% 0.0 –/+100.0 of Drive Rated Volts	RW	Real
		1138	**Adj Vltg Trim Lo** Adjustable Voltage Trim Low Scales the lower value of the P1136 [Adj Vltg TrimSel] selection when the source is an analog input.	Units: Default: Min/Max:	% 0.0 –/+100.0 of Drive Rated Volts	RW	Real
		1139	**Adj Vltg Command** Adjustable Voltage Command Displays the voltage value of the reference specified in P1133 [Adj Vltg Select].	Units: Default: Min/Max:	VAC 0.00 0.00 / Drive Rated Volts	RO	Real
		1140	**Adj Vltg AccTime** Adjustable Voltage Acceleration Time Sets the rate of voltage increase. The value will be the time it takes to ramp the voltage from P1152 [Min Adj Voltage] to P36 [Maximum Voltage]. An "S" curve can be applied to the ramp using P1150 [Adj Volt Scurve].	Units: Default: Min/Max:	Secs 0.0 0.0 / 3600.0	RW	Real
		1141	**Adj Vltg DecTime** Adjustable Voltage Deceleration Time Sets the rate of voltage decrease. The value will be the time it takes to ramp the voltage from P36 [Maximum Voltage] to P1152 [Min Adj Voltage]. An "S" curve can be applied to the ramp using P1150 [Adj Volt Scurve]. **Important:** This ramp and P142/143 [Decel Time X] must ramp to zero for drive to Stop.	Units: Default: Min/Max:	Secs 0.0 0.0 / 3600.0	RW	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
APPLICATIONS	Adjustable Vltg	**1142** **1143** **1144** **1145** **1146** **1147** **1148**	**Adj Vltg Preset1** **Adj Vltg Preset2** **Adj Vltg Preset3** **Adj Vltg Preset4** **Adj Vltg Preset5** **Adj Vltg Preset6** **Adj Vltg Preset7** Adjustable Voltage Preset 1…7 Provides an internal fixed voltage command value that is available as a selection for P1133 [Adj Vltg Select].	Units: Default: Min/Max:	VAC 0.0 0.0 / Drive Rated Volts	RW	Real
		1149	**Adj Vltg RefMult** Adjustable Voltage Reference Multiplier Scales the voltage reference value from the reference source.	Units: Default: Min/Max:	% 0.0 –/+100.0 of Drive Rated Volts	RW	Real
		1150	**Adj Vltg Scurve** Adjustable Voltage S Curve Sets the percentage of accel or decel time to be applied to the voltage ramp as “S” curve. Time is added 1/2 at the beginning and 1/2 at the end.	Units: Default: Min/Max:	% 0.0 0.0 / 100.0	RW	Real
		1151	**Adj Vltg TrimPct** Adjustable Voltage Trim Percentage Scales the total voltage trim value from all sources. Analog In 1 and 2 are scaled separately with P1137 [Adj Vltg Trim Hi] and P1138 [Adj Vltg Trim Lo] then [Adj Vltg TrimPct] sets the trim value. The sign of this value will determine if trim is added or subtracted from the reference.	Units: Default: Min/Max:	% 0.0 –/+100.0 of Drive Rated Volts	RW	Real
		1152	**Min Adj Voltage** Minimum Adjustable Voltage Sets the low limit for the voltage reference when P35 [Motor Ctrl Mode] is set to 9 “Adj Voltage.”	Units: Default: Min/Max:	VAC 0.0 0.0 / Drive Rated Volts	RW	Real
		1153	**Dead Time Comp** Dead Time Compensation Sets the dead time compensation value to reduce DC offsets in the output voltage from the PWM inverter for non-motor loads.	Units: Default: Min/Max:	% 100.00 0.00 / 100.00	RW	Real
		1154	**DC Offset Ctrl** DC Offset Control Used to further reduce DC offsets in the output voltage from the PWM inverter for non-motor loads. When enabled, P1153 [Dead Time Comp] is disabled.	Default: Options:	0 = “Disable” 0 = “Disable” 1 = “Enable”	RW	32-bit Integer

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
APPLICATIONS	Pump Jack	**1165**	**Rod Speed** Rod Speed Displays the speed in RPM of the pump rod after the gearbox and sheaves.	Units: Default: Min/Max:	RPM 0.00 0.00 / 10000.00	RO	Real
		1166	**Rod Torque** Rod Torque Displays the load side torque. P1174 [Total Gear Ratio] must be greater than zero to activate this display.	Units: Default: Min/Max:	FtLb 0.00 0.00 / 10000.00	RO	Real
		1167	**Rod Speed Cmd** Rod Speed Command Displays the commanded speed in RPM of the pump rod after the gearbox and sheaves.	Units: Default: Min/Max:	RPM 0.00 0.00 / 10000.00	RO	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
APPLICATIONS	Pump Jack	**1168**	**TorqAlarm Action** Torque Alarm Action Sets the drive action when the Torque Alarm is exceeded. Note: only active with PC pump applications. See P1179 [OilWell Pump Cfg].	Default: Options:	0 = "Ignore" 0 = "Ignore" 1 = "Preset Spd1"	RW	32-bit Integer
		1169	**TorqAlarm Config** Torque Alarm Configure Enables the Torque Alarm function. Options: Reserved (15, 14, 13, 12, 11, 10, 9, 8, 7, 6, 5, 4, 3, 2, 1), Torque Level (0) Default: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 Bit: 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0 0 = Disabled 1 = Enabled				
		1170	**TorqAlarm Dwell** Torque Alarm Dwell Sets the time that the torque must exceed P1171 [TorqAlarm Level] before P1168 [TorqAlarm Action] takes place.	Units: Default: Min/Max:	Secs 0.0 0.0 / 60.0	RW	Real
		1171	**TorqAlarm Level** Torque Alarm Level Sets the level at which the Torque Alarm becomes active.	Units: Default: Min/Max:	FtLb 0.0 0.0 / 5000.0	RW	Real
		1172	**TorqAlm Timeout** Torque Alarm Time Out Sets the amount of time a Torque Alarm can be active until timeout action begins.	Units: Default: Min/Max:	Secs 0.0 0.0 / 600.0	RW	Real
		1173	**TorqAlarm TOActn** Torque Alarm Time Out Action Sets the drive action when P1172 [TorqAlrm Timeout] is exceeded. "Ignore" (0) – No action is taken "Alarm" (1) – Alarm occurs "Flt Minor" (2) – Minor Fault occurs if enabled, otherwise Fault Coast Stop "FltCoastStop" (3) – Fault Coast Stop occurs "Flt RampStop" (4) – Fault Ramp Stop occurs "Flt CL Stop" (5) – Fault Current Limit Stop occurs	Default: Options:	0 = "Ignore" 0 = "Ignore" 1 = "Alarm" 2 = "Flt Minor" 3 = "FltCoastStop" 4 = "Flt RampStop" 5 = "Flt CL Stop" 6 = "Resume"	RW	32-bit Integer
		1174	**Total Gear Ratio** Total Gear Ratio Displays the calculated total gear ratio as follows: (P1184 [Gearbox Sheave] x P1183 [Gearbox Ratio]) / P1178 [Motor Sheave]	Default: Min/Max:	0.0 0.0 / 32000.0	RO	Real
		1175	**Max Rod Speed** Maximum Rod Speed Sets the maximum speed for the polished rod in a PCP oil well application.	Units: Default: Min/Max:	RPM 300.0 200.0 / 600.0	RW	Real
		1176	**Max Rod Torque** Maximum Rod Torque Sets the desired maximum torque on the polished rod in a PCP oil well application.	Units: Default: Min/Max:	FtLb 500.0 0.0 / 3000.0	RW	Real
		1177	**Min Rod Speed** Minimum Rod Speed Sets the minimum speed for the polished rod in a PCP oil well application.	Units: Default: Min/Max:	RPM 0.0 0.0 / 199.0	RW	Real
		1178	**Motor Sheave** Motor Sheave Sets the sheave diameter on the motor.	Units: Default: Min/Max:	Inch 10.0 0.25 / 25.00	RW	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
APPLICATIONS	Pump Jack	**1179**	**OilWell Pump Cfg** Oil Well Pump Configure Selects the type of oil well application. "Disable" (0) – Disables oil well parameters. "Pump Jack" (1) – Sets parameters based on Pump Jack type oil well. "PrgrsvCavity" (2) – Sets parameters based on Progressive Cavity type Pumps.	Default: Options:	0 = "Disable" 0 = "Disable" 1 = "Pump Jack" 2 = "PrgrsvCavity"	RW	32-bit Integer
		1180	**PCP Pump Sheave** PCP Pump Sheave Specifies the pump sheave diameter.	Units: Default: Min/Max:	Inch 20.0 0.25 / 200.00	RW	Real
		1181	**Gearbox Limit** Gearbox Limit Sets the gearbox torque limit. This value is used in determining the P670 [Pos Torque Limit] and P671 [Neg Torque Limit].	Units: Default: Min/Max:	% 100.0 0.0 / 200.0	RW	Real
		1182	**Gearbox Rating** Gearbox Rating Sets the gearbox rating.	Units: Default: Min/Max:	Kin# 640.0 16.0 / 2560.0	RW	Real
		1183	**Gearbox Ratio** Gearbox Ratio Specifies the nameplate gear ratio.	Default: Min/Max:	1.0 1.0 / 40.0	RW	Real
		1184	**Gearbox Sheave** Gearbox Sheave Sets the Sheave diameter on the Gearbox	Units: Default: Min/Max:	Inch 0.25 0.25 / 100.00	RW	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
APPLICATIONS	Pump Off	**1187**	**Pump Off Config** Pump Off Configure Selects the torque data that will be used for the Pump-Off control. "Automatic" (0) – Auto select. "Position" (1) – Downstroke torque. "Cycle" (2) – Full Stroke torque.	Default: Options:	0 = "Automatic" 0 = "Automatic" 1 = "Position" 2 = "Cycle"	RW	32-bit Integer
		1188	**Pump Off Setup** Pump Off Setup Select Pump-Off options.				
		1189	**Pump Off Action** Pump Off Action Selects the action to be taken after a Pump-Off condition has been detected.	Default: Options:	0 = "Change Speed" 0 = "Change Speed" 1 = "Always Stop" 2 = "Stop After 1" 3 = "Stop After 2"	RW	32-bit Integer

Options

	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Cycle PO Pos	Pos Min Trq	Pos Offset	Pos Filter
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Disabled
1 = Enabled

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
APPLICATIONS	Pump Off	**1190**	**Pump Off Control** Pump Off Control Enables/Disable the Pump-Off control or select the source for the torque level.	Default: Options:	0 = "Disable" 0 = "Disable" 1 = "Baseline Set" 2 = "Fixed Setpt"	RW	32-bit Integer
		1191	**Pump Off Status** Pump Off Status Displays the status of the Pump-Off control. 0 = Disabled 1 = Enabled				
		1192	**Pump Cycle Store** Pump Cycle Store Stores the torque waveform. The value will automatically be returned to 0.	Default: Options:	0 = "Disable" 0 = "Disable" 1 = "Enable"	RW	32-bit Integer
		1193	**Set Top ofStroke** Set Top of Stroke Captures the position at the top of the pump stroke cycle. The value will automatically be returned to 0.	Default: Options:	0 = "Disable" 0 = "Disable" 1 = "Enable"	RW	32-bit Integer
		1194	**Torque Setpoint** Torque Set Point Sets the torque level for Pump-Off when P1190 [Pump Off Control] is set to 2 "Fixed Setpt."	Units: Default: Min/Max:	% 0.00 0.00 / 100.00	RW	Real
		1195	**Pump Off Level** Pump Off Level Sets the percent change in torque from the baseline or setpoint that will indicate the well is in the pump-off condition.	Units: Default: Min/Max:	% 5.00 0.00 / 100.00	RW	Real
		1196	**Pump Off Speed** Pump Off Speed Sets the torque level for Pump-Off when P1190 [Pump Off Control] is set to Fixed Setpt.	Units: Default: Min/Max:	% 20.00 0.00 / 100.00	RW	Real
		1197	**Pump Off Time** Pump Off Time Sets the time the drive will run at the reduced P1196 [Pump Off Speed] before returning to the commanded speed.	Units: Default: Min/Max:	Secs 600.00 120.00 / 60000.00	RW	Real
		1198	**Pct Cycle Torque** Percent Cycle Torque Displays the average torque for a full pump cycle.	Units: Default: Min/Max:	% 0.00 -100.00 / 200.00	RO	Real
		1199	**Pct Lift Torque** Percent Lift Torque Displays the average rod lift torque.	Units: Default: Min/Max:	% 0.00 -100.00 / 200.00	RO	Real
		1200	**Pct Drop Torque** Percent Drop Torque Displays the average rod dropping torque.	Units: Default: Min/Max:	% 0.00 -100.00 / 200.00	RO	Real
		1201	**Stroke Pos Count** Stroke Position Count Displays the pump cycle position. The top of stroke should be 0 and rolls over at 10,000.	Default: Min/Max:	0 0 / 15000	RO	Real

Options

	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Pump Stable	PumpOff Alrm	TopOf Stroke	Cycle Used	Pump Stopped	Pump Slowed	Pump OffEnbl
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
APPLICATIONS	Pump Off	1202	**Stroke Per Min** Stroke Per Minute Displays the strokes per minute.	Default: Min/Max:	0.00 0.00 / 50.00	RO	Real
		1203	**Pump Off Count** Pump Off Count Displays the number of times a pump-off condition has occurred since this parameter was reset.	Default: Min/Max:	0.00 0.00 / 60000.00	RW	Real
		1204	**PumpOff SleepCnt** Pump Off Sleep Count Displays the number of times a sleep condition has occurred since this parameter was reset.	Default: Min/Max:	0.00 0.00 / 60000.00	RW	Real
		1205	**Day Stroke Count** Day Stroke Count Displays the number of strokes for the past 24 hours. This is a rolling counter updated every hour.	Default: Min/Max:	0.00 0.00 / 65535.00	RO	Real
		1206	**DI PumpOff Disbl** Digital Input Pump Off Disable Selects the digital input source for the Pump Off Disable function.	Default: Min/Max:	0.00 0.00 / 159999.15	RW	32-bit Integer
		1207	**Pump OffSleepLvl** Pump Off Sleep Level Provides a source for P351 [SleepWake RefSel]. This provides the start/stop control of the drive by the Pump-Off function.	Units: Default: Min/Max:	Volt 0.00 0.00 / 10.00	RO	32-bit Integer

File	Group	No.	Display Name Full Name Description	Values	Read-Write	Data Type
APPLICATIONS	Profiling	1210	755 **Profile Status** Profile Status Indicates status of speed profile/position indexer control logic.			

Options	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Home Not Set	Vel Override	Restart Step	Resume	Stopped	Complete	In Position	Holding	Dwell	PositionMode	Running	Enabled	Reserved	Reserved	Reserved	Step Bit 4	Step Bit 3	Step Bit 2	Step Bit 1	Step Bit 0
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Condition False
1 = Condition True

Bit 0 “Step Bit 0” – Bit 0 through Bit 4 indicate executing step number in the move table in binary format.
Bit 1 “Step Bit 1”
Bit 2 “Step Bit 2”
Bit 3 “Step Bit 3”
Bit 4 “Step Bit 4”
Bit 8 “Enabled” – Indicates that the profile control logic is enabled. When the drive is started with the profiler selection (Option 6) in the speed/torque/position mode P313 [Actv SpTqPs Mode], this bit turns on.
Bit 9 “Running” – Indicates that the profile control logic is in running state.
Bit 10 “PositionMode” – Indicates that the profile control logic is using position control logic.
Bit 11 “Dwell” – Indicates that the profile control logic is in dwell state.
Bit 12 “Holding” – Indicates that the profile control logic is in holding states
Bit 13 “In Position” – Indicates that the target position has been reached at the completion of a move. The in position bandwidth P726 [In Pos Psn Band] can be adjusted to affect when this bit is set with respect to the target position. This bit will be cleared when a new move is begun. The status of this bit is not meaningful when using blended steps.
Bit 14 “Complete” – Indicates that all steps in the move table have been executed and a step with a End action has been reached. The profile control logic is complete. This bit will be cleared when the profile is first enabled.
Bit 15 “Stopped” – Indicates that the profile control logic stops the drive following Bit 14 “Complete” and any additional dwell time specified for the End step. This bit will be cleared when a new profile is begun.
Bit 16 “Resume” – Indicates that an existing step is to resume execution when the profile is enabled. A previously running step will then be allowed to complete. When the bit is clear, the profile will begin at its Starting Step.
Bit 17 “Restart Step” – Follows the state of the restart step bit in P1213 [Profile Command] Bit 10 “Restart Step”.
Bit 18 “Vel Override” – Follows the state of the velocity override bit in P1213 [Profile Command] Bit 9 “Vel Override”.
Bit 19 “Home Not Set” – Indicates that the home position is not defined and the move table contains a position absolute move type. When this bit is set the profile will not be allowed to execute. This bit will be cleared when either a homing function or position redefine function is completed.

		1212	755 **Units Traveled** Units Traveled Indicates total number of units traveled. The relationship between the feedback edge counts and the position units is determined by the P1215 [Counts Per Unit]. Actual motor position is converted from the edge counts to this value using the P1215 [Counts Per Unit].	Units: Default: Min/Max:	Cnts Read Only –/+ 2200000000.00	RO	Real

File	Group	No.	Display Name Full Name Description	Values	Read-Write	Data Type
APPLICATIONS	Profiling	1213	755 **Profile Command** Profile Command Sets bits to configure the speed profile/position indexer control logic.			

Options	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Prof Run Alm	HomNotSetAlm	Restart Step	Vel Override	Hold Step	Reserved	Reserved	Reserved	StrStepSel4	StrStepSel3	StrStepSel2	StrStepSel1	StrStepSel0
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
Bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Disabled
1 = Enabled

Bit 0 "StrStepSel0" – Bit 0 through Bit 4 set initial or starting step in the move table in binary format. A starting step value of zero results in no motion when the drive is enabled.

Bit 1 "StrStepSel1"

Bit 2 "StrStepSel2"

Bit 3 "StrStepSel3"

Bit 4 "StrStepSel4"

Bit 8 "Hold Step" – When the drive is enabled with this bit is set, the drive starts and runs at zero velocity. The starting step is not executed until the 'Hold Step' bit is removed.

For non-blended moves, the drive will hold zero speed and/or current position. This does not stop the drive. For blended moves, the drive will continue to run at the step velocity. If the Hold Step bit is removed, then the conditions required to complete the step can be evaluated.

Bit 9 "Vel Override" – can be used to rescale all move velocities by the velocity override P1216 [ProfVel Override]. When this bit is off, a scale factor of 1 is used.

Bit 10 "Restart Step" – can be used to disable a currently executing profile. This bit forces the current step to reset to the starting step value.

Bit 11 "HomNotSetAlm" – sets condition to indicate the "home position not set" alarm. The absolute position type will work without home position if the bit is off. Set on as default.

Bit 12 "Prof Run Alm" – sets condition to indicate the profile running alarm during the drive is running. Set on as default.

1215	755 **Counts Per Unit** Counts Per Unit Sets number of position feedback counts per unit of machine travel (ex, 1024 encoder edge counts per inch). This parameter is used to scale position targets from their entered values of units to internal units of encoder edge counts. This parameter is also used to convert actual motor position from encoder edge counts back into the desired units for display in P1212 [Units Traveled].	Default: Min/Max:	1 1 / 2200000000	RW	32-bit Integer
1216	755 **ProfVel Override** Profile Velocity Override Sets multiplier for all move velocities when the velocity override function is selected P1213 [Profile Command] Bit 9 "Vel Override." This parameter is typically set to a value less than 1. When the velocity override bit P1213 [Profile Command] Bit 9 "Vel Override" is off, a scale factor of 1 is used.	Units: Default: Min/Max:	% 100.00 10.00 / 150.00	RW	Real

File	Group	No.	Display Name Full Name Description	Values	Read-Write	Data Type
APPLICATIONS	Profiling	**1217**	755 **Prof DI Invert** Profile Digital Input Invert Sets polarity of the digital inputs. Each bit is assigned to a move table step. Rising edge of the digital input is used when the bit is off, and falling edge of digital input is used when the bit is on.			

Options	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Step 16	Step 15	Step 14	Step 13	Step 12	Step 11	Step 10	Step 9	Step 8	Step 7	Step 6	Step 5	Step 4	Step 3	Step 2	Step 1	StrStepSel4	StrStepSel3	StrStepSel2	StrStepSel1	StrStepSel0	Vel Override	AbortProfile	Abort Step	Hold Step
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Condition False
1 = Condition True

Bit 0 "Hold Step" – sets polarity of the digital input for the hold step, P1218 [DI Hold Step].
Bit 1 "Abort Step" – sets polarity of the digital input for abort step, P1219 [DI Abort Step].
Bit 2 "AbortProfile" – sets polarity of the digital input for abort profile, P1220 [DI Abort Profile].
Bit 3 "Vel Override" – sets polarity of the digital input for velocity override, P1221 [DI Vel Override].
Bit 4 "StrStepSel0" – sets polarity of the digital input for start step 1, P1222 [DI StrtStep Sel0].
Bit 5 "StrStepSel1" – sets polarity of the digital input for start step 2, P1223 [DI StrtStep Sel1].
Bit 6 "StrStepSel2" – sets polarity of the digital input for start step 3, P1224 [DI StrtStep Sel2].
Bit 7 "StrStepSel3" – sets polarity of the digital input for start step 4, P1225 [DI StrtStep Sel3].
Bit 8 "StrStepSel4" – sets polarity of the digital input for start step 5, P1226 [DI StrtStep Sel4]
Bit 9 "Step 1" – sets polarity of the digital input for move step 1, P1230 [Step 1 Type].
Bit 10 "Step 2" – sets polarity of the digital input for move step 2, P1240 [Step 2 Type].
Bit 11 "Step 3" – sets polarity of the digital input for move step 3, P1250 [Step 3 Type].
Bit 12 "Step 4" – sets polarity of the digital input for move step 4, P1260 [Step 4 Type].
Bit 13 "Step 5" – sets polarity of the digital input for move step 5, P1270 [Step 5 Type].
Bit 14 "Step 6" – sets polarity of the digital input for move step 6, P1280 [Step 6 Type].
Bit 15 "Step 7" – sets polarity of the digital input for move step 7, P1290 [Step 7 Type].
Bit 16 "Step 8" – sets polarity of the digital input for move step 8, P1300 [Step 8 Type].
Bit 17 "Step 9" – sets polarity of the digital input for move step 9, P1310 [Step 9 Type].
Bit 18 "Step 10" – sets polarity of the digital input for move step 10, P1320 [Step 10 Type].
Bit 19 "Step 11" – sets polarity of the digital input for move step 11, P1330 [Step 11 Type].
Bit 20 "Step 12" – sets polarity of the digital input for move step 12, P1340 [Step 12 Type].
Bit 21 "Step 13" – sets polarity of the digital input for move step 13, P1350 [Step 13 Type].
Bit 22 "Step 14" – sets polarity of the digital input for move step 14, P1360 [Step 14 Type].
Bit 23 "Step 15" – sets polarity of the digital input for move step 15, P1370 [Step 15 Type].
Bit 24 "Step 16" – sets polarity of the digital input for move step 16, P1380 [Step 16 Type].

	1218	755 **DI Hold Step** Digital Input Hold Step Sets a digital input port for the hold step in profile/indexer control logic. The digital input assigned by this parameter is equivalent to P1213 [Profile Command] Bit 8 "Hold Step." Polarity of active state is defined by P1217 [Prof DI Invert] Bit 0 "Hold Step."	Default: Min/Max:	0.00 0.00 / 159999.15	RW	32-bit Integer
	1219	755 **DI Abort Step** Digital Input Abort Step Sets a digital input port for the abort step in profile/indexer control logic. Polarity of active state is defined by P1217 [Prof DI Invert] Bit 1 "Abort Step."	Default: Min/Max:	0.00 0.00 / 159999.15	RW	32-bit Integer

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
APPLICATIONS	Profiling	**1220**	755 **DI Abort Profile** Digital Input Abort Profile Sets a digital input port for the abort profile in profile/indexer control logic. Polarity of active state is defined by P1217 [Prof DI Invert] Bit 2 "AbortProfile."	Default: Min/Max:	0.00 0.00 / 159999.15	RW	32-bit Integer
		1221	755 **DI Vel Override** Digital Input Velocity Profile Sets a digital input port for the velocity override in profile/indexer control logic. The digital input assigned by this parameter is equivalent to P1213 [Profile Command] Bit 9 "Vel Override." Polarity of active state is defined by P1217 [Prof DI Invert] Bit 3 "Vel Override."	Default: Min/Max:	0.00 0.00 / 159999.15	RW	32-bit Integer
		1222 **1223** **1224** **1225** **1226**	755 **DI StrtStep Sel0** 755 **DI StrtStep Sel1** 755 **DI StrtStep Sel2** 755 **DI StrtStep Sel3** 755 **DI StrtStep Sel4** Digital Input Start Step Select 0…4 Set digital input ports for the start step in profile/indexer control logic. The digital inputs assigned by these parameters are equivalent to P1213 [Profile Command] Bit 4 "StrStepSel4." Polarities of active state are defined by P1217 [Prof DI Invert] Bit 4 "StrStepSel0" to Bit 8 "StrStepSel4."	Default: Min/Max:	0.00 0.00 / 159999.15	RW	32-bit Integer
		1230 **1240** **1250** **1260** **1270** **1280** **1290** **1300** **1310** **1320** **1330** **1340** **1350** **1360** **1370** **1380**	755 **Step 1 Type** 755 **Step 2 Type** 755 **Step 3 Type** 755 **Step 4 Type** 755 **Step 5 Type** 755 **Step 6 Type** 755 **Step 7 Type** 755 **Step 8 Type** 755 **Step 9 Type** 755 **Step 10 Type** 755 **Step 11 Type** 755 **Step 12 Type** 755 **Step 13 Type** 755 **Step 14 Type** 755 **Step 15 Type** 755 **Step 16 Type** Step 1…16 Type Set type of move for a particular step. The possible step types are: "Speed" (0) = Speed Profile moves in speed mode. "Position Abs" (1) = Position Absolute moves in absolute position mode. "PositionIncr" (2) = Position Incremental moves in position increment mode. The drive must have the direction mode set to the bipolar for the position regulator to function properly. The current, torque, and regen power limits must be set so as not to limit the programmed deceleration time. If the limits occur, the position regulator may overshoot the position set point.	Default: Options:	0 = "Speed" 0 = "Speed" 1 = "Position Abs" 2 = "PositionIncr"	RW	32-bit Integer

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
APPLICATIONS	Profiling	1231 1241 1251 1261 1271 1281 1291 1301 1311 1321 1331 1341 1351 1361 1371 1381	755 **Step 1 Velocity** 755 **Step 2 Velocity** 755 **Step 3 Velocity** 755 **Step 4 Velocity** 755 **Step 5 Velocity** 755 **Step 6 Velocity** 755 **Step 7 Velocity** 755 **Step 8 Velocity** 755 **Step 9 Velocity** 755 **Step 10 Velocity** 755 **Step 11 Velocity** 755 **Step 12 Velocity** 755 **Step 13 Velocity** 755 **Step 14 Velocity** 755 **Step 15 Velocity** 755 **Step 16 Velocity** Step 1…16 Velocity Set speed at which a move will take place. The step velocity applies to all three types of moves – position absolute, position incremental, and speed profile. The motor may not achieve the step velocity in all cases. Short distance moves may begin to decelerate before the step velocity is reached. If the move is sufficiently long, then the motor speed will be limited to the step velocity. Sign on the step velocity is used to determine direction of motor rotation. Cannot be used with most blended moves in Position Absolute type and Position Incremental type.	Units: Default: Min/Max:	Hz / RPM 0.00 –/+P27 [Motor NP Hertz] x 8 –/+P28 [Motor NP RPM] x 8	RW	Real
		1232 1242 1252 1262 1272 1282 1292 1302 1312 1322 1332 1342 1352 1362 1372 1382	755 **Step 1 Accel** 755 **Step 2 Accel** 755 **Step 3 Accel** 755 **Step 4 Accel** 755 **Step 5 Accel** 755 **Step 6 Accel** 755 **Step 7 Accel** 755 **Step 8 Accel** 755 **Step 9 Accel** 755 **Step 10 Accel** 755 **Step 11 Accel** 755 **Step 12 Accel** 755 **Step 13 Accel** 755 **Step 14 Accel** 755 **Step 15 Accel** 755 **Step 16 Accel** Step 1…16 Acceleration Set acceleration time between zero and rated motor speed in seconds. The motor will accelerate towards the step speed using the step velocity parameter. The minimum acceleration rate is determined by the system inertia. Cannot be used with most blended moves in Position Absolute type and Position Incremental type.	Units: Default: Min/Max:	Secs 10.00 0.00 / 3600.00	RW	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
APPLICATIONS	Profiling	1233	755 **Step 1 Decel**	Units:	Secs	RW	Real
		1243	755 **Step 2 Decel**	Default:	10.00		
		1253	755 **Step 3 Decel**	Min/Max:	0.00 / 3600.00		
		1263	755 **Step 4 Decel**				
		1273	755 **Step 5 Decel**				
		1283	755 **Step 6 Decel**				
		1293	755 **Step 7 Decel**				
		1303	755 **Step 8 Decel**				
		1313	755 **Step 9 Decel**				
		1323	755 **Step 10 Decel**				
		1333	755 **Step 11 Decel**				
		1343	755 **Step 12 Decel**				
		1353	755 **Step 13 Decel**				
		1363	755 **Step 14 Decel**				
		1373	755 **Step 15 Decel**				
		1383	755 **Step 16 Decel** Step 1…16 Deceleration Set deceleration time between rated motor speed and zero in seconds. The motor will decelerate towards zero speed. The minimum deceleration rate is determined by the system inertia. Cannot be used with most blended moves in Position Absolute type and Position Incremental type.				

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
APPLICATIONS	Profiling	**1234** **1244** **1254** **1264** **1274** **1284** **1294** **1304** **1314** **1324** **1334** **1344** **1354** **1364** **1374** **1384**	755 **Step 1 Value** 755 **Step 2 Value** 755 **Step 3 Value** 755 **Step 4 Value** 755 **Step 5 Value** 755 **Step 6 Value** 755 **Step 7 Value** 755 **Step 8 Value** 755 **Step 9 Value** 755 **Step 10 Value** 755 **Step 11 Value** 755 **Step 12 Value** 755 **Step 13 Value** 755 **Step 14 Value** 755 **Step 15 Value** 755 **Step 16 Value** Step 1…16 Value These parameters can take on any one of several meanings depending on the move type and action. The possible meanings for these parameters are given below. All other type/action combinations will be ignored. [Type] = Position Absolute [Action] = Posit Blend, Wait Dig-in, or Step to Next [Value] is the Absolute Target Position [Type] = Position Incremental [Action] = Posit Blend, Wait Dig-in, or Step to Next [Value] is the Incremental Target Position [Type] = Speed Profile [Action] = Posit Blend [Value] is the Incremental Target Position [Type] = Speed Profile [Action] = Time Blend, Wait Dig-in, or Step to Next [Value] is the Total Time to complete the move. Time is specified in 1/100ths of a second (1000 = 10.00 sec). Negative values result in time = 0 sec (no move) [Type] = Speed Profile [Action] = Parameter Blend [Value] is the parameter number to compare against the parameter set-point specified in the dwell parameter. Positive numbers will use a greater than check, negative numbers will use a less than check.	Default: Min/Max:	0 –2147483648 / 2147483647	RW	32-bit Integer

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
APPLICATIONS	Profiling	1235	755 **Step 1 Dwell**	Units:	Secs	RW	Real
		1245	755 **Step 2 Dwell**	Default:	0.00		
		1255	755 **Step 3 Dwell**	Min/Max:	–1.00 / 3600.00		
		1265	755 **Step 4 Dwell**				
		1275	755 **Step 5 Dwell**				
		1285	755 **Step 6 Dwell**				
		1295	755 **Step 7 Dwell**				
		1305	755 **Step 8 Dwell**				
		1315	755 **Step 9 Dwell**				
		1325	755 **Step 10 Dwell**				
		1335	755 **Step 11 Dwell**				
		1345	755 **Step 12 Dwell**				
		1355	755 **Step 13 Dwell**				
		1365	755 **Step 14 Dwell**				
		1375	755 **Step 15 Dwell**				
		1385	755 **Step 16 Dwell** Step 1…16 Dwell Set time delay between moves. P1210 [Profile Status] Bit 11 “Dwell” will be set to indicate that the step dwell period is active and timing. Zero value will disable dwell, negative value will wait forever. Not all steps can use dwell (example, most blended moves cannot use dwell). When the speed type with the parameter blend action move is used, the step dwell parameter will contain the parameter number of the set-point value to compare with the parameter selected in the value parameter.				

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
APPLICATIONS	Profiling	1236 1246 1256 1266 1276 1286 1296 1306 1316 1326 1336 1346 1356 1366 1376 1386	755 **Step 1 Batch** 755 **Step 2 Batch** 755 **Step 3 Batch** 755 **Step 4 Batch** 755 **Step 5 Batch** 755 **Step 6 Batch** 755 **Step 7 Batch** 755 **Step 8 Batch** 755 **Step 9 Batch** 755 **Step 10 Batch** 755 **Step 11 Batch** 755 **Step 12 Batch** 755 **Step 13 Batch** 755 **Step 14 Batch** 755 **Step 15 Batch** 755 **Step 16 Batch** Step 1…16 Batch Set number of times to repeat a step. For example, a batch count of two will cause that step to repeat two times before starting the next step. These parameters cannot be used with position absolute moves, since this would imply moving to the same position repeatedly. These parameters cannot be used with most blended moves (exception dig-in blend), because most blended moves need to transition to the next step, instead of repeating. The dig-in blend moves use this parameter to specify the number of digital input transitions required. A zero step batch setting will cause that step to repeat forever.	Default: Min/Max:	1 0 / 65535	RW	32-bit Integer
		1237 1247 1257 1267 1277 1287 1297 1307 1317 1327 1337 1347 1357 1367 1377 1387	755 **Step 1 Next** 755 **Step 2 Next** 755 **Step 3 Next** 755 **Step 4 Next** 755 **Step 5 Next** 755 **Step 6 Next** 755 **Step 7 Next** 755 **Step 8 Next** 755 **Step 9 Next** 755 **Step 10 Next** 755 **Step 11 Next** 755 **Step 12 Next** 755 **Step 13 Next** 755 **Step 14 Next** 755 **Step 15 Next** 755 **Step 16 Next** Step 1…16 Next Set step number that will be executed after the current step is complete. The current step will be complete after any batch repeat cycles have finished. Typically, steps are executed in ascending order, although this is not a requirement. These parameters do not apply to a step having an End action, since this step is normally used to terminate a sequence of step moves.	Default: Min/Max:	2 1 / 16	RW	32-bit Integer

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
APPLICATIONS	Profiling	**1238** **1248** **1258** **1268** **1278** **1288** **1298** **1308** **1318** **1328** **1338** **1348** **1358** **1368** **1378** **1388**	755 **Step 1 Action** 755 **Step 2 Action** 755 **Step 3 Action** 755 **Step 4 Action** 755 **Step 5 Action** 755 **Step 6 Action** 755 **Step 7 Action** 755 **Step 8 Action** 755 **Step 9 Action** 755 **Step 10 Action** 755 **Step 11 Action** 755 **Step 12 Action** 755 **Step 13 Action** 755 **Step 14 Action** 755 **Step 15 Action** 755 **Step 16 Action** Step 1…16 Action Set what is to be done at the end of a step after the move is complete. End (0) = End stops the move sequence. Step to Next (1) = Step to Next moves to the next step after the speed ramp up/down is completed in the specific total time. The dwell time and the batch can be applied. Psn Blend (2) = Posit Blend moves to the next step after the actual position becomes greater than the position specified in the value parameter. Time Blend (3) = Time Blend moves to the next step after the total running time becomes greater than the time specified in the value parameter. Param Blend (4) = Param Blend moves to the next step after comparison of two parameters is satisfied. The parameters for comparison are specified in the value and dwell parameter. DigIn Blend (5) = DigIn Blend moves to the next step after the specified number of digital input rising (or falling) edges are applied. The batch parameter specifies the number of digital input edges. Wait DigIn (6) = Wait DigIn moves to the next step after the digital input rising (or falling) edges are applied.	Default: Options:	1 = “Step to Next” 0 = “End” 1 = “Step to Next” 2 = “Psn Blend” 3 = “Time Blend” 4 = “Param Blend” 5 = “DigIn Blend” 6 = “Wait DigIn”	RW	32-bit Integer

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
APPLICATIONS	Profiling	1239 1249 1259 1269 1279 1289 1299 1309 1319 1329 1339 1349 1359 1369 1379 1389	755 **Step 1 Dig In** 755 **Step 2 Dig In** 755 **Step 3 Dig In** 755 **Step 4 Dig In** 755 **Step 5 Dig In** 755 **Step 6 Dig In** 755 **Step 7 Dig In** 755 **Step 8 Dig In** 755 **Step 9 Dig In** 755 **Step 10 Dig In** 755 **Step 11 Dig In** 755 **Step 12 Dig In** 755 **Step 13 Dig In** 755 **Step 14 Dig In** 755 **Step 15 Dig In** 755 **Step 16 Dig In** Step 1…16 Digital Input Set digital input sources. Not all steps use the digital input for the step move. The following type and action moves use the dig-in parameters to specify the digital input sources. Polarity (rising or falling edges) of digital input is set by P1217 [Prof DI Invert]. 1. [Type] Position Absolute [Action] Wait DigIn 2. [Type] Position Incremental [Action] Wait DigIn 3. [Type] Speed Profile [Action] DigIn Blend 4. [Type] Speed Profile [Action] Wait DigIn	Default: Min/Max:	0.00 0.00 / 159999.15	RW	32-bit Integer

File	Group	No.	Display Name Full Name Description	Values	Read-Write	Data Type
APPLICATIONS	Camming	**1390**	755 **PCAM Control** Position Camming Control Sets bits to control the position CAM control logic.			
		1391	755 **PCAM Mode** Position Camming Mode The parameter sets type of operational mode. "Off" (0) – Disable position CAM function "Single Step" (1) – At rising edge of Start (P1390 [PCAM Control]), the CAM profile begins at point 0 and runs until the x-axis has reached the last point defined by the end point (P1405 [PCAM Main EndPnt] and P1439 [PCAM Aux EndPnt]) at which point it is completed. If the x-axis then backs up into CAM range, nothing happens; the profile has already completed and won't restart until control Start (P1390 [PCAM Control]) is once again set. "Continuous" (2) – At rising edge of Start (P1390 [PCAM Control]), the CAM profile begins at point 0 and runs to the end point (P1405 [PCAM Main EndPnt] and P1439 [PCAM Aux EndPnt]), and then repeats forever or until the control bit Start (P1390 [PCAM Control]) is cleared. "Persistent" (3) – At rising edge of Start (P1390 [PCAM Control]), the CAM profile begins at point 0 and runs to the end point (P1405 [PCAM Main EndPnt] and P1439 [PCAM Aux EndPnt]), and remains active until the control bit Start (P1390 [PCAM Control]) is cleared.	Default: Options:	0 = "Off" 0 = "Off" 1 = "Single Step" 2 = "Continuous" 3 = "Persistent"	RW	32-bit Integer
		1392	755 **PCAM Psn Select** Position Camming Position Select The parameter selects a position reference source for x-axis.	Default: Options:	1393 1 / 159999	RW	32-bit Integer
		1393	755 **PCAM Psn Stpt** Position Camming Position Setpoint The parameter provides position reference for x-axis when the position reference select (P1392 [PCAM Psn Select]) selects this parameter.	Default: Min/Max:	0 –2147483648 / 2147483647	RW	32-bit Integer
		1394	755 **PCAM Psn Ofst** Position Camming Position Offset The parameter provides position offset value to x-axis position when the offset enable control bit (P1390 [PCAM Control]) is set. The offset value causes a phase shift or position change in x-axis and a momentary change to CAM speed.	Default: Min/Max:	0 –2147483648 / 2147483647	RW	32-bit Integer

Options	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Cndtnl Hold	Unidirection	Reref Psn In	Offset En	Alt Slope	Aux Cam En	ReverseY Out	ReverseX In	Start
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Disabled
1 = Enabled

Bit 0 "Start" – Start the position CAM
Bit 1 "ReverseX In" – Reverse polarity of x-axis input (P1392 [PCAM Psn Select])
Bit 2 "ReverseY Out" – Reverse polarity of y-axis output at beginning of next cycle (P1473 [PCAM Psn Out])
Bit 3 "Aux Cam En" – Switch to the auxiliary CAM profile at beginning of next cycle
Bit 4 "Alt Slope" – Use a different slope calculation
Bit 5 "Offset En" – Enable input offset function (P1394 [PCAM Psn Ofst])
Bit 6 "Reref Psn In" – Permit re-referencing x-axis input (P1392 PCAM Psn Select])
Bit 7 "Unidirection" – Use unidirectional operation
Bit 8 "Cndtnl Hold" – Freeze the speed regulator's integrator if position reference changes. This bit is recommended to be set for point to point motion.

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
APPLICATIONS	Camming	1395	755 **PCAM PsnOfst Eps** Position Camming Position Offset Eps The parameter provides count of edges per second for virtual encoder function. The value makes a limit on change of x-axis position in change of position offset input.	Default: Min/Max:	2000 0 / 2147483647	RW	32-bit Integer
		1396	755 **PCAM Span X** Position Camming Span X The parameter provides the number of integer counts equivalent to the span or range of x-axis.	Default: Min/Max:	8192 0 / 2147483647	RW	32-bit Integer
		1397	755 **PCAM Scale X** Position Camming Scale X The parameter multiplies span x (P1396 [PCAM Span X]) such that the x-axis dimension will expand if this parameter is greater than 1.	Default: Min/Max:	1.00 0.01 / 214748000.00	RW	Real
		1398	755 **PCAM Span Y** Position Camming Span Y The parameter provides the number of edges equivalent to the span of the y-axis. The value is the number of integer counts representing the maximum vertical extent of the profile.	Default: Min/Max:	8192 0 / 2147483647	RW	32-bit Integer
		1399	755 **PCAM ScaleY Sel** Position Camming Scale Y Select The parameter selects a source for y scale.	Default: Options:	1400 1 / 159999	RW	32-bit Integer
		1400	755 **PCAM ScaleYSetPt** Position Camming Scale Y Setpoint The parameter provides y-axis scale when the y scale select (P1399 [PCAM ScaleY Sel]) selects this parameter. The y scale multiplies the y span such that the y-axis dimension will increase if y scale is greater than 1.	Default: Min/Max:	1.00 0.00 / 214748000.00	RW	Real
		1401	755 **PCAM VelScaleSel** Position Camming Velocity Scale Select The parameter selects a source for velocity scale.	Default: Options:	1402 1 / 159999	RW	32-bit Integer
		1402	755 **PCAM VelScaleSP** Position Camming Velocity Scale Setpoint The parameter provides velocity scale when the velocity scale select (P1401 [PCAM VelScaleSel]) selects this parameter. The velocity scale multiplies the velocity output (P1472 [PCAM Vel Out]) such that the velocity output (P1472) will decrease if the velocity scale is less than 1.	Units: Default: Min/Max:	MPE 0.000099 0.000000 / 8.000000	RW	Real
		1403	755 **PCAM Slope Begin** Position Camming Slope Begin The parameter provides beginning slope at CAM point 0. The parameter is used only if the segment is cubic type curve.	Default: Min/Max:	0.00 –/+214748000.00	RW	Real
		1404	755 **PCAM Slope End** Position Camming Slope End The parameter provides ending slope at CAM point 0. The parameter is used only if the segment is cubic type curve in both the main and the auxiliary CAM profile.	Default: Min/Max:	0.00 –/+214748000.00	RW	Real
		1405	755 **PCAM Main EndPnt** Position Camming Main End Point The parameter provides a number of the last CAM point used in the main CAM profile.	Default: Options:	0 1 / 15	RW	32-bit Integer

File	Group	No.	Display Name Full Name Description	Values	Read-Write	Data Type
APPLICATIONS	Camming	1406	755 **PCAM Main Types** Position Camming Main Types Each bit sets curve type for each segment in the main CAM profile. If the bit is clear, the curve is linear at the point of segment in the main CAM profile. If the bit is set, the curve is cubic at the point of segment in the main CAM profile. Options: Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, CubicCurve15, CubicCurve14, CubicCurve13, CubicCurve12, CubicCurve11, CubicCurve10, CubicCurve9, CubicCurve8, CubicCurve7, CubicCurve6, CubicCurve5, CubicCurve4, CubicCurve3, CubicCurve2, CubicCurve1, CubicCurve0 Default: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 Bit: 31 30 29 28 27 26 25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0 0 = Disabled 1 = Enabled			
		1407 1409 1411 1413 1415 1417 1419 1421 1423 1425 1427 1429 1431 1433 1435 1437	755 **PCAM Main Pt X 0** 755 **PCAM Main Pt X 1** 755 **PCAM Main Pt X 2** 755 **PCAM Main Pt X 3** 755 **PCAM Main Pt X 4** 755 **PCAM Main Pt X 5** 755 **PCAM Main Pt X 6** 755 **PCAM Main Pt X 7** 755 **PCAM Main Pt X 8** 755 **PCAM Main Pt X 9** 755 **PCAM Main PtX 10** 755 **PCAM Main PtX 11** 755 **PCAM Main PtX 12** 755 **PCAM Main PtX 13** 755 **PCAM Main PtX 14** 755 **PCAM Main PtX 15** Position Camming Main Point X 0…15 Provides x-coordinate value for CAM point in the main CAM profile.	Default: 0.00 Min/Max: –/+220000000.00	RW	Real
		1408 1410 1412 1414 1416 1418 1420 1422 1424 1426 1428 1430 1432 1434 1436 1438	755 **PCAM Main Pt Y 0** 755 **PCAM Main Pt Y 1** 755 **PCAM Main Pt Y 2** 755 **PCAM Main Pt Y 3** 755 **PCAM Main Pt Y 4** 755 **PCAM Main Pt Y 5** 755 **PCAM Main Pt Y 6** 755 **PCAM Main Pt Y 7** 755 **PCAM Main Pt Y 8** 755 **PCAM Main Pt Y 9** 755 **PCAM Main PtY 10** 755 **PCAM Main PtY 11** 755 **PCAM Main PtY 12** 755 **PCAM Main PtY 13** 755 **PCAM Main PtY 14** 755 **PCAM Main PtY 15** Position Camming Main Point Y 0…15 Provides y-coordinate value for CAM point in the main CAM profile.	Default: 0.00 Min/Max: –/+220000000.00	RW	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
APPLICATIONS	Camming	**1439**	755 **PCAM Aux EndPnt** Position Camming Auxiliary End Point Provides a number of the last CAM point used in the auxiliary CAM profile.	Default: Options:	0 1 / 15	RW	32-bit Integer
		1440	755 **PCAM Aux Types** Position Camming Auxiliary Types Each bit sets curve type for each segment in the auxiliary CAM profile. If the bit is clear, the curve is linear at the point of segment in the auxiliary CAM profile. If the bit is set, the curve is cubic at the point of segment in the auxiliary CAM profile.				
		1441 **1443** **1445** **1447** **1449** **1451** **1453** **1455** **1457** **1459** **1461** **1463** **1465** **1467** **1469**	755 **PCAM Aux Pt X 1** 755 **PCAM Aux Pt X 2** 755 **PCAM Aux Pt X 3** 755 **PCAM Aux Pt X 4** 755 **PCAM Aux Pt X 5** 755 **PCAM Aux Pt X 6** 755 **PCAM Aux Pt X 7** 755 **PCAM Aux Pt X 8** 755 **PCAM Aux Pt X 9** 755 **PCAM Aux PtX 10** 755 **PCAM Aux PtX 11** 755 **PCAM Aux PtX 12** 755 **PCAM Aux PtX 13** 755 **PCAM Aux PtX 14** 755 **PCAM Aux PtX 15** Position Camming Auxiliary Point X 1…15 Provides x-coordinate value for CAM point in the auxiliary CAM profile.	Default: Min/Max:	0.00 –/+220000000.00	RW	Real
		1442 **1444** **1446** **1448** **1450** **1452** **1454** **1456** **1458** **1460** **1462** **1464** **1466** **1468** **1470**	755 **PCAM Aux Pt Y 1** 755 **PCAM Aux Pt Y 2** 755 **PCAM Aux Pt Y 3** 755 **PCAM Aux Pt Y 4** 755 **PCAM Aux Pt Y 5** 755 **PCAM Aux Pt Y 6** 755 **PCAM Aux Pt Y 7** 755 **PCAM Aux Pt Y 8** 755 **PCAM Aux Pt Y 9** 755 **PCAM Aux PtY 10** 755 **PCAM Aux PtY 11** 755 **PCAM Aux PtY 12** 755 **PCAM Aux PtY 13** 755 **PCAM Aux PtY 14** 755 **PCAM Aux PtY 15** Position Camming Auxiliary Point Y 1…15 Provides y-coordinate value for CAM point in the auxiliary CAM profile.	Default: Min/Max:	0.00 –/+220000000.00	RW	Real

Options

	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	CubicCurve15	CubicCurve14	CubicCurve13	CubicCurve12	CubicCurve11	CubicCurve10	CubicCurve9	CubicCurve8	CubicCurve7	CubicCurve6	CubicCurve5	CubicCurve4	CubicCurve3	CubicCurve2	CubicCurve1	Reserved
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Disabled
1 = Enabled

File	Group	No.	Display Name Full Name Description	Values	Read-Write	Data Type
APPLICATIONS	Camming	1471	755 **PCAM Status** Position Camming Status Indicates status of position CAM logic.			

Options	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Cndtnl Hold	Unidirection	Reref Psn In	Offset En	Alt Slope	Aux Cam En	ReverseY Out	ReverseX In	Start	In Cam	Persist Mode	Contins Mode	Single Mode
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Disabled
1 = Enabled

Bit 0 “Single Mode” – Position CAM is in single step mode.
Bit 1 “Contins Mode” – Position CAM is in continuous mode.
Bit 2 “Persist Mode” – Position CAM is in persistent mode.
Bit 3 “In Cam” – X-axis is in range of defined profile.
Bit 4 “Start” – Position CAM has started.
Bit 5 “ReverseX In” – X-axis input is reversed.
Bit 6 “ReverseY Out” – Y-axis output is reversed.
Bit 7 “Aux Cam En” – Auxiliary CAM profile is in use.
Bit 8 “Alt Slope” – Alternated slope is in use.
Bit 9 “Offset En” – X-axis offset is enabled.
Bit 10 “Reref Pos In” – X-position input is re-referencing.
Bit 11 “Unidirection” – Position CAM is in unidirectional mode.
Bit 12 “Cndtnl Hold” – Conditional integrator hold is in use.

	1472	755 **PCAM Vel Out** Position Camming Velocity Output Indicates output velocity in per unit. The value is connected to the speed regulator.	Units: Default: Min/Max:	Hz RPM 0.00 0.00 / P27 [Motor NP Hertz] x 8 0.00 / P28 [Motor NP RPM] x 8	RO	Real
	1473	755 **PCAM Psn Out** Position Camming Position Output Indicates output position. The value is connected to the position regulator.	Default: Min/Max:	0.00 –/+220000000.00	RO	32-bit Integer
	1474	755 **DI PCAM Start** Digital Input Position Camming Start Selects the digital input used to start the position camming sequence.	Default: Min/Max:	0.00 0.00 / 159999.15	RW	32-bit Integer

File	Group	No.	Display Name Full Name Description	Values	Read-Write	Data Type
APPLICATIONS	Roll Position	**1500**	**Roll Psn Config** Roll Position Indicator Configuration Configuration for the Roll Position Indicator function. Options: Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Rereference, Preset, Enable Default: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 Bit: 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0 0 = Disabled 1 = Enabled Bit 0 "Enable" – Enables the Roll Position Indicator function. Bit 1 "Preset" – At rising edge of this bit, P1504 [Roll Psn Preset] is loaded in P1505 [Roll Psn Offset]. Bit 2 "Rereference" – Permit changing the offset value of P1511 [Roll Psn Offset] without affecting actual position.			
		1501	**Roll Psn Status** Roll Position Indicator Status Status of the Roll Position Indicator function. Options: Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Rereference, Enable Default: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 Bit: 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0 0 = Disabled 1 = Enabled Bit 0 "Enable" – Acknowledges that Roll Position Indicator function is enabled. Bit 1 "Rereference" – Acknowledges that rereferencing of P1511 [Roll Psn Offset] is active.			
		1502	**RP Psn Fdbk Stpt** Roll Position Position Indicator Feedback Setpoint Provides a set point for the position feedback value in the form of accumulated encoder counts.	Default: 0 Min/Max: –2147483648 / 2147483647	RW	32-bit Integer
		1503	**RP Psn Fdbk Sel** Roll Position Position Indicator Feedback Select Selects source data for the position feedback. The function generates P1511 [RP Position Out] based on the selected position feedback source.	Default: 1502 Min/Max: 0 / 159999	RW	32-bit Integer
		1504	**Roll Psn Preset** Roll Position Indicator Preset Provides a pre-set position value. At rising edge of Bit 1 "Preset" in P1500 [Roll Psn Config], this parameter value is loaded in P1511 [RP Psn Out]. Note: P1511 [RP Psn Out] is limited by P1509 [RP Unwind].	Default: 0 Min/Max: –2147483648 / 2147483647	RW	32-bit Integer
		1505	**Roll Psn Offset** Roll Position Indicator Offset Provides position offset, which is summed after the EPR and used to trim the phase of the position feedback.	Default: 0 Min/Max: –2147483648 / 2147483647	RW	32-bit Integer
		1506	**RP EPR Input** Roll Position Indicator Edges Per Revolution Input Sets edges per revolution of the physical input device such as the motor encoder.	Default: 4096 Min/Max: 1 / 67108864	RW	32-bit Integer

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
APPLICATIONS	Roll Position	**1507**	**RP Rvls Input** Roll Position Indicator Revolutions Input Sets revolution of the input encoder. This parameter must be coordinated with the revolution of the output encoder P1508 [RP Rvls Output] to resolve the gear ratio between input revolutions and output (virtual) revolutions. The ratio of input to output revolutions can always be resolved into integer values and should be reduce to their lowest common factor.	Default: Min/Max:	1 –/+1000000	RW	32-bit Integer
		1508	**RP Rvls Output** Roll Position Indicator Revolutions Output Sets revolution of the output encoder. This parameter must be coordinated with the revolution of the input encoder P1507 [RP Rvls Input] to resolve the gear ratio between input revolutions and output (virtual) revolutions. The ratio of input to output revolutions can always be resolved into integer values and should be reduce to their lowest common factor.	Default: Min/Max:	1 1 / 4294967295	RW	32-bit Integer
		1509	**RP Unwind** Roll Position Indicator Unwind Count Sets the number of counts per roll revolution. P1511 [RP Psn Output] rolls over at this count minus 1.	Default: Min/Max:	4194304 1024 / 536870912	RW	32-bit Integer
		1510	**RP Unit Scale** Roll Position Indicator Unit Scale Provides the multiplier to P1512 [RP Unit Out], which is a floating point output of P1511 [RP Psn Output].	Default: Min/Max:	1.00000 –/+220000000.00000	RW	Real
		1511	**RP Psn Output** Roll Position Indicator Position Output Output of roll position, which has a span limited by P1509 [RP Unwind].	Default: Min/Max:	0 0 / 4294967295	RO	32-bit Integer
		1512	**RP Unit Out** Roll Position Indicator Unit Output Floating point output that results from multiplying P1511 [RP Psn Output] by P1510 [RP Unit Scale].	Default: Min/Max:	0.00 –/+220000000.00	RO	Real

File	Group	No.	Display Name Full Name Description	Values	Read-Write	Data Type
APPLICATIONS	Torque Boost	**1515**	**PsnTrqBst Ctrl** Position Oriented Torque Boost Control Configuration for the Position Oriented Torque Boost function.			

Options	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Boost Enable
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Disabled
1 = Enabled

Bit 0 “Boost Enable” – Enables the Position Oriented Torque Boost function.

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
APPLICATIONS	Torque Boost	**1516**	**PsnTrqBst Sts** Position Oriented Torque Boost Status Status of the Position Oriented Torque Boost function. Options: Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, In Position, Enabled Default: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 Bit: 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0 0 = Disabled 1 = Enabled Bit 0 "Enabled" – Acknowledges that Position Oriented Torque Boost is enabled. Bit 1 "In Position" – Indicates that the selected position reference is in the target range (such as between X1 and X5).				
		1517	**PsnTrqBst RefSel** Position Oriented Torque Boost Reference Select Selects a source data for the position reference.	Default: Min/Max:	1511 0 / 159999	RW	32-bit Integer
		1518	**PsnTrqBstPsnOfst** Position Oriented Torque Boost Position Offset Provides position offset, which is summed to the position reference and used to trim the phase of it.	Default: Min/Max:	0 –2147483648 / 2147483647	RW	32-bit Integer
		1519	**PsnTrqBst UNWCnt** Position Oriented Torque Boost Unwind Count Sets the number of counts per roll revolution. The selected position reference internally rolls over at this count minus 1.	Default: Min/Max:	4194304 1024 / 2147483647	RW	32-bit Integer
		1520 **1521** **1522** **1523** **1524**	**PsnTrqBst Ps X1** **PsnTrqBst Ps X2** **PsnTrqBst Ps X3** **PsnTrqBst Ps X4** **PsnTrqBst Ps X5** Position Oriented Torque Boost Position X1…X5 The torque/position profile is built by specifying endpoint position counts for X1, X2, X3, X4, and X5, and corresponding per unit torque values for Y2, Y3, and Y4. The torque values corresponding to the points X1 and X5 are zero.	Default: Min/Max:	0 0 / 2147483647	RW	32-bit Integer
		1525 **1526** **1527**	**PsnTrqBst Trq Y2** **PsnTrqBst Trq Y3** **PsnTrqBst Trq Y4** Position Oriented Torque Boost Torque Y2…Y4 The position profile from X1 to X5 must be ascending order. The torque profile from Y2 and Y4 is free form with no restriction.	Default: Min/Max:	0.00 –/+2.00	RW	Real
		1528	**PsnTrqBst TrqOut** Position Oriented Torque Boost Torque Output Output of the Position Oriented Torque Boost, which is the torque taken from the profile at the position target.	Default: Min/Max:	0.00 –/+2.00	RO	Real

File	Group	No.	Display Name Full Name Description	Values	Read-Write	Data Type
APPLICATIONS	Spindle Orient	1580	**SO Config** Spindle Orientation Configuration Configures the options for the Spindle Orientation feature. Options: Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, ShortestPath, Recap Hm Psn, Home DI Inv, Home DI Default: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 Bit: 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0 0 = Disabled 1 = Enabled Bit 0 "Home DI" – Selects the type of Homing signal (Marker Pulse vs. Digital Input Switch). Bit 1 "Home DI Inv" – Rising/Falling Edge of Homing Input. Bit 2 "Recap Hm Psnv" – Re-capture Home Position. Bit 3 "ShortestPath" – Allow direction reversal to obtain shortest distance traveled.			
		1581	**SO Status** Spindle Orientation Status Spindle Orientation status. Options: Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Orient Cplt, Mode, At SO Speed Default: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 Bit: 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0 0 = Disabled 1 = Enabled Bit 0 "At SO Speed" – Drive running at Spindle Orientation velocity. Bit 1 "Mode" – Drive in Spindle Orientation mode. Bit 2 "Orient Cplt" – In selected Spindle Orientation position.			
		1582	**SO Setpoint** Spindle Orientation Setpoint Sets the desired Spindle Orientation Position in user-defined units.	Default: 0.00 Min/Max: 0.00 / 536870912.00	RW	Real
		1583	**SO Offset** Spindle Orientation Offset Sets the offset encoder counts for the Home position. This value is loaded automatically when the Homing function is run (typically after power up).	Default: 0 Min/Max: –/+536870912	RW	Real
		1584	**SO EPR Input** Spindle Orientation Edges Per Revolution Input Indicates the edges per revolution of the encoder.	Default: 4096 Min/Max: 1 / 67108864	RW	Real
		1585	**SO Rvls Input** Spindle Orientation Revolutions Input Sets the revolutions of the input gear relative to the output gear.	Default: 1.00 Min/Max: –/+1000000.00	RW	Real
		1586	**SO Rvls Output** Spindle Orientation Revolutions Output Sets the revolutions of the output gear relative to the input gear.	Default: 1.00 Min/Max: 1.00 / 2000000.00	RW	Real
		1587	**SO Cnts per Rvls** Spindle Orientation Counts Per Revolution Sets the counts per revolution of the output gear.	Default: 4096 Min/Max: 1024 / 536870912	RW	Real
		1588	**SO Unit Scale** Spindle Orientation Unit Scale Scales P1589 [SO Position Out] to user-defined units.	Default: 1.00000 Min/Max: –/+220000000.00000	RW	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
APPLICATIONS	Spindle Orient	1589	**SO Position Out** Spindle Orientation Position Output Displays the present position of the output gear in encoder counts.	Default: Min/Max:	0 0 / 4294967295	RO	Real
		1590	**SO Unit Out** Spindle Orientation Unit Output Displays the present position of the output gear in user-scaled units.	Default: Min/Max:	0.00 –/+220000000.00	RO	Real
		1591	**SO Accel Time** Spindle Orientation Acceleration Time Sets the acceleration rate used during positioning.	Units: Default: Min/Max:	Secs 10.00 0.00 / 3600.00	RW	Real
		1592	**SO Decel Time** Spindle Orientation Deceleration Time Sets the deceleration rate used during positioning.	Units: Default: Min/Max:	Secs 10.00 0.00 / 3600.00	RW	Real
		1593	**SO Fwd Vel Lmt** Spindle Orientation Forward Velocity Limit Sets the forward speed used during positioning.	Units: Default: Min/Max:	Hz / RPM 30.00 0.00 / 40000.00	RW	Real
		1594	**SO Rev Vel Lmt** Spindle Orientation Reverse Velocity Limit Sets the reverse speed used during positioning.	Units: Default: Min/Max:	Hz / RPM –30.00 –40000.00 / 0.00	RW	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
APPLICATIONS	Id Compensation	1600	**Id Comp Enbl** Id Compensation Enable Enables or disables the Id compensation calculation. This selection is active only in motor control mode flux vector induction (P35 [Motor Ctrl Mode] = 3 “Induction FV”).	Default: Options:	0 = “Disable” 0 = “Disable” 1 = “Enable”	RW	Real
		1601	**Id Comp Mtrng 1** Id Compensation Monitoring 1 Sets Id compensation value (in p.u.) at Iq = P1602 [IdCompMtrng 1 Iq] (in p.u.) for motoring operation. Id compensation = [Id Comp Mtrng 1] * IqCmd (in p.u.) for IqCmd = between 0 and P1602 [IdCompMtrng 1 Iq]. 1.0 p.u. is scaled to the drive rated current. This parameter is active only in motor control mode flux vector induction (P35 [Motor Ctrl Mode] = 3 “Induction FV”).	Default: Min/Max:	0.0000 –/+1.0000	RW	Real
		1602	**IdCompMtrng 1 Iq** Id Compensation Monitoring 1 Iq Sets Iq value (in p.u.) at which P1601 [Id Comp Mtrng 1] (in p.u.) is specified. This parameter is active only in motor control mode flux vector induction (P35 [Motor Ctrl Mode] = 3 “Induction FV”).	Default: Min/Max:	0.2500 0.0000 / 5.0000	RW	Real
		1603	**Id Comp Mtrng 2** Id Compensation Monitoring 2 Sets Id compensation value (in p.u.) at Iq = P1604 [IdCompMtrng 2 Iq] (in p.u.) for motoring operation. Id compensation = P1601 [Id Comp Mtrng 1] + (Id Comp Mtrng 2 – Id Comp Mtrng 1) * (IqCmd - IdCompMtrng 1 Iq) * 1/ (IdCompMtrng 2 Iq – IdCompMtrng 1 Iq) for IqCmd = between IdCompMtrng 1 Iq and IdCompMtrng 2 Iq. 1.0 p.u. is scaled to the drive rated current. This parameter is active only in motor control mode flux vector induction (P35 [Motor Ctrl Mode] = 3 “Induction FV”).	Default: Min/Max:	0.0000 –/+1.0000	RW	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
APPLICATIONS	Id Compensation	**1604**	**IdCompMtrng 2 Iq** Id Compensation Monitoring 2 Iq Sets Iq value (in p.u.) at which P1603 [Id Comp Mtrng 2] (in p.u.) is specified. This parameter is active only in motor control mode flux vector induction (P35 [Motor Ctrl Mode] = 3 "Induction FV").	Default: Min/Max:	0.2500 0.0000 / 5.0000	RW	Real
		1605	**Id Comp Mtrng 3** Id Compensation Monitoring 3 Sets Id compensation value (in p.u.) at Iq = P1606 [IdCompMtrng 3 Iq] (in p.u.) for motoring operation. Id compensation = Id Comp Mtrng 2 + (Id Comp Mtrng 3 – Id Comp Mtrng 2) * (IqCmd – IdCompMtrng 2 Iq) * 1/ (IdCompMtrng 3 Iq – IdCompMtrng 2 Iq) for IqCmd = between IdCompMtrng 2 Iq and IdCompMtrng 3 Iq. 1.0 p.u. is scaled to the drive rated current. This parameter is active only in motor control mode flux vector induction (P35 [Motor Ctrl Mode] = 3 "Induction FV").	Default: Min/Max:	0.0000 –/+1.0000	RW	Real
		1606	**IdCompMtrng 3 Iq** Id Compensation Monitoring 3 Iq Sets Iq value (in p.u.) at which P1605 [Id Comp Mtrng 3] (in p.u.) is specified. This parameter is active only in motor control mode flux vector induction (P35 [Motor Ctrl Mode] = 3 "Induction FV").	Default: Min/Max:	0.2500 0.0000 / 5.0000	RW	Real
		1607	**Id Comp Mtrng 4** Id Compensation Monitoring 4 Sets Id compensation value (in p.u.) at Iq = P1608 [IdCompMtrng 4 Iq] (in p.u.) for motoring operation. Id compensation = Id Comp Mtrng 3 + (Id Comp Mtrng 4 – Id Comp Mtrng 3) * (IqCmd – IdCompMtrng 3 Iq) * 1/ (IdCompMtrng 4 Iq – IdCompMtrng 3 Iq) for IqCmd = between IdCompMtrng 3 Iq and IdCompMtrng 4 Iq. 1.0 p.u. is scaled to the drive rated current. This parameter is active only in motor control mode flux vector induction (P35 [Motor Ctrl Mode] = 3 "Induction FV").	Default: Min/Max:	0.0000 –/+1.0000	RW	Real
		1608	**IdCompMtrng 4 Iq** Id Compensation Monitoring 4 Iq Sets Iq value (in p.u.) at which P1607 [Id Comp Mtrng 4] (in p.u.) is specified. This parameter is active only in motor control mode flux vector induction (P35 [Motor Ctrl Mode] = 3 "Induction FV").	Default: Min/Max:	0.2500 0.0000 / 5.0000	RW	Real
		1609	**Id Comp Mtrng 5** Id Compensation Monitoring 5 Sets Id compensation value (in p.u.) at Iq = P1610 [IdCompMtrng 5 Iq] (in p.u.) for motoring operation. Id compensation = Id Comp Mtrng 4 + (Id Comp Mtrng 5 – Id Comp Mtrng 4) * (IqCmd – IdCompMtrng 4 Iq) * 1/ (IdCompMtrng 5 Iq – IdCompMtrng 4 Iq) for IqCmd = between IdCompMtrng 4 Iq and IdCompMtrng 5 Iq. 1.0 p.u. is scaled to the drive rated current. This parameter is active only in motor control mode flux vector induction (P35 [Motor Ctrl Mode] = 3 "Induction FV").	Default: Min/Max:	0.0000 –/+1.0000	RW	Real
		1610	**IdCompMtrng 5 Iq** Id Compensation Monitoring 5 Iq Sets Iq value (in p.u.) at which P1609 [Id Comp Mtrng 5] (in p.u.) is specified. This parameter is active only in motor control mode flux vector induction (P35 [Motor Ctrl Mode] = 3 "Induction FV").	Default: Min/Max:	0.2500 0.0000 / 5.0000	RW	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
APPLICATIONS	Id Compensation	**1611**	**Id Comp Mtrng 6** Id Compensation Monitoring 6 Sets Id compensation value (in p.u.) at Iq = P1612 [IdCompMtrng 6 Iq] (in p.u.) for motoring operation. Id compensation = Id Comp Mtrng 5 + (Id Comp Mtrng 6 – Id Comp Mtrng 5) * (IqCmd – IdCompMtrng 5 Iq) * 1/ (IdCompMtrng 6 Iq – IdCompMtrng 5 Iq) for IqCmd = between IdCompMtrng 5 Iq and IdCompMtrng 6 Iq. 1.0 p.u. is scaled to the drive rated current. This parameter is active only in motor control mode flux vector induction (P35 [Motor Ctrl Mode] = 3 "Induction FV").	Default: Min/Max:	0.0000 –/+1.0000	RW	Real
		1612	**IdCompMtrng 6 Iq** Id Compensation Monitoring 6 Iq Sets Iq value (in p.u.) at which P1611 [Id Comp Mtrng 6] (in p.u.) is specified. This parameter is active only in motor control mode flux vector induction (P35 [Motor Ctrl Mode] = 3 "Induction FV").	Default: Min/Max:	0.2500 0.0000 / 5.0000	RW	Real
		1613	**Id Comp Regen 1** Id Compensation Regen 1 Sets Id compensation value (in p.u.) at P1614 Iq = IdCompRegen 1 Iq (in p.u.) for regenerative operation. Id compensation = Id Comp Regen 1 * IqCmd (in p.u.) for IqCmd = between 0 and IdCompRegen 1 Iq. 1.0 p.u. is scaled to the drive rated current. This parameter is active only in motor control mode flux vector induction (P35 [Motor Ctrl Mode] = 3 "Induction FV").	Default: Min/Max:	0.0000 –/+1.0000	RW	Real
		1614	**IdCompRegen 1 Iq** Id Compensation Regen 1 Iq Sets Iq value (in p.u.) at which P1613 Id Comp Regen 1 (in p.u.) is specified. This parameter is active only in motor control mode flux vector induction (P35 [Motor Ctrl Mode] = 3 "Induction FV").	Default: Min/Max:	0.2500 0.0000 / 5.0000	RW	Real
		1615	**Id Comp Regen 2** Id Compensation Regen 2 Sets Id compensation value (in p.u.) at Iq = P1616 [IdCompRegen 2 Iq] (in p.u.) for regenerative operation. Id compensation = Id Comp Regen 1 + (Id Comp Regen 2 – Id Comp Regen 1) * (IqCmd – IdCompRegen 1 Iq) * 1/ (IdCompRegen 2 Iq – IdCompRegen 1 Iq) for IqCmd = between IdCompRegen 1 Iq and IdCompRegen 2 Iq. This parameter is active only in motor control mode flux vector induction (P35 [Motor Ctrl Mode] = 3 "Induction FV").	Default: Min/Max:	0.0000 –/+1.0000	RW	Real
		1616	**IdCompRegen 2 Iq** Id Compensation Regen 2 Iq Sets Iq value (in p.u.) at which P1615 [Id Comp Regen 2] (in p.u.) is specified. This parameter is active only in motor control mode flux vector induction (P35 [Motor Ctrl Mode] = 3 "Induction FV").	Default: Min/Max:	0.2500 0.0000 / 5.0000	RW	Real
		1617	**Id Comp Regen 3** Id Compensation Regen 3 Sets Id compensation value (in p.u.) at Iq = P1618 [IdCompRegen 3 Iq] (in p.u.) for regenerative operation. Id compensation = Id Comp Regen 2 + (Id Comp Regen 3 – Id Comp Regen 2) * (IqCmd – IdCompRegen 2 Iq) * 1/ (IdCompRegen 3 Iq – IdCompRegen 2 Iq) for IqCmd = between IdCompRegen 2 Iq and IdCompRegen 3 Iq. This parameter is active only in motor control mode flux vector induction (P35 [Motor Ctrl Mode] = 3 "Induction FV").	Default: Min/Max:	0.0000 –/+1.0000	RW	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
APPLICATIONS	Id Compensation	1618	**IdCompRegen 3 Iq** Id Compensation Regen 3 Iq Sets Iq value (in p.u.) at which P1617 [Id Comp Regen 3] (in p.u.) is specified. This parameter is active only in motor control mode flux vector induction (P35 [Motor Cntrl Mode] = 3 "Induction FV").	Default: Min/Max:	0.2500 0.0000 / 5.0000	RW	Real
		1619	**Id Comp Regen 4** Id Compensation Regen 4 Sets Id compensation value (in p.u.) at Iq = P1620 [IdCompRegen 4 Iq] (in p.u.) for regenerative operation. Id compensation = Id Comp Regen 3 + (Id Comp Regen 4 – Id Comp Regen 3) * (IqCmd – IdCompRegen 3 Iq) * 1/ (IdCompRegen 4 Iq – IdCompRegen 3 Iq) for IqCmd = between IdCompRegen 3 Iq and IdCompRegen 4 Iq. This parameter is active only in motor control mode flux vector induction (P35 [Motor Ctrl Mode] = 3 "Induction FV").	Default: Min/Max:	0.0000 –/+1.0000	RW	Real
		1620	**IdCompRegen 4 Iq** Id Compensation Regen 4 Iq Sets Iq value (in p.u). at which P1619 [Id Comp Regen 4] (in p.u.) is specified. This parameter is active only in motor control mode flux vector induction (P35 [Motor Ctrl Mode] = 3 "Induction FV").	Default: Min/Max:	0.2500 0.0000 / 5.0000	RW	Real
		1621	**Id Comp Regen 5** Id Compensation Regen 5 Sets Id compensation value (in p.u.) at Iq = P1622 [IdCompRegen 5 Iq] (in p.u.) for regenerative operation. Id compensation = Id Comp Regen 4 + (Id Comp Regen 5 – Id Comp Regen 4) * (IqCmd – IdCompRegen 4 Iq) * 1/ (IdCompRegen 5 Iq – IdCompRegen 4 Iq) for IqCmd = between IdCompRegen 4 Iq and IdCompRegen 5 Iq. This parameter is active only in motor control mode flux vector induction (P35 [Motor Ctrl Mode] = 3 "Induction FV").	Default: Min/Max:	0.0000 –/+1.0000	RW	Real
		1622	**IdCompRegen 5 Iq** Id Compensation Regen 5 Iq Sets Iq value (in p.u.) at which P1621 [Id Comp Regen 5] (in p.u.) is specified. This parameter is active only in motor control mode flux vector induction (P35 [Motor Ctrl Mode] = 3 "Induction FV").	Default: Min/Max:	0.2500 0.0000 / 5.0000	RW	Real
		1623	**Id Comp Regen 6** Id Compensation Regen 6 Sets Id compensation value (in p.u.) at Iq = P1624 [IdCompRegen 6 Iq] (in p.u.) for regenerative operation. Id compensation = Id Comp Regen 5 + (Id Comp Regen 6 – Id Comp Regen 5) * (IqCmd - IdCompRegen 5 Iq) * 1/ (IdCompRegen 6 Iq – IdCompRegen 5 Iq) for IqCmd = between IdCompRegen 5 Iq and IdCompRegen 6 Iq. This parameter is active only in motor control mode flux vector induction (P35 [Motor Ctrl Mode] = 3 "Induction FV").	Default: Min/Max:	0.0000 –/+1.0000	RW	Real
		1624	**IdCompRegen 6 Iq** Id Compensation Regen 6 Iq Sets Iq value (in p.u.) at which P1623 [Id Comp Regen 6] (in p.u.) is specified. This parameter is active only in motor control mode flux vector induction (P35 [Motor Ctrl Mode] = 3 "Induction FV").	Default: Min/Max:	0.2500 0.0000 / 5.0000	RW	Real

Inverter Common Parameters

Inverter Common parameters apply only to Frame 8 drives.

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
INVERTER COMMON	System Ratings	1	**Sys Rated Amps** System Rated Amps Displays the continuous current rating of the drive. This parameter is the same value as displayed in P21 [Rated Amps] for the drive at Port 0.	Units: Default: Min/Max:	Amps 0.00 0.00 / 5000.00	RO	Real
		2	**Sys Rated Volts** System Rated Volts Input voltage class (400, 480, 600, 690, etc) of the drive. This parameter is the same value as displayed in P20 [Rated Volts] for the drive at Port 0.	Units: Default: Min/Max:	VAC 0.00 0.00 / 690.00	RO	Real
		3	**I1 Rated Amps** Inverter 1 Rated Amps Continuous current rating of inverter 1. The continuous current rating varies based on the value of P305 [Voltage Class] and P306 [Duty Rating] for the drive at Port 0.	Units: Default: Min/Max:	Amps 0.00 0.00 / 1000.00	RO	Real

File	Group	No.	Display Name Full Name Description	Values	Read-Write	Data Type
INVERTER COMMON	Status	10	**Online Status** Online Status Indicates whether the inverter has successfully established fiber optic communications with the main control board.			
		12	**Fault Status** Fault Status Indicates whether the inverter has a fault condition. See P105 [I1 Fault Status] to view which fault conditions currently exist for inverter 1. Refer to Chapter 3 for information on fault and alarm codes.			
		13	**Alarm Status** Alarm Status Indicates whether the inverter has an alarm condition. See P107 [I1 Alarm Status] to view which alarms currently exist for inverter 1. Refer to Chapter 3 for information on fault and alarm codes.			

Options	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Inverter 1
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Not Active
1 = Active

Options	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Inverter 1
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Not Faulted
1 = Faulted

Options	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Inverter 1
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = No Alarm
1 = Alarm

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
INVERTER COMMON	Metering	18	**Ground Current** Ground Current Ground current of AC output to a motor. This value is calculated based on the total output currents (U, V, and W phases of the drive). When the three phases are balanced, the ground current is ideally close to zero.	Units: Default: Min/Max:	Amps 0.0 0.0 / 5000.0	RO	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
INVERTER COMMON	Testpoints	30 32	**Testpoint Sel 1** **Testpoint Sel 2** Testpoint 1, 2 Selection Selects a source for [Testpoint Val X]. Used by the factory, typically for diagnostic purposes.	Default: Min/Max:	0 0 / 65535	RW	32-bit Integer
		31 33	**Testpoint Val 1** **Testpoint Val 2** Testpoint 1, 2 Value Displays data selected by [Testpoint Sel X].	Default: Min/Max:	0.000000 –/+220000000.000000	RO	Real

Inverter 1 Parameters

Inverter 1 parameters apply only to Frame 8 drives.

File	Group	No.	Display Name Full Name Description	Values	Read-Write	Data Type
INVERTER 1	Status	105	**I1 Fault Status** Inverter 1 Fault Status Indicates which fault conditions currently exist for inverter 1. Refer to Chapter 3 for information on fault and alarm codes.			

Options	Reserved	Reserved	WBrd Fault	VBrd Fault	UBrd Fault	Incompat PS	DC Bus Imbal	Incomp Brdn	Incomp WBrd	Incomp VBrd	Incomp UBrd	NTC Open	PSBrdOvrTemp	PLI OvrTemp	CT Harness	SysPSOverCur	Sys PS Low	IPwrIF PSLow	Main PS Low	HS OvrTemp	IGBT OvrTemp	Ground Fault	Bus Overvolt	Overcur WNeg	Overcur WPos	Overcur VNeg	Overcur VPos	Overcur UNeg	Overcur UPos	ThermalConst	Comm Loss	Fault O Full
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = No Fault
1 = Fault

File	Group	No.	Display Name Full Name Description	Values	Read-Write	Data Type
INVERTER 1	Status	107	**I1 Alarm Status** Inverter 1 Alarm Status Indicates which alarm conditions currently exist for inverter 1. Refer to Chapter 3 for information on fault and alarm codes.			

Options	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	HSFan Slow	HSFan PS Low	Cur Offset W	Cur Offset V	Cur Offset U	Reserved	HS OvrTemp	IGBT OvrTemp	DC Bus Imbal	InFan2 Slow	InFan1 Slow	Sys PS Low	Reserved
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = No Alarm
1 = Alarm

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
INVERTER 1	Metering	**115**	**I1 U Phase Curr** Inverter 1 U Phase Current Output current present through terminal T1 (U phase) of inverter 1.	Units: Default: Min/Max:	Amps 0.0 –/+3000.0	RO	Real
		116	**I1 V Phase Curr** Inverter 1 V Phase Current Output current present through terminal T2 (V phase) of inverter 1.	Units: Default: Min/Max:	Amps 0.0 –/+3000.0	RO	Real
		117	**I1 W Phase Curr** Inverter 1 W Phase Current Output current present through terminal T3 (W phase) of inverter 1.	Units: Default: Min/Max:	Amps 0.0 –/+3000.0	RO	Real
		118	**I1 Gnd Current** Inverter 1 Ground Current Ground current of the AC output to a motor. The value is calculated based on the output currents (U, V, and W phases) for inverter 1. When the three phases are balanced, the ground current is ideally close to zero.	Units: Default: Min/Max:	Amps 0.0 –/+3000.0	RO	Real
		119	**I1 DC Bus Volt** Inverter 1 DC Bus Voltage DC bus voltage measured by inverter 1.	Units: Default: Min/Max:	VDC 0.00 0.00 / 1200.00	RO	Real
		120	**I1 Heatsink Temp** Inverter 1 Heatsink Temperature Temperature of the heatsink for inverter 1.	Units: Default: Min/Max:	DegC 0.0 –/+200.0	RO	Real
		121	**I1 IGBT Temp** Inverter 1 IGBT Temperature IGBT junction temperature of inverter 1.	Units: Default: Min/Max:	DegC 0.0 –/+200.0	RO	Real
		124	**I1 HSFan Speed** Inverter 1 Heatsink Fan Speed The measured speed of the heatsink fan for inverter 1.	Units: Default: Min/Max:	RPM 0.0 0.0 / 7200.0	RO	Real
		125	**I1 InFan 1 Speed** Inverter 1 Internal Fan 1 Speed The measured speed of internal stirring fan 1 for inverter 1.	Units: Default: Min/Max:	RPM 0.0 0.0 / 7200.0	RO	Real
		126	**I1 InFan 2 Speed** Inverter 1 Internal Fan 2 Speed The measured speed of internal stirring fan 2 for inverter 1.	Units: Default: Min/Max:	RPM 0.0 0.0 / 7200.0	RO	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
INVERTER 1	Predictive Main	**127**	**I1 PredMainReset** Inverter 1 Predictive Maintenance Reset Allows a reset of the elapsed run time to zero for either the heatsink fan or internal stirring fans for inverter 1. After the time has been reset, the value of this parameter returns to 0 "Ready". "Hs Fan Life" (1) – Resets the elapsed run time (displayed in P128 [I1 HSFanElpsdLif]) for the heatsink fan on inverter 1 to zero. "In Fan Life" (2) – Resets the elapsed run time (displayed in P129 [I1 InFanElpsdLif]) for the internal stirring fans on inverter 1 to zero.	Default: Options:	0 = "Ready" 0 = "Ready" 1 = "HS Fan Life" 2 = "In Fan Life"	RW	Real
		128	**I1 HSFanElpsdLif** Inverter 1 Heatsink Fan Elapsed Life The amount of time the heat sink fan on inverter 1 has been running. This value can be reset using P127 [I1 PredMainReset].	Units: Default: Min/Max:	Hrs 0.00 0.00 / 220000000.00	RO	Real
		129	**I1 InFanElpsdLif** Inverter 1 Internal Fan Elapsed Life The amount of time the inverter stirring fans on inverter 1 have been running. This value can be reset using P127 [I1 PredMainReset].	Units: Default: Min/Max:	Hrs 0.00 0.00 / 220000000.00	RO	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
INVERTER 1	Testpoints	**140** **142**	**I1 Testpt Sel 1** **I1 Testpt Sel 2** Inverter 1 Testpoint Selection 1, 2 Selects a source for [I1 Testpt Val X]. Used by the factory, typically for diagnostic purposes.	Default: Min/Max:	0 0 / 65535	RW	32-bit Integer
		141 **143**	**I1 Testpt Val 1** **I1 Testpt Val 2** Inverter 1 Testpoint Value 1, 2 Displays the data selected by [I1 Testpt Sel X].	Default: Min/Max:	0.000000 –/+220000000.000000	RO	Real

Converter Common Parameters

Converter Common parameters apply only to Frame 8 drives.

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
CONVERTER COMMON	System Ratings	1	**Sys Rated Amps** System Rated Amps Displays the continuous current rating of the converter system.	Units: Default: Min/Max:	Amps 0.00 0.00 / 5000.00	RO	Real
		2	**Sys Rated Volts** System Volts Input voltage class (400, 480, 600, 690, etc) of the converter system.	Units: Default: Min/Max:	VAC 0.00 0.00 / 690.00	RO	Real
		3	**C1 Rated Amps** Converter 1 Rated Amps Continuous current rating of converter 1.	Units: Default: Min/Max:	Amps 0.00 0.00 / 3000.00	RO	Real

File	Group	No.	Display Name Full Name Description	Values	Read-Write	Data Type
CONVERTER COMMON	Status	10	**Online Status** Online Status Indicates whether the converter has successfully established fiber optic communications with the main control board.			
		12	**Fault Status** Fault Status Indicates whether the converter has a fault condition. See P105 [C1 Fault Status1] and P106 [C1 Fault Status2] to view which fault conditions currently exist for converter 1.			
		13	**Alarm Status** Alarm Status Indicates whether the converter has an alarm condition. See P107 [C1 Alarm Status1] to view which alarms currently exist for converter 1.			

Options	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Converter 1
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Not Active
1 = Active

Options	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Converter 1
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = No Fault
1 = Fault

Options	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Converter 1
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = No Alarm
1 = Alarm

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
CONVERTER COMMON	Configuration	16	**Gnd Cur Flt Lvl** Ground Current Fault Level The converter system peak ground current fault threshold. The converter will fault if the peak input ground current exceeds this threshold for five line cycles on any converter.	Units: Default: Min/Max:	Amps 600.0 0.0 / 3000.0	RW	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
CONVERTER COMMON	Metering	20	**L1 Phase Curr** Line 1 Phase Current The converter system AC line 1 (R) RMS input current. This is the sum of all line 1 (R) phase currents from all online converters.	Units: Default: Min/Max:	Amps 0.0 0.0 / 15000.0	RO	Real
		21	**L2 Phase Curr** Line 2 Phase Current The converter system AC line 2 (S) RMS input current. This is the sum of all line 2 (S) phase currents from all online converters.	Units: Default: Min/Max:	Amps 0.0 0.0 / 15000.0	RO	Real
		22	**L3 Phase Curr** Line 3 Phase Current The converter system AC line 3 (T) RMS input current. This is the sum of all line 3 (T) phase currents from all online converters.	Units: Default: Min/Max:	Amps 0.0 0.0 / 15000.0	RO	Real
		23	**Heatsink Temp** Heatsink Temperature The converter system heatsink temperature. This is the maximum heatsink temperature from all online converters.	Units: Default: Min/Max:	DegC 0.0 –/+200.0	RO	Real
		24	**SCR Temp** SCR Temperature The converter system SCR temperature. This is the maximum SCR temperature from all online converters.	Units: Default: Min/Max:	DegC 0.0 –/+200.0	RO	Real
		25	**Gate Board Temp** Gate Board Temperature The converter system gate board temperature. This is the maximum gate board temperature from all online converters	Units: Default: Min/Max:	DegC 0.0 –/+200.0	RO	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
CONVERTER COMMON	Testpoints	**30** **32**	**Testpoint Sel 1** **Testpoint Sel 2** Testpoint 1, 2 Selection Selects a source for [Testpoint Val X]. Used by the factory, typically for diagnostic purposes.	Default: Min/Max:	0 0 / 65535	RW	32-bit Integer
		31 **33**	**Testpoint Val 1** **Testpoint Val 2** Testpoint 1, 2 Value Displays data selected by [Testpoint Sel X].	Default: Min/Max:	0.000000 –/+220000000.000000	RO	Real

Converter 1 Parameters

Converter 1 parameters apply only to Frame 8 drives.

File	Group	No.	Display Name Full Name Description	Values	Read-Write	Data Type
CONVERTER 1	Status	105	**C1 Fault Status1** Converter 1 Fault Status 1 Indicates which fault conditions currently exist for converter 1. Refer to Chapter 3 for information on fault and alarm codes.			

Options	Reserved	BFuseHarness	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Line Fuse L3	Line Fuse L2	Line Fuse L1	LFuseHarness	CT Harness	DC Bus Short	DC Bus Open	Firmware Flt	Comm Loss	Power Supply	Brd NTCShort	Brd NTC Open	Brd OvrTemp	HS NTC Short	HS NTC Open	Ground Fault	Overcurrent	Single Phase	Line Freq	Line Dip	HS OvrTemp	SCR OvrTemp	Precharge	Fault O Full
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = False
1 = True

File	Group	No.	Display Name Full Name Description	Values	Read-Write	Data Type
CONVERTER 1	Status	106	**C1 Fault Status2** Converter 1 Fault Status 2 Indicates which fault conditions currently exist for converter 1. Refer to Chapter 3 for information on fault and alarm codes.			

Options	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Line Loss	AC Line High	Command Stop	BFuse Neg	BFuse Pos
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = False
1 = True

File	Group	No.	Display Name Full Name Description	Values	Read-Write	Data Type
CONVERTER 1	Status	107	**C1 Alarm Status1** Converter 1 Alarm Status 1 Indicates which alarm conditions currently exist for converter 1. Refer to Chapter 3 for information on fault and alarm codes.			

Options	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Single Phase	Line Freq	Minimum Line	Line Dip	Reserved	TVSS Blown	HS OvrTemp	SCR OvrTemp	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Phase LossL3	Phase LossL2	Phase LossL1	Precharge
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = False
1 = True

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
CONVERTER 1	Metering	115	**C1 L1 Phase Curr** Converter 1 Line 1 Phase Current Input current present at terminal L1 (R phase) of converter 1.	Units: Default: Min/Max:	Amps 0.0 –/+9000.0	RO	Real
		116	**C1 L2 Phase Curr** Converter 1 Line 2 Phase Current Input current present at terminal L2 (S phase) of converter 1.	Units: Default: Min/Max:	Amps 0.0 –/+9000.0	RO	Real
		117	**C1 L3 Phase Curr** Converter 1 Line 3 Phase Current Input current present at terminal L3 (T phase) of converter 1.	Units: Default: Min/Max:	Amps 0.0 –/+9000.0	RO	Real
		118	**C1 Gnd Current** Converter 1 Ground Current The RMS ground current of AC input to converter 1. The value displayed is based on the sum of converter 1 drive input currents (L1, L2 and L3). When the three phases are balanced, the ground current is ideally close to zero.	Units: Default: Min/Max:	Amps 0.0 –/+9000.0	RO	Real
		119	**C1 DC Bus Volt** Converter 1 DC Bus Voltage DC bus voltage measured by converter 1.	Units: Default: Min/Max:	VDC 0.0 0.0 / 1200.0	RO	Real
		120	**C1 Heatsink Temp** Converter 1 Heatsink Temperature Temperature of the converter 1 heatsink.	Units: Default: Min/Max:	DegC 0.0 –/+200.0	RO	Real
		121	**C1 SCR Temp** Converter 1 SCR Frequency Maximum temperature of all SCRs for converter 1.	Units: Default: Min/Max:	DegC 0.0 –/+200.0	RO	Real
		122	**C1 GateBoardTemp** Converter 1 Gate Board Temperature Gate board temperature for converter 1.	Units: Default: Min/Max:	DegC 0.0 –/+200.0	RO	Real
		123	**C1 AC Line Freq** Converter 1 AC Line Frequency AC line frequency of converter 1.	Units: Default: Min/Max:	Hz 0.0 0.0 / 100.0	RO	Real
		125	**C1 L12 Line Volt** Converter 1 Line 1 to Line 2 Line Voltage The phase-to-phase RMS line voltage between L1 and L2 for converter 1.	Units: Default: Min/Max:	VAC 0.0 0.0 / 850.0	RO	Real
		126	**C1 L23 Line Volt** Converter 1 Line 2 to Line 3 Line Voltage The phase-to-phase RMS line voltage between L2 and L3 for converter 1.	Units: Default: Min/Max:	VAC 0.0 0.0 / 850.0	RO	Real
		127	**C1 L31 Line Volt** Converter 1 Line 3 to Line 1 Line Voltage The phase-to-phase RMS line voltage between L3 and L1 for converter 1.	Units: Default: Min/Max:	VAC 0.0 0.0 / 850.0	RO	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
CONVERTER 1	Predictive Main	137	**C1 PredMainReset** Converter 1 Predictive Maintenance Reset Allows a reset of the elapsed run time to zero for the cabinet fan for converter 1. After the time has been reset, the value of this parameter returns to 0 "Ready".	Default: Options:	0 = "Ready" 0 = "Ready" 1 = "Cb Fan Life"	RW	Real
		138	**C1 CbFanElpsdLif** Converter 1 Cabinet Fan Elapsed Life The amount of time the cabinet fan for converter 1 has been running. This value can be reset using P137 [C1 PredMainReset].	Units: Default: Min/Max:	Hrs 0.000 0.000 / 2200000.000	RO	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
CONVERTER CH1	Testpoints	140 142	**C1 Testpt Sel 1** **C1 Testpt Sel 2** Converter 1 Testpoint Selection 1, 2 Selects a source for [C1 Testpt Val X]. Used by the factory, typically for diagnostic purposes.	Default: Min/Max:	0 0 / 65535	RW	32-bit Integer
		141 143	**C1 Testpt Val 1** **C1 Testpt Val 2** Converter 1 Testpoint Data 1, 2 Displays the data selected by [C1 Testpt Sel X].	Default: Min/Max:	0.000000 –/+220.000000	RO	Real

I/O Module Parameters

File: HOST GROUPS | **Group:** Digital Inputs

No. 1

Dig In Sts
Digital Input Status
Status of the digital inputs.

Options	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Input 5	Input 4	Input 3	Input 2	Input 1	Input 0
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Input Not Activated
1 = Input Activated

Values: RW | 32-bit Integer

No. 2

Dig In Filt Mask
Digital Input Filter Mask
Filters the selected digital input.
Important: Only used by I/O Module models 20-750-2263C-1R2T and 20-750-2262C-2R. (Modules with 24V DC inputs.)

Options	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Input 5	Input 4	Input 3	Input 2	Input 1	Input 0
Default	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Input Not Filtered
1 = Input Filtered

Values: RW | 32-bit Integer

No. 3

Dig In Filt
Digital Input Filter
Sets the amount of filtering on the digital inputs.
Important: Only used by I/O Module models 20-750-2263C-1R2T and 20-750-2262C-2R. (M0dules with 24V DC inputs.)

Values: Units: mS | Default: 4 | Min/Max: 2 / 10

Read-Write: RW | **Data Type:** 32-bit Integer

File: HOST GROUPS | **Group:** Digital Outputs

No. 5

Dig Out Sts
Digital Output Status
Status of the digital outputs.

Options	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Trans Out 1 (2)	Trans Out 0 (1)	Relay Out 0
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Output De-energized
1 = Output Energized

(1) Bit 1= "Trans Out 0" for I/O Module model 20-750-2263C-1R2T
= "Relay Out 1" for I/O Module models 20-750-2262C-2R and 20-750-2262D-2R
(2) Bit 2 is only used by I/O Module 20-750-2263C-1R2T

File	Group	No.	Display Name Full Name Description	Values	Read-Write	Data Type
HOST GROUPS	Digital Outputs	6	**Dig Out Invert** Digital Output Invert Inverts the selected digital output. Options: Reserved (15–4), Reserved (3), Trans Out 1[2] (2), Trans Out 0[1] (1), Relay Out 0 (0) Default: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 Bit: 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0 0 = Output Not Inverted 1 = Output Inverted (1) Bit 1= "Trans Out 0" for I/O Module model 20-750-2263C-1R2T = "Relay Out 1" for I/O Module models 20-750-2262C-2R and 20-750-2262D-2R (2) Bit 2 is only used by I/O Module 20-750-2263C-1R2T			
		7	**Dig Out Setpoint** Digital Output Setpoint Controls Relay or Transistor Outputs when chosen as the source. Can be used to control outputs from a communication device using DataLinks. Options: Reserved (15–4), Reserved (3), Trans Out 1[2] (2), Trans Out 0[1] (1), Relay Out 0 (0) Default: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 Bit: 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0 0 = Output De-energized 1 = Output Energized (1) Bit 1= "Trans Out 0" for I/O Module model 20-750-2263C-1R2T = "Relay Out 1" for I/O Module models 20-750-2262C-2R and 20-750-2262D-2R (2) Bit 2 is only used by I/O Module 20-750-2263C-1R2T			
		10	**RO0 Sel** Relay Output 0 Select Selects the source that will energize the relay output. Any status parameter bit can be used as an output source. For example P935 [Drive Status 1] bit 7 "Faulted".	Default: 0.00 (Disabled) Min/Max: 0.00 / 159999.15	RW	32-bit Integer
		11	**RO0 Level Sel** Relay Output 0 Level Select Selects the source of the level that will be compared.	Default: 0 (Disabled) Min/Max: 0 / 159999	RW	32-bit Integer
		12	**RO0 Level** Relay Output 0 Level Sets the level compare value.	Default: 0.0 Min/Max: –/+1000000.0	RW	Real
		13	**RO0 Level CmpSts** Relay Output 0 Level Compare Status Status of the level compare, and a possible source for a relay or transistor output. Relay Output X Select or Transistor Output X Select must have this selected to energize the output. Can be used without a physical output as status information only. Options: Reserved (15–4), Reserved (3), Reserved (2), Grt Than Equ (1), Less Than (0) Default: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 Bit: 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0 0 = Condition False 1 = Condition True Bit 0 "Less Than" – Level source is less than the level value. Bit 1 "Grt Than Equ" – Level source is greater than or equal to the level value.			

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
HOST GROUPS	Digital Outputs	14	**RO0 On Time** Relay Output 0 On Time Sets the "ON Delay" time for the digital outputs. This is the time between the occurrence of a condition and activation of the relay.	Units: Default: Min/Max:	Secs 0.0 0.0 / 600.0	RW	Real
		15	**RO0 Off Time** Relay Output 0 Off Time Sets the "OFF Delay" time for the digital outputs. This is the time between the disappearance of a condition and de-activation of the relay.	Units: Default: Min/Max:	Secs 0.0 0.0 / 600.0	RW	Real
		20	**RO1 Sel** Relay Output 1 Select – I/O Module model 20-750-2262C-2R or 20-750-2262D-2R is installed. **TO0 Sel** Transistor Output 0 Select – I/O Module model 20-750-2263C-1R2T is installed. Selects the source that will energize the relay or transistor output. Any status parameter bit can be used as an output source. For example P935 [Drive Status 1] bit 7 "Faulted".	Default: Min/Max:	0 (Disabled) 0 / 15999915	RW	32-bit Integer
		21	**RO1 Level Sel** Relay Output 1 Level Select – I/O Module model 20-750-2262C-2R or 20-750-2262D-2R is installed. **TO0 Level Sel** Transistor Output 0 Level Select – I/O Module model 20-750-2263C-1R2T is installed. Selects the source of the level that will be compared.	Default: Min/Max:	0 (Disabled) 0 / 159999	RW	32-bit Integer
		22	**RO1 Level** Relay Output 1 Level – I/O Module model 20-750-2262C-2R or 20-750-2262D-2R is installed. **TO0 Level** Transistor Output 0 Level – I/O Module model 20-750-2263C-1R2T is installed. Sets the level compare value.	Default: Min/Max:	0.0 –/+1000000.0	RW	Real
		23	**RO1 Level CmpSts** Relay Output 1 Level Compare Status – I/O Module model 20-750-2262C-2R or 20-750-2262D-2R is installed. **TO0 Level CmpSts** Transistor Output 0 Level Compare Status – I/O Module model 20-750-2263C-1R2T is installed. Status of the level compare, and a possible source for a relay or transistor output. Relay Output X Select or Transistor Output X Select must have this selected to energize the output. Can be used without a physical output as status information only.				
		24	**RO1 On Time** Relay Output 1 On Time – I/O Module model 20-750-2262C-2R or 20-750-2262D-2R is installed. **TO0 On Time** Transistor Output 0 On Time – I/O Module model 20-750-2263C-1R2T is installed. Sets the "ON Delay" time for the digital outputs. This is the time between the occurrence of a condition and activation of the relay or transistor.	Units: Default: Min/Max:	Secs 0.0 0.0 / 600.0	RW	Real

Options	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Grt Than Equ	Less Than
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Condition False
1 = Condition True

Bit 0 "Less Than" – Level source is less than the level value.
Bit 1 "Grt Than Equ" – Level source is greater than or equal to the level value.

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
HOST GROUPS	Digital Outputs	25	**RO1 Off Time** Relay Output 1 Off Time – I/O Module model 20-750-2262C-2R or 20-750-2262D-2R is installed. **TO0 Off Time** Transistor Output 0 Off Time – I/O Module model 20-750-2263C-1R2T is installed. Sets the "OFF Delay" time for the digital outputs. This is the time between the disappearance of a condition and de-activation of the relay or transistor.	Units: Default: Min/Max:	Secs 0.0 0.0 / 600.0	RW	Real
		30	**TO1 Sel** Transistor Output 1 Select Selects the source that will energize the transistor output. Any status parameter bit can be used as an output source. For example P935 [Drive Status 1] bit 7 "Faulted". **Important:** Only used by I/O Module model 20-750-2263C-1R2T.	Default: Min/Max:	0 (Disabled) 0 / 159999.15	RW	32-bit Integer
		31	**TO1 Level Sel** Transistor Output 1 Level Select Selects the source of the level that will be compared. **Important:** Only used by I/O Module model 20-750-2263C-1R2T.	Default: Min/Max:	0 (Disabled) 0 / 159999.15	RW	32-bit Integer
		32	**TO1 Level** Transistor Output 1 Level Sets the level compare value. **Important:** Only used by I/O Module model 20-750-2263C-1R2T.	Default: Min/Max:	0.0 –/+1000000.0	RW	Real
		33	**TO1 Level CmpSts** Transistor Output 1 Level Compare Status Status of the level compare, and a possible source for a transistor output. Transistor Output X Select must have this selected to energize the output. Can be used without a physical output as status information only. Options: Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Grt Than Equ, Less Than Default: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 Bit: 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0 0 = Condition False 1 = Condition True Bit 0 "Less Than" – Level source is less than the level value. Bit 1 "Grt Than Equ" – Level source is greater than or equal to the level value. **Important:** Only used by I/O Module model 20-750-2263C-1R2T.				
		34	**TO1 On Time** Transistor Output 1 On Time Sets the "ON Delay" time for the digital outputs. This is the time between the occurrence of a condition and activation of the transistor. **Important:** Only used by I/O Module model 20-750-2263C-1R2T.	Units: Default: Min/Max:	Secs 0.0 0.0 / 600.0	RW	Real
		35	**TO1 Off Time** Transistor Output 1 Off Time Sets the "OFF Delay" time for the digital outputs. This is the time between the disappearance of a condition and de-activation of the transistor. **Important:** Only used by I/O Module model 20-750-2263C-1R2T.	Units: Default: Min/Max:	Secs 0.0 0.0 / 600.0	RW	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
HOST GROUPS	Motor PTC	40	**PTC Cfg** Positive Temperature Coefficient Configuration Sets the action that will be taken when the PTC is not Ok. "Ignore" (0) – No action is taken "Alarm" (1) – Alarm occurs "Flt Minor" (2) – Minor Fault occurs if enabled, otherwise Fault Coast Stop "FltCoastStop" (3) – Fault Coast Stop occurs "Flt RampStop" (4) – Fault Ramp Stop occurs "Flt CL Stop" (5) – Fault Current Limit Stop occurs	Default: Options:	0 = "Ignore" 0 = "Ignore" 1 = "Alarm" 2 = "Flt Minor" 3 = "FltCoastStop" 4 = "Flt RampStop" 5 = "Flt CL Stop"	RW	32-bit Integer
		41	**PTC Sts** Positive Temperature Coefficient Status Status of the PTC. Options: Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Over Temp, PTC Short, PTC Ok Default: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 Bit: 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0 0 = Condition False 1 = Condition True Bit 0 "PTC Ok" – PTC is OK Bit 1 "PTC Short" – PTC is Shorted Bit 2 "Over Temp" – PTC is indicating over temperature				
		42	**PTC Raw Value** Positive Temperature Coefficient Raw Value Displays the value of the PTC.	Units: Default: Min/ Max:	VAC 0 0 / 10	RO	Real

File	Group	No.	Display Name Full Name Description	Values	Read-Write	Data Type
HOST GROUPS	Analog Inputs	45	**Anlg In Type** Analog Input Type Status of the analog input mode set by the option jumpers. Options: Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Analog 1, Analog 0 Default: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 Bit: 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0 0 = Voltage Mode 1 = Current Mode			
		46	**Anlg In Sqrt** Analog Input Square Root Enables/disables the square root function for each input. Options: Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Analog 1, Analog 0 Default: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 Bit: 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0 0 = Square Root Disabled 1 = Square Root Enabled			

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
HOST GROUPS	Analog Inputs	47	**Anlg In Loss Sts** Analog Input Loss Status Status of the analog input loss. Options: Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Loss 1, Loss 0, Loss Default: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 Bit: 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0 0 = Loss not Present 1 = Loss Present Bit 0 "Loss" – Indicates loss of one or both inputs.				
		50	**Anlg In0 Value** Analog Input 0 Value Value of the Analog input after filter, square root, and loss action.	Units: Default: Min/Max:	Volt mA 0.000 Volts 0.000 mA –/+10.000 Volts 0.000 / 20.000 mA	RO	Real
		51	**Anlg In0 Hi** Analog Input 0 High Sets the highest input value to the analog input scaling block.	Units: Default: Min/Max:	Volt mA 0.000 Volts 0.000 mA –/+10.000 Volts 0.000 / 20.000 mA	RW	Real
		52	**Anlg In0 Lo** Analog Input 0 Low Sets the lowest input value to the analog input scaling block.	Units: Default: Min/Max:	Volt mA 0.000 Volts 0.000 mA –/+10.000 Volts 0.000 / 20.000 mA	RW	Real
		53	**Anlg In0 LssActn** Analog Input 0 Loss Action Selects drive action when an analog signal loss is detected. Signal loss is defined as an analog signal less than 1V or 2mA. The signal loss event ends and normal operation resumes when the input signal level is greater than or equal to 1.5V or 3mA. "Ignore" (0) – No action is taken "Alarm" (1) – Alarm occurs "Flt Minor" (2) – Minor Fault occurs if enabled, otherwise Fault Coast Stop "FltCoastStop" (3) – Fault Coast Stop occurs "Flt RampStop" (4) – Fault Ramp Stop occurs "Flt CL Stop" (5) – Fault Current Limit Stop occurs "Hold Input" (6) – Holds input at last value "Set Input Lo" (7) – Sets input to P52 [Anlg In0 Lo] "Set Input Hi" (8) – Sets input to P51 [Anlg In0 Hi]	Default: Options:	0 = "Ignore" 0 = "Ignore" 1 = "Alarm" 2 = "Flt Minor" 3 = "FltCoastStop" 4 = "Flt RampStop" 5 = "Flt CL Stop" 6 = "Hold Input" 7 = "Set Input Lo" 8 = "Set Input Hi"	RW	32-bit Integer
		54	**Anlg In0 Raw Val** Analog Input 0 Raw Value Raw Value of the analog input.	Units: Default: Min/Max:	Volt mA 0.000 Volts 0.000 mA –/+10.000 Volts 0.000 / 20.000 mA	RO	Real
		55	**Anlg In0 Filt Gn** Analog Input 0 Filter Gain Sets the analog input filter gain.	Default: Min/Max:	1.00 –/+5.00	RW	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
HOST GROUPS	Analog Inputs	56	**Anlg In0 Filt BW** Analog Input 0 Filter Bandwidth Sets the analog input filter bandwidth.	Default: Min/Max:	0.0 0.0 / 500.0	RW	Real
		60	**Anlg In1 Value** Analog Input 1 Value Value of the Analog input after filter, square root, and loss action.	Units: Default: Min/Max:	Volt mA 0.000 Volts 0.000 mA –/+10.000 Volts 0.000 / 20.000 mA	RO	Real
		61	**Anlg In1 Hi** Analog Input 1 High Sets the highest input value to the analog input scaling block.	Units: Default: Min/Max:	Volt mA 0.000 Volts 0.000 mA –/+10.000 Volts 0.000 / 20.000 mA	RW	Real
		62	**Anlg In1 Lo** Analog Input 1 Low Sets the lowest input value to the analog input scaling block.	Units: Default: Min/Max:	Volt mA 0.000 Volts 0.000 mA –/+10.000 Volts 0.000 / 20.000 mA	RW	Real
		63	**Anlg In1 LssActn** Analog Input 1 Loss Action Selects drive action when an analog signal loss is detected. Signal loss is defined as an analog signal less than 1V or 2mA. The signal loss event ends and normal operation resumes when the input signal level is greater than or equal to 1.5V or 3mA. "Ignore" (0) – No action is taken "Alarm" (1) – Alarm occurs "Flt Minor" (2) – Minor Fault occurs if enabled, otherwise Fault Coast Stop "FltCoastStop" (3) – Fault Coast Stop occurs "Flt RampStop" (4) – Fault Ramp Stop occurs "Flt CL Stop" (5) – Fault Current Limit Stop occurs "Hold Input" (6) – Holds input at last value "Set Input Lo" (7) – Sets input to P62 [Anlg In1 Lo] "Set Input Hi" (8) – Sets input to P61 [Anlg In1 Hi]	Default: Options:	0 = "Ignore" 0 = "Ignore" 1 = "Alarm" 2 = "Flt Minor" 3 = "FltCoastStop" 4 = "Flt RampStop" 5 = "Flt CL Stop" 6 = "Hold Input" 7 = "Set Input Lo" 8 = "Set Input Hi"	RW	32-bit Integer
		64	**Anlg In1 Raw Val** Analog Input 1 Raw Value Raw Value of the analog input.	Units: Default: Min/Max:	Volt mA 0.000 Volts 0.000 mA –/+10.000 Volts 0.000 / 20.000 mA	RO	Real
		65	**Anlg In1 Filt Gn** Analog Input 1 Filter Gain Sets the analog input filter gain.	Default: Min/Max:	1.00 –/+5.00	RW	Real
		66	**Anlg In1 Filt BW** Analog Input 1 Filter Bandwidth Sets the analog input filter bandwidth.	Default: Min/Max:	0.0 0.0 / 500.0	RW	Real

File	Group	No.	Display Name Full Name Description	Values	Read-Write	Data Type
HOST GROUPS	Analog Outputs	70	**Anlg Out Type** Analog Output Type Select the analog output mode for each analog output. Options: Reserved (bits 15–2), Analog 1 (bit 1), Analog 0 (bit 0) Default: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 Bit: 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0 0 = Voltage Mode 1 = Current Mode			
		71	**Anlg Out Abs** Analog Output Absolute Selects whether the signed value or absolute value of a parameter is used before being scaled to drive the analog output. Options: Reserved (bits 15–2), Analog 1 (bit 1), Analog 0 (bit 0) Default: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 1 Bit: 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0 0 = Condition False 1 = Condition True			
		75	**Anlg Out0 Sel** Analog Output 0 Select Selects the source for the analog output.	Default: 3 Min/Max: 0 / 159999	RW	32-bit Integer
		76	**Anlg Out0 Stpt** Analog Output 0 Setpoint A possible source for an analog output. Can be used to control an analog output from a communication device using a DataLink. Not affected by analog output scaling.	Units: VAC Default: 0 Min/Max: –10/20	RW	Real
		77	**Anlg Out0 Data** Analog Output 0 Data Displays the value of the source selected by P75 [Anlg Out0 Sel].	Default: 0 Min/Max: –/+100000	RO	Real
		78	**Anlg Out0 DataHi** Analog Output 0 Data High Sets the high value for the data range of analog out scale.	Default: 1 Min/Max: –/+214748000	RW	Real
		79	**Anlg Out0 DataLo** Analog Output 0 Data Low Sets the low value for the data range of analog out scale.	Default: 1 Min/Max: –/+214748000	RW	Real
		80	**Anlg Out0 Hi** Analog Output 0 High Sets the high value for the analog output value when the data value is at its maximum.	Units: Volt mA Default: 10.000 Volts 20.000 mA Min/Max: –/+10.000 Volts 0.000 / 20.000 mA	RW	Real
		81	**Anlg Out0 Lo** Analog Output 0 Low Sets the low value for the analog output value when the data value is at its minimum.	Units: Volt mA Default: 0.000 Volts 0.000 mA Min/Max: –/+10.000 Volts 0.000 / 20.000 mA	RW	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
HOST GROUPS	Analog Outputs	**82**	**Anlg Out0 Val** Analog Output 0 Value Displays the analog output value.	Units: Default: Min/Max:	Volt mA 10.000 Volts 20.000 mA –/+10.000 Volts 0.000 / 20.000 mA	RO	Real
		85	**Anlg Out1 Sel** Analog Output 1 Select Selects the source for the analog output.	Default: Min/Max:	3 0 / 159999	RW	32-bit Integer
		86	**Anlg Out1 Stpt** Analog Output 1 Setpoint A possible source for an analog output. Can be used to control an analog output from a communication device using a DataLink. Not affected by analog output scaling.	Units: Default: Min/Max:	VAC 0 –10 / 20	RW	Real
		87	**Anlg Out1 Data** Analog Output 1 Data Displays the value of the source selected by P85 [Anlg Out1 Sel].	Default: Min/Max:	0 –/+100000	RO	Real
		88	**Anlg Out1 DataHi** Analog Output 1 Data High Sets the high value for the data range of analog out scale.	Default: Min/Max:	1 –/+214748000	RW	Real
		89	**Anlg Out1 DataLo** Analog Output 1 Data Low Sets the low value for the data range of analog out scale.	Default: Min/Max:	1 –/+214748000	RW	Real
		90	**Anlg Out1 Hi** Analog Output 1 High Sets the high value for the analog output value when the data value is at its maximum.	Units: Default: Min/Max:	Volt mA 10.000 Volts 20.000 mA –/+10.000 Volts 0.000 / 20.000 mA	RW	Real
		91	**Anlg Out1 Lo** Analog Output 1 Low Sets the low value for the analog output value when the data value is at its minimum.	Units: Default: Min/Max:	Volt mA 0.000 Volts 0.000 mA –/+10.000 Volts 0.000 / 20.000 mA	RW	Real
		92	**Anlg Out1 Val** Analog Output 1 Value Displays the analog output value.	Units: Default: Min/Max:	Volt mA 10.000 Volts 20.000 mA –/+10.000 Volts 0.000 / 20.000 mA	RO	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
HOST GROUPS	Predictive Main	**99**	**PredMaint Sts** Predictive Maintenance Status Status of relay's predictive maintenance. Options: Master, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Relay Out 0[1], Relay Out 0 Default: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 Bit: 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0 0 = Condition False 1 = Condition True (1) Bit 1= "Relay Out 0" for I/O Module models 20-750-2262C-2R and 20-750-2262D-2R				
		100	**RO0 Load Type** Relay Output 0 Load Type Sets the type of load that will be applied to the relay. Must be properly set for the Predictive Maintenance function to predict the relay life.	Default: Options:	1 = "DC Inductive" 0 = "DC Resistive" 1 = "DC Inductive" 2 = "AC Resistive" 3 = "AC Inductive"	RW	32-bit Integer
		101	**RO0 Load Amps** Relay Output 0 Load Amps Load current that will be applied to the relay contacts. Must be properly set for the Predictive Maintenance function to approximate the relay life.	Units: Default: Min/Max:	Amps 2.000 0.000 / 2.000	RW	Real
		102	**RO0 TotalLife** Relay Output 0 Total Life Total life cycles of the relay based on programmed load type and amps.	Units: Default: Min/Max:	Cycl 0 0 / 2147483647	RO	32-bit Integer
		103	**RO0 ElapsedLife** Relay Output 0 Elapsed Life Non-resettable, total accumulated cycles of the relay.	Units: Default: Min/Max:	Cycl 0 0 / 2147483647	RO	32-bit Integer
		104	**RO0 RemainLife** Relay Output 0 Remaining Life The difference between the Total Life and the Elapsed Life.	Units: Default: Min/Max:	Cycl 0 –/+2147483647	RO	32-bit Integer
		105	**RO0 LifeEvntLvl** Relay Output 0 Life Event Level Sets the percentage of relay life cycles before action is taken.	Units: Default: Min/Max:	% 80.000 0.000 / 100.000	RW	Real
		106	**RO0 LifeEvntActn** Relay Output 0 Life Event Action Sets the action that will be taken when the percentage of relay life cycles has been reached. "Ignore" (0) – No action is taken "Alarm" (1) – Alarm occurs "Flt Minor" (2) – Minor Fault occurs if enabled, otherwise Fault Coast Stop "FltCoastStop" (3) – Fault Coast Stop occurs "Flt RampStop" (4) – Fault Ramp Stop occurs "Flt CL Stop" (5) – Fault Current Limit Stop occurs	Default: Options:	1 = "Alarm" 0 = "Ignore" 1 = "Alarm" 2 = "Flt Minor" 3 = "FltCoastStop" 4 = "Flt RampStop" 5 = "Flt CL Stop"	RW	32-bit Integer

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
HOST GROUPS	Predictive Main	**110**	**RO1 Load Type** Relay Output 1 Load Type Sets the type of load that will be applied to the relay. Must be properly set for the Predictive Maintenance function to predict the relay life. **Important:** Only used by I/O Module models 20-750-2262C-2R and 20-750-2262D-2R.	Default: Options:	1 = "DC Inductive" 0 = "DC Resistive" 1 = "DC Inductive" 2 = "AC Resistive" 3 = "AC Inductive"	RW	32-bit Integer
		111	**RO1 Load Amps** Relay Output 1 Load Amps Load current that will be applied to the relay contacts. Must be properly set for the Predictive Maintenance function to approximate the relay life. **Important:** Only used by I/O Module models 20-750-2262C-2R and 20-750-2262D-2R.	Units: Default: Min/Max:	Amps 2.000 0.000 / 2.000	RW	Real
		112	**RO1 TotalLife** Relay Output 1 Total Life Total life cycles of the relay based on programmed load type and amps. **Important:** Only used by I/O Module models 20-750-2262C-2R and 20-750-2262D-2R.	Units: Default: Min/Max:	Cycl 0 0 / 2147483647	RO	32-bit Integer
		113	**RO1 ElapsedLife** Relay Output 1 Elapsed Life Non-resettable, total accumulated cycles of the relay. **Important:** Only used by I/O Module models 20-750-2262C-2R and 20-750-2262D-2R.	Units: Default: Min/Max:	Cycl 0 0 / 2147483647	RO	32-bit Integer
		114	**RO1 RemainLife** Relay Output 1 Remaining Life The difference between the Total Life and the Elapsed Life. **Important:** Only used by I/O Module models 20-750-2262C-2R and 20-750-2262D-2R.	Units: Default: Min/Max:	Cycl 0 –/+2147483647	RO	32-bit Integer
		115	**RO1 LifeEvntLvl** Relay Output 1 Life Event Level Sets the percentage of relay life cycles before action is taken. **Important:** Only used by I/O Module models 20-750-2262C-2R and 20-750-2262D-2R.	Units: Default: Min/Max:	% 80.000 0.000 / 100.000	RW	Real
		116	**RO1 LifeEvntActn** Relay Output 1 Life Event Action Sets the action that will be taken when the percentage of relay life cycles has been reached. **Important:** Only used by I/O Module models 20-750-2262C-2R and 20-750-2262D-2R. "Ignore" (0) – No action is taken "Alarm" (1) – Alarm occurs "Flt Minor" (2) – Minor Fault occurs if enabled, otherwise Fault Coast Stop "FltCoastStop" (3) – Fault Coast Stop occurs "Flt RampStop" (4) – Fault Ramp Stop occurs "Flt CL Stop" (5) – Fault Current Limit Stop occurs	Default: Options:	1 = "Alarm" 0 = "Ignore" 1 = "Alarm" 2 = "Flt Minor" 3 = "FltCoastStop" 4 = "Flt RampStop" 5 = "Flt CL Stop"	RW	32-bit Integer

Safe Speed Monitor Module Parameters

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
HOST GROUPS	Security	**1**	**Password** Password Password for Lock and Unlock function.	Default: Min/Max:	N/A 0 / 4,294,967,295	RO	Real
		5	**Lock State** Lock State Command to lock or unlock the safety option configuration.	Default: Options:	0 = "Unlock" 0 = "Unlock" 1 = "Lock"	RW	Real
		6	**Operating Mode** Operating Mode Command to place the system in Program or Run mode.	Default: Options:	0 = "Program" 0 = "Program" 1 = "Run" 2 = "Config flt"	RW	Real
		7	**Reset Defaults** Reset Defaults Resets safety option to factory defaults.	Default: Options:	0 = "No action" 0 = "No action" 1 = "Reset Fac" (Reset to factory defaults)	RW	Real
		10	**Signature ID** Signature Identifier Safety configuration identifier.	Default: Min/Max:	N/A 0 / 4,294,967,295	RO	Real
		13	**New Password** New Password 32-bit configuration password.	Default: Min/Max:	N/A 0 / 4,294,967,295	RW	Real
		17	**Password Command** Password Command Save new password command.	Default: Options:	0 = "No action" 0 = "No action" 1 = "Change PW" (Change Password) 2 = "Reset PW" (Reset Password)	RW	Real
		18	**Security Code** Security Code Used for Reset Password command.	Default: Min/Max:	N/A 0 / 65,535	RO	Real
		19	**Vendor Password** Vendor Password Vendor password for Reset Password command.	Default: Min/Max:	N/A 0 / 65,535	RW	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
HOST GROUPS	General	**20**	**Cascaded Config** Cascaded Configuration Defines whether the speed monitoring safety option is a single unit or if it occupies a first, middle, or last position in a multi-axis cascaded system. "Single" (0) - Single Unit System "Milti First" (1) - Cascaded System First Unit "Multi Mid" (2) - Cascaded System Middle Unit "Multi Last" (3) - Cascaded System Last Unit	Default: Options:	0 = "Single" 0 = "Single" 1 = "Multi First" 2 = "Multi Mid" 3 = "Multi Last"	RW	Real
		21	**Safety Mode** Safety Mode Defines the primary operating mode of the speed monitoring safety functions. "Safe Stop" (1) - Master, Safe Stop "Safe Stop DM" (2) - Master, Safe Stop with Door Monitoring "Lim Speed" (3) - Master, Safe Limited Speed "Lim Speed DM" (4) -Master, Safe Limited Speed with Door Monitoring "Lim Speed ES" (5) - Master, Safe Limited Speed with Enabling Switch Control "LimSpd DM ES" (6) - Master, Safe Limited Speed with Door Monitoring and Enabling Switch Control "Lim Spd Stat" (7) - Master, Safe Limited Speed Status Only "Slv Safe Stp" (8) - Slave, Safe Stop "Slv Lim Spd" (9) - Slave, Safe Limited Speed "Slv Spd Stat" (10) - Slave, Safe Limited Speed Status Only	Default: Options:	1 = "Safe Stop" 0 = "Disabled" 1 = "Safe Stop" 2 = "Safe Stop DM" 3 = "Lim Speed" 4 = "Lim Speed DM" 5 = "Lim Speed ES" 6 = "LimSpd DM ES" 7 = "Lim Spd Stat" 8 = "Slv Safe Stp" 9 = "Slv Lim Spd" 10 = "Slv Spd Stat"	RW	Real
		22	**Reset Type** Reset Type Defines the type of reset used by the safety option.	Default: Options:	2 = "Monitored" 0 = "Automatic" 1 = "Manual" 2 = "Monitored" (Manual Monitored)	RW	Real
		24	**OverSpd Response** Over Speed Response Configuration for the feedback interface sampling rate.	Default: Options:	0 = "42 ms" 0 = "42 ms" 1 = "48 ms" 2 = "60 ms" 3 = "84 ms" 4 = "132 ms" 5 = "228 ms" 6 = "420 ms"	RW	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
HOST GROUPS	Feedback	**27**	**Fbk Mode** Feedback Mode Selects the number of feedback devices and the type of discrepancy checking. "Single Fbk" (0) - 1 Encoder "Dual S/P Chk" (1) - 2 Encoders with Speed and Position Discrepancy Checking "Dual Spd Chk" (2) - 2 Encoders with Speed Discrepancy Checking "Dual Pos Chk" (3) - 2 Encoders with Position Discrepancy Checking	Default: Options:	0 = "Single Fbk" 0 = "Single Fbk" 1 = "Dual S/P Chk" 2 = "Dual Spd Chk" 3 = "Dual Pos Chk"	RW	Real
		28	**Fbk 1 Type** Feedback 1 Type Selects the type of feedback for safety option 1.	Default: Options:	1 = "TTL" 0 = "Sine/Cosine" 1 = "TTL" (Incremental)	RW	Real
		29	**Fbk 1 Units** Feedback 1 Units Selects rotary or linear feedback for safety option 1.	Default: Options:	0 = "Rev" 0 = "Rev" (Rotary) 1 = "mm" (Linear)	RW	Real
		30	**Fbk 1 Polarity** Feedback 1 Polarity Defines the direction polarity for encoder 1.	Default: Options:	0 = "Normal" 0 = "Normal" (Same as encoder) 1 = "Reversed"	RW	Real
		31	**Fbk 1 Resolution** Feedback 1 Resolution Counts/Revolution. 1…65,535 pulses/revolution or pulses/mm based on rotary or linear configuration defined by P29 [Fbk 1 Units].	Default: Min/Max:	1024 1 / 65,535	RO	Real
		32	**Fbk 1 Volt Mon** Feedback 1 Voltage Monitor Encoder 1 voltage to be monitored.	Default: Options:	0 = Voltage not monitored 0 = Voltage not monitored 5 = 5V +/- 5% 9 = 7…12V 12 = 12V +/- 5% 24 = 24V - 10%…24V + 5%	RW	Real
		33	**Fbk 1 Speed** Feedback 1 Speed Displays the output speed of encoder 1. Units based on rotary or linear configuration defined by P29 [Fbk 1 Units].	Units: Min/Max:	RPM mm/s -214,748,364.8 / 214,748,364.7 RPM -214,748,364.8 / 214,748,364.7mm/s	RO	Real
		34	**Fbk 2 Units** Feedback 2 Units Selects rotary or linear feedback for safety option 2.	Default: Options:	0 = "Rev" 0 = "Rev" (Rotary) 1 = "mm" (Linear)	RW	Real
		35	**Fbk 2 Polarity** Feedback 2 Polarity Defines the direction polarity for encoder 2.	Default: Options:	0 = "Normal" 0 = "Normal" (Same as encoder) 1 = "Reversed"	RW	Real
		36	**Fbk 2 Resolution** Feedback 2 Resolution Counts/Revolution. 0…65,535 pulses/revolution or pulses/mm based on rotary or linear configuration defined by P34 [Fbk 2 Units].	Default: Min/Max:	0 1 / 65,535	RO	Real
		37	**Fbk 2 Volt Mon** Feedback 2 Voltage Monitor Encoder 2 voltage to be monitored.	Default: Options:	0 = Voltage not monitored 0 = Voltage not monitored 5 = 5V +/- 5% 9 = 7…12V 12 = 12V +/- 5% 24 = 24V - 10%…24V + 5%	RW	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
HOST GROUPS	Feedback	**38**	**Fbk 2 Speed** Feedback 2 Speed Displays the output speed of encoder 2. Units based on rotary or linear configuration defined by P34 [Fbk 2 Units].	Units: Min/Max:	RPM mm/s -214,748,364.8 / 214,748,364.7 RPM -214,748,364.8 / 214,748,364.7 mm/s	RO	Real
		39	**Fbk Speed Ratio** Feedback Speed Ratio Defines the ratio of the expected speed of encoder 2 divided by the expected speed of encoder 1. Ratio based on rotary or linear configuration defined by P29 [Fbk 1 Units].	Default: Min/Max:	0.0000 0.0001 / 10,000.0	RW	Real
		40	**Fbk Speed Tol** Feedback Speed Tolerance Acceptable difference in speed between P33 [Fbk 1 Speed] and P38 [Fbk 2 Speed]. Units are based on rotary or linear configuration defined by P29 [Fbk 1 Units].	Units: Min/Max:	RPM mm/s 0 / 6553.5 RPM 0 / 6553.5 mm/s	RW	Real
		41	**Fbk Pos Tol** Feedback Position Tolerance Acceptable difference in position between encoder 1 and encoder 2. Units are based on rotary or linear configuration defined by P29 [Fbk 1 Units].	Units: Default: Min/Max:	Deg mm 0 0 / 65,535 deg 0 / 65,535 mm	RW	Real
		42	**Direction Mon** Direction Monitoring Defines the allowable direction if Safe Direction Monitoring is enabled. "Pos Always" (1) – Positive always "Neg Always" (2) – Negative always "Pos in SLS" (3) – Positive during safe limited speed monitoring "Neg in SLS" (4) – Negative during safe limited speed monitoring	Default: Options:	0 = "Disabled" 0 = "Disabled" 1 = "Pos Always" 2 = "Neg Always" 3 = "Pos in SLS" 4 = "Neg in SLS"	RW	Real
		43	**Direction Tol** Direction Tolerance The position limit in encoder units tolerated in the wrong direction when Safe Direction Monitoring is active. Units are based on rotary or linear configuration defined by P29 [Fbk 1 Units].	Units: Default: Min/Max:	Deg mm 10 0 / 65,535 deg 0 / 65,535 mm	RW	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
HOST GROUPS	Stop	**44**	**Safe Stop Input** Safe Stop Input Configuration for Safe Stop input (SS_In). "2NC" (1) – Dual-channel equivalent "2 NC 3s" (2) – Dual-channel equivalent 3 s "1 NO + 1 NC" (3) – Dual-channel complementary "1 NO + 1 NC 3s" (4) – Dual-channel complementary 3 s "2 OSSD" (5) – Dual-channel SS equivalent "1 NC" (6) – Single channel equivalent	Default: Options:	1 = "2NC" 0 = "Not used" 1 = "2NC" 2 = "2 NC 3s" 3 = "1 NO + 1 NC" 4 = "1 NO + 1 NC 3s" 5 = "2 OSSD" 6 = "1 NC"	RW	Real
		45	**Safe Stop Type** Safe Stop Type Safe operating stop type selection. This defines the type of Safe Stop that is performed if the Safe Stop function is initiated by a stop type condition. "Torque Off" (0) – Safe Torque Off With Standstill Checking "Torque Off NoCk" (3) – Safe Torque Off Without Standstill Checking	Default: Options:	0 = "Torque Off" 0 = "Torque Off" 1 = "Safe Stop 1" 2 = "Safe Stop 2" 3 = "Torque Off NoCk"	RW	Real
		46	**Stop Mon Delay** Stop Monitoring Delay Defines the monitoring delay between the request and the Max Stop Time when the request for a Safe Stop 1 or a Safe Stop 2 is initiated by an SS_In input ON to OFF transition. If the Safe Stop Type is Safe Torque Off With or Without Standstill Speed Checking, the Stop Monitor Delay must be 0 or a Invalid Configuration Fault occurs.	Units: Default: Min/Max:	Secs 0 0 / 6553.5	RW	Real
		47	**Max Stop Time** Maximum Stop Time Defines the maximum stop delay time that is used when the Safe Stop function is initiated by a stop type condition.	Units: Default: Min/Max:	Secs 0 0 / 6553.5	RW	Real
		48	**Standstill Speed** Standstill Speed Defines the speed limit that is used to declare motion as stopped. Units are based on rotary or linear configuration defined by P29 [Fbk 1 Units].	Units: Default: Min/Max:	RPM mm/s 0.001 0.001/ 65.535 RPM 000/ 65.535 mm/s	RW	Real
		49	**Standstill Pos** Standstill Position Defines the position limit window in encoder 1 degrees or mm that will be tolerated after a safe stop condition has been detected. Degrees (360° = 1 revolution) or mm based on rotary or linear configuration defined by P29 [Fbk 1 Units].	Units: Default: Min/Max:	Deg mm 10 0 / 65,535 deg 0 / 65.535 mm	RW	Real
		50	**Decel Ref Speed** Deceleration Reference Speed Determines deceleration rate to monitor for Safe Stop 1 or Safe Stop 2. Units are based on rotary or linear configuration defined by encoder 1 feedback configuration, P29 [Fbk 1 Units].	Units: Default: Min/Max:	RPM mm/s 0 0 / 65,535 RPM 0 / 65,535 mm/s	RW	Real
		51	**Stop Decel Tol** Stop Deceleration Tolerance This is the acceptable tolerance above the deceleration rate set by the Decel Ref Speed parameter.	Units: Default: Min/Max:	% 0 0 / 100	RW	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
HOST GROUPS	Limited Speed	**52**	**Lim Speed Input** Limited Speed Input Configuration for Safe Limited Speed input (SLS_In). "2NC" (1) – Dual-channel equivalent "2 NC 3s" (2) – Dual-channel equivalent 3 s "1 NO + 1 NC" (3) – Dual-channel complementary "1 NO + 1 NC 3s" (4) – Dual-channel complementary 3 s "2 OSSD" (5) – Dual-channel SS equivalent "1 NC" (6) – Single channel equivalent	Default: Options:	0 = "Not used" 0 = "Not used" 1 = "2NC" 2 = "2 NC 3s" 3 = "1 NO + 1 NC" 4 = "1 NO + 1 NC 3s" 5 = "2 OSSD" 6 = "1 NC"	RW	Real
		53	**LimSpd Mon Delay** Limited Speed Monitoring Delay Defines the Safe Limited Speed Monitoring Delay between the SLS_In ON to OFF transition and the initiation of the Safe Limited Speed (SLS) or Safe Maximum Speed (SMS) monitoring.	Units: Default: Min/Max:	Secs 0 0 / 6553.5	RW	Real
		54	**Enable SW Input** Enable Switch Input Configuration for the Enabling Switch input (ESM_In). "2NC" (1) – Dual-channel equivalent "2 NC 3s" (2) – Dual-channel equivalent 3 s "1 NO + 1 NC" (3) – Dual-channel complementary "1 NO + 1 NC 3s" (4) – Dual-channel complementary 3 s "2 OSSD" (5) – Dual-channel SS equivalent "1 NC" (6) – Single channel equivalent	Default: Options:	0 = "Not used" 0 = "Not used" 1 = "2NC" 2 = "2 NC 3s" 3 = "1 NO + 1 NC" 4 = "1 NO + 1 NC 3s" 5 = "2 OSSD" 6 = "1 NC"	RW	Real
		55	**Safe Speed Limit** Safe Speed Limit Defines the speed limit that will be monitored in Safe Limited Speed (SLS) mode. Units are based on rotary or linear configuration defined by P29 [Fbk 1 Units].	Units: Default: Min/Max:	RPM mm/s 0 0 / 6553.5 RPM 0 / 6553.5 mm/s	RW	Real
		56	**Speed Hysteresis** Speed Hysteresis Provides hysteresis for SLS_Out output when Safe Limited Speed monitoring is active.	Units: Default: Min/Max:	% 0 0 / 100	RW	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
HOST GROUPS	Door Control	**57**	**Door Out Type** Door Output Type Defines the lock and unlock state for door control output (DC_Out). When Door Out Type equals power to release, DC_Out is OFF in the lock state and ON in the unlock state. When Door Out Type equals power to lock, DC_Out is ON in the lock state and OFF in the unlock state. The first and middle units of a multi-axis system must be configured as cascading (2).	Default: Options:	0 = “Pwr to Rel” 0 = “Pwr to Rel” 1 = “Pwr to Lock” 2 = “2 Ch Sourcing”	RW	Real
		58	**DM Input** Door Monitor Input Configuration for the Door Monitor input (DM_In). “2NC” (1) – Dual-channel equivalent “2 NC 3s” (2) – Dual-channel equivalent 3 s “1 NO + 1 NC” (3) – Dual-channel complementary “1 NO + 1 NC 3s” (4) – Dual-channel complementary 3 s “2 OSSD” (5) – Dual-channel SS equivalent “1 NC” (6) – Single channel equivalent	Default: Options:	0 = “Not used” 0 = “Not used” 1 = “2NC” 2 = “2 NC 3s” 3 = “1 NO + 1 NC” 4 = “1 NO + 1 NC 3s” 5 = “2 OSSD” 6 = “1 NC”	RW	Real
		59	**Lock Mon Enable** Lock Monitor Enable Lock Monitoring can only be enabled when the speed monitoring safety option is a single unit or as the first unit in a multi-axis system (Cascaded Config equals 0 or 3).	Default: Options:	0 = “Disable” 0 = “Disable” 1 = “Enable”	RW	Real
		60	**Lock Mon Input** Lock Monitor Input Configuration for the Lock Monitor input (LM_In). “2NC” (1) – Dual-channel equivalent “2 NC 3s” (2) – Dual-channel equivalent 3 s “1 NO + 1 NC” (3) – Dual-channel complementary “1 NO + 1 NC 3s” (4) – Dual-channel complementary 3 s “2 OSSD” (5) – Dual-channel SS equivalent “1 NC” (6) – Single channel equivalent	Default: Options:	0 = “Not used” 0 = “Not used” 1 = “2NC” 2 = “2 NC 3s” 3 = “1 NO + 1 NC” 4 = “1 NO + 1 NC 3s” 5 = “2 OSSD” 6 = “1 NC”	RW	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
HOST GROUPS	Max Speed	61	**Max Speed Enable** Maximum Speed Enable Enable Safe Maximum Speed Monitoring.	Default: Options:	0 = "Disable" 0 = "Disable" 1 = "Enable"	RW	Real
		62	**Safe Max Speed** Safe Maximum Speed Defines the maximum speed limit that will be tolerated if Safe Maximum Speed monitoring is enabled.	Units: Default: Min/Max:	RPM mm/s 0 0 / 65,535 RPM 0 / 65,535 mm/s	RW	Real
		63	**Max Spd Stop Typ** Maximum Speed Stop Type Defines the safe stop type that will be initiated in the event of a SMS Speed Fault. "Torque Off" (0) – Safe Torque Off With Standstill Checking "Safe Stp Typ" (1) – Safe Torque Off Without Standstill Checking	Default: Options:	0 = "Torque Off" 0 = "Torque Off" 1 = "Safe Stp Typ"	RW	Real
		64	**Max Accel Enable** Maximum Acceleration Enable Enable Safe Maximum Acceleration Monitoring.	Default: Options:	0 = "Disable" 0 = "Disable" 1 = "Enable"	RW	Real
		65	**Safe Accel Limit** Safe Acceleration Limit Defines the Safe Maximum Acceleration Limit, relative to encoder 1, for which the system is being monitored. Units are based on rotary or linear configuration defined by P29 [Fbk 1 Units].	Units: Default: Min/Max:	Rev/s^2 mm/s^2 0 0 / 65,535 rev/s^2 0 / 65,535 mm/s^2	RW	Real
		66	**Max Acc Stop Typ** Maximum Acceleration Stop Type Defines the safe stop type that will be initiated in the event of an Acceleration Fault. "Torque Off" (0) – Safe Torque Off With Standstill Checking "Safe Stp Typ" (1) – Safe Torque Off Without Standstill Checking	Default: Options:	0 = "Torque Off" 0 = "Torque Off" 1 = "Safe Stp Typ"	RW	Real

File	Group	No.	Display Name Full Name Description	Values	Read-Write	Data Type
HOST GROUPS	Faults	67	**Fault Status** Fault Status Bit-encoded faults.			

Options	Reserved	Reserved	Reserved	Fbk 2 V Flt	Fbk 1 V Flt	ESM Mon Flt	ESM In Flt	Lock Mon Flt	LM In Flt	DC Out Flt	Door Mon Flt	DM In Flt	Dir Flt	Accel Flt	SMS Spd Flt	SLS Spd Flt	SLS Out Flt	SLS In Flt	Mov in Stop	Stop Spd Flt	Decel Flt	SS Out Flt	SS In Flt	Dual Fbk Pos	Dual Fbk Spd	Fbk 2 Flt	Fbk 1 Flt	Reset PwrUp	MP Out Flt	Invalid Cfg	Core Error	Combined Flt
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

Bit 0 “Combined Flt” – Combined Fault Status
Bit 1 “Core Error” – Reserved for Core Error
Bit 2 “Invalid Cfg” – Invalid Configuration Fault
Bit 3 “MP Out Flt” – MP Out Fault
Bit 4 “Reset PwrUp” – Reset On at PwrUp Fault
Bit 5 “Fbk 1 Flt” – Feedback 1 Fault
Bit 6 “Fbk 2 Flt” – Feedback 2 Fault
Bit 7 “Dual Fbk Spd” – Dual FB Speed Fault
Bit 8 “Dual Fbk Pos” – Dual FB Position Fault
Bit 9 “SS In Flt” – SS_In Fault
Bit 10 “SS Out Flt” – SS_Out Fault
Bit 11 “Decel Flt” – Deceleration Fault
Bit 12 “Stop Spd Flt” – Stop Speed Fault
Bit 13 “Mov in Stop” – Motion After Stopped Fault
Bit 14 “SLS In Flt” – SLS_In Fault
Bit 15 “SLS Out Flt” – SLS_Out Fault
Bit 16 “SLS Spd Flt” – SLS_Speed Fault
Bit 17 “SMS Spd Flt” – SMS_Speed Fault
Bit 18 “Accel Flt” – Acceleration Fault
Bit 19 “Dir Flt” – Direction Fault
Bit 20 “DM In Flt” – DM_In Fault
Bit 21 “Door Mon Flt” – Door Monitoring Fault
Bit 22 “DC Out Flt” – DC_Out Fault
Bit 23 “LM In Flt” – LM_In Fault
Bit 24 “Lock Mon Flt” – Lock Monitoring Fault
Bit 25 “ESM In Flt” – ESM_In Fault
Bit 26 “ESM Mon Flt” – ESM Monitoring Fault
Bit 27 “Fbk 1 V Flt” – Encoder 1 Voltage Fault
Bit 28 “Fbk 2 V Flt” – Encoder 2 Voltage Fault

File	Group	No.	Display Name Full Name Description	Values	Read-Write	Data Type
HOST GROUPS	Faults	68	**Guard Status** Guard Status			

Options	Reserved	Reserved	Reserved	Reserved	Reserved	Wait No Stop	Wait SS Cyc	Wait Reset	Reset In	ESM In Prog	ESM In	LM In	DM In Prog	DM In	DC Out	DC Lock	SDM In Prog	SMA In Prog	SMS In Prog	SLS Out	SLS In Prog	SLS Req	SLS In	SS Out	SS Stopped	SS Decel	SS In Prog	SS Req	SS In	MP Out	Config Lock	StatusOK
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

Bit 0 “StatusOK” – 0 = Fault; 1 = OK
Bit 1 “Config Lock” – Configuration_Lock: 0 = Unlock; 1 = Lock
Bit 2 “MP Out” – MP_Out_Value: 0 = Off; 1 = On
Bit 3 “SS In” – SS_In_Value: 0 = Off; 1 = On
Bit 4 “SS Req” – SS_Request_Status: 0 = Inactive; 1 = Active
Bit 5 “SS In Prog“ – SS_In_Progress: 0 = Inactive; 1 = Active
Bit 6 “SS Decel” – SS_Decelerating_Status: 0 = Inactive; 1 = Active
Bit 7 “SS Stopped” – SS_Axis_Stopped_Status: 0 = Inactive; 1 = Active
Bit 8 “SS Out” – SS_Output_Value: 0 = Off; 1 = On
Bit 9 “SLS In” – SLS_In_Value: 0 = Off; 1 = On
Bit 10 “SLS Req” – SLS_Request_Status: 0 = Inactive; 1 = Active
Bit 11 “SLS In Prog” – SLS_In_Progress: 0 = Inactive; 1 = Active
Bit 12 “SLS Out” – SLS_Output_Value: 0 = Off; 1 = On
Bit 13 “SMS In Prog” – SMS_In_Progress: 0 = Inactive; 1 = Active
Bit 14 “SMA In Prog” – SMA_In_Progress: 0 = Inactive; 1 = Active
Bit 15 “SDM In Prog” – SDM_In_Progress: 0 = Inactive; 1 = Active
Bit 16 “DC Lock” – DC_Lock_Status: 0 = Lock; 1 = Unlock
Bit 17 “DC Out” – DC_Out_Value: 0 = Off; 1 = On
Bit 18 “DM In” – DM_In_Value: 0 = Off; 1 = On
Bit 19 “DM In Prog” – DM_In_Progress: 0 = Inactive; 1 = Active
Bit 20 “LM In” – LM_In_Value: 0 = Off; 1 = On
Bit 21 “ESM In” – ESM_In_Value: 0 = Off; 1 = On
Bit 22 “ESM In Prog” – ESM_In_Progress: 0 = Inactive; 1 = Active
Bit 23 “Reset In” – Reset_In_Value: 0 = Off; 1 = On
Bit 24 “Wait Reset” – Waiting_for_SS_Reset: 0 = Inactive; 1 = Active
Bit 25 “Wait SS Cyc” – Waiting_for_Cycle_SS_In: 0 = Inactive; 1 = Active
Bit 26 “Wait No Stop” – Waiting_for_Stop_Request_Removal: 0 = Inactive; 1 = Active

File	Group	No.	Display Name Full Name Description	Values	Read-Write	Data Type
HOST GROUPS	Faults	69	**IO Diag Status** Indicates present state of I/O used for diagnostics. **Important:** When the safety option is not in the Run mode. this parameter is not updated.			

Options	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	MP Out Ch 1	MP Out Ch 0	Stop Cmd	SLS Cmd	Reserved	Reset In	LM In Ch 1	LM In Ch 0	DC Out Ch 1	DC Out Ch 0	DM In Ch 1	DM In Ch 0	ESM In Ch 1	ESM In Ch 0	SLS Out Ch 1	SLS Out Ch 0	SLS In Ch 1	SLS In Ch 0	SS Out Ch 1	SS Out Ch 0	SS In Ch 1	SS In Ch 0
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Open
1 = Closed

Bit 0 “SS In Ch 0” – SS_in_ch_0 status
Bit 1 “SS In Ch 1” – SS_in_ch_1 status
Bit 2 “SS Out Ch 0” – SS_out_ch_0 status
Bit 3 “SS Out Ch 1” – SS_out_ch_1 status
Bit 4 “SLS In Ch 0” – SLS_in_ch_0 status
Bit 5 “SLS In Ch 1” – SLS_in_ch_1 status
Bit 6 “SLS Out Ch 0” – SLS_out_ch_0 status
Bit 7 “SLS Out Ch 1” – SLS_out_ch_1 status
Bit 8 “ESM In Ch 0” – ESM_in_ch_0 status
Bit 9 “ESM In Ch 1” – ESM_in_ch_1 status
Bit 10 “DM In Ch 0” – DM_in_ch_0 status
Bit 11 “DM In Ch 1” – DM_in_ch_1 status
Bit 12 “DC Out Ch 0” – DC_out_ch_0 status
Bit 13 “DC Out Ch 1” – DC_out_ch_1 status
Bit 14 “LM In Ch 0” – LM_in_ch_0 status
Bit 15 “LM In Ch 1” – LM_in_ch_1 status
Bit 16 “Reset In” – Reset_In status
Bit 17 “Reserved”
Bit 18 “SLS Cmd” – SLS_command status
Bit 19 “Stop Cmd” – Stop_command status
Bit 20 “MP Out Ch 0” – MP_Out_Ch_0 status
Bit 21 “MP Out Ch 1” – MP_Out_Ch_1 status

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
HOST GROUPS	Faults	**70**	**Config Flt Code** Configuration Fault Code. 0 = No Fault 1 = Password Required (Password Req) 2 = P21 [Safety Mode] value not legal based on P20 [Cascaded Config] value. 3 = P57 [Door Out Type] value not legal based on P20 [Cascaded Config] value. 4 = P46 [Stop Mon Delay] value not legal based on P45 [Safe Stop Type] value. 5 = P50 [Decel Ref Speed] value not legal based on P31 [Fbk 1 Resolution] value. 6 = P48 [Standstill Speed] value not legal based on P20 [Cascaded Config] value. 7 = P53 [LimSpd Mon Delay] value not legal based on P21 [Safety Mode] value. 8 = P55 [Safe Speed Limit] value not legal based on P21 [Safety Mode] and P31 [Fbk 1 Resolution] value. 9 = P56 [Speed Hysteresis] value not legal based on P21 [Safety Mode] value. 10 = P62 [Safe Max Speed] value not legal based on P31 [Fbk 1 Resolution] value. 11 = P42 [Direction Mon] value not legal based on P21 [Safety Mode] value. 12 = P59 [Lock Mon Enable] value not legal based on P21 [Safety Mode] value. 13 = P36 [Fbk 2 Resolution] value not legal based on P27 [Fbk Mode] value. 14 = P35 [Fbk 2 Polarity] value not legal based on P27 [Fbk Mode] value. 15 = P39 [Fbk Speed Ratio] value not legal based on P27 [Fbk Mode] value. 16 = P41 [Fbk Pos Tol] value not legal based on P27 [Fbk Mode] value. 17 = P40 [Fbk Speed Tol] value not legal based on P27 [Fbk Mode] value. 18 = P44 [Safe Stop In Typ] value not legal based on P21 [Safety Mode] value. 19 = P52 [Lim Spd In Typ] value not legal based on P21 [Safety Mode] value. 20 = P58 [DM Input Type] value not legal based on P20 [Cascaded Config] and P21 [Safety Mode] value. 21 = P54 [Enable SW In Typ] value not legal based on P21 [Safety Mode] value. 22 = P60 [Lock Mon In Type] value not legal based on P21 [Safety Mode] value and P59 [Lock Mon Enable] value. 23 = Illegal P20 [Cascaded Config] value. 24 = Illegal P22 [Reset Type] value. 25 = Reserved 26 = Illegal P45 [Safe Stop Type] value. 27 = Illegal P51 [Stop Decel Tol] value. 28 = Illegal P27 [Fbk Mode] value. 29 = Illegal P28 [Fbk 1 Type] value. 30 = Illegal P31 [Fbk 1 Resolution] value. 31 = Illegal P32 [Fbk1 Volt Mon] value. 32 = Illegal P37 [Fbk 2 Volt Mon] value. 33 = Illegal P24 [OverSpd Response] value. 34 = Reserved 36 = Unknown error (Unknown Err).	Default: Options:		RW	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
HOST GROUPS	Faults	72	**SS Out Mode** Defines whether the SS_Out output is pulse-tested. If pulse-testing is turned off for any output, the SIL, Category, and PL rating is reduced for the entire PowerFlex safety system.	Default: Options:	0 = "Pulse test" 0 = "Pulse test" 1 = "No pulse test"	RW	Real
		73	**SLS Out Mode** Defines whether the SLS_Out output is pulse-tested. If pulse-testing is turned off for any output, the SIL, Category, and PL rating is reduced for the entire PowerFlex safety system.	Default: Options:	0 = "Pulse test" 0 = "Pulse test" 1 = "No pulse test"	RW	Real
		74	**Door Out Mode** Defines whether the DC_Out output is pulse-tested. If pulse-testing is turned off for any output, the SIL, Category, and PL rating is reduced for the entire PowerFlex safety system.	Default: Options:	0 = "Pulse test" 0 = "Pulse test" 1 = "No pulse test"	RW	Real

Single Incremental Encoder Module Parameters

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
HOST GROUPS		1	**Encoder Cfg** Encoder Configure Configures the direction, speed calculation method, signal type and active encoder channels.				
		2	**Encoder PPR** Encoder Pulses Per Revolution Configures the encoder module for the Pulses Per Revolution (Encoder Lines) of the A Quad B Encoder.	Default: Min/Max:	1024 2 / 20000	RW	Real
		3	**Fdbk Loss Cfg** Feedback Loss Configure Configures how the drive reacts to an error status condition for the feedback.	Default: Options:	3 = "FltCoastStop" 0 = "Ignore" 1 = "Alarm" 2 = "Flt Minor" 3 = "FltCoastStop"	RW	Real
		4	**Encoder Feedback** Encoder Feedback Displays the position feedback value of the encoder. This can be used as a source for the main control (Port 0) Feedback Select.	Default: Min/Max:	0 –/+2147483647	RO	Real

Options

	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Direction	Single Ended	Inv Home In	Edge Mode	A Chan Only	Z Chan Enbl
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Condition False
1 = Condition True

Bit 0 "Z Channel Enbl" – Configures the Channel Z to be used and monitored for Phase Loss. A value of 0 = the Z channel will be ignored.
Bit 1 "A Chan Only" – Configures the module to use only the A channel, and ignore the B channel. In this mode, direction cannot be determined, and the position counter will always count up.
Bit 2 "Edge Mode" – Configure the module to use AB edge time data for speed calculation rather than accumulated count.
Bit 3 "Inv Home In" – Configures the home input to be inverted. 1 = inverted, 0 = not inverted
Bit 4 "Single Ended" – Configure when the A Quad B encoder has single ended signals. In this mode, Phase Loss detection is disabled. 0 = Differential, 1 = Single Ended
Bit 5 "Direction" – Inverts the position count up/down associated with a given rotation direction internally. 1 = invert, 0 = do not invert

File	Group	No.	Display Name Full Name Description	Values	Read-Write	Data Type
HOST GROUPS		5	**Encoder Status** Encoder Status Status information for the Incremental Encoder Module			

Options	Direction	HomMrk Event	HomMrk Armed	HomeIn Event	HomeIn Armed	Home Input	Inv Home In	Marker Event	Z Not Input	Z Input	B Not Input	B Input	A Not Input	A Input	A Chan Only	Z Chan Enbl
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Condition False
1 = Condition True

Bit 0 “Z Chan Enbl” – State of the corresponding bit in the [Encoder Cfg] parameter.
Bit 1 “A Chan Only” – State of the corresponding bit in the [Encoder Cfg] parameter.
Bit 2 “A Input” – State of encoder A input signal.
Bit 3 “A Not Input” – State of encoder A Not input signal.
Bit 4 “B Input” – State of encoder B input signal.
Bit 5 “B Not Input” – State of encoder B Not input signal.
Bit 6 “Z Input” – State of encoder Z input signal.
Bit 7 “Z Not Input” – State of encoder Z Not input signal.
Bit 8 “Marker Event” – When channel Z (marker pulse) is used, indicates that a marker pulse is detected. Automatically cleared in the homing routine or due to clearing of encoder faults.
Bit 9 “Inv Home In” – State of the corresponding bit in the [Encoder Cfg] parameter. When set, the home input signal will be inverted.
Bit 10 “Home Input” – Active state of the Home Input signal. This status bit gets inverted if the “Inv Home In” bit is enabled.
Bit 11 “HomeIn Armed” – Indicates that the homing logic is configured to latch the encoder position upon the next transition of the home input.
Bit 12 “HomeIn Event” – Indicates that the homing logic has latched the encoder position in response to a transition of the home input.
Bit 13 “HomMrk Armed” – Indicates that the homing logic is configured to latch the encoder position upon the next marker (Z channel) pulse.
Bit 14 “HomMrk Event” – Indicates that the homing logic has latched the encoder position in response to a marker (Z channel) pulse.
Bit 15 “Direction” – State of the corresponding bit in the [Encoder Cfg] parameter.

		6	**Error Status** Error Status Status information that will result in a feedback loss condition.			

Options	SI Comm Loss	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Quad Loss	Phase Loss	Open Wire
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Condition False
1 = Condition True

Bit 0 “Open Wire” – Indicates that an input signal (A, B or Z) is in the same state as its complement (A Not, B Not, Z Not). For open wire detection to work, the encoder signals must be differential (not single ended). The Z channel is only checked when enabled. -- see [Encoder Cfg].
Bit 1 “Phase Loss” – Indicates that more than 30 phase loss (open wire) events have occurred over an 8msec time period. The same restrictions apply as on [Encoder Cfg] Bit 0.
Bit 2 “Quad Loss” – Quadrature loss events occur when simultaneous edge transitions occur on both the A and B encoder channels. Indicates that more than 10 quad loss events over a 10 msec time period are detected. Only valid when both A and B channels are used (not 'A Chan Only' in [Encoder Cfg]).
Bit 15 “SI Comm Loss” – Indicates a communication loss between the main control board and the encoder module over the Serial Interface backplane.

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
HOST GROUPS		7	**Phase Loss Count** Phase Loss Count Displays the active value of the encoder module's phase loss counter hardware register. Values in this register accumulated over 8 msec are used to detect Phase Loss errors.	Default: Min/Max:	0 0 / 127	RO	Real
		8	**Quad Loss Count** Displays the active value of the encoder module's quad loss counter hardware register. Values in this register accumulated over 8 msec are used to detect Quad Loss errors.	Default: Min/Max:	0 0 / 15	RO	Real

Dual Incremental Encoder Module Parameters

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
HOST GROUPS	Encoder 0	1	**Enc 0 Cfg** Encoder 0 Configure Configures the position direction, speed calculation method, signal type and active encoder channels used for Encoder 0 (primary encoder).				
		2	**Enc 0 PPR** Encoder 0 Pulses Per Revolution Configures the encoder module's primary input (Encoder 0) for the Pulses Per Revolution (Encoder Lines) of the A Quad B Encoder.	Default: Min/Max:	1024 2 / 20000	RW	Real
		3	**Enc 0 FB Lss Cfg** Encoder 0 Feedback Loss Configure Configures how the drive reacts to an error status condition for Encoder 0 (primary encoder).	Default: Options:	3 = "FltCoastStop" 0 = "Ignore" 1 = "Alarm" 2 = "Flt Minor" 3 = "FltCoastStop"	RW	Real
		4	**Enc 0 FB** Encoder 0 Feedback Displays the position feedback value of Encoder 0 (primary encoder). This should be used as a source for the main control (Port 0) Feedback Select.	Default: Min/Max:	0 –/+2147483647	RO	Real

Options	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Direction	Single Ended	Reserved	Edge Mode	A Chan Only	Z Chan Enbl
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Condition False
1 = Condition True

Bit 0 "Z Channel Enbl" – Configures the Channel Z to be used and monitored for Phase Loss. A value of 0 = the Z channel will be ignored.
Bit 1 "A Chan Only" – Configures the module to use only the A channel, and ignore the B channel. In this mode, direction cannot be determined, and the position counter will always count up.
Bit 2 "Edge Mode" – Configure the module to use AB edge time data for speed calculation rather than accumulated count.
Bit 4 "Single Ended" – Configure when the A Quad B encoder has single ended signals. In this mode, Phase Loss detection is disabled. 0 = Differential, 1 = Single Ended
Bit 5 "Direction" – Inverts the position count up/down associated with a given rotation direction internally. 1 = invert, 0 = do not invert

File	Group	No.	Display Name Full Name Description	Values	Read-Write	Data Type
HOST GROUPS	Encoder 0	5	**Enc 0 Sts** Encoder 0 Status Status information for Encoder 0.			

Options	Direction	HomMrk Event	HomMrk Armed	HomeIn Event	HomeIn Armed	Home Input	Inv Home In	Marker Event	Z Not Input	Z Input	B Not Input	B Input	A Not Input	A Input	A Chan Only	Z Chan Enbl
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Condition False
1 = Condition True

Bit 0 "Z Chan Enbl" – State of the corresponding bit in the [Enc 0 Cfg] parameter.
Bit 1 "A Chan Only" – State of the corresponding bit in the [Enc 0 Cfg] parameter.
Bit 2 "A Input" – State of encoder A input signal.
Bit 3 "A Not Input" – State of encoder A Not input signal.
Bit 4 "B Input" – State of encoder B input signal.
Bit 5 "B Not Input" – State of encoder B Not input signal.
Bit 6 "Z Input" – State of encoder Z input signal.
Bit 7 "Z Not Input" – State of encoder Z Not input signal.
Bit 8 "Marker Event" – When channel Z (marker pulse) is used, indicates that a marker pulse is detected. Automatically cleared in the homing routine or due to clearing of encoder faults.
Bit 9 "Inv Home In" – State of the corresponding bit in the [Enc 0 Cfg] parameter. When set, the home input signal will be inverted.
Bit 10 "Home Input" – Active state of the Home Input signal. This status bit gets inverted if the "Inv Home In" bit is enabled.
Bit 11 "HomeIn Armed" – Indicates that the homing logic is configured to latch the encoder position upon the next transition of the home input.
Bit 12 "HomeIn Event" – Indicates that the homing logic has latched the encoder position in response to a transition of the home input.
Bit 13 "HomMrk Armed" – Indicates that the homing logic is configured to latch the encoder position upon the next marker (Z channel) pulse.
Bit 14 "HomMrk Event" – Indicates that the homing logic has latched the encoder position in response to a marker (Z channel) pulse.
Bit 15 "Direction" – State of the corresponding bit in the [Enc 0 Cfg] parameter.

		6	**Enc 0 Error Sts** Encoder 0 Error Status Status information that will result in a feedback loss condition for Encoder 0.													

Options	SI Comm Loss	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Quad Loss	Phase Loss	Open Wire
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Condition False
1 = Condition True

Bit 0 "Open Wire" – Indicates that an input signal (A, B or Z) is in the same state as its complement (A Not, B Not, Z Not). For open wire detection to work, the encoder signals must be differential (not single ended). The Z channel is only checked when enabled.
Bit 1 "Phase Loss" – Indicates that more than 30 phase loss (open wire) events have occurred over an 8msec time period. The same restrictions apply as on [Enc 0 Cfg] Bit 0 "Z Chan Enbl."
Bit 2 "Quad Loss" – Quadrature loss events occur when simultaneous edge transitions occur on both the A and B encoder channels. Indicates that more than 10 quad loss events over a 10 msec time period are detected. Only valid when both A and B channels are used (not 'A Chan Only' in [Enc 0 Cfg]).
Bit 15 "SI Comm Loss" – Indicates a communication loss between the main control board and the encoder module over the Serial Interface backplane.

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
HOST GROUPS	Encoder 0	7	**Enc 0 PhsLss Cnt** Encoder 0 Phase Loss Count Displays the active value of the encoder module's Encoder 0 phase loss counter hardware register. Values in this register accumulated over 8 msec are used to detect Phase Loss errors.	Default: Min/Max:	0 0 / 127	RO	Real
		8	**Enc 0 QuadLssCnt** Encoder 0 Quad Loss Count Displays the active value of the encoder module's Encoder 0 quad loss counter hardware register. Values in this register accumulated over 8 msec are used to detect Quad Loss errors.	Default: Min/Max:	0 0 / 15	RO	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
HOST GROUPS	Encoder 1	11	**Enc 1 Cfg** Encoder 1 Configure Configures the position direction, speed calculation method, signal type and active encoder channels used for Encoder 1 (secondary encoder).				
		12	**Enc 1 PPR** Encoder 1 Pulses Per Revolution Configures the encoder module's secondary input (Encoder 1) for the Pulses Per Revolution (Encoder Lines) of the A Quad B Encoder.	Default: Min/Max:	1024 2 / 20000	RW	Real
		13	**Enc 1 FB Lss Cfg** Encoder 1 Feedback Loss Configures how the drive reacts to an error status condition for Encoder 1 (secondary encoder).	Default: Min/Max:	3 = "FltCoastStop" 0 = "Ignore" 1 = "Alarm" 2 = "Flt Minor" 3 = "FltCoastStop"	RW	Real
		14	**Enc 1 FB** Encoder 1 Feedback Displays the position feedback value of Encoder 1 (secondary encoder). This should be used as a source for the main control (Port 0) Feedback Select.	Default: Min/Max:	0 –/+2147483647	RO	Real

Options	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Direction	Single Ended	Reserved	Edge Mode	A Chan Only	Z Chan Enbl
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Condition False
1 = Condition True

Bit 0 "Z Channel Enbl" – Configures the Channel Z to be used and monitored for Phase Loss. A value of 0 = the Z channel will be ignored.
Bit 1 "A Chan Only" – Configures the module to use only the A channel, and ignore the B channel. In this mode, direction cannot be determined, and the position counter will always count up.
Bit 2 "Edge Mode" – Configure the module to use AB edge time data for speed calculation rather than accumulated count.
Bit 4 "Single Ended" – Configure when the A Quad B encoder has single ended signals. In this mode, Phase Loss detection is disabled. 0 = Differential, 1 = Single Ended
Bit 5 "Direction" – Inverts the position count up/down associated with a given rotation direction internally. 1 = invert, 0 = do not invert

File	Group	No.	Display Name Full Name Description	Values	Read-Write	Data Type
HOST GROUPS	Encoder 1	15	**Enc 1 Sts** Encoder 1 Status Status information for Encoder 1			

Options	Direction	HomMrk Event	HomMrk Armed	HomeIn Event	HomeIn Armed	Home Input	Inv Home In	Marker Event	Z Not Input	Z Input	B Not Input	B Input	A Not Input	A Input	A Chan Only	Z Chan Enbl
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Condition False
1 = Condition True

Bit 0 "Z Chan Enbl" – State of the corresponding bit in the [Enc 1 Cfg] parameter.
Bit 1 "A Chan Only" – State of the corresponding bit in the [Enc 1 Cfg] parameter.
Bit 2 "A Input" – State of encoder A input signal.
Bit 3 "A Not Input" – State of encoder A Not input signal.
Bit 4 "B Input" – State of encoder B input signal.
Bit 5 "B Not Input" – State of encoder B Not input signal.
Bit 6 "Z Input" – State of encoder Z input signal.
Bit 7 "Z Not Input" – State of encoder Z Not input signal.
Bit 8 "Marker Event" – When channel Z (marker pulse) is used, indicates that a marker pulse is detected. Automatically cleared in the homing routine or due to clearing of encoder faults.
Bit 9 "Inv Home In" – State of the corresponding bit in the [Enc 1 Cfg] parameter. When set, the home input signal will be inverted.
Bit 10 "Home Input" – Active state of the Home Input signal. This status bit gets inverted if the "Inv Home In" bit is enabled.
Bit 11 "HomeIn Armed" – Indicates that the homing logic is configured to latch the encoder position upon the next transition of the home input.
Bit 12 "HomeIn Event" – Indicates that the homing logic has latched the encoder position in response to a transition of the home input.
Bit 13 "HomMrk Armed" – Indicates that the homing logic is configured to latch the encoder position upon the next marker (Z channel) pulse.
Bit 14 "HomMrk Event" – Indicates that the homing logic has latched the encoder position in response to a marker (Z channel) pulse.
Bit 15 "Direction" – State of the corresponding bit in the [Enc 1 Cfg] parameter.

				Enc 1 Error Sts Encoder 1 Error Status Status information that will result in a feedback loss condition for Encoder 1.		

Options	SI Comm Loss	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Quad Loss	Phase Loss	Open Wire
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Condition False
1 = Condition True

Bit 0 "Open Wire" – Indicates that an input signal (A, B or Z) is in the same state as its complement (A Not, B Not, Z Not). For open wire detection to work, the encoder signals must be differential (not single ended). The Z channel is only checked when enabled.
Bit 1 "Phase Loss" – Indicates that more than 30 phase loss (open wire) events have occurred over an 8msec time period. The same restrictions apply as on [Enc 1 Cfg] bit 0.
Bit 2 "Quad Loss" – Quadrature loss events occur when simultaneous edge transitions occur on both the A and B encoder channels. Indicates that more than 10 quad loss events over a 10 msec time period are detected. Only valid when both A and B channels are used (not "A Chan Only" in [Enc 1 Cfg]).
Bit 15 "SI Comm Loss" – Indicates a communication loss between the main control board and the encoder module over the Serial Interface backplane.

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
HOST GROUPS	Encoder 1	17	**Enc 1 PhsLss Cnt** Encoder 1 Phase Loss Count Displays the active value of the encoder module's Encoder 1 phase loss counter hardware register. Values in this register accumulated over 8 msec are used to detect Phase Loss errors.	Default: Min/Max:	0 0 / 127	RO	Real
		18	**Enc 1 QuadLssCnt** Encoder 1 Quad Loss Count Displays the active value of the encoder module's Encoder 1 quad loss counter hardware register. Values in this register accumulated over 8 msec are used to detect Quad Loss errors.	Default: Min/Max:	0 0 / 15	RO	Real

File	Group	No.	Display Name Full Name Description	Values	Read-Write	Data Type
HOST GROUPS	Homing Cfg	20	**Homing Cfg** Homing Configure Configures options for the homing function. Common to both encoders.			

Options	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Inv Home In
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Not Inverted
1 = Inverted

Bit 0 "Inv Home In" – Inverts the home input signal.

File	Group	No.	Display Name Full Name Description	Values	Read-Write	Data Type
HOST GROUPS	Module Status	21	**Module Sts** Module Status Encoder module status information. Common to both encoders.			

Options	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	SafetyVoltHi	Safety Mode
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Cleared
1 = Set

Bit 0 "Safety Mode" – Indicates that the dip switch on the dual encoder module is configured to place its feedback signals on the SI backplane for use by the Safe Speed Monitor module. If multiple dual encoder modules are present, only one dual encoder can be configured for Safety Mode. 0 = Safety Mode Off. 1 = Safety Mode On.

Bit 1 "SafetyVoltHi" – Indicates the status (configured by a jumper on the module) of the safety feedback voltage mode. 0 = 5V safety feedback mode, 1 = 12V safety feedback mode.

Universal Feedback Module Parameters

File	Group	No.	Display Name Full Name Description	Values	Read-Write	Data Type
HOST GROUPS	Module	1	**Module Sts** Module Status Shows error and alarm information of the Feedback Option module.			

Options	DPI Ready	Sec Safety	Pri Safety	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Initializing	FB0FB1 Cflct	Reserved	Reserved	Safety Cflct	EncOut Cflct	Reserved	Reserved	Firmware Err	Hardware Err	Reserved	Cfg Alarm	FB1 Alarm	FB0 Alarm	Reserved	System Error	FB1 Error	FB0 Error	Reserved	Alarm Type 2	Alarm Type 1	Module Error
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = False
1 = True

Bit 0 “Module Error” – Indicates that the Feedback Option module has any error. This bit is set if at least one of the bits “FB0 Error”, “FB1 Error”, or “System Error” is set.

Bit 1 “Alarm Type 1” – Indicates that there is any alarm of type 1 active on the Feedback Option module. Bits 8…10 indicate what kind of alarm is active.

Bit 2 “Alarm Type 2” – Indicates that there is any alarm of type 2 active on the Feedback Option module. Bits 20 and 21 indicate what kind of alarm is active.

Bit 4 “FB0 Error” – Indicates that Feedback 0 has an error. This bit is set if any Feedback 0 error bit in P10 [FB0 Sts] is set. If this bit is set, the bit “Module Error” is also set.

Bit 5 “FB1 Error” – Indicates that Feedback 1 has an error. This bit is set if any Feedback 1 error bit in P10 [FB1 Sts] is set. If this bit is set, the bit “Module Error” is also set.

Bit 6 “System Error” – Indicates that there is a feedback independent error on the Feedback Option module. Bits 12 and 13 show the type of the System Error. If this bit is set, the bit “Module Error” is also set.

Bit 8 “FB0 Alarm” – Indicates that Feedback 0 has an alarm This bit is set if there is an alarm in the Feedback 0 encoder. If this bit is set, the bit “Alarm Type 1” is also set.

Bit 9 “FB1 Alarm” – Indicates that Feedback 1 has an alarm This bit is set if there is an alarm in the Feedback 1 encoder. If this bit is set, the bit “Alarm Type 1” is also set.

Bit 10 “Cfg Alarm” – Indicates that there is a feedback independent alarm on the Feedback Option module. Bits 16 and 17 show the type of the Cfg Alarm. If this bit is set, Bit 1 “Alarm Type 1” is also set.

Bit 12 “Hardware Err” – Indicates that there is a Hardware Error on the Feedback Option module. If this bit is set, Bit 6 “System Error” is also set.

Bit 13 “Firmware Err” – Indicates that there is a Firmware Error on the Feedback Option module. A Firmware Error occurs if the Hardware and the downloaded Firmware are not compatible. If this bit is set, Bit 6 “System Error” is also set.

Bit 16 “EncOut Cflct” – If set, there is one of the following problems with the Encoder Output:

- The selection in P80 [Enc Out Sel] is not possible since the required pins on the terminal blocks are already used for Feedback 0 or 1 according to P6 [FB0 Device Sel] and P36 [FB1 Device Sel].
- P80 [Enc Out Sel] is set to “Sine Cosine” and there is no signal connected to the pins 1-4 of the Terminal Block 1.
- P80 [Enc Out Sel] is set to “Sine Cosine”, the value of [FBX IncAndSC PPR] is not a power of two, and the parameter P84 [Enc Out Z PPR] is not set to 0 “1 ZPulse”. This is not allowed.
- P80 [Enc Out Sel] is set to “Channel X” or “Channel Y” and there is no encoder connected to that channel.
- P80 [Enc Out Sel] is set to “Channel X” or “Channel Y” and there is a linear encoder connected to this channel. If this bit is set, Bit 10 “Cfg Alarm” is also set.

Bit 17 “Safety Cflct” – If set, the Safety DIP switches are in an invalid position. If this bit is set, Bit 10 “Cfg Alarm” is also set.

Bit 20 “FB0FB1 Cflct” – If set, the combination of the feedback selection done with the parameters P6 [FB0 Device Sel] and P36 [FB1 Device Sel] is invalid, i.e. both feedbacks have Sin-Cos-Signals (There is only place for one set of Sin-Cos-Signals on the Terminal Blocks). If this bit is set, Bit 2 “Alarm Type 2” is also set.

Bit 21 “Initializing” – Indicates that the Universal Feedback State Machine is in the Initialize State. This Type 2 alarm makes sure that the motor cannot be started during the initialization state. If this bit is set, the bit “Alarm Type 2” is also set.

Bit 29 “Pri Safety” – Indicates that the UFB is used as primary safety module.

Bit 30 “Sec Safety” – Indicates that the UFB is used as secondary safety module.

Bit 31 “DPI Ready” – This bit tells the MCB if the UFB is ready for DPI communication.

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
HOST GROUPS	Module	2	**Module Err Reset** Module Error Reset Selects the module reset type.	Default: Options:	0 = "Ready" 0 = "Ready" 1 = "Clr FB Intlz" 2 = "Clear Errors" 3 = "FB Initlz"	RW	32-bit Integer

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
HOST GROUPS	Feedback 0	5	**FB0 Position** Feedback 0 Position Displays the position value from the feedback 0 device.	Default: Min/Max:	0 2147483648 / 2147483647	RO	32-bit Integer
		6	**FB0 Device Sel** Feedback 0 Device Select Specifies the encoder type for the feedback 0 device.	Default: Options:	0 = "None" 0 = "None" 1 = "EnDat SC" 2 = "Hiperface SC" 3 = "BiSS SC" 4 = "SSI SC" 5 = "EnDat FD ChX" 6 = "EnDat FD ChY" 7 = "BiSS FD ChX' 8 = "BiSS FD ChY" 9 = "Reserved" 10 = "Reserved" 11 = "SinCos Only" 12 = "Inc A B Z" 13 = "Inc SC" 14 = "LinTempo ChX" 15 = "LinTempo ChY" 16 = "LinStahl ChX" 17 = "LinStahl ChY" 18 = "LinSSI ChX" 19 = "LinSSI ChY"	RW	Real

File	Group	No.	Display Name Full Name Description	Values	Read-Write	Data Type
HOST GROUPS	Feedback 0	7	**FB0 Identify** Feedback 0 Identify Displays the used encoder type for the feedback 0 device, e.g. Multi turn, rotary encoder with EnDat 2.1 interface including SIN/COS incremental signals.			

Options	Reserved	Stahl	Temposonic	SSI	BiSS	Hiperface	EnDat 2p2	EnDat 2p1	Incremental	Full Digital	Sin Cos	Enh Resol	Multi Turn	Single Turn	Linear	Rotary
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Condition False
1 = Condition True

Bit 0 “Rotary” – Rotary encoder
Bit 1 “Linear” – Linear encoder; e.g. Temposonic and Stahl
Bit 2 “Single Turn” – Single turn absolute encoder
Bit 3 “Multi Turn” – Multiturn absolute encoder
Bit 4 “Enh Resol” – High resolution encoder. This bit is set if there are more than 24 bits resolution (full digital encoders) or the PPR is greater than or equal to 16384. If this bit is set, bit 1 “24-bit Resol” in parameter [FB0 Cfg] should also be set.
Bit 5 “Sin Cos” – SinCos encoder
Bit 6 “Full Digital” – Full digital encoder
Bit 7 “Incremental” – A Quad B encoder
Bit 8 “EnDat 2p1” – Heidenhain EnDat 2.1 command set
Bit 9 “EnDat 2p2” – Heidenhain EnDat 2.2 command set
Bit 10 “Hiperface” – Hiperface Interface
Bit 11 “BiSS” – BiSS interface
Bit 12 “SSI” – SSI interface
Bit 13 “Temposonic” – Temposonic linear encoder
Bit 14 “Stahl” – Stahl linear encoder

File	Group	No.	Display Name Full Name Description	Values	Read-Write	Data Type
		8	**FB0 Cfg** Feedback 0 Configuration Configure the direction, position data format, as well as the baud rate for the serial communication interface for the feedback 0 device.			

Options	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	SC Quadrant	FD Low Baud	24-bit Resol	Direction
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Condition False
1 = Condition True

Bit 0 “Direction” – Inverts the direction internally.
Bit 1 “24-bit Resol” – If set, the data format of [FB0 Position] is set to 8/24 (8 bit resolution, 24 bits position within one revolution). Otherwise, the data format is set to 12/20. It only makes sense to set this bit if the bit “Enh Resol” in parameter [FB0 Identify] is set.
Bit 2 “FD Low Baud” – Reduces the communication baud rate from the default setting for the connected encoder with a serial communication channel.
Bit 3 “SC Quadrant” – Reserved for future use.

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
		9	**FB0 Loss Cfg** Feedback 0 Loss Configuration Configures how the drive reacts to an error status condition on the feedback 0 device.	Default: Options:	3 = “FltCoastStop” 0 = “Ignore” 1 = “Alarm” 2 = “Flt Minor” 3 = “FltCoastStop”	RW	32-bit Integer

File	Group	No.	Display Name Full Name Description	Values	Read-Write	Data Type
HOST GROUPS	Feedback 0	10	**FB0 Sts** Feedback 0 Status Shows feedback specific errors and alarms for the feedback 0 device.			
		15	**FB0 IncAndSC PPR** Feedback 0 Incremental and Sine Cosine Pulses Per Revolution Indicates the Pulses Per Revolution (Encoder Lines) of the SinCos or A Quad B encoder for the feedback 0 device.	Units: PPR Default: 1024 Min/Max: 1 / 100000	RW	32-bit Integer
		16	**FB0 Inc Cfg** Feedback 0 Incremental Configuration Configures Incremental Feedback for the feedback 0 device.			

Options	Reserved	Reserved	Reserved	Encoder Alm	Reserved	Unsupp Enc	Phase Loss	Quad Loss	Open Wire	SC Amplitude	SpplyVltRng	Diagnostic	Comm	Timeout	Msg Checksum	Encoder Err
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Condition False
1 = Condition True

Bit 0 “Encoder Err” – When asserted, there is an Encoder Error.
Bit 1 “Msg Checksum” – When asserted, the module has experienced a checksum error while attempting to communicate to an encoder via the serial communication channel.
Bit 2 “Timeout” – When asserted, the module has experienced a time out condition while attempting to communicate to the encoder via the serial communication channel.
Bit 3 “Comm” – When asserted, there was an error (except Checksum and Time Out) while attempting to communicate to an encoder via the serial communication channel.
Bit 4 “Diagnostic” – When asserted, the module has experienced a diagnostic test failure on power up.
Bit 5 “SpplyVltRng” – When asserted, the voltage source to the encoder is out of range.
Bit 6 “SC Amplitude” – When asserted, the module detected that the encoder signal amplitude is out of tolerance.
Bit 7 “Open Wire” – When asserted, the module has detected an open wire.
Bit 8 “Quad Loss” – Indicates that there is a signal quadrature error.
Bit 9 “Phase Loss” – Indicates that an A or B signal of an A Quad B Incremental encoder is disconnected.
Bit 10 “Unsupp Enc” – Indicates that the connected encoder is not supported.
Bit 12 “Encoder Alm” – When asserted, there is an Encoder Alarm.

For the following selections, PPR is automatically read from the encoder:
- EnDat SC
- BiSS SC (not manually configured)
- Hiperface SC

For the following selections, PPR has to be entered by the user:
- BiSS SC, Manually configured
- Gen SinCos
- A Quad B

Options	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Single Ended	Reserved	Edge Mode	A Chan Only	Z Chan Enbl
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Condition False
1 = Condition True

Bit 0 “Z Chan Enbl” – When set, Channel Z is also monitored for Phase Loss. When cleared, Channel Z is ignored for Phase Loss detection. Only used if [FB0 Device Sel] = “Inc A B Z”.
Bit 1 “A Chan Only” – When set, logic monitors only channel A. When clear, logic monitors both A and B.
Bit 2 “Edge Mode” – When set, speed calc uses AB edge data. When clear, speed calc does not use AB edge data.
Bit 4 “Single Ended” – This bit has to be set if the connected A Quad B encoder has single ended signals. For these encoders, the Phase Loss detection is switched off.

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
HOST GROUPS	Feedback 0	17	**FB0 Inc Sts** Feedback 0 Incremental Status Displays Incremental Feedback status for the feedback 0 device.				
HOST GROUPS	Feedback 0	20	**FB0 SSI Cfg** Feedback 0 SSI Configuration Configures the communication to a SSI encoder for the feedback 0 device. Transmission format: [MSB...Position...LSB], [Error Bit]*, [Parity Bit]*.				
HOST GROUPS	Feedback 0	21	**FB0 SSI Resol** Feedback 0 SSI Resolution Configures the number of bits for the position within one revolution (resolution) of the SSI encoder for the feedback 0 device.	Units: Default: Min/Max:	Bits 13 8 / 32	RW	32-bit Integer
HOST GROUPS	Feedback 0	22	**FB0 SSI Turns** Feedback 0 SSI Turns Configures the number of bits for the revolutions of the SSI encoder for the feedback 0 device.	Units: Default: Min/Max:	Bits 12 0 / 16	RW	32-bit Integer
HOST GROUPS	Feedback 0	25	**FB0 Lin CPR** Feedback 0 Linear Encoder Counts Per Revolution Specifies the counts per motor revolution for a linear encoder for the feedback 0 device.	Default: Min/Max:	0 0 / 4294967295	RW	32-bit Integer
HOST GROUPS	Feedback 0	26	**FB0 Lin Upd Rate** Feedback Linear Update Rate Sets the sample rate for the linear channel for the feedback 0 device.	Default: Options:	2 = “1.5 ms” 0 = “0.5 ms” 1 = “1.0 ms” 2 = “1.5 ms“ 3 = “2.0 ms“	RW	32-bit Integer

Options for FB0 Inc Sts:

Options	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Z Not Input	Z Input	B Not Input	B Input	A Not Input	A Input	A Chan Only	Z Chan Enbl
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Condition False
1 = Condition True

Bit 0 “Z Chan Enbl” – Indicates that Channel Z is monitored for Phase Loss. Only used if [FB0 Device Sel] = “Inc A B Z”.
Bit 1 “A Chan Only” – Indicates only A channel is monitored, B channel not used.
Bit 2 “A Input” – State of encoder A input signal
Bit 3 “A Not Input” – State of encoder A Not input signal
Bit 4 “B Input” – State of encoder B input signal
Bit 5 “B Not Input” – State of encoder B Not input signal
Bit 6 “Z Input” – State of encoder Z input signal
Bit 7 “Z Not Input” – State of encoder Z Not input signal

Options for FB0 SSI Cfg:

Options	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	DblWordQuery	Err Bit Enbl	Gray Code	Reserved	Parity Bit
Default	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Condition False
1 = Condition True

Bit 0 “Parity Bit” – If set, SSI encoder has to support a parity bit (even parity).
Bit 2 “Gray Code” – Enables the gray to binary conversion of the position.
Bit 3 “Err Bit Enbl” – If set, there is an error bit transmitted by the encoder.
Bit 4 “DblWordQuery” – If set, a Double Word Query is executed at startup which means that the same position is transmitted twice by the encoder. If the two positions are not identical, the “Comm” error bit in [FB0 Sts] is set. This bit only needs to be cleared if the encoder does not support Double Word Query and it does not send zeros instead of the second position (which it actually should according to the SSI specification).

File	Group	No.	Display Name Full Name Description	Values	Read-Write	Data Type
HOST GROUPS	Feedback 0	27	**FB0 LinStahl Sts** Feedback 0 Linear Stahl Status Displays the error status of the linear Stahl encoder for the feedback 0 device.			

Options	Reserved	No Position	Reserved	ROM Error	EPROM Error	RAM Error	Read Head 2	Read Head 1	Reserved	Reserved	Reserved	OutOfRailErr	Reserved	Reserved	OutOfRailAlm	Optics Alarm
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Condition False
1 = Condition True

Bit 0 “Optics Alarm” – Displays an alarm when optics require cleaning.
Bit 1 “OutOfRailAlm” – Indicates that the read encoder count is at the maximum value (524,287).
Bit 4 “OutOfRailErr” – Indicates that there is no more room between the read head and the rail.
Bit 8 “Read Head 1” – Indicates that the read head must be cleaned or installed correctly.
Bit 9 “Read Head 2” – Indicates that the read head must be cleaned or installed correctly.
Bit 10 “RAM Error” – Indicates a RAM error. Reading head needs to be repaired.
Bit 11 “EPROM Error” – Indicates an EPROM error. Reading head needs to be repaired.
Bit 12 “ROM Error” – Indicates a ROM error. Reading head needs to be repaired.
Bit 14 “No Position” – Indicates that no position value was available. Only happens after power on or reset.

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
HOST GROUPS	Feedback 1	**35**	**FB1 Position** Feedback 1 Position Displays the position value from the feedback 1 device.	Default: Min/Max:	0 2147483648 / 2147483647	RO	32-bit Integer
		36	**FB1 Device Sel** Feedback 1 Device Select Specifies the encoder type for the feedback 1 device.	Default: Options:	0 = "None" 0 = "None" 1 = "EnDat SC" 2 = "Hiperface SC" 3 = "BiSS SC" 4 = "SSI SC" 5 = "EnDat FD ChX" 6 = "EnDat FD ChY" 7 = "BiSS FD ChX" 8 = "BiSS FD ChY" 9 = "Reserved" 10 = "Reserved" 11 = "SinCos Only" 12 = "Inc A B Z" 13 = "Inc SC" 14 = "LinTempo ChX" 15 = "LimTempo ChY" 16 = "LinStahl ChX" 17 = "LinStahl ChY" 18 = "LinSSI ChX" 19 = "LinSSI ChY"	RW	Real
		37	**FB1 Identify** Feedback 1 Identify Displays the used encoder type for the feedback 1 device, e.g. Multi turn, rotary encoder with EnDat 2.1 interface including SIN/COS incremental signals.				

Options	Reserved	Stahl	Temposonic	SSI	BiSS	Hiperface	EnDat 2p2	EnDat 2p1	Incremental	Full Digital	Sin Cos	Enh Resol	Multi Turn	Single Turn	Linear	Rotary
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Condition False
1 = Condition True

Bit 0 "Rotary" – Rotary encoder
Bit 1 "Linear" – Linear encoder; e.g. Temposonic and Stahl
Bit 2 "Single Turn" – Single turn absolute encoder
Bit 3 "Multi Turn" – Multiturn absolute encoder
Bit 4 "Enh Resol" – High resolution encoder. This bit is set if there are more than 24 bits resolution (full digital encoders) or the PPR is greater than or equal to 16384. If this bit is set, bit 1 "24-bit Resol" in parameter [FB1 Cfg] should also be set.
Bit 5 "Sin Cos" – SinCos encoder
Bit 6 "Full Digital" – Full digital encoder
Bit 7 "Incremental" – A Quad B encoder
Bit 8 "EnDat 2p1" – Heidenhain EnDat 2.1 command set
Bit 9 "EnDat 2p2" – Heidenhain EnDat 2.2 command set
Bit 10 "Hiperface" – Hiperface Interface
Bit 11 "BiSS" – BiSS interface
Bit 12 "SSI" – SSI interface
Bit 13 "Temposonic" – Temposonic linear encoder
Bit 14 "Stahl" – Stahl linear encoder

File	Group	No.	Display Name Full Name Description	Values	Read-Write	Data Type
HOST GROUPS	Feedback 1	38	**FB1 Cfg** Feedback 1 Configuration Configure the position direction, position data format, as well as the baud rate for the serial communication interface for the feedback 1 device.			
		39	**FB1 Loss Cfg** Feedback 1 Loss Configuration Configures how the drive reacts to an error status condition on the feedback 1 device.	Default: 3 = "FltCoastStop" Options: 0 = "Ignore" 1 = "Alarm" 2 = "Flt Minor" 3 = "FltCoastStop"	RW	32-bit Integer
		40	**FB1 Sts** Feedback 1 Status Shows feedback specific errors and alarms for the feedback 1 device.			

Options

	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	SC Quadrant	FD Low Baud	24-bit Resol	Direction
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Condition False
1 = Condition True

Bit 0 "Direction" – Inverts the position direction internally.

Bit 1 "24-bit Resol" – If set, the data format of the parameter [FB1 Position] is set to 8/24 (8 bit resolution, 24 bits position within one revolution). Otherwise, the data format is set to 12/20. It only makes sense to set this bit if the bit "Enh Resol" in parameter [FB1 Identify] is set.

Bit 2 "FD Low Baud" – Reduces the communication baud rate from the default setting for the connected encoder with a serial communication channel.

Bit 3 "SC Quadrant" – Reserved for future use.

Options

	Reserved	Reserved	Reserved	Encoder Alm	Reserved	Unsupp Enc	Phase Loss	Quad Loss	Open Wire	SC Amplitude	SpplyVltRng	Diagnostic	Comm	Timeout	Msg Checksum	Encoder Err
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Condition False
1 = Condition True

Bit 0 "Encoder Err" – When asserted, there is an Encoder Error.

Bit 1 "Msg Checksum" – When asserted, the module has experienced a checksum error while attempting to communicate to an encoder via the serial communication channel.

Bit 2 "Timeout" – When asserted, the module has experienced a time out condition while attempting to communicate to the encoder via the serial communication channel.

Bit 3 "Comm" – When asserted, there was an error (except Checksum and Time Out) while attempting to communicate to an encoder via the serial communication channel.

Bit 4 "Diagnostic" – When asserted, the module has experienced a diagnostic test failure on power up.

Bit 5 "SpplyVltRng" – When asserted, the voltage source to the encoder is out of range.

Bit 6 "SC Amplitude" – When asserted, the module detected that the encoder signal amplitude is out of tolerance.

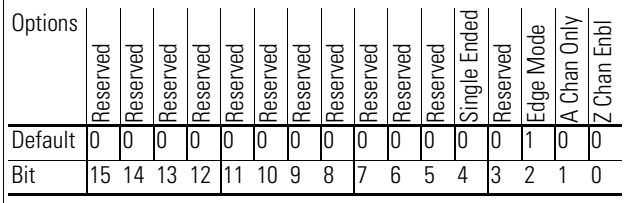
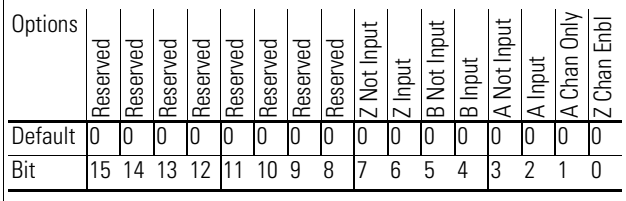
Bit 7 "Open Wire" – When asserted, the module has detected an open wire.

Bit 8 "Quad Loss" – Indicates that there is a signal quadrature error.

Bit 9 "Phase Loss" – Indicates that an A or B signal of an A Quad B Incremental encoder is disconnected.

Bit 10 "Unsupp Enc" – Indicates that the connected encoder is not supported.

Bit 12 "Encoder Alm" – When asserted, there is an Encoder Alarm.

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
HOST GROUPS	Feedback 1	45	**FB1 IncAndSC PPR** Feedback 1 Incremental and Sine Cosine Pulses Per Revolution Indicates the Pulses Per Revolution (Encoder Lines) of the SinCos or A Quad B encoder for the feedback 1 device. For the following selections, PPR is automatically read from the encoder: • EnDat SC • BiSS SC (not manually configured) • Hiperface SC For the following selections, PPR has to be entered by the user: • BiSS SC, Manually configured • Gen SinCos • A Quad B	Units: Default: Min/Max:	PDR 1024 1 / 100000	RW	32-bit Integer
		46	**FB1 Inc Cfg** Feedback 1 Incremental Configuration Configures Incremental Feedback for the feedback 1 device.  0 = Condition False 1 = Condition True Bit 0 "Z Chan Enbl" – When set, Channel Z is also monitored for Phase Loss. When cleared, Channel Z is ignored for Phase Loss detection. Only used if [FB1 Device Sel] = "Inc A B Z". Bit 1 "A Chan Only" – When set, logic monitors only channel A. When clear, logic monitors both A and B. Bit 2 "Edge Mode" – When set, speed calc uses AB edge data. When clear, speed calc does not use AB edge data. Bit 4 "Single Ended" – This bit has to be set if the connected A Quad B encoder has single ended signals. For these encoders, the Phase Loss detection is switched off.				
		47	**FB1 Inc Sts** Feedback 1 Incremental Status Displays Incremental Feedback status for the feedback 1 device.  0 = Condition False 1 = Condition True Bit 0 "Z Chan Enbl" – Indicates that Channel Z is monitored for Phase Loss. Only used if [FB1 Device Sel] = "Inc A B Z". Bit 1 "A Chan Only" – Indicates only A channel is monitored, B channel not used. Bit 2 "A Input" – State of encoder A input signal Bit 3 "A Not Input" – State of encoder A Not input signal Bit 4 "B Input" – State of encoder B input signal Bit 5 "B Not Input" – State of encoder B Not input signal Bit 6 "Z Input" – State of encoder Z input signal Bit 7 "Z Not Input" – State of encoder Z Not input signal				

File	Group	No.	Display Name Full Name Description	Values	Read-Write	Data Type
HOST GROUPS	Feedback 1	**50**	**FB1 SSI Cfg** Feedback 1 SSI Configuration Configures the communication to a SSI encoder for the feedback 1 device. Transmission format: [MSB...Position...LSB], [Error Bit]*, [Parity Bit]*. Options: Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, Reserved, DblWordQuery, Err Bit Enbl, Gray Code, Reserved, Parity Bit Default: 0 0 0 0 0 0 0 0 0 0 0 1 0 1 0 0 Bit: 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0 0 = Condition False 1 = Condition True Bit 0 "Parity Bit" – If set, SSI encoder has to support a parity bit (even parity). Bit 2 "Gray Code" – Enables the gray to binary conversion of the position. Bit 3 "Err Bit Enbl" – If set, there is an error bit transmitted by the encoder. Bit 4 "DblWordQuery" – If set, a Double Word Query is executed at startup which means that the same position is transmitted twice by the encoder. If the two positions are not identical, the "Comm" error bit in [FB1 Sts] is set. This bit only needs to be cleared if the encoder does not support Double Word Query and it does not send zeros instead of the second position (which it actually should according to the SSI specification).			
		51	**FB1 SSI Resol** Feedback 1 SSI Resolution Configures the number of bits for the position within one revolution (resolution) of the SSI encoder for the feedback 1 device.	Units: Bits Default: 13 Min/Max: 8 / 32	RW	32-bit Integer
		52	**FB1 SSI Turns** Feedback 1 SSI Turns Configures the number of bits for the revolutions of the SSI encoder for the feedback 1 device.	Units: Bits Default: 12 Min/Max: 0 / 16	RW	32-bit Integer
		55	**FB1 Lin CPR** Feedback 1 Linear Encoder Counts Per Revolution Specifies the counts per motor revolution for a linear encoder for the feedback 1 device.	Default: 0 Min/Max: 0 / 4294967295	RW	32-bit Integer
		56	**FB1 Lin Upd Rate** Feedback Linear Update Rate Sets the sample rate for the linear channel for the feedback 1 device.	Default: 2 = "1.5 ms" Options: 0 = "0.5 ms" 1 = "1.0 ms" 2 = "1.5 ms" 3 = "2.0 ms"	RW	32-bit Integer
		57	**FB1 LinStahl Sts** Feedback 1 Linear Stahl Status Displays the error status of the linear Stahl encoder for the feedback 1 device. Options: Reserved, No Position, Reserved, ROM Error, EPROM Error, RAM Error, Read Head 2, Read Head 1, Reserved, Reserved, Reserved, OutOfRailErr, Reserved, Reserved, OutOfRailAlm, Optics Alarm Default: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 Bit: 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0 0 = Condition False 1 = Condition True Bit 0 "Optics Alarm" – Displays an alarm when fiber optics require cleaning. Bit 1 "OutOfRailAlm" – Indicates that the read encoder count is at the maximum value (524,287). Bit 4 "OutOfRailErr" – Indicates that there is no more room between the read head and the rail. Bit 8 "Read Head 1" – Indicates that the read head must be cleaned or installed correctly. Bit 9 "Read Head 2" – Indicates that the read head must be cleaned or installed correctly. Bit 10 "RAM Error" – Indicates a RAM error. Reading head needs to be repaired. Bit 11 "EPROM Error" – Indicates an EPROM error. Reading head needs to be repaired. Bit 12 "ROM Error" – Indicates a ROM error. Reading head needs to be repaired. Bit 14 "No Position" – Indicates that no position value was available. Only happens after power on or reset.			

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
HOST GROUPS	Encoder Out	**80**	**Enc Out Sel** Encoder Output Select Selects the Encoder Output. If the feedback 0 or 1 device is configured as A Quad B Z or Hall Sensor, then this parameter has to be set to None. Otherwise, there is an Encoder Output Alarm (Bit 16 of [Module Sts]).	Default: Options:	0 = "None" 0 = "None" 1 = "Reserved" 2 = "Sine Cosine" 3 = "Channel X" 4 = "Channel Y"	RW	32-bit Integer
		81	**Enc Out Mode** Encoder Output Mode Configures the Encoder Output type.	Default: Options:	0 = "A Quad B" 0 = "A Quad B" 1 = "Inv A Quad B"	RW	32-bit Integer
		82	**Enc Out FD PPR** Encoder Output PPR Specifies the encoder output PPR for the simulated encoder mode ([Enc Out Sel] = "Channel X" or "Channel Y"). In the emulated encoder mode, the SIN/COS signals PPR defines the encoder output PPR.	Default: Options:	1 = "1024 PPR" 0 = "512 PPR" 1 = "1024 PPR" 2 = "2048 PPR" 3 = "4096 PPR"	RW	32-bit Integer
		83	**Enc Out Z Offset** Encoder Output Z Offset Configures the offset of the Z pulse for the emulated/simulated encoder output. The marker offset is specified within one revolution.	Units: Default: Min/Max:	PPR 0 0 / 100000	RW	32-bit Integer
		84	**Enc Out Z PPR** Encoder Output Z PPR Configures the number of Z-Pulses per revolution.	Default: Options:	0 = "1 Z-Pulse" 0 = "1 Z-Pulse" 1 = "2 Z-Pulses" 2 = "4 Z-Pulses" 3 = "8 Z-Pulses" 4 = "16 Z-Pulses" 5 = "32 Z-Pulses"	RW	32-bit Integer

File	Group	No.	Display Name Full Name Description	Values	Read-Write	Data Type
HOST GROUPS	Registration	**90**	**Rgsn Arm** Registration Arm Selects Registration Latches to be used.			

Options	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Arm Latch 10	Arm Latch 9	Arm Latch 8	Arm Latch 7	Arm Latch 6	Arm Latch 5	Arm Latch 4	Arm Latch 3	Arm Latch 2	Arm Latch 1
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Condition False
1 = Condition True

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
HOST GROUPS	Registration	91	**Rgsn In 0 Filter** Registration Input 0 Filter Configures a digital filter for the registration input 0. This filter can be used to reject spurious noise. The filter works by waiting a programmed time before deciding that the signal is valid. This waiting imposes a mandatory delay in the registration signal. The filter delay is programmable in increments of 100 nanoseconds from 0 (or no delay) up to 1500 nanoseconds.	Default: Options:	0 = "0 ns" 0 = "0 ns" 1 = "100 ns" 2 = "200 ns" 3 = "300 ns" 4 = "400 ns" 5 = "500 ns" 6 = "600 ns" 7 = "700 ns" 8 = "800 ns" 9 = "900 ns" 10 = "1000 ns" 11 = "1100 ns" 12 = "1200 ns" 13 = "1300 ns" 14 = "1400 ns" 15 = "1500 ns"	RW	Real
		92	**Rgsn In 1 Filter** Registration Input 1 Filter Configures a digital filter for the registration input 1. This filter can be used to reject spurious noise. The filter works by waiting a programmed time before deciding that the signal is valid. This waiting imposes a mandatory delay in the registration signal. The filter delay is programmable in increments of 100 nanoseconds from 0 (or no delay) up to 1500 nanoseconds.	Default: Options:	0 = "0 ns" 0 = "0 ns" 1 = "100 ns" 2 = "200 ns" 3 = "300 ns" 4 = "400 ns" 5 = "500 ns" 6 = "600 ns" 7 = "700 ns" 8 = "800 ns" 9 = "900 ns" 10 = "1000 ns" 11 = "1100 ns" 12 = "1200 ns" 13 = "1300 ns" 14 = "1400 ns" 15 = "1500 ns"	RW	Real
		93	**Rgsn HmIn Filter** Registration Home Input Filter Configures a digital filter for the home input. This filter can be used to reject spurious noise. The filter works by waiting a programmed time before deciding that the signal is valid. This waiting imposes a mandatory delay in the registration signal. The filter delay is programmable in increments of 100 nanoseconds from 0 (or no delay) up to 1500 nanoseconds.	Default: Options:	0 = "0 ns" 0 = "0 ns" 1 = "100 ns" 2 = "200 ns" 3 = "300 ns" 4 = "400 ns" 5 = "500 ns" 6 = "600 ns" 7 = "700 ns" 8 = "800 ns" 9 = "900 ns" 10 = "1000 ns" 11 = "1100 ns" 12 = "1200 ns" 13 = "1300 ns" 14 = "1400 ns" 15 = "1500 ns"	RW	Real

File	Group	No.	Display Name Full Name Description	Values	Read-Write	Data Type
HOST GROUPS	Registration	94	**Rgsn Sts** Registration Status Status of the configured registration events.			

Options	Home Input	Rgsn Input 1	Rgsn Input 0	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Latch10Found	Latch10Armed	Latch9 Found	Latch9 Armed	Latch8 Found	Latch8 Armed	Latch7 Found	Latch7 Armed	Latch6 Found	Latch6 Armed	Latch5 Found	Latch5 Armed	Latch4 Found	Latch4 Armed	Latch3 Found	Latch3 Armed	Latch2 Found	Latch2 Armed	Latch1 Found	Latch1 Armed
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = False
1 = True

File	Group	No.	Display Name Full Name Description	Values	Read-Write	Data Type
HOST GROUPS	Registration	100 103 106 109 112 115 118 121 124 127	**Rgsn Latch1 Cfg** **Rgsn Latch2 Cfg** **Rgsn Latch3 Cfg** **Rgsn Latch4 Cfg** **Rgsn Latch5 Cfg** **Rgsn Latch6 Cfg** **Rgsn Latch7 Cfg** **Rgsn Latch8 Cfg** **Rgsn Latch9 Cfg** **Rgsn Latch10 Cfg** Registration Latch X Configure Configures Registration Latch 1			

Options	Reserved	Stg2EdgeFall	Stg2EdgeRise	Reserved	Stg2 In b1	Stg2 In b0	Logic Sel b1	Logic Sel b0	Stg1EdgeFall	Stg1EdgeRise	Reserved	Stg1 In b1	Stg1 In b0	Rev Capture	Fwd Capture	Channel Sel
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Condition False
1 = Condition True

Bit 0 “Channel Sel” – Channel select (FB0 or FB1).
Bit 1 “Fwd Capture” – Direction select forward.
Bit 2 “Rev Capture” – Direction select reverse.
Bit 3 “Stg1 In b0” – Latch stage 1 input selection b0
Bit 4 “Stg1 In b1” – Latch stage 1 input selection b1
Bit 6 “Stg1EdgeRise” – Latch stage 1 edge/level select: Rising edge or high level
Bit 7 “Stg1EdgeFall” – Latch stage 1 edge/level select: Falling edge or low level
Bit 8 “Logic Sel b0” – Trigger stage combination logic
Bit 9 “Logic Sel b1” – Trigger stage combination logic
Bit 10 “Stg2 In b0” – Latch stage 2 input selection b0
Bit 11 “Stg2 In b1” – Latch stage 2 input selection b1
Bit 13 “Stg2EdgeRise” – Latch stage 2 edge/level select: Rising edge or high level
Bit 14 “Stg2EdgeFall” – Latch stage 2 edge/level select: Falling edge or low level

HOST GROUPS

Registration

Registration Latch Configuration Parameters

Functionality of the Registration Latch Configuration parameter bits are listed in the tables that follow.

The registration parameters P100, P103, P106, …P127 can only be used when the drive's Spindle Orientation and Homing functions are active. These functions will overwrite any manually entered configuration.

Feedback Selection

Selects the feedback device for registration and marker pulse.

Bit 0 "Channel Sel" – 0 = Feedback 0
1 = Feedback 1

Direction Selection.

Bit 2 "Rev Capture"	Bit 1 "Fwd Capture"	Description
0	1	Latch only if rotation is forward
1	0	Latch only if rotation is reverse
1	1	Latch for both forward and reverse rotation
0	0	Not defined. No latch will occur

Trigger Stage 1

Bit 4 "Stg1 In b1"	Bit 3 "Stg1 In b0"	Description
0	0	Registration Input 0 (TB2: -R0, +R0)
0	1	Registration Input 0 (TB2: -R1, +R1)
1	0	Home Input (TB2: -Hm, +Hm)
1	1	Marker Input of respective feedback channel. (Z channel must be activated for respective feedback channel.)

Bit 7 "Stg1EdgeFall"	Bit 6 "Stg1EdgeRise"	Description
0	0	Trigger Disabled
0	1	Trigger on rising edge or high level of signal
1	0	Trigger on falling edge or low level of signal
1	1	Trigger on either edge. (Invalid as level select. Result is always true for level select.)

Trigger Stage Combination Logic

The two trigger stages are combined to form the final or resulting trigger condition for each registration latch.

Bit 9 "Logic Sel b1"	Bit 8 "Logic Sel b0"	Description
0	0	None: Stage 1 Only (Stage 2 ignored)
0	1	THEN: Stage 1 Edge Transition THEN Stage 2 Edge Transition
1	0	OR: Stage 1 Edge Transition OR Stage 2 Edge Transition
1	1	AND: Stage 1 Level Transition AND Stage 2 Level Transition

Trigger Stage 2

Bit 11 "Stg2 In b1"	Bit 10 "Stg1 In b0"	Description
0	0	Registration Input 0 (TB2: -R0, +R0)
0	1	Registration Input 0 (TB2: -R1, +R1)
1	0	Home Input (TB2: -Hm, +Hm)
1	1	Marker Input of respective feedback channel. (Z channel must be activated for respective feedback channel.)

Bit 14 "Stg2EdgeFall"	Bit 13 "Stg2EdgeRise"	Description
0	0	Trigger Disabled
0	1	Trigger on rising edge or high level of signal
1	0	Trigger on falling edge or low level of signal
1	1	Trigger on either edge. (Invalid as level select. Result is always true for level select.)

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
HOST GROUPS	Registration	**101** **104** **107** **110** **113** **116** **119** **122** **125** **128**	**Rgsn Latch1 Psn** **Rgsn Latch2 Psn** **Rgsn Latch3 Psn** **Rgsn Latch4 Psn** **Rgsn Latch5 Psn** **Rgsn Latch6 Psn** **Rgsn Latch7 Psn** **Rgsn Latch8 Psn** **Rgsn Latch9 Psn** **Rgsn Latch10 Psn** Registration Latch X Position Position Captured during the Registration Event for Latch X.	Default: Min/Max:	0 2147483648 / 2147483647	RO	32-bit Integer
		102 **105** **108** **111** **114** **117** **120** **123** **126** **129**	**Rgsn Latch1 Time** **Rgsn Latch2 Time** **Rgsn Latch3 Time** **Rgsn Latch4 Time** **Rgsn Latch5 Time** **Rgsn Latch6 Time** **Rgsn Latch7 Time** **Rgsn Latch8 Time** **Rgsn Latch9 Time** **Rgsn Latch10 Time** Registration Latch X Time Time Captured when the Registration Event occurred for Latch X.	Units: Default: Min/Max:	Cnt 0 0 / 4294967295	RO	32-bit Integer

Embedded EtherNet/IP Parameters

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
HOST GROUPS		**1** Thru **16**	755 **DL From Net 01** 755 **DL From Net 16** Datalinks From Network 01…16 Sets the port number and parameter number to which the selected Datalinks should connect. Each selected port/parameter will be written with data received from the network. These are parameters written by the controller (outputs from the controller). If setting the value manually, the parameter value = (10000 x port number) + (destination parameter number). For example, suppose you want to use P1 [DL From Net 01] to write to Parameter 1 of an optional encoder module plugged into drive Port 5. The value for P1 [DL From Net 01] would be 50001 [(10000 x 5) + 1].	Default: Min/Max:	0 0 / 159999	RW	32-bit Integer
		17 Thru **32**	755 **DL To Net 01** 755 **DL To Net 16** Datalinks To Network 01…16 Sets the port number and parameter number to which the selected Datalinks should connect. Each selected port/parameter will be read and their values transmitted over the network to the controller. These are parameters read by the controller (inputs to the controller). If setting the value manually, the parameter value = (10000 x port number) + (origination parameter number). For example, suppose you want to use P17 [DL To Net 01] to read Parameter 01 of an optional I/O module plugged into drive Port 4. The value for P17 [DL To Net 01] would be 40001 [(10000 x 4) + 1].	Default: Min/Max:	0 0 / 159999	RW	32-bit Integer
		33	755 **Port Number** Port number Displays the drive port to which the embedded EtherNet/IP adapter is dedicated. This is always Port 13.	Default: Value:	13 13	RO	Real
		34	755 **DLs From Net Act** Datalinks From Network Actual Displays the number of actual controller-to- drive Datalinks that the drive is using based on the I/O connection opened by the controller.	Default: Min/Max:	0 0 / 16	RO	Real
		35	755 **DLs To Net Act** Datalinks To Network Actual Displays the number of actual drive-to- controller Datalinks that the controller is using based on the I/O connection opened by the controller.	Default: Min/Max:	0 0 / 16	RO	Real
		36	755 **BOOTP** BOOTP Configures the adapter to use BOOTP so that you can set its IP address, subnet mask, and gateway address with a BOOTP server. When this parameter is disabled, you must use the adapter parameters to set these addressing functions.	Default: Options:	1 = "Enabled" 0 = "Disabled" 1 = "Enabled"	RW	Real
		37	755 **Net Addr Src** Network Address Source Displays the source from which the adapter node address is taken. This will be switches, Parameters 40…43 [IP Addr Cfg x], or BOOTP. It is determined by the settings of the octet switches on the adapter. See Establishing A Connection With EtherNet/IP on page 21 for details.	Default: Options:	0 = "Switches" 0 = "Switches" 1 = "Parameters" 2 = "BOOTP"	RO	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
HOST GROUPS		**38** **39** **40** **41**	755 **IP Addr Cfg 1** 755 **IP Addr Cfg 2** 755 **IP Addr Cfg 3** 755 **IP Addr Cfg 4** IP Address Configure 1…4 Sets the bytes in the IP address. 255 . 255 . 255 . 255 [IP Addr Cfg 1] [IP Addr Cfg 2] [IP Addr Cfg 3] Set with Octet Switch on Drive Main Control Board **Important:** To set the IP address using these parameters, P36 [BOOTP] must be set to "0" (Disabled).	Default: Min/Max:	0 0 / 255	RW	32-bit Integer
		42 **43** **44** **45**	755 **Subnet Cfg 1** 755 **Subnet Cfg 2** 755 **Subnet Cfg 3** 755 **Subnet Cfg 4** Subnet Configure 1…4 Sets the bytes of the subnet mask. 255 . 255 . 255 . 255 [Subnet Cfg 1] [Subnet Cfg 2] [Subnet Cfg 3] [Subnet Cfg 4] **Important:** To set the subnet mask using these parameters, P36 [BOOTP] must be set to "0" (Disabled).	Default: Min/Max:	0 0 / 255	RW	32-bit Integer
		46 **47** **48** **49**	755 **Gateway Cfg 1** 755 **Gateway Cfg 2** 755 **Gateway Cfg 3** 755 **Gateway Cfg 4** Gateway Configure 1…4 Sets the bytes of the gateway address. 255 . 255 . 255 . 255 [Gateway Cfg 1] [Gateway Cfg 2] [Gateway Cfg 3] [Gateway Cfg 4] **Important:** To set the gateway address using these parameters, P36 [BOOTP] must be set to "0" (Disabled).	Default: Min/Max:	0 0 / 255	RW	Real
		50	755 **Net Rate Cfg** Network Rate Configure Sets the network data rate at which the adapter communicates. (Updates P51 [Net Rate Act] after a reset.)	Default: Options:	0 = "Autodetect" 0 = "Autodetect" 1 = "10Mbps Full" 2 = "10Mbps Half" 3 = "100Mbps Full" 4 = "100Mbps Half"	RW	32-bit Integer

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
HOST GROUPS		51	755 **Net Rate Act** Network Rate Actual Displays the actual network data rate used by the adapter.	Default: Options:	0 = "No Link" 0 = "No Link" 1 = "10Mbps Full" 2 = "10Mbps Half" 3 = "100Mbps Full" 4 = "100Mbps Half" 5 = "Dup IP Addr"	RO	32-bit Integer
		52	755 **Web Enable** Web Enabled Enables/disables the adapter web page features.	Default: Options:	1 = "Enabled" 0 = "Disabled" 1 = "Enabled"	RW	32-bit Integer
		53	755 **Web Features** Web Features Enables/disables the Web-configurable e-mail notification feature.				

Options	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	E-mail Cfg
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Disabled
1 = Enabled

		54	755 **Comm Flt Action** Communication Fault Action Sets the action that the adapter and drive will take if the adapter detects that I/O communications have been disrupted. This setting is effective only if I/O that controls the drive is transmitted through the adapter.	Default: Options:	0 = "Fault" 0 = "Fault" 1 = "Stop" 2 = "Zero Data" 3 = "Hold Last" 4 = "Send Flt Cfg"	RW	32-bit Integer

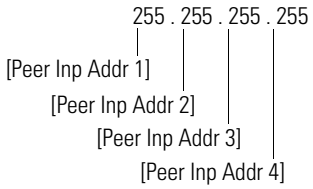
ATTENTION: Risk of injury or equipment damage exists. P54 [Comm Flt Action] lets you determine the action of the adapter and connected drive if I/O communications are disrupted. By default, this parameter faults the drive. You can set this parameter so that the drive continues to run. Precautions should be taken to ensure that the setting of this parameter does not create a risk of injury or equipment damage. When commissioning the drive, verify that your system responds correctly to various situations (for example, a disconnected cable).

		55	755 **Idle Flt Action** Idle Fault Action Sets the action that the adapter and drive will take if the adapter detects that the controller is in program mode or faulted. This setting is effective only if I/O that controls the drive is transmitted through the adapter.	Default: Options:	0 = "Fault" 0 = "Fault" 1 = "Stop" 2 = "Zero Data" 3 = "Hold Last" 4 = "Send Flt Cfg"	RW	32-bit Integer

ATTENTION: Risk of injury or equipment damage exists. P55 [Idle Flt Action] lets you determine the action of the adapter and connected drive when the controller is idle. By default, this parameter faults the drive. You can set this parameter so that the drive continues to run. Precautions should be taken to ensure that the setting of this parameter does not create a risk of injury or equipment damage. When commissioning the drive, verify that your system responds correctly to various situations (for example, a controller in idle state).

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
HOST GROUPS		56	755 **Peer Flt Action** Peer Fault Action Sets the action that the adapter and drive will take if the adapter detects that Peer I/O communications have been disrupted. This setting is effective only if I/O is transmitted through the adapter.	Default: Options:	0 = "Fault" 0 = "Fault" 1 = "Stop" 2 = "Zero Data" 3 = "Hold Last" 4 = "Send Flt Cfg"	RW	32-bit Integer
			ATTENTION: Risk of injury or equipment damage exists. P56 [Peer Flt Action] lets you determine the action of the adapter and connected drive if the adapter is unable to communicate with the designated peer. By default, this parameter faults the drive. You can set this parameter so that the drive continues to run. Precautions should be taken to ensure that the setting of this parameter does not create a risk of injury or equipment damage. When commissioning the drive, verify that your system responds correctly to various situations (for example, a disconnected cable).				
		57	755 **Msg Flt Action** Message Fault Action Sets the action that the adapter and drive will take if the adapter detects that explicit messaging, only when used for drive control via PCCC and the CIP Register Object, has been disrupted.	Default: Options:	0 = "Fault" 0 = "Fault" 1 = "Stop" 2 = "Zero Data" 3 = "Hold Last" 4 = "Send Flt Cfg"	RW	32-bit Integer
			ATTENTION: Risk of injury or equipment damage exists. P57 [Msg Flt Action] lets you determine the action of the adapter and connected drive if explicit messaging for drive control is disrupted. By default, this parameter faults the drive. You can set this parameter so that the drive continues to run. Precautions should be taken to ensure that the setting of this parameter does not create a risk of injury or equipment damage. When commissioning the drive, verify that your system responds correctly to various situations (for example, a disconnected cable).				
		58	755 **Flt Cfg Logic** Fault Configure Logic Sets the Logic Command data that is sent to the drive if any of the following is true: • P54 [Comm Flt Action] is set to 4 "Send Flt Cfg" and I/O communications are disrupted. • P55 [Idle Flt Action] is set to 4 "Send Flt Cfg" and the controller is idle. • P56 [Peer Flt Action] is set to 4 "Send Flt Cfg" and Peer I/O communications are disrupted. • P57 [Msg Flt Action] is set to 4 "Send Flt Cfg" and explicit messaging for drive control is disrupted. The bit definitions in the Logic Command word for PowerFlex 750-Series drives are shown in Appendix B.	Default: Min/Max: Min/Max:	0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 1111 1111 1111 1111 1111 1111 1111 1111	RW	Real
		59	755 **Flt Cfg Ref** Fault Configure Reference Sets the Reference data that is sent to the drive if any of the following is true: • P54 [Comm Flt Action] is set to 4 "Send Flt Cfg" and I/O communications are disrupted. • P55 [Idle Flt Action] is set to 4 "Send Flt Cfg" and the controller is idle. • P56 [Peer Flt Action] is set to 4 "Send Flt Cfg" and Peer I/O communications are disrupted. • P57 [Msg Flt Action] is set to 4 "Send Flt Cfg" and explicit messaging for drive control is disrupted.	Default: Min/Max:	0 –/+3.40282 x 10^{38}	RW	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
HOST GROUPS		**60** Thru **75**	755 **Flt Cfg DL 01** 755 **Flt Cfg DL 16** Fault Configure DeviceLogix Sets the data that is sent to the Datalink in the drive if any of the following is true: • P54 [Comm Flt Action] is set to 4 "Send Flt Cfg" and I/O communications are disrupted. • P55 [Idle Flt Action] is set to 4 "Send Flt Cfg" and the controller is idle. • P56 [Peer Flt Action] is set to 4 "Send Flt Cfg" and Peer I/O communications are disrupted. • P57 [Msg Flt Action] is set to 4 "Send Flt Cfg" and explicit messaging for drive control is disrupted.	Default: Min/Max:	0 0 / 4294967295	RW	Real
		76	755 **DLs Fr Peer Cfg** Datalinks From Peer Configure Sets the number of network-to-drive Datalinks (parameters) that are used for peer I/O. The Datalinks being used are allocated from the end of the list. For example, if this parameter's value is set to 3, Datalinks 14…16 are allocated for the three selected Datalinks. The Datalinks allocated for peer I/O cannot overlap with other assigned DL From Net 01…16 parameters.	Default: Min/Max:	0 0 / 16	RW	Real
		77	755 **DLs Fr Peer Act** Datalinks From Peer Action Displays the value of P76 [DLs Fr Peer Cfg] at the time the drive was reset. This is the number of actual peer-to-drive Datalinks that the drive is expecting.	Default: Min/Max:	0 0 / 16	RO	Real
		78	755 **Logic Src Cfg** Logic Source Configure Controls which of the peer-to-drive Datalinks contain the Logic Command for the drive.	Default: Min/Max:	0 0 / 16	RW	Real
		79	755 **Ref Src Cfg** Reference Source Configure Controls which of the peer-to-drive Datalinks contain the Reference for the drive.	Default: Min/Max:	0 0 / 16	RW	Real
		80	755 **Fr Peer Timeout** From Peer Timeout Sets the timeout for a Peer I/O connection. If the time is reached without the adapter receiving (consuming) a message, the adapter will respond with the action specified in P56 [Peer Flt Action]. In an adapter receiving (consuming) Peer I/O, the value of this parameter must be greater than the product of the value of P89 [To Peer Period] in the adapter transmitting (producing) Peer I/O multiplied by the value of P90 [To Peer Skip] in the adapter transmitting (producing) Peer I/O.	Units: Default: Min/Max:	Secs 10.00 0.01 / 10.00	RW	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
HOST GROUPS		**81** **82** **83** **84**	755 **Fr Peer Addr 1** 755 **Fr Peer Addr 2** 755 **Fr Peer Addr 3** 755 **Fr Peer Addr 4** From Peer Address 1…4 Sets the bytes in the IP address that specifies the device from which the adapter receives (consumes) Peer I/O data.  **Important:** The Peer Inp Addr must be on the same subnet as the embedded EtherNet/IP adapter. Changes to these parameters are ignored when P85 [Fr Peer Enable] is "1" (On).	Default: Min/Max:	0 0 / 255	RW	Real
		85	755 **Fr Peer Enable** From Peer Enable Controls whether Peer I/O input is operating. A value of 0 "Off" turns off Peer I/O input. A value of 1 "Cmd/Ref" overrides the settings in Parameters P76 [DLs Fr Peer Cfg], P78 [Logic Src Cfg], and P79 [Ref Src Cfg] and automatically uses peer Datalink 01 as the drive's present Logic Command and peer Datalink 02 as the drive's Reference. A value of 2 "Custom" enables peer I/O input using the Datalink count and settings provided by the user.	Default: Options:	0 = "Off" 0 = "Off" 1 = "Cmd/Ref" 2 = "Custom"	RW	32-bit Integer
		86	755 **Fr Peer Status** From Peer Status Displays the status of the consumed Peer I/O input connection.	Default: Options:	0 = "Off" 0 = "Off" 1 = "Waiting" 2 = "Running" 3 = "Faulted"	RO	32-bit Integer
		87	755 **DLs To Peer Cfg** Datalinks To Peer Configure Sets the number of drive-to-network Datalinks (parameters) that are used for Peer I/O. The Datalinks being used are allocated from the end of the list. For example, if this parameter's value is set to 3, Datalinks 14…16 are allocated for the three selected Datalinks. The Datalinks allocated for this cannot overlap with other assigned DL To Net 01…16 parameters.	Default: Min/Max:	0 0 / 16	RW	Real
		88	755 **DLs To Peer Act** Datalinks To Peer Action Displays the value of P87 [DLs To Peer Cfg] at the time the drive was reset. This is the number of actual drive-to-peer Datalinks that the drive is expecting.	Default: Min/Max:	0 0 / 16	RO	Real
		89	755 **To Peer Period** To Peer Period Sets the minimum time that an adapter will wait when transmitting data to a peer. **Important:** Changes to this parameter are ignored when P91 [To Peer Enable] is 0 "Off."	Units: Default: Min/Max:	Secs 10.00 0.01 / 10.00	RW	Real

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
HOST GROUPS		**90**	755 **To Peer Skip** To Peer Skip Sets the maximum time that an adapter will wait when transmitting data to a peer. The value of P89 [To Peer Period] is multiplied by the value of this parameter to set the time. Important: Changes to this parameter are ignored when P91 [To Peer Enable] is 0 "Off."	Default: Min/Max:	1 1 / 16	RW	Real
		91	755 **To Peer Enable** To Peer Enable Controls whether Peer I/O output is operating. A value of 0 "Off" turns off Peer I/O output. A value of 1 "Cmd/Ref" overrides the settings in Parameters P31 [DL To Net 15], P32 [DL To Net 16], P76 [DLs Fr Peer Cfg], and P77 [DLs Fr Peer Act], and automatically sends the drive's present Logic Command (as Datalink 01) and Reference (as Datalink 02). A value of 2 "Custom" enables Peer I/O output using the Datalink count and settings provided by the user.	Default: Options:	0 = "Off" 0 = "Off" 1 = "Cmd/Ref" 2 = "Custom"	RW	32-bit Integer

Notes:

Troubleshooting

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This chapter provides information to guide through troubleshooting PowerFlex 750-Series faults and alarms.

For information on...	See page
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Drive Status Indicators	256
Manually Clearing Faults	258
Drive Fault and Alarm Descriptions	260
Common Symptoms and Corrective Actions	291

Faults, Alarms and Configurable Conditions

A fault is a condition that stops the drive. There are three types of faults.

Type	Description
Auto Reset Run	When this type of fault occurs, and P348 [Auto Rstrt Tries] is set to a value greater than "0," a user-configurable timer, P349 [Auto Rstrt Delay] begins. When the timer reaches zero, the drive attempts to automatically reset the fault. If the condition that caused the fault is no longer present, the fault will be reset and the drive will be restarted. "Auto Reset Run" faults are identified by "Y" in the "Auto Reset" column in Table 6 on page 260.
Resettable	This type of fault can be cleared. Resettable faults are identified by "Resettable Fault" in the "Type" column in Table 6.
Non-Resettable	This type of fault normally requires drive or motor repair. The cause of the fault must be corrected before the fault can be cleared. The fault will be reset on power up after repair. Non-Resettable faults are identified by "Non-Reset Fault" in the "Type" column in Table 6.

An alarm is a condition that, if left unaddressed, may stop the drive if running or prevent starting of the drive. There are two types of alarms.

Type	Description
Alarm 1	Alarms of type 1 indicate that a condition exists. Type 1 alarms are user configurable.
Alarm 2	Alarms of type 2 indicate that a configuration error exists and the drive cannot be started. Type 2 alarms are non-configurable.

User configurable conditions can be enabled as an alarm or fault.

Type	Description
Configurable	Event action is enabled/disabled by the parameter identified in the "Configuration Parameter" column of Table 6. **Options** "Ignore" (0) – No action. "Alarm" (1) – Type 1 alarm indicated. "Flt Minor" (2) – Minor fault indicated. If running, drive continues to run. Enable with P950 [Minor Flt Config]. If not enabled, acts like a major fault. "FltCoastStop" (3) – Major fault indicated. Coast to Stop. "Flt RampStop" (4) – Major fault indicated. Ramp to Stop. "Flt CL Stop" (5) – Major fault indicated. Current Limit Stop.

Drive Status Indicators

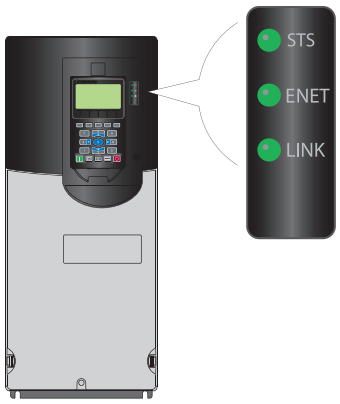
The condition or state of the drive is constantly monitored and is indicated through the LEDs and/or the HIM (if present).

IMPORTANT The Status Indicator LEDs on the HIM cradle do not indicate the current status of an installed Communication Adapter option. If an optional Communication Adapter is installed, refer to that option's user manual for a description of LED location and indication.

PowerFlex 753

Table 4 - PowerFlex 753 Drive Status Indicator Descriptions

Name	Color	State	Description
STS (Status)	Green	Flashing	Drive ready but not running, and no faults are present.
		Steady	Drive running, no faults are present.
	Yellow	Flashing	Drive is not running, a type 2 (non-configurable) alarm condition exists and the drive cannot be started.
		Steady	Drive is not running, a type 1 alarm condition exists. The drive can be started.
	Red	Flashing	A major fault has occurred. Drive will stop. Drive cannot be started until fault condition is cleared.
		Steady	A non-resettable fault has occurred.
	Red / Yellow	Flashing Alternately	A minor fault has occurred. When running, the drive continues to run. System is brought to a stop under system control. Fault must be cleared to continue. Use parameter 950 [Minor Flt Config] to enable. If not enabled, acts like a major fault.
	Yellow / Green	Flashing Alternately	When running, a type 1 alarm exists.
	Green / Red	Flashing Alternately	Drive is flash updating.



PowerFlex 755

Table 5 - PowerFlex 755 Drive Status Indicator Descriptions

Name	Color	State	Description
STS (Status)	Green	Flashing	Drive ready but not running, and no faults are present.
		Steady	Drive running, no faults are present.
	Yellow	Flashing	Drive is not running, a type 2 (non-configurable) alarm condition exists and the drive cannot be started.
		Steady	Drive is not running, a type 1 alarm condition exists. The drive can be started.
	Red	Flashing	A major fault has occurred. Drive will stop. Drive cannot be started until fault condition is cleared.
		Steady	A non-resettable fault has occurred.
	Red / Yellow	Flashing Alternately	A minor fault has occurred. When running, the drive continues to run. System is brought to a stop under system control. Fault must be cleared to continue. Use parameter 950 [Minor Flt Config] to enable. If not enabled, acts like a major fault.
	Yellow / Green	Flashing Alternately	When running, a type 1 alarm exists.
	Green / Red	Flashing Alternately	Drive is flash updating.
ENET	Unlit	Off	Adapter and/or network is not powered, adapter is not properly connected to the network, or adapter needs an IP address.
	Red	Flashing	An EtherNet/IP connection has timed out.
		Steady	Adapter failed the duplicate IP address detection test.
	Red / Green	Flashing Alternately	Adapter is performing a self-test.
	Green	Flashing	Adapter is properly connected but is not communicating with any devices on the network.
		Steady	Adapter is properly connected and communicating on the network.
LINK	Unlit	Off	Adapter is not powered or is not transmitting on the network.
	Green	Flashing	Adapter is properly connected and transmitting data packets on the network.
		Steady	Adapter is properly connected but is not transmitting on the network.

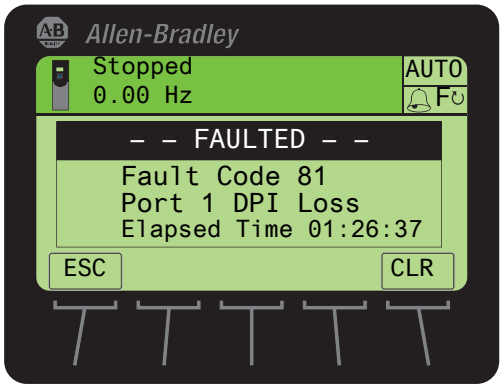
HIM Indication

Fault Display Screen

The pop-up Fault Display screen automatically appears when a fault condition for the Host Drive or any connected peripheral is detected. The pop-up Fault Display screen flashes to alert that a fault condition exists. This screen displays the:

- Fault Code number (See Fault and Alarm Display Codes on page 259.)
- Fault description
- Elapsed time (in hh:mm:ss format) from fault detection

Figure 3 - Pop-Up/Flashing Fault Display Screen



Soft Key Functions

Label	Name	Description
ESC	Escape	Reverts back to the previous screen without clearing the fault.
CLR	Clear	Removes the pop-up Fault Display screen from the display and clears the fault.

Single Function Key

Key	Name	Description
	Stop	Removes the pop-up Fault Display screen from the display and clears the fault.

Manually Clearing Faults

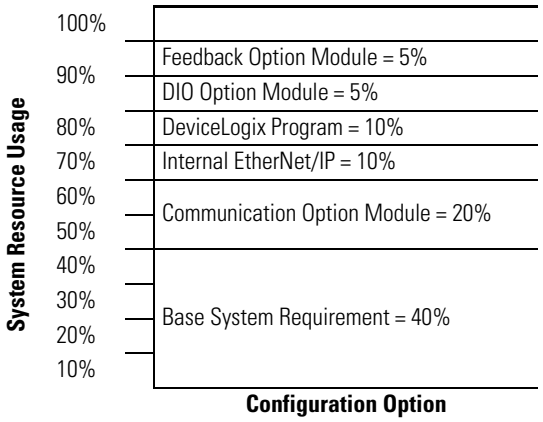
Step	Key(s)
1. Press the "Clear" soft key to acknowledge the fault. The fault information will be removed so that you can use the HIM. 2. Address the condition that caused the fault. The cause must be corrected before the fault can be cleared. 3. After corrective action has been taken, clear the fault by one of these methods: Press Stop (if running the drive will stop) Cycle drive power Select the "Clear" soft key on the HIM Diagnostic folder Faults menu.	

Hardware Service Manual

The PowerFlex 750-Series AC Drive Hardware Service Manual, publication 750-TG001, provides schematics and detailed instructions on part replacement for Frame 8 drives.

System Resource Allocation

Each option installed in the drive requires a percentage of the available system resources. Some options configurations may exceed the available resources of the main control board's processor. If 90% of the available system resources is reached, an F19 Task Overrun alarm will result indicating that system resource utilization is excessive.



Fault and Alarm Display Codes

Event numbers for PowerFlex 750-Series faults and alarms are displayed in one of three formats.

- Port 00 (Host Drive) displays the event number only. For example, Fault 3 "Power Loss" is displayed as:
  Fault Code 3.
- Ports 01 through 09 use the format PEEE, indicating port number (P) and event number (EEE). For example, Fault 1 "Analog In Loss" on an I/O module installed in Port 4 is displayed as:
  Fault Code 4001.
- Ports 10 through 14 use the format PPEEE, indicating port number (PP) and event number (EEE). For example, Fault 37 "Net IO Timeout" on Port 14 is displayed as:
  Fault Code 14037.

Drive Fault and Alarm Descriptions

The table below contains a list of drive-specific faults and alarms, the type of fault or alarm, the action taken when the drive faults, the parameter used to configure the fault or alarm (if applicable), and a description and action (where applicable).

Table 6 - Drive Fault and Alarm Types, Descriptions and Actions

Event No.	Fault/Alarm Text	Type	Fault Action	Configuration Parameter	Auto Reset	Description/Action(s)
0	No Entry					
2	Auxiliary Input	Resettable Fault	Coast			An auxiliary input interlock is open.
3	Power Loss	Configurable		P449 [Power Loss Actn]	Y	The DC bus voltage remained below the P451/P454 [Pwr Loss X Level] of nominal for longer than the time programmed in P452/P455 [Pwr Loss X Time].
4	UnderVoltage	Configurable		P460 [UnderVltg Action]	Y	If the bus voltage, P11 [DC Bus Volts] falls below the value set in P461 [UnderVltg Level] an undervoltage condition exists.
5	OverVoltage	Resettable Fault	Coast		Y	The DC bus voltage exceeded the maximum value.
7	Motor Overload	Configurable		P410 [Motor OL Actn]	Y	An internal electronic overload trip has occurred.
8	Heatsink OvrTemp	Resettable Fault	Coast		Y	The heatsink temperature has exceeded 100% of the drive temperature. Heatsink over temperature occurs between 115…120 °C. The exact value is stored in drive firmware.
9	Trnsistr OvrTemp	Resettable Fault	Coast		Y	The output transistors have exceeded the maximum operating temperature.
10	DynBrake OvrTemp	Alarm 1				The dynamic brake resistor has exceeded its maximum operating temperature.
12	HW OverCurrent	Resettable Fault	Coast		Y	The drive output current has exceeded the hardware current limit.
13	Ground Fault	Resettable Fault	Coast		Y	A current path to earth ground greater than 25% of drive rating has occurred.
14	Ground Warning	Configurable				The ground current has exceeded the level set in P467 [Ground Warn Lvl].
15	Load Loss	Configurable		P441 [Load Loss Action]		The output torque current is below the value programmed in P442 [Load Loss Level] for a time period greater than the time programmed in P443 [Load Loss Time].
17	Input Phase Loss	Configurable		P462 [InPhase LossActn]		The DC bus ripple has exceeded a preset level.
18	Motor PTC Trip	Configurable		P250 [PTC Config]		Motor PTC (Positive Temperature Coefficient) over temperature.
19	Task Overrun	Alarm 1				System resource utilization is at or above 90% of capacity. Review the system resource allocation table on page 259.
20	TorqPrv Spd Band	Resettable Fault	Coast			The difference between P2 [Commanded SpdRef] and P3 [Mtr Vel Fdbk] has exceeded the level programmed in P1105 [Speed Dev Band] for a time period greater than the time programmed in P1106 [SpdBand Intgrtr].
21	Output PhaseLoss	Configurable		P444 [OutPhaseLossActn]		The current in one or more phases has been lost or remains below a preset level.
24	Decel Inhibit	Configurable		P409 [Dec Inhibit Actn]		The drive is not following a commanded deceleration because it is attempting to limit the bus voltage.

Event No.	Fault/Alarm Text	Type	Fault Action	Configuration Parameter	Auto Reset	Description/Action(s)
25	OverSpeed Limit	Resettable Fault	Coast		Y	The motor operating speed exceeds the limit set by the maximum speed setting P524 [Overspeed Limit]. For forward motor rotation, this limit is P520 [Max Fwd Speed] + P524 [Overspeed Limit]. For reverse motor rotation, this limit is P521 [Max Rev Speed] - P524 [Overspeed Limit]. When flux vector control modes are selected in P35 [Motor Ctrl Mode] the motor operating speed is determined by P131 [Active Vel Fdbk]. For all other non-flux vector control modes, the motor operating speed is determined by P1 [Output Frequency].
26	Brake Slipped	Alarm 1				The encoder movement has exceeded the level in P1110 [Brk Slip Count] after the brake was set and the brake slip maneuver is controlling the drive. (Drive is active.)
		Alarm 2				The encoder movement has exceeded the level in P1110 [Brk Slip Count] after the brake was set and the brake slip maneuver is finished. (Drive is stopped.)
27	Torq Prove Cflct	Alarm 2				When P1100 [Trq Prove Cfg] is enabled, P35 [Motor Ctrl Mode], P125 [Pri Vel Fdbk Sel] and P135 [Mtr Psn Fdbk Sel] must be properly set. If these parameters point to a feedback module, the module parameters must also be properly set.
28	TP Encls Config	Alarm 2				Encoderless TorqProve has been enabled but user has not read and understood application concerns of encoderless operation. Read the "Attention" on page 367 relating to the use of TorqProve with no encoder.
29	Analog In Loss	Configurable		263 [Anlg In0 LssActn]		Analog input has a lost signal.
33	AuRsts Exhausted	Resettable Fault	Coast			The drive unsuccessfully attempted to reset a fault and resume running for the programmed number of tries.
36	SW OverCurrent	Resettable Fault	Coast		Y	The drive output current has exceeded the 1 ms current rating. This rating is greater than the 3 second current rating and less than the hardware overcurrent fault level. It is typically 200…250% of the drive continuous rating.
38	Phase U to Grnd	Resettable Fault	Coast			A phase to ground fault has been detected between the drive and motor in this phase.
39	Phase V to Grnd					
40	Phase W to Grnd					
41	Phase UV Short	Resettable Fault	Coast			Excessive current has been detected between these two output terminals.
42	Phase VW Short					
43	Phase WU Short					
44	Phase UNegToGrnd	Resettable Fault	Coast			A phase to ground fault has been detected between the drive and motor in this phase.
45	Phase VNegToGrnd					
46	Phase WNegToGrnd					
48	System Defaulted	Resettable Fault	Coast			The drive was commanded to write default values.
49	Drive Powerup	–				A Power Up Marker in the Fault Queue indicating that the drive power cycled.
51	Clr Fault Queue	–				Indication that the fault queue has been cleared.
55	Ctrl Bd Overtemp	Resettable Fault	Coast			The temperature sensor on the main control board detected excessive heat. See product temperature requirement.
58	Module Defaulted	Resettable Fault	Coast			The module was commanded to write default values.
59	Invalid Code	Resettable Fault	Coast			Internal error.

Event No.	Fault/Alarm Text	Type	Fault Action	Configuration Parameter	Auto Reset	Description/Action(s)
61	Shear Pin 1	Configurable		P435 [Shear Pin 1 Actn]	Y	The programmed value in P436 [Shear Pin1 Level] has been exceeded.
62	Shear Pin 2	Configurable		P438 [Shear Pin 2 Actn]	Y	The programmed value in P439 [Shear Pin2 Level] has been exceeded.
64	Drive OverLoad	Alarm 1			Y	P940 [Drive OL Count] has exceeded 50% but is less than 100%.
		Resettable Fault	Coast			P940 [Drive OL Count] has exceeded 100%. Reduce the mechanical load on the drive. Inverter fiber optic connection is not detected on Frame 8 drive. This fault may occur on power up if the control detects that no inverter is detected via the fiber optic communication on a Frame 8 drive.
67	Pump Off	Alarm 1				Pump Off condition has been detected.
71	Port 1 Adapter	Resettable Fault	Coast			The DPI communications option has a fault. See device event queue.
72	Port 2 Adapter					
73	Port 3 Adapter					
74	Port 4 Adapter					
75	Port 5 Adapter					
76	Port 6 Adapter					
77	IR Volts Range	Alarm 2				The default for P70 [Autotune] is 1 “Calculate” and the value calculated from the motor nameplate values returned a value for P73 [IR Voltage Drop] which is not in the range of acceptable values.
		Resettable Fault	Coast			P70 [Autotune] is set to 2 “Static Tune” or 3 “Rotate Tune” and the value measured by the Autotune procedure for P73 [IR Voltage Drop] is not in the range of acceptable values.
78	FluxAmpsRef Rang	Alarm 2				The default for P70 [Autotune] is 1 “Calculate” and the value for flux amps determined by the Autotune procedure exceeds the value programmed in P26 [Motor NP Amps].
		Resettable Fault	Coast			P70 [Autotune] is set to 2 “Static Tune” or 3 “Rotate Tune” and the value for flux amps measured by the Autotune procedure exceeds the value programmed in P26 [Motor NP Amps].
79	Excessive Load	Resettable Fault	Coast			The motor did not come up to speed in the allotted time during Autotune.
80	AutoTune Aborted	Resettable Fault	Coast			The Autotune function was manually canceled or a fault occurred.
81	Port 1 DPI Loss	Resettable Fault	Coast			The DPI port stopped communicating. Check connections and drive grounding.
82	Port 2 DPI Loss					
83	Port 3 DPI Loss					
84	Port 4 DPI Loss					
85	Port 5 DPI Loss					
86	Port 6 DPI Loss					

Event No.	Fault/Alarm Text	Type	Fault Action	Configuration Parameter	Auto Reset	Description/Action(s)
87	IXo VoltageRange	Alarm 2				The default for P70 [Autotune] is 1 "Calculate" and the voltage calculated for motor inductive impedance exceeds 25% of the value of P25 [Motor NP Volts].
		Resettable Fault	Coast			P70 [Autotune] is set to 2 "Static Tune" or 3 "Rotate Tune" and the voltage measured for motor inductive impedance exceeds 25% of the value of P25 [Motor NP Volts].
91	Pri VelFdbk Loss	Configurable		Note: See option module for config parameter number		A Feedback Loss has been detected for the source of P134 [Aux Vel Feedback]. This could be due to a problem detected by the feedback option module selected by P125 [Pri Vel Fdbk Sel] or due to a loss in communication between the feedback option module and main control board. The source of primary velocity feedback must be configured not to fault if the feedback loss switchover feature is used.
93	Hw Enable Check	Resettable Fault	Coast			Hardware enable is disabled (jumper installed) but indicates not enabled.
94	Alt VelFdbk Loss	Configurable		Note: See option module for config parameter number		A Feedback Loss has been detected for the source of P128 [Alt Vel Fdbk Sel]. This could be due to a problem detected by the feedback option module selected by P128 [Alt Vel Fdbk Sel] or due to a loss in communication between the feedback option module and main control board.
95	Aux VelFdbk Loss	Configurable				A Feedback Loss has been detected for the source of P132 [Aux Vel Fdbk Sel]. This could be due to a problem detected by the feedback option module selected by P132 [Aux Vel Fdbk Sel] or due to a loss in communication between the feedback option module and main control board.
96	PositionFdbkLoss	Configurable				A Feedback Loss has been detected for the source of P847 [Psn Fdbk]. This could be due to a problem detected by the feedback option module selected by P135 [Mtr Psn Fdbk Sel] or due to a loss in communication between the feedback option module and main control board.
97	Auto Tach Switch	Resettable Fault	Coast			Indication that either of the two following conditions exists. • Tach switch has occurred and alternate feedback device has failed. • Tach switch has not occurred, Auto Tach Switch Option is enabled and both primary and alternate devices have failed.
100	Parameter Chksum	Resettable Fault	Coast			The checksum read from the non-volatile storage does not match the checksum calculated. Data set to default value.
101	PwrDn NVS Blank	Resettable Fault	Coast			Internal data error.
102	NVS Not Blank	Resettable Fault	Coast			Internal data error.
103	PwrDn NVS Incomp	Resettable Fault	Coast			Internal data error.
104	Pwr Brd Checksum	Non-Reset Fault				The checksum read from the non-volatile storage does not match the checksum calculated. Data set to default value.
106	Incompat MCB-PB	Non-Reset Fault	Coast			The main control board did not recognize the power structure. Flash with newer Application version.
107	Replaced MCB-PB	Resettable Fault	Coast			The main control board was moved to a different power structure. Data set to default values.
108	Anlg Cal Chksum	Non-Reset Fault	Coast			The checksum read from the analog calibration data does not match the checksum calculated. Replace main control board.
111	PwrBd Invalid ID	Non-Reset Fault	Coast			Power structure ID invalid. Flash with newer Application version.

Event No.	Fault/Alarm Text	Type	Fault Action	Configuration Parameter	Auto Reset	Description/Action(s)
112	PwrBd App MinVer	Resettable Fault	Coast			Power structure needs newer Application version. Flash with newer Application version.
113	Tracking DataErr	Resettable Fault	Coast			Internal data error.
115	PwrDn Table Full	Resettable Fault	Coast			Internal data error.
116	PwrDnEntry2Large	Resettable Fault	Coast			Internal data error.
117	PwrDn Data Chksm	Resettable Fault	Coast			Internal data error.
118	PwrBd PwrDn Chks	Resettable Fault	Coast			Internal data error.
124	App ID Changed	Resettable Fault	Coast			Application Firmware changed. Verify Application version.
125	Using Backup App	Resettable Fault	Coast			Application did not flash correctly. Reflash.
134	Start On PowerUp	Alarm 1				When P345 [Start At PowerUp] is enabled, an alarm will be set for the time programmed in P346 [PowerUp Delay].
137	Ext Prechrg Err	Configurable		P323 [Prchrg Err Cfg]		The seal contact on the external precharge contactor has opened (as signalled by P190 [DI Prchrg Seal]) while the drive was running (PWM was active).
138	Precharge Open	Resettable Fault	Coast			The internal precharge was commanded to open while the drive was running (PWM was active). The internal fault latch will be automatically cleared when PWM is disabled.
141	Autn Enc Angle	Resettable Fault	Coast			P78 [EncdrIss AngComp] is out of range.
142	Autn Spd Rstrct	Resettable Fault	Coast			Frequency limit settings are preventing the drive from reaching a suitable speed during an Inertia Tune test.
143	Autotune CurReg	Resettable Fault	Coast			Calculated values for P96 [VCL Cur Reg Kp] and/or P97 [VCL Cur Reg Ki] are out of range.
144	Autotune Inertia	Resettable Fault	Coast			Results from the Inertia Tune test out of range for P76 [Total Inertia].
145	Autotune Travel	Resettable Fault	Coast			When P77 [Inertia Test Lmt] is set, the Inertia Tune test was prevented from reaching a suitable speed to run the test.
152	No Stop Source	Resettable Fault	Coast			Last stop source has been removed.
155	Bipolar Conflict	Alarm 2				P308 [Direction Mode] is set to 1 “Bipolar” or 2 “Rev Disable” and one or more digital input is enabled for direction control.
157	DigIn Cfg B	Alarm 2				Digital input conflict. Input functions that cannot exist at the same time have been selected (for example run and start). Correct Digital Input configuration.
158	DigIn Cfg C	Alarm 2				Digital input conflict. Input functions that cannot be assigned to the same digital input have been selected (for example run and stop). Correct Digital Input configuration.
161	Sleep Config	Alarm 2				There is a Sleep/Wake configuration error. With Sleep Wake Mode = Direct, possible causes include: Drive is stopped and Wake Level < Sleep Level. Stop=CF, Run, Run Fwd, or Run Rev is not configured in Digital Input functions.
162	Waking	Alarm 2				The Wake timer is counting toward a value that will start the drive.

Event No.	Fault/Alarm Text	Type	Fault Action	Configuration Parameter	Auto Reset	Description/Action(s)
168	HeatSinkUnderTmp	Resettable Fault				Heatsink temperature sensor is reporting a value below -18.7 °C (-1.66 °F) or the sensor feedback circuit is open.
169	PWM Freq Reduced	Alarm 1				The PWM Frequency has been reduced from the value set in P38 [PWM Frequency] due to excessive IGBT junction temperatures.
170	CurLimit Reduced	Alarm 1				The current limit value has been reduced from the value set in P422/423 [Current Limit X] due to excessive IGBT junction temperatures or P940 [Drive OL Count] = 95%.
171	Adj Vltg Ref	Alarm 1				Invalid adjustable voltage reference selection conflict.
177	Profiling Active	Alarm 1				The Profile/Indexer is active.
178	Homing Active	Alarm 1				The Homing function is active.
179	Home Not Set	Alarm 1				The Home position was not set before profile operation.
185	Freq Conflict	Alarm 2				Indicates that the values of P520 [Max Fwd Speed] and P521 [Max Rev Speed] are in conflict with the value of P63 [Break Frequency].
186	VHz Neg Slope	Alarm 2				Indicates that the V/Hz curve segment resulted in a negative V/Hz slope.
187	VHz Boost Limit	Alarm 2				Indication that one of the two following conditions exists. • P60 [Start/Acc Boost] and P61 [Run Boost] are greater than P25 [Motor NP Volts] x 0.25 when P65 [VHz Curve] = 0 "Custom V/Hz." • P61 [Run Boost] is greater than P25 [Motor NP Volts] x 0.25 when P65 [VHz Curve] = 1 "Fan/Pump."
190	PM FV Pri Fdbk	Alarm 2				Indicates a control mode and primary feedback device configuration error. P35 [Motor Ctrl Mode] is set to the permanent magnet flux vector "PM FV" control mode, P125 [Pri Vel Fdbk Sel] is set to 137 (port 0, P137 [Open Loop Fdbk]).
191	PM FV Alt Fdbk	Alarm 2				Indicates a control mode and alternate feedback device configuration error. P35 [Motor Ctrl Mode] is set to the permanent magnet flux vector "PM FV" control mode, P635 [Spd Options Ctrl] is set to bit 7 "Auto Tach SW," P128 [Alt Vel Fdbk Sel] is set to 137 (port 0, P137 [Open Loop Fdbk]).
192	Fwd Spd Lim Cfg	Alarm 2				The forward speed reference is out of range. Verify the settings of P38 [PWM Frequency] and P520 [Max Fwd Speed]. Lower carrier frequencies reduce the output frequency range. Verify that P522 [Min Fwd Speed] is less than or equal to P520 [Max Fwd Speed].
193	Rev Spd Lim Cfg	Alarm 2				The reverse speed reference is out of range. Verify the settings of P38 [PWM Frequency] and P521 [Max Rev Speed]. Lower carrier frequencies reduce the output frequency range. Verify that P523 [Min Rev Speed] is greater than or equal to P521 [Max Rev Speed].
201	SpdReg DL Err	Alarm 2				Attempted to establish a Datalink to P644 [Spd Err Flt BW], P645 [Speed Reg KP], or P647 [Speed Reg Ki] and P636 [Speed Reg BW] is set to a value other than zero.
202	AltSpdReg DL Err	Alarm 2				Attempted to establish a Datalink to P649 [Alt Speed Reg Kp], P650 [Alt Speed Reg Ki], or P651 AltSpdErr FltrBW] and P648 [Alt Speed Reg BW] is set to a value other than zero.
203	Port 13 Adapter	Resettable Fault	Coast			The embedded EtherNet/IP adapter has a fault. See EtherNet event queue.
204	Port 14 Adapter	Resettable Fault	Coast			The DeviceLogix adapter has a fault.

Event No.	Fault/Alarm Text	Type	Fault Action	Configuration Parameter	Auto Reset	Description/Action(s)
205	DPI TransportErr	Alarm 1				A DPI Communication Error has occurred.
210	HW Enbl Jmpr Out	Resettable Fault	Coast			A Safety Option module is present and Jumper J1 ENABLE is removed. Install the jumper.
211	Safety Brd Fault	Resettable Fault	Coast			A Safety option module has indicated a fault. Verify that Jumper J1 ENABLE is installed. Reset or power cycle drive.
212	Safety Jmpr Out	Resettable Fault	Coast			Jumper J2 SAFETY is not installed and a Safety option module is not present. Install the jumper.
213	Safety Jumper In	Resettable Fault	Coast			Jumper J2 SAFETY is installed and a Safety option module is present. Remove the jumper.
214	SafetyPortCnflct	Alarm 2				Allowable number of safety options exceeded.
224	Port 4 Comm Loss	Resettable Fault	Coast			The device at the port has stopped communicating with the main control board. Verify that the device is present and functional. Verify network connections. Verify options installed in ports 4…8 are seated in the port and secured with mounting screws.
225	Port 5 Comm Loss					
226	Port 6 Comm Loss					
227	Port 7 Comm Loss					
228	Port 8 Comm Loss					
229	Port 9 Comm Loss					
230	Port10 Comm Loss					
231	Port11 Comm Loss					
232	Port12 Comm Loss					
233	Port13 Comm Loss					
234	Port14 Comm Loss					
244	Port 4 Cfg	Alarm 2				The main control board does not have the correct option in the port. Option may not be compatible with product or MCB firmware needs to be updated to support it. Option my have to be moved or removed, accept option configuration change.
245	Port 5 Cfg					
246	Port 6 Cfg					
247	Port 7 Cfg					
248	Port 8 Cfg					
249	Port 9 Cfg					
250	Port 10 Cfg					
251	Port 11 Cfg					
252	Port 12 Cfg					
253	Port 13 Cfg					
254	Port 14 Cfg					

Event No.	Fault/Alarm Text	Type	Fault Action	Configuration Parameter	Auto Reset	Description/Action(s)
264	Port 4 Checksum	Resettable Fault	Coast			A option module storage checksum failed. Option data has been set to default values.
265	Port 5 Checksum					
266	Port 6 Checksum					
267	Port 7 Checksum					
268	Port 8 Checksum					
269	Port 9 Checksum					
270	Port10 Checksum					
271	Port11 Checksum					
272	Port12 Checksum					
273	Port13 Checksum					
274	Port14 Checksum					
281	ENet Checksum	Resettable Fault	Coast			EtherNet/IP storage checksum failed. Data set to default values.
282	DLX Checksum	Resettable Fault	Coast			DeviceLogix storage checksum failed. Data set to default values.
291	HSFan Life	Configurable		P493 [HSFan EventActn]		Predictive maintenance function has reached the event level. Perform maintenance.
292	InFan Life	Configurable		P500 [InFan EventActn]		
293	MtrBrng Life	Configurable		P506 [MtrBrngEventActn]		
294	MtrBrng Lube	Configurable		P510 [MtrLubeEventActn]		
295	MachBrng Life	Configurable		P515 [MtrBrngEventActn]		
296	MachBrng Lube	Configurable		P519 [MchLubeEventActn]		
307	Port7InvalidCard	Non-Reset Fault	Coast			Option not valid in that port. Remove option module.
308	Port8InvalidCard	Non-Reset Fault	Coast			
918	Control Task Overload	Resettable Fault	Coast			System resource utilization has been exceeded. Evaluate system resource allocation using the table on page 259.
919	System Task Overload	Resettable Fault	Coast			
920	5 msec Task Overload	Resettable Fault	Coast			
14037	Net IO Timeout	Configurable		P52 [DLX Prog Cond]		DeviceLogix has been disabled.

IMPORTANT Fault and Alarm event numbers between 3000 and 13999 are generated by a module installed in a port. Refer to Fault and Alarm Display Codes on page 259 for an explanation. For event numbers that fall between 13000 and 13999, refer to the PowerFlex 755 Drive Embedded EtherNet/IP Adapter User Manual, publication 750COM-UM001 for descriptions.

Table 7 - Drive Fault and Alarm Cross Reference By Name

Fault/Alarm Text	Number
5 msec Task Overload	920
Adj Vltg Ref	171
Alt VelFdbk Loss	94
AltSpdReg DL Err	202
Analog In Loss	29
Anlg Cal Chksum	108
App ID Changed	124
AuRsts Exhausted	33
Autn Enc Angle	141
Autn Spd Rstrct	142
Auto Tach Switch	97
AutoTune Aborted	80
Autotune CurReg	143
Autotune Inertia	144
Autotune Travel	145
Aux VelFdbk Loss	95
Auxiliary Input	2
Bipolar Conflict	155
Brake Slipped	26
Clr Fault Queue	51
Control Task Overload	918
Crtl Bd Overtemp	55
CurLimit Reduced	170
Decel Inhibit	24
DigIn Cfg B	157
DigIn Cfg C	158
DLX Checksum	314
DPI TransportErr	205
Drive OverLoad	64
Drive Powerup	49
DynBrake OvrTemp	10
ENet Checksum	313
Excessive Load	79
Ext Prechrg Err	137
Flt QueueCleared	51
FluxAmpsRef Rang	78

Fault/Alarm Text	Number
Freq Conflict	185
Fwd Spd Lim Cfg	192
Ground Fault	13
Ground Warning	14
Heatsink OvrTemp	8
HeatSinkUnderTmp	168
Home Not Set	179
Homing Active	178
HSFan Life	291
Hw Enable Check	93
HW Enbl Jmpr Out	210
HW OverCurrent	12
Incompat MCB-PB	106
InFan Life	292
Input Phase Loss	17
Invalid Code	59
IR Volts Range	77
IXo VoltageRange	87
Load Loss	15
MachBrng Life	295
MachBrng Lube	296
MaxFreq Conflict	185
Module Defaulted	58
Motor Overload	7
Motor PTC Trip	18
MtrBrng Life	293
MtrBrng Lube	294
Net IO Timeout	14037
No Stop Source	152
NVS Not Blank	102
Output PhaseLoss	21
OverSpeed Limit	25
OverVoltage	5
OW Torq Level	66
OW TqLvl Timeout	65
Parameter Chksum	100

Fault/Alarm Text	Number
Phase U to Grnd	38
Phase UNegToGrnd	44
Phase UV Short	41
Phase V to Grnd	39
Phase VNegToGrnd	45
Phase VW Short	42
Phase W to Grnd	40
Phase WNegToGrnd	46
Phase WU Short	43
PM FV Alt Fdbk	191
PM FV Pri Fdbk	190
Port 1 Adapter	71
Port 1 DPI Loss	81
Port 10 Config	250
Port 11 Config	251
Port 12 Config	252
Port 13 Adapter	203
Port 13 Config	253
Port 14 Adapter	204
Port 14 Config	254
Port 2 Adapter	72
Port 2 DPI Loss	82
Port 3 Adapter	73
Port 3 DPI Loss	83
Port 4 Adapter	74
Port 4 Checksum	264
Port 4 Comm Loss	224
Port 4 Config	244
Port 4 DPI Loss	84
Port 5 Adapter	75
Port 5 Checksum	265
Port 5 Comm Loss	225
Port 5 Config	245
Port 5 DPI Loss	85
Port 6 Adapter	76
Port 6 Checksum	266

Fault/Alarm Text	Number
Port 6 Comm Loss	226
Port 6 Config	246
Port 6 DPI Loss	86
Port 7 Checksum	267
Port 7 Comm Loss	227
Port 7 Config	247
Port 8 Checksum	268
Port 8 Comm Loss	228
Port 8 Config	248
Port 9 Checksum	269
Port 9 Comm Loss	229
Port 9 Config	249
Port10 Checksum	270
Port10 Comm Loss	230
Port11 Checksum	271
Port11 Comm Loss	231
Port12 Checksum	272
Port12 Comm Loss	232
Port10 Checksum	270
Port10 Comm Loss	230
Port11 Checksum	271
Port11 Comm Loss	231
Port12 Checksum	272
Port12 Comm Loss	232
Port13 Checksum	273
Port13 Comm Loss	233
Port14 Checksum	274
Port14 Comm Loss	234
Port7InvalidCard	307
Port8InvalidCard	308
PositionFdbkLoss	96
Power Loss	3
Precharge Open	138
Prev Maint Reset	290
Pri VelFdbk Loss	91
Profiling Active	177

Fault/Alarm Text	Number
Pump Off	67
PWM Freq Reduced	169
Pwr Brd Checksum	104
PwrBd App MinVer	112
PwrBd Invalid ID	111
PwrBd PwrDn Chks	118
PwrDn Data Chksm	117
PwrDn NVS Blank	101
PwrDn NVS Incomp	103
PwrDn Table Full	115
PwrDnEntry2Large	116
Replaced MCB-PB	107
Rev Spd Lim Cfg	193
Safety Brd Fault	211
Safety Jmpr Out	212
Safety Jumper In	213
SafetyPortCnflct	214
Shear Pin 1	61
Shear Pin 2	62

Fault/Alarm Text	Number
Sleep Config	161
SpdReg DL Err	201
Start On PowerUp	134
SW OverCurrent	36
System Defaulted	48
System Task Overload	919
Task Overrun	19
Torq Prove Cflct	27
TorqPrv Spd Band	20
TP Encls Config	28
Tracking DataErr	113
TrqMode Incompat	184
UnderVoltage	4
Using Backup App	125
Vel Fbk Sel Err	189
VHz Boost Limit	187
VHz Curve Incomp	188
VHz Neg Slope	186
Waking	162

Inverter Faults and Alarms (Frame 8 Drives)

The table below contains a list of Inverter-specific faults and alarms, the type of fault or alarm, the action taken when the drive faults, the parameter used to configure the fault or alarm (if applicable), and a description and action (where applicable). These faults and alarms only apply to Frame 8 drives.

Table 8 - Inverter Fault and Alarm Types, Descriptions and Actions

Event No.	Fault/Alarm Text	Type	Fault Action	Configuration Parameter	Auto Reset	Description/Action(s)
10101	I1 Comm Loss	Non-Reset Fault	Coast			Indicates that the communication connection from the fiber optic interface board to the power layer interface board has been lost. Once the root cause of the communication fault has been resolved, power must be cycled or a drive reset must be initiated to clear this fault. • Verify the status of the Fiber Loss pin segment of the power layer interface board LED. **ATTENTION:** Hazard of permanent eye damage exists when using optical transmission equipment. This product emits intense light and invisible radiation. Do not look into fiber-optic ports or fiber-optic cable connectors. Remove power from the drive before disconnecting fiber optic cables. • Verify that the fiber optic cables are properly connected to the transceivers. • Verify that the transceivers are properly seated in the ports. • Verify that the fiber optic cable is not cracked or broken. • Verify that power is applied to the fiber optic interface board and power layer interface board.
10102	I1 Thermal Const	Non-Reset Fault	Coast			The thermal model data sent to the power layer interface board is incorrect. • Verify that the inverter is the correct rating for the drive. • Compare the firmware versions of the power layer interface and control board for compatibility. • If necessary, re-flash the application firmware in control board.
10103	I1 HSFan Slow	Alarm 1				The inverter heatsink fan is running below normal operating speed. • Verify the actual fan speed in parameter 124 [I1 HSFan Speed] (Port 10). • Check for debris in the fan. If necessary, clean the fan and housing. • Check for noise at the fan, indicating motor bearing failure. • Verify that the fan power and feedback connections are not loose or disconnected. • Replace the fan, if necessary.
10104	I1 Overcurr UPos	Resettable Fault	Coast		Y	An instantaneous overcurrent (IOC) has occurred in the U, V, or W phase, positive or negative leg. • Reduce the mechanical load. • Check the motor and connections. • With motor disconnected, run the drive in open loop, in V/Hz mode and check for sufficient output phase-to-phase voltages. If an IOC occurs immediately after restarting the drive, check the appropriate current sensor. • Check the power and signal connections to gate driver board for that phase identified, or replace it. The IGBT could also have failed open (and the opposite leg is receiving excess current).
10105	I1 Overcurr UNeg					
10106	I1 Overcurr VPos					
10107	I1 Overcurr VNeg					
10108	I1 Overcurr WPos					
10109	I1 Overcurr WNeg					

Event No.	Fault/Alarm Text	Type	Fault Action	Configuration Parameter	Auto Reset	Description/Action(s)
10110	I1 Bus Overvolt	Resettable Fault	Coast		Y	The DC bus has exceeded the maximum value. • Verify the correct voltage on the AC input line. • Reduce the mechanical load and/or rate of deceleration. • Compare the DC bus voltage displayed in parameter 119 [I1 DC Bus Volt] (port 10), in parameter 119 [C1 DC Bus Volt] (converter 1 - port 11), and with a meter using the DC+ and DC- test points at the top of the inverter. If the measurements do not match, the components used for DC bus voltage feedback sensing may be damaged or incorrect. Replace the power supply, power control, and power layer interface circuit boards.
10111	I1 Ground Fault	Resettable Fault	Coast		Y	A current path to earth ground greater than 25% of drive rating has occurred. • Perform a Megger or surge test on a disconnected motor. Replace the motor, if necessary. • Check the output phase current displayed in parameters 115 [I1 U Phase Curr], 116 [I1 V Phase Curr], and 117 [I1 W Phase Curr] (port 10) for an imbalance. Parameter 118 [I1 Gnd Current] (port 10) is the calculated (not measured) ground current based on the phase currents. • If the ground fault happens immediately when the drive is started, view the values of the output phase current parameters (noted above) when running the drive with a light load or perform a trending analysis. • Re-seat the rating plug and current transducer wiring harness.
10112	I1 IGBT OvrTemp	Resettable Fault	Coast		Y	An IGBT over temperature has been detected. This value is calculated by the power layer interface board based on the NTC temperature plus a rise based on recent currents through the inverter. • Check the NTC temperature displayed in parameter 120 [I1 Heatsink Temp] (port 10) and verify that it is not near the limit. If this value is near the limit, check for cooling problems caused by a blocked or slow heatsink fan. • Check the output phase current displayed in parameters 115 [I1 U Phase Curr], 116 [I1 V Phase Curr], and 117 [I1 W Phase Curr] (port 10) for an imbalance. • Check for high-current operation at very low speeds, since nearly all the current goes through one IGBT in this case. • Replace the power layer interface board.
10113	I1 HS OvrTemp	Resettable Fault	Coast		Y	A heatsink over temperature has occurred in inverter 1. • Verify that the NTC is not disconnected or shorted. • Check for cooling problems - the heatsink cooling fan is running slow, the enclosure filter or heatsink fins are dirty, or the ambient temperature is too high. • Check the NTC resistance with a meter. If the resistance is correct, replace the power layer interface board.
10114	I1 Main PS Low	Resettable Fault	Coast			The main power supply is producing a low voltage. The inverter power board provides +/- 24V for the stirring fans, LEMs, and floating supply for the gate driver boards. This fault may occur during a normal power down sequence. • If this fault occurs when the drive is started, check the stirring fans for a short. • Disconnect the individual loads powered by this board and look for a short or excessive current. • Replace the inverter power supply board.

Event No.	Fault/Alarm Text	Type	Fault Action	Configuration Parameter	Auto Reset	Description/Action(s)
10115	I1 IPwrIF PS Low	Resettable Fault	Coast			The local power supply is producing a low voltage. The inverter power supply board generates +/-12V from the system power supply and provides power to the power control and power layer interface (PLI) boards. • Check for a short on the power layer interface or backplane board and replace as necessary. • If no short is present on the power layer interface or backplane board, replace the inverter power board.
10116	I1 Sys PS Low	Alarm 1				A system power supply under voltage has occurred. • Using a meter, check for 24V on the inverter power supply board. Replace the board if necessary.
10117	I1 SysPS Overcur	Resettable Fault	Coast			A system power supply over current has occurred. This fault may occur during a normal power down sequence. • Check the wiring harness from the inverter power supply board to the converter gate firing board and control pod for shorts/reversals. • Check for a short on incoming power to the converter gate firing board or fiber interface board. • Disconnect P6 on the inverter power board to remove the load from this power supply. If the breaker remains tripped, replace the inverter power supply board.
10118	I1 HSFan PS Low	Alarm 1				A heatsink fan power supply undervoltage has occurred. • Check for 230V supply on the inverter power supply board at connector P6. If there is voltage, replace the inverter power supply board. • If there is no voltage, check the control power transformer, its primary and secondary fuses, and wiring harness.
10119	I1 CT Harness	Non-Reset Fault	Coast			The drive has detected a connection loss to a current transducer. • Verify that the current transducer wiring harness is connected to J22, J23, and J24 on the power interface board.
10120	I1 PLI OvrTemp	Resettable Fault	Coast		Y	The power layer interface circuit board is over temperature. • Verify that the ambient temperature is not too high. • Verify that the stirring fans are operational. • Check the temperature sensor test point on the power layer interface board to verify that the output is within range. If necessary, replace the power layer interface board.
10121	I1 PSBrd OvrTemp	Resettable Fault	Coast		Y	The power supply board is over temperature. • Verify that the ambient temperature is not too high. • Verify that the stirring fans are operational. • Check the temperature sensor test point on the power layer interface board to verify that the output is within range. The temperature sensor is located on the inverter power supply board but the A/D processing is on the power layer interface board. If necessary, replace the inverter power supply board. If this problem persists after replacing the inverter power supply board, replace the power layer interface board.
10122	I1 InFan1 Slow	Alarm 1				Stirring fan 1 is under speed. • Visually verify that fan 1 is turning. • Check the measured fan speed in parameter 125 [1 InFan 1 Speed] (port 10). • Check the wiring harness to the stirring fans to verify that the power and tachometer signals are connected. • If necessary, replace both stirring fans. When the fans are replaced, the elapsed hours, displayed in parameter 127 [I1 PredMainReset] (port 10) must be reset.
10123	I1 InFan2 Slow					

Event No.	Fault/Alarm Text	Type	Fault Action	Configuration Parameter	Auto Reset	Description/Action(s)
10124	I1 NTC Open	Non-Reset Fault	Coast			An NTC open condition has occurred. • Check the ribbon cable that runs between the backplane board and gate driver board for loose connections or damage. The capacitor bank must be removed in order to check this cable. • If the drive is located in extremely cold conditions, raise the ambient temperature. • Check the power layer interface board testpoints for the individual phase NTC temperatures to determine which is open. • Re-seat the power layer interface board. If this problem persists, replace the power layer interface board.
10125	I1 Incompat UBrd	Non-Reset Fault	Coast			The power layer interface and power control board do not detect the correct gate driver board on the U, V or W phase. This fault may occur during a normal power down sequence. • Check the ribbon cable that runs between the backplane board and gate driver board for loose connections or damage and verify that the correct gate driver board is installed. The capacitor bank must be removed in order to check this cable and the board. • Re-flash the control board. • Check the rating plug.
10126	I1 Incompat VBrd					
10127	I1 Incompat WBrd					
10128	I1 Incompat Brdn	Non-Reset Fault	Coast			The drive detected an incompatible burden resistor. • Verify that the correct rating plug in installed. Re-seat the rating plug.
10129	I1 DC Bus Imbal	Resettable Fault	Coast			Either the lower or upper leg of the capacitor bank is getting too much voltage (based on the bus voltage, measured voltage across the lower leg, and a calculation to find the voltage across the upper leg) or the voltage sensing components are damaged. • Check the value of the bus bleeder resistor and bus balancing resistor and replace as necessary. • Inspect the capacitor bank for leakage or damage and replace as necessary. Replacing the capacitor bank assembly will also replace the bus balancing resistor. **ATTENTION:** The DC bus voltage can only be measured when the drive is energized. Servicing energized equipment can be hazardous. Severe injury or death can result from electrical shock, burn or unintended actuation of controlled equipment. Follow Safety related practices of NFPA 70E, ELECTRICAL SAFETY FOR EMPLOYEE WORKPLACES. DO NOT work alone on energized equipment! • Measure the voltage on each half of the bus to confirm the calculations. If the bus measurements aren't correct, replace the power interface board and/or inverter power supply board.
10131	I1 Fault Q Full	Resettable Fault	Coast			The fault queue is full - there are at least three other faults in the queue. Troubleshooting and clearing the existing faults will make room for additional faults in the queue (if any). This fault may occur during a normal power down sequence.
10132	I1 Incompat PS	Resettable Fault	Coast			The drive has detected an incompatible power supply for the drive AC input rating. • Check the power supply and replace it if incorrect. • If the power supply is correct, re-flash the control board. • If this problem persists, replace the inverter power supply board or power layer interface board.

Event No.	Fault/Alarm Text	Type	Fault Action	Configuration Parameter	Auto Reset	Description/Action(s)
10134	I1 UBrd Fault	Resettable Fault	Coast			The power supply on the U, V, or W phase gate driver board has failed. • If this fault occurred on this phase only, replace the appropriate gate driver board. • If this fault occurred on all three phases, check the 24V power supply on the inverter power supply board that feeds the gate driver boards and replace the inverter power supply board if necessary.
10135	I1 VBrd Fault					
10136	I1 WBrd Fault					
10137	I1 Cur Offset U	Alarm 1				The current sensor for the U, V, or W phase is not reading zero (off by more than 1% of the inverter rated current), while the drive is not running. • Check the current sensor's offset reading inverter testpoint and power supply. If necessary, replace the current sensor. • If this problem persists, replace the inverter power supply board and/or the power layer interface board.
10138	I1 Cur Offset V					
10139	I1 Cur Offset W					

Converter Faults and Alarms (Frame 8 Drives)

The table below contains a list of Converter-specific faults and alarms, the type of fault or alarm, the action taken when the drive faults, the parameter used to configure the fault or alarm (if applicable), and a description and action (where applicable). These faults and alarms only apply to Frame 8 drives.

Table 9 - Converter Fault and Alarm Types, Descriptions and Actions

Event No.	Fault/Alarm Text	Type	Fault Action	Configuration Parameter	Auto Reset	Description/Action(s)
11101	C1 Precharge	Alarm 1				1. The AC line voltage is in the range of 50...300V (for 400V class drives) or 50...400V (for 600V class drives). Precharge begins when the AC line voltage reaches 300V or 400V. 2. The drive has been in precharge for more than 12 seconds. If the "C1 Precharge" alarm persists for more than 30 seconds the drive will fault. Following powerup or a fault reset, the converter will not issue any voltage related alarms until the AC input voltage exceeds 50V in order to prevent an alarm when a customer-supplied auxiliary power supply is used. 3. The DC bus open circuit test may be cycling. If this test cycles for more than 10 seconds, event 144 [C1 DC Bus Open] will occur. Alarm: • Check the line voltage in parameters, 125 [C1 L12 Line Volt], 126 [C1 L23 Line Volt], and 127 [C1 L31 Line Volt] (port 11). • Check the phase current in parameters 115 [C1 L1 Phase Curr], 116 [C1 L2 Phase Curr], and 117 [C1 L3 Phase Curr] (port 11) and the bus voltage in parameter 119 [C1 DC Bus Volt] (port 11). Line current, line voltage, and bus voltage sensing are all performed on the converter gate firing board. If this alarm persists, replace the converter gate firing board. Fault: • Verify that the current transducers have not all failed. If necessary, replace all three current transducers. • Verify that the DC link inductor has not failed. If necessary, replace the DC link choke. • Verify that the converter line and DC bus wiring is connected. • Verify that the capacitor bank is properly installed and connected.
		Non-Reset Fault	Coast			
11102	C1 Phase Loss L1	Alarm 1				The AC line-to-line voltages are imbalanced, indicating an open AC input phase. • Check for an upstream AC line loss. • Verify that the AC input line wiring is properly connected. • Check the wiring harness to the converter gate firing board for loose connections and/or damage. If necessary, replace the converter gate firing board wiring harness.
11103	C1 Phase Loss L2					
11104	C1 Phase Loss L3					
11111	C1 SCR OvrTemp	Alarm 1			Y	An alarm occurs if the calculated SCR temperature exceeds 125 °C and a fault occurs when the calculated SCR temperature exceeds 135 °C. • Check for cooling problems - the heatsink cooling fan is running slow, the enclosure filter or heatsink fins are dirty, or the ambient temperature is too high.
		Resettable Fault	Coast			
11112	C1 HS OvrTemp	Alarm 1			Y	An alarm when the heatsink temperature exceeds 95 °C and a fault when the heatsink temperature exceeds 100 °C. • Check the NTC for a short or verify that it is connected. • Check for cooling problems - the heatsink cooling fan is running slow, the enclosure filter or heatsink fins are dirty, or the ambient temperature is too high.
		Resettable Fault	Coast			

Event No.	Fault/Alarm Text	Type	Fault Action	Configuration Parameter	Auto Reset	Description/Action(s)
11113	C1 TVSS Blown	Alarm 1				The MOV block is reporting that the transient voltage suppression system (TVSS) has blown. • Check the MOV wiring harness for loose connections and/or damage and replace if necessary. • Replace the MOV block. • If the MOV block is not blown and the wiring harness is properly connected and not damaged, replace the converter gate firing board.
11114	C1 Blower Speed	Alarm 1				The converter cooling fan is running below normal operating speed. • Check for debris in the fan. If necessary, clean the fan and housing. • Check for noise at the fan, indicating motor bearing failure. • Verify that the fan power and feedback connections are not loose or disconnected. • Replace the fan, if necessary.
11115	C1 Line Dip	Alarm 1			Y	The bus voltage has fallen below the value specified in parameter 451 [Pwr Loss A Level] or 454 [Pwr Loss B Level] (port 0) minus 20 volts. Until the converter has established communications with the main control board, this value defaults to 180V below the converter bus memory. The converter stops firing the SCRs until the nominal value of the DC bus voltage for the present AC line voltage is within 60 volts of parameter 12 [DC Bus Memory] (port 0). If the line dip condition persists for more than 60 seconds the alarm becomes a fault. • Verify the power wiring connections. • Compare the actual DC bus voltage to the value displayed in parameter 119 [C1 DC Bus Volt]. If the values are different, replace the converter gate firing board.
		Resettable Fault	Coast			
11116	C1 Minimum Line	Alarm 1				The AC line voltage is less than 280V (for a 400V class drive) / 400V (for a 600V class drive). • The AC line voltage must exceed 320V / 440V in order to recover from this alarm.
11117	C1 Line Freq	Alarm 1				The measured line frequency is out of the range (below 40 Hz, or above 65 Hz). This alarm becomes a fault if the condition persists for more than 30 seconds. • Check the incoming power line frequency. • Check the wiring harness to the converter gate firing board for loose connections and/or damage and replace if necessary. • If the wiring harness is properly connected and not damaged, replace the converter gate firing board.
		Resettable Fault	Coast			
11118	C1 Single Phase	Alarm 1				The converter was intentionally powered up in single-phase mode with only AC phase L1-L2 present. Intentional single-phase mode is only detected at the initial application of AC line voltage. Application of 3-phase voltage after the converter has entered single-phase mode will result in the single phase alarm becoming a fault. • Verify that only a single phase is applied to a drive in single-phase mode.
		Resettable Fault	Coast			
11134	C1 Overcurrent	Resettable Fault	Coast			The peak AC input current has exceeded 3000A for five line cycles. • Verify that the current transducers are connected. • Check the wiring harness to the converter gate firing board for loose connections or damage and replace if necessary. • If the current transducers are properly connect and the wiring harness for the gate firing board is OK, replace the converter gate firing board. • Check for an open SCR or DC bus short.

Event No.	Fault/Alarm Text	Type	Fault Action	Configuration Parameter	Auto Reset	Description/Action(s)
11135	C1 Ground Fault	Resettable Fault	Coast		Y	The converter input ground current (peak) has exceeded the threshold set P16 [Gnd Cur Flt Lvl] (port 11) for 5 line cycles. A possible internal short in the drive between a phase, ground, or the DC bus may have occurred. • Verify that the current transducer wiring harness is connected to the converter gate firing board and that they are functioning properly. If necessary, replace all three current transducers (CTs). • If the current transducer wiring harness is connected and the CTs are functioning properly, replace the converter gate firing board. • To determine if there is an imbalance between the phases, view the input phase current values in parameters 115 [C1 L1 Phase Curr], 116 [C1 L2 Phase Curr], and 117 [C1 L3 Phase Curr] (port 11). Parameter 118 [C1 Gnd Current] (port 11) is the calculated (not measured) ground current based on the phase currents. If necessary, use trending when the ground fault occurs upon drive power up.
11136	C1 HS NTC Open	Non-Reset Fault	Coast			The converter heatsink NTC is open. The heatsink NTC is mounted on the converter heatsink and is wired to the converter gate firing board. An open NTC is assumed when the heatsink temperature is below -40 °C. • Check for loose connections or damage to the NTC wiring harness. • Measure the resistance of the NTC and verify that it is within range. • If the NTC wiring harness and resistance measurement is OK, replace the converter gate firing board.
11137	C1 HS NTC Short	Non-Reset Fault	Coast			The converter heatsink NTC is shorted. The heatsink NTC is mounted on the converter heatsink and is wired to the converter gate firing board. A shorted NTC is assumed when the heatsink temperature is above 200 °C. • Check for loose connections or damage to the NTC wiring harness. • Measure the resistance of the NTC and verify that it is within range. • If the NTC wiring harness and resistance measurement is OK, replace the converter gate firing board.
11138	C1 Brd OvrTemp	Resettable Fault	Coast		Y	The gate firing board is over temperature. This fault occurs when the gate firing board temperature exceeds 70 °C. • Check the cabinet fan wiring harness for loose connections or damage and that the fan is running. If necessary, replace the fan wiring harness and/or fan. • Lower the ambient temperature. • Replace the converter gate firing board.
11139	C1 Brd NTC Open	Non-Reset Fault	Coast			The converter gate firing board NTC is open. An open NTC is assumed when the temperature is below -40 °C. • Replace the converter gate firing board.
11140	C1 Brd NTC Short	Non-Reset Fault	Coast			The converter gate firing board NTC is shorted. A shorted NTC is assumed when the temperature is above 200 °C. • Replace the converter gate firing board.

Event No.	Fault/Alarm Text	Type	Fault Action	Configuration Parameter	Auto Reset	Description/Action(s)
11141	C1 Power Supply	Resettable Fault	Coast			A power supply input voltage (24V input and/or +/-12V internal supply) is operating outside of the acceptable range. • Check input power to the converter gate firing board. The following thresholds are used: +24V is below 20.1V +12V is below 10.0V +12V is above 15.0V -12V is above -10.0V • If the power supply voltage is within the acceptable range, replace the converter gate firing board.
11142	C1 Comm Loss	Resettable Fault	Coast			The converter gate firing board lost communications (through the power layer interface board) to the main control board. Once the root cause of the communication fault has been resolved, power must be cycled or a drive reset must be initiated to clear this fault. **ATTENTION:** Hazard of permanent eye damage exists when using optical transmission equipment. This product emits intense light and invisible radiation. Do not look into fiber-optic ports or fiber-optic cable connectors. Remove power from the drive before disconnecting fiber optic cables. • Verify that the fiber optic cables are properly connected to the transceivers. • Verify that the transceivers are properly seated in the ports. • Verify that the fiber optic cable is not cracked or broken. • Verify that power is applied to the fiber optic interface board, gate firing board, and power layer interface board. If necessary, replace the fiber optic interface, gate firing board, and/or power layer interface board.
11143	C1 Firmware Flt	Non-Reset Fault	Coast			A firmware fault has occurred. • Reset the drive. If this fault persists, replace the converter gate firing board.
11144	C1 DC Bus Open	Non-Reset Fault	Coast			The DC bus voltage did not rise above 12V (for 400V class drives) or 20V (for 600V class drives) as the SCRs began to ramp on. In this case, the converter will try to turn on the SCRs for approximately 10 seconds before issuing this fault. Event 101 [C1 Precharge] is issued following the first retry. • Verify that the current transducers have not all failed. If necessary, replace all three current transducers. • Verify that the DC link inductor has not failed. If necessary, replace the DC link choke. • Verify that the converter line and DC bus wiring is connected. • Verify that the capacitor bank is properly installed and connected.
11145	C1 DC Bus Short	Non-Reset Fault	Coast			The peak current has exceeded 150% of the converter rating during the precharge sequence. Peak charging current is normally limited to 50% of the converter rating. • Check for a DC bus short, internally and externally. • Verify that the wiring harness to P10 on the converter gate firing board is connected and not damaged. Replace the harness as necessary. • Verify that the capacitor bank is properly installed and connected. • Check for an IGBT short and replace as necessary.

Event No.	Fault/Alarm Text	Type	Fault Action	Configuration Parameter	Auto Reset	Description/Action(s)
11146	C1 CT Harness	Non-Reset Fault	Coast			A current transducer (CT) wiring harness connection loss has been detected. • Verify that the CT wiring harness is not damaged and is connected to P6 on the converter gate firing board. Replace the wiring harness if necessary. • If this problem persists, replace the converter gate firing board.
11147	C1 LFuse Harness	Non-Reset Fault	Coast			A line fuse wiring harness connection loss has been detected. • Verify that the line fuse wiring harness is not damaged and is connected to P7 on the converter gate firing board. Replace the wiring harness if necessary. • If this problem persists, replace the converter gate firing board.
11148	C1 Line Fuse L1	Non-Reset Fault	Coast			The line fuse for Line X has blown. • Check the fuse and replace if necessary. • Verify that the line fuse wiring harness for line 1 is not damaged and is connected to P7 on the converter gate firing board. Replace the wiring harness if necessary. • If this problem persists, replace the converter gate firing board.
11149	C1 Line Fuse L2					
11150	C1 Line Fuse L3					
11157	C1 BFuse Harness	Non-Reset Fault	Coast			A bus fuse wiring harness connection loss has been detected. • Check the bus fuse harness and replace if necessary. • If this problem persists, replace the converter gate firing board.
11158	C1 BFuse Pos	Non-Reset Fault	Coast			The DC+ bus fuse is blown. • Check the DC+ bus fuse and wiring harness and replace if necessary. • If this problem persists, replace the converter gate firing board.
11159	C1 BFuse Neg	Non-Reset Fault	Coast			The DC- bus fuse is blown. • Check the DC- bus fuse and wiring harness and replace if necessary. • If this problem persists, replace the converter gate firing board.
11160	C1 Command Stop	Resettable Fault	Coast		Y	The main control board has commanded the converter gate firing board to stop due to an asymmetrical bus condition. • Check the DC bus connections and wiring.
11161	C1 AC Line High	Resettable Fault	Coast			The AC line voltage has exceeded 565V (for 400V class drives) or 815V (for 600V class drives), which corresponds to the nominal bus voltage of 799VDC (for 400V class drives) or 1150VDC (for 600V class drives). This fault is intended to protect the capacitor bank from an overvoltage condition especially if a 400V class drive is inadvertently placed in a 600V system. • Verify the incoming line voltage.
11162	C1 Line Loss	Resettable Fault	Coast		Y	An AC line loss has occurred. • Monitor the incoming AC line for low voltage or line power interruption.
11163	C1 Fault Q Full	Resettable Fault	Coast			The fault queue is full - there are at least three other faults in the queue. • Troubleshooting and clearing the existing faults will make room for additional faults in the queue (if any).

I/O Faults and Alarms

The table below contains a list of I/O-specific faults and alarms, the type of fault or alarm, the action taken when the drive faults, the parameter used to configure the fault or alarm (if applicable), and a description and action (where applicable).

Table 10 - I/O Fault and Alarm Types, Descriptions and Actions

Event No. (1)	Fault/Alarm Text	Type	Fault Action	Configuration Parameter	Auto Reset	Description/Action(s)
*xx*000	No Entry					
*xx*001	Analog In Loss	Configurable		P53/P63 [Anlg InX LssActn]		Analog input has a lost signal.
*xx*002	Motor PTC Trip	Configurable		P40 [PTC Cfg]		Motor PTC (Positive Temperature Coefficient) over temperature.
*xx*005	Relay0 Life	Configurable		P106 [RO0 LifeEvntActn]		Predictive maintenance.
*xx*006	Relay1 Life	Configurable		P116 [RO1 LifeEvntActn]		Predictive maintenance.
xx010	Anlg Cal Chksum	Non-Reset Fault	Coast			The checksum read from the analog calibration data does not match the checksum calculated. Replace option module.
*xx*058	Module Defaulted	Fault	Coast			Module was commanded to write default values.

(1) *xx* indicates the port number. Refer to Fault and Alarm Display Codes on page 259 for an explanation.

Safe Torque Off Fault

The table below lists the safe torque off-specific fault, the action taken when the drive faults, and its description.

Table 11 - Safe Torque Fault and Alarm Types, Descriptions and Actions

Event No. (1)	Fault/Alarm Text	Type	Fault Action	Configuration Parameter	Auto Reset	Description/Action(s)
*xx*000	No Entry					
*xx*058	Module Defaulted	Fault	Coast			Module was commanded to write default values.

(1) *xx* indicates the port number. Refer to Fault and Alarm Display Codes on page 259 for an explanation.

Single Incremental Encoder Faults and Alarms

The table below contains a list of encoder-specific faults and alarms, the type of fault or alarm, the action taken when the drive faults, the parameter used to configure the fault or alarm (if applicable), and a description and action (where applicable).

Table 12 - Single Incremental Encoder Fault and Alarm Types, Descriptions and Actions

Event No. (1)	Fault/Alarm Text	Type	Fault Action	Configuration Parameter	Auto Reset	Description/Action(s)
*xx*000	Open Wire	Configurable		P3 [Fdbk Loss Cfg]		The encoder module has detected an input signal (A, B, or Z) in the same state as its complement (A Not, B Not, or Z Not). For open wire detection to work, the encoder signals must be differential (not single ended). The Z channel is only checked when enabled. See P1 [Encoder Cfg].
*xx*001	Phase Loss	Configurable		P3 [Fdbk Loss Cfg]		More than 30 phase loss (open wire) events have occurred over an 8 millisecond time period. The same restrictions as for Open Wire detection apply.
*xx*002	Quadrature Loss	Configurable		P3 [Fdbk Loss Cfg]		Quadrature loss events occur when simultaneous edge transitions occur on both the A and B encoder channels. This fault will occur when more than 10 quad loss events over a 10 millisecond time period are detected. Only valid when both A and B channels are used (not Bit 1 “A Chan Only”) in P1 [Encoder Cfg].
*xx*058	Module Defaulted	Fault	Coast			Module was commanded to write default values.

(1) *xx* indicates the port number. Refer to Fault and Alarm Display Codes on page 259 for an explanation.

Dual Incremental Encoder Faults and Alarms

The table below contains a list of encoder-specific faults and alarms, the type of fault or alarm, the action taken when the drive faults, the parameter used to configure the fault or alarm (if applicable), and a description and action (where applicable).

Table 13 - Dual Incremental Encoder Fault and Alarm Types, Descriptions and Actions

Event No. (1)	Fault/Alarm Text	Type	Fault Action	Configuration Parameter	Auto Reset	Description/Action(s)
*xx*000	Enc0 Open Wire	Configurable		P3 [Enc 0 FB Lss Cfg]		The dual encoder module has detected an encoder 0 input signal (A, B, or Z) in the same state as its complement (A Not, B Not, or Z Not). For open wire detection to work, the encoder signals must be differential (not single ended). The Z channel is only checked when enabled. See P1 [Enc 0 Cfg].
*xx*001	Enc0 Phase Loss	Configurable		P3 [Enc 0 FB Lss Cfg]		More than 30 encoder 0 phase loss (open wire) events have occurred over an 8 millisecond time period. The same restrictions as for Enc0 Open Wire detection apply.
*xx*002	Enc0 Quad Loss	Configurable		P3 [Enc 0 FB Lss Cfg]		Encoder 0 Quadrature loss events occur when simultaneous edge transitions occur on both the A and B channels of encoder 0. This fault will occur when more than 10 quad loss events over a 10 millisecond time period are detected. Only valid when both A and B channels are used (not Bit 1 "A Chan Only") in P1 [Enc 0 Cfg].
*xx*030	Enc1 Open Wire	Configurable		P13 [Enc 1 FB Lss Cfg]		The dual encoder module has detected an encoder 1 input signal (A, B, or Z) in the same state as its complement (A Not, B Not, or Z Not). For open wire detection to work, the encoder signals must be differential (not single ended). The Z channel is only checked when enabled. See P11 [Enc 1 Cfg].
*xx*031	Enc1 Phase Loss	Configurable		P13 [Enc 1 FB Lss Cfg]		More than 30 encoder 1 phase loss (open wire) events have occurred over an 8 millisecond time period. The same restrictions as for Enc1 Open Wire detection apply.
*xx*032	Enc1 Quad Loss	Configurable		P13 [Enc 1 FB Lss Cfg]		Encoder 1 Quadrature loss events occur when simultaneous edge transitions occur on both the A and B channels of encoder 1. This fault will occur when more than 10 quad loss events over a 10 millisecond time period are detected. Only valid when both A and B channels are used (not Bit 1 "A Chan Only") in P11 [Enc 1 Cfg].
*xx*058	Module Defaulted	Fault	Coast			Module was commanded to write default values.

(1) *xx* indicates the port number. Refer to Fault and Alarm Display Codes on page 259 for an explanation.

Universal Feedback Faults and Alarms

The table below contains a list of universal feedback-specific faults and alarms, the type of fault or alarm, the action taken when the drive faults, the parameter used to configure the fault or alarm (if applicable), and a description and action (where applicable).

Table 14 - Universal Feedback Fault and Alarm Types, Descriptions and Actions

Event No. (1)	Fault/Alarm Text	Type	Fault Action	Configuration Param	Auto Reset	Description
*xx*000	LightSrc Err	Configurable		P9 [FB0 Loss Cfg]		Error reported by Heidenhain Encoder on Channel 0 with EnDat Interface - Light source failure
*xx*001	Ch0 SigAmp Err	Configurable		P9 [FB0 Loss Cfg]		Error reported by Heidenhain Encoder on Channel 0 with EnDat Interface -Signal amplitude error
*xx*002	Ch0 PsnVal Err	Configurable		P9 [FB0 Loss Cfg]		Error reported by Heidenhain Encoder on Channel 0 with EnDat Interface - Position value error
*xx*003	Ch0 OverVolt Err	Configurable		P9 [FB0 Loss Cfg]		Error reported by Heidenhain Encoder on Channel 0 with EnDat Interface - Overvoltage error
*xx*004	Ch0 UndVolt Err	Configurable		P9 [FB0 Loss Cfg]		Error reported by Heidenhain Encoder on Channel 0 with EnDat Interface - Undervoltage error
*xx*005	Ch0 OverCur Err	Configurable		P9 [FB0 Loss Cfg]		Error reported by Heidenhain Encoder on Channel 0 with EnDat Interface - Overcurrent error
*xx*006	Ch0 Battery Err	Configurable		P9 [FB0 Loss Cfg]		Error reported by Heidenhain Encoder on Channel 0 with EnDat Interface - Battery empty
*xx*009	Ch0 AnalSig Err	Configurable		P9 [FB0 Loss Cfg]		Error reported by Stegmann Encoder on Channel 0 with Hiperface Interface - Analog signals outside specification
*xx*010	Ch0 IntOfst Err	Configurable		P9 [FB0 Loss Cfg]		Error reported by Stegmann Encoder on Channel 0 with Hiperface Interface - Faulty internal angular offset
*xx*011	Ch0 DataTabl Err	Configurable		P9 [FB0 Loss Cfg]		Error reported by Stegmann Encoder on Channel 0 with Hiperface Interface - Data field partitioning table damaged
*xx*012	Ch0 AnalLim Err	Configurable		P9 [FB0 Loss Cfg]		Error reported by Stegmann Encoder on Channel 0 with Hiperface Interface - Analog limit values not available
*xx*013	Ch0 Int I2C Err	Configurable		P9 [FB0 Loss Cfg]		Error reported by Stegmann Encoder on Channel 0 with Hiperface Interface - Internal I2C bus not operational
*xx*014	Ch0 IntChksm Err	Configurable		P9 [FB0 Loss Cfg]		Error reported by Stegmann Encoder on Channel 0 with Hiperface Interface - Internal checksum error
*xx*015	Ch0 PrgmResetErr	Configurable		P9 [FB0 Loss Cfg]		Error reported by Stegmann Encoder on Channel 0 with Hiperface Interface - Encoder reset occurred as a result of program monitoring
*xx*016	Ch0 CntOvrflwErr	Configurable		P9 [FB0 Loss Cfg]		Error reported by Stegmann Encoder on Channel 0 with Hiperface Interface - Counter overflow
*xx*017	Ch0 Parity Err	Configurable		P9 [FB0 Loss Cfg]		Error reported by Stegmann Encoder on Channel 0 with Hiperface Interface - Parity error
*xx*018	Ch0 Chksum Err	Configurable		P9 [FB0 Loss Cfg]		Error reported by Stegmann Encoder on Channel 0 with Hiperface Interface - Checksum of the data transmitted is incorrect
*xx*019	Ch0 InvCmd Err	Configurable		P9 [FB0 Loss Cfg]		Error reported by Stegmann Encoder on Channel 0 with Hiperface Interface - Unknown command code
*xx*020	Ch0 SendSize Err	Configurable		P9 [FB0 Loss Cfg]		Error reported by Stegmann Encoder on Channel 0 with Hiperface Interface - Number of data transmitted is incorrect

Event No. (1)	Fault/Alarm Text	Type	Fault Action	Configuration Param	Auto Reset	Description
*xx*021	Ch0 CmdArgmt Err	Configurable		P9 [FB0 Loss Cfg]		Error reported by Stegmann Encoder on Channel 0 with Hiperface Interface - Command argument transmitted is not allowed
*xx*022	Ch0 InvWrtAdrErr	Configurable		P9 [FB0 Loss Cfg]		Error reported by Stegmann Encoder on Channel 0 with Hiperface Interface - The selected data field must not be written to (invalid write address)
*xx*023	Ch0 AccCode Err	Configurable		P9 [FB0 Loss Cfg]		Error reported by Stegmann Encoder on Channel 0 with Hiperface Interface - Incorrect access code
*xx*024	Ch0 FieldSizeErr	Configurable		P9 [FB0 Loss Cfg]		Error reported by Stegmann Encoder on Channel 0 with Hiperface Interface - Size of data field stated cannot be changed
*xx*025	Ch0 Address Err	Configurable		P9 [FB0 Loss Cfg]		Error reported by Stegmann Encoder on Channel 0 with Hiperface Interface - Word address stated is outside data field
*xx*026	Ch0 FieldAcc Err	Configurable		P9 [FB0 Loss Cfg]		Error reported by Stegmann Encoder on Channel 0 with Hiperface Interface - Access to non-existent data field
*xx*028	Ch0 SiTurnPsnErr	Configurable		P9 [FB0 Loss Cfg]		Error reported by Stegmann Encoder on Channel 0 with Hiperface Interface - Single turn position unreliable
*xx*029	Ch0 MulTrnPsnErr	Configurable		P9 [FB0 Loss Cfg]		Error reported by Stegmann Encoder on Channel 0 with Hiperface Interface - Multiple turn position unreliable
*xx*036	Ch0 AnalVal Err	Configurable		P9 [FB0 Loss Cfg]		Error reported by Stegmann Encoder on Channel 0 with Hiperface Interface - Analog value error (process data)
*xx*037	Ch0 SendCurr Err	Configurable		P9 [FB0 Loss Cfg]		Error reported by Stegmann Encoder on Channel 0 with Hiperface Interface - Transmitter current critical (dirt, broken transmitter)
*xx*038	Ch0 EncTemp Err	Configurable		P9 [FB0 Loss Cfg]		Error reported by Stegmann Encoder on Channel 0 with Hiperface Interface - Encoder temperature critical
*xx*039	Ch0 Speed Err	Configurable		P9 [FB0 Loss Cfg]		Error reported by Stegmann Encoder on Channel 0 with Hiperface Interface - Speed too high, no position formation possible
*xx*040	Ch0 General Err	Configurable		P9 [FB0 Loss Cfg]		Error reported by a Encoder on Channel 0 with BiSS Interface - An error bit of the BiSS Single Cycle Data is set
*xx*046	Ch0 LED Curr Err	Configurable		P9 [FB0 Loss Cfg]		Error reported by a Encoder on Channel 0 with BiSS Interface - LED current out of control range
*xx*047	Ch0 ExMulTurnErr	Configurable		P9 [FB0 Loss Cfg]		Error reported by a Encoder on Channel 0 with BiSS Interface - External multiturn error
*xx*048	Ch0 PsnCode Err	Configurable		P9 [FB0 Loss Cfg]		Error reported by a Encoder on Channel 0 with BiSS Interface - Position code error (single step error)
*xx*049	Ch0 Config Err	Configurable		P9 [FB0 Loss Cfg]		Error reported by a Encoder on Channel 0 with BiSS Interface - failure configuring interface
*xx*050	Ch0 PsnVal Err	Configurable		P9 [FB0 Loss Cfg]		Error reported by a Encoder on Channel 0 with BiSS Interface - Position data not valid
*xx*051	Ch0 SerialComErr	Configurable		P9 [FB0 Loss Cfg]		Error reported by a Encoder on Channel 0 with BiSS Interface - Serial interface failure
*xx*052	Ch0 Ext Failure	Configurable		P9 [FB0 Loss Cfg]		Error reported by a Encoder on Channel 0 with BiSS Interface - External failure over NERR
*xx*053	Ch0 Temp Exc Err	Configurable		P9 [FB0 Loss Cfg]		Error reported by a Encoder on Channel 0 with BiSS Interface - Temperature out of defined range

Event No. (1)	Fault/Alarm Text	Type	Fault Action	Configuration Param	Auto Reset	Description
*xx*058	Module Defaulted	Fault	Coast			Parameter values for this encoder have been reset to their default settings.
*xx*064	Ch0 OutOfRailErr	Configurable		P9 [FB0 Loss Cfg]		Error reported by a linear Stahl encoder on Channel 0 - Rail is no longer present between the read head
*xx*068	Ch0 Read Head 1	Configurable		P9 [FB0 Loss Cfg]		Error reported by a linear Stahl encoder on Channel 0 - Indicates that the read head must be cleaned or installed correctly
*xx*069	Ch0 Read Head 2	Configurable		P9 [FB0 Loss Cfg]		Error reported by a linear Stahl encoder on Channel 0 - Indicates that the read head must be cleaned or installed correctly
*xx*070	Ch0 RAM Error	Configurable		P9 [FB0 Loss Cfg]		Error reported by a linear Stahl encoder on Channel 0 - Indicates a RAM error. Reading head needs to be repaired
*xx*071	Ch0 EPROM Error	Configurable		P9 [FB0 Loss Cfg]		Error reported by a linear Stahl encoder on Channel 0 - Indicates a EPROM error. Reading head needs to be repaired
*xx*072	Ch0 ROM Error	Configurable		P9 [FB0 Loss Cfg]		Error reported by a linear Stahl encoder on Channel 0 - Indicates a ROM error. Reading head needs to be repaired
*xx*074	Ch0 No Position	Configurable		P9 [FB0 Loss Cfg]		Error reported by a linear Stahl encoder on Channel 0 - Indicates that no position value was available - only possible following powerup or reset
*xx*081	Ch0 Msg Cheksum	Configurable		P9 [FB0 Loss Cfg]		Indicates the option card has detected a serial communications checksum error while attempting to communicate with the encoder on channel 0.
*xx*082	Ch0 Timeout	Configurable		P9 [FB0 Loss Cfg]		Indicates the option card has detected a serial communications timeout error while attempting to communicate with the encoder on channel 0.
*xx*083	Ch0 Comm	Configurable		P9 [FB0 Loss Cfg]		Indicates the option card has detected a serial communications error (other than checksum or timeout) while attempting to communicate with the encoder on channel 0.
*xx*084	Ch0 Diagnostic	Configurable		P9 [FB0 Loss Cfg]		Indicates the option card has detected a powerup diagnostic test failure for encoder channel 0.
*xx*085	Ch0 SpplyVltgRng	Configurable		P9 [FB0 Loss Cfg]		Indicates that the voltage source to the encoder 0 is out of range.
*xx*086	Ch0 SC Amplitude	Configurable		P9 [FB0 Loss Cfg]		Indicates that the encoder 0 signal amplitude is out of tolerance.
*xx*087	Ch0 Open Wire	Configurable		P9 [FB0 Loss Cfg]		Indicates that an open wire condition has been detected for encoder 0.
*xx*088	Ch0 Quad Loss	Configurable		P9 [FB0 Loss Cfg]		Indicates that a signal quadrature error has been detected for encoder 0
*xx*089	Ch0 Phase Loss	Configurable		P9 [FB0 Loss Cfg]		Indicates that an A or B signal of an A quad B incremental encoder on Channel 0 is disconnected.
*xx*090	Ch0 Unsupp Enc	Configurable		P9 [FB0 Loss Cfg]		Indicates that the connected encoder on Channel 0 is not supported
*xx*100	Ch0 FreqExc Alm	Alarm 1		P9 [FB0 Loss Cfg]		Alarm reported by Heidenhain Encoder on Channel 0 with EnDat Interface - Frequency exceeded warning
*xx*101	Ch0 TempExc Alm	Alarm 1		P9 [FB0 Loss Cfg]		Alarm reported by Heidenhain Encoder on Channel 0 with EnDat Interface - Temperature exceeded warning
*xx*102	Ch0 LightLim Alm	Alarm 1		P9 [FB0 Loss Cfg]		Alarm reported by Heidenhain Encoder on Channel 0 with EnDat Interface - Limit of light control reserve reached

Event No. (1)	Fault/Alarm Text	Type	Fault Action	Configuration Param	Auto Reset	Description
*xx*103	Ch0 Battery Alm	Alarm 1		P9 [FB0 Loss Cfg]		Alarm reported by Heidenhain Encoder on Channel 0 with EnDat Interface - Battery warning
*xx*104	Ch0 RefPoint Alm	Alarm 1		P9 [FB0 Loss Cfg]		Alarm reported by Heidenhain Encoder on Channel 0 with EnDat Interface - Reference point not reached
*xx*108	Ch0 General Alm	Alarm 1		P9 [FB0 Loss Cfg]		Alarm reported by a Encoder on Channel 0 with BiSS Interface - A warning bit of the BiSS Single Cycle Data is set
*xx*115	Ch0 Optics Alarm	Alarm 1		P9 [FB0 Loss Cfg]		Alarm reported by a linear Stahl encoder on Channel 0 - Displays an alarm when the Stahl optical system requires cleaning
*xx*116	Ch0 OutOfRailAlm	Alarm 1		P9 [FB0 Loss Cfg]		Alarm reported by a linear Stahl encoder on Channel 0 - Indicates that the read encoder count is at the maximum value (524287)
*xx*200	Ch1 LightSrc Err	Configurable		P39 [FB1 Loss Cfg]		Error reported by Heidenhain Encoder on Channel 1 with EnDat Interface - Light source failure
*xx*201	Ch1 SigAmp Err	Configurable		P39 [FB1 Loss Cfg]		Error reported by Heidenhain Encoder on Channel 1 with EnDat Interface -Signal amplitude error
*xx*202	Ch1 PsnVal Err	Configurable		P39 [FB1 Loss Cfg]		Error reported by Heidenhain Encoder on Channel 1 with EnDat Interface - Position value error
*xx*203	Ch1 OverVolt Err	Configurable		P39 [FB1 Loss Cfg]		Error reported by Heidenhain Encoder on Channel 1 with EnDat Interface - Overvoltage error
*xx*204	Ch1 UndVolt Err	Configurable		P39 [FB1 Loss Cfg]		Error reported by Heidenhain Encoder on Channel 1 with EnDat Interface - Undervoltage error
*xx*205	Ch1 OverCur Err	Configurable		P39 [FB1 Loss Cfg]		Error reported by Heidenhain Encoder on Channel 1 with EnDat Interface - Overcurrent error
*xx*206	Ch1 Battery Err	Configurable		P39 [FB1 Loss Cfg]		Error reported by Heidenhain Encoder on Channel 1 with EnDat Interface - Battery empty
*xx*209	Ch1 AnalSig Err	Configurable		P39 [FB1 Loss Cfg]		Error reported by Stegmann Encoder on Channel 1 with Hiperface Interface - Analog signals outside specification
*xx*210	Ch1 IntOfst Err	Configurable		P39 [FB1 Loss Cfg]		Error reported by Stegmann Encoder on Channel 1 with Hiperface Interface - Faulty internal angular offset
*xx*211	Ch1 DataTabl Err	Configurable		P39 [FB1 Loss Cfg]		Error reported by Stegmann Encoder on Channel 1 with Hiperface Interface - Data field partitioning table damaged
*xx*212	Ch1 AnalLim Err	Configurable		P39 [FB1 Loss Cfg]		Error reported by Stegmann Encoder on Channel 1 with Hiperface Interface - Analog limit values not available
*xx*213	Ch1 Int I2C Err	Configurable		P39 [FB1 Loss Cfg]		Error reported by Stegmann Encoder on Channel 1 with Hiperface Interface - Internal I2C bus not operational
*xx*214	Ch1 IntChksm Err	Configurable		P39 [FB1 Loss Cfg]		Error reported by Stegmann Encoder on Channel 1 with Hiperface Interface - Internal checksum error
*xx*215	Ch1 PrgmResetErr	Configurable		P39 [FB1 Loss Cfg]		Error reported by Stegmann Encoder on Channel 1 with Hiperface Interface - Encoder reset occurred as a result of program monitoring
*xx*216	Ch1 CntOvrflwErr	Configurable		P39 [FB1 Loss Cfg]		Error reported by Stegmann Encoder on Channel 1 with Hiperface Interface - Counter overflow
*xx*217	Ch1 Parity Err	Configurable		P39 [FB1 Loss Cfg]		Error reported by Stegmann Encoder on Channel 1 with Hiperface Interface - Parity error

Event No. (1)	Fault/Alarm Text	Type	Fault Action	Configuration Param	Auto Reset	Description
*xx*218	Ch1 Chksum Err	Configurable		P39 [FB1 Loss Cfg]		Error reported by Stegmann Encoder on Channel 1 with Hiperface Interface - Checksum of the data transmitted is incorrect
*xx*219	Ch1 InvCmd Err	Configurable		P39 [FB1 Loss Cfg]		Error reported by Stegmann Encoder on Channel 1 with Hiperface Interface - Unknown command code
*xx*220	Ch1 SendSize Err	Configurable		P39 [FB1 Loss Cfg]		Error reported by Stegmann Encoder on Channel 1 with Hiperface Interface - Number of data transmitted is incorrect
*xx*221	Ch1 CmdArgmt Err	Configurable		P39 [FB1 Loss Cfg]		Error reported by Stegmann Encoder on Channel 1 with Hiperface Interface - Command argument transmitted is not allowed
*xx*222	Ch1 InvWrtAdrErr	Configurable		P39 [FB1 Loss Cfg]		Error reported by Stegmann Encoder on Channel 1 with Hiperface Interface - The selected data field must not be written to (invalid write address)
*xx*223	Ch1 AccCode Err	Configurable		P39 [FB1 Loss Cfg]		Error reported by Stegmann Encoder on Channel 1 with Hiperface Interface - Incorrect access code
*xx*224	Ch1 FieldSizeErr	Configurable		P39 [FB1 Loss Cfg]		Error reported by Stegmann Encoder on Channel 1 with Hiperface Interface - Size of data field stated cannot be changed
*xx*225	Ch1 Address Err	Configurable		P39 [FB1 Loss Cfg]		Error reported by Stegmann Encoder on Channel 1 with Hiperface Interface - Word address stated is outside data field
*xx*226	Ch1 FieldAcc Err	Configurable		P39 [FB1 Loss Cfg]		Error reported by Stegmann Encoder on Channel 1 with Hiperface Interface - Access to non-existent data field
*xx*228	Ch1 SiTurnPsnErr	Configurable		P39 [FB1 Loss Cfg]		Error reported by Stegmann Encoder on Channel 1 with Hiperface Interface - Single turn position unreliable
*xx*229	Ch1 MulTrnPsnErr	Configurable		P39 [FB1 Loss Cfg]		Error reported by Stegmann Encoder on Channel 1 with Hiperface Interface - Multiple turn position unreliable
*xx*236	Ch1 AnalVal Err	Configurable		P39 [FB1 Loss Cfg]		Error reported by Stegmann Encoder on Channel 1 with Hiperface Interface - Analog value error (process data)
*xx*237	Ch1 SendCurr Err	Configurable		P39 [FB1 Loss Cfg]		Error reported by Stegmann Encoder on Channel 1 with Hiperface Interface - Transmitter current critical (dirt, broken transmitter)
*xx*238	Ch1 EncTemp Err	Configurable		P39 [FB1 Loss Cfg]		Error reported by Stegmann Encoder on Channel 1 with Hiperface Interface - Encoder temperature critical
*xx*239	Ch1 Speed Err	Configurable		P39 [FB1 Loss Cfg]		Error reported by Stegmann Encoder on Channel 1 with Hiperface Interface - Speed too high, no position formation possible
*xx*240	Ch1 General Err	Configurable		P39 [FB1 Loss Cfg]		Error reported by a Encoder on Channel 1 with BiSS Interface - An error bit of the BiSS Single Cycle Data is set
*xx*246	Ch1 LED Curr Err	Configurable		P39 [FB1 Loss Cfg]		Error reported by a Encoder on Channel 1 with BiSS Interface - LED current out of control range
*xx*247	Ch1 ExMulTurnErr	Configurable		P39 [FB1 Loss Cfg]		Error reported by a Encoder on Channel 1 with BiSS Interface - External multiturn error
*xx*248	Ch1 PsnCode Err	Configurable		P39 [FB1 Loss Cfg]		Error reported by a Encoder on Channel 1 with BiSS Interface - Position code error (single step error)
*xx*249	Ch1 Config Err	Configurable		P39 [FB1 Loss Cfg]		Error reported by a Encoder on Channel 1 with BiSS Interface - failure configuring interface
*xx*250	Ch1 PsnVal Err	Configurable		P39 [FB1 Loss Cfg]		Error reported by a Encoder on Channel 1 with BiSS Interface - Position data not valid

Event No. (1)	Fault/Alarm Text	Type	Fault Action	Configuration Param	Auto Reset	Description
*xx*251	Ch1 SerialComErr	Configurable		P39 [FB1 Loss Cfg]		Error reported by a Encoder on Channel 1 with BiSS Interface - Serial interface failure
*xx*252	Ch1 Ext Failure	Configurable		P39 [FB1 Loss Cfg]		Error reported by a Encoder on Channel 1 with BiSS Interface - External failure over NERR
*xx*253	Ch1 Temp Exc Err	Configurable		P39 [FB1 Loss Cfg]		Error reported by a Encoder on Channel 1 with BiSS Interface - Temperature out of defined range
*xx*256	Ch1 OutOfRailErr	Configurable		P39 [FB1 Loss Cfg]		Error reported by a linear Stahl encoder on Channel 1 - Rail is no longer present between the read head
*xx*260	Ch1 Read Head 1	Configurable		P39 [FB1 Loss Cfg]		Error reported by a linear Stahl encoder on Channel 1 - Indicates that the read head must be cleaned or installed correctly
*xx*261	Ch1 Read Head 2	Configurable		P39 [FB1 Loss Cfg]		Error reported by a linear Stahl encoder on Channel 1 - Indicates that the read head must be cleaned or installed correctly
*xx*262	Ch1 RAM Error	Configurable		P39 [FB1 Loss Cfg]		Error reported by a linear Stahl encoder on Channel 1 - Indicates a RAM error. Reading head needs to be repaired
*xx*263	Ch1 EPROM Error	Configurable		P39 [FB1 Loss Cfg]		Error reported by a linear Stahl encoder on Channel 1 - Indicates a EPROM error. Reading head needs to be repaired
*xx*264	Ch1 ROM Error	Configurable		P39 [FB1 Loss Cfg]		Error reported by a linear Stahl encoder on Channel 1 - Indicates a ROM error. Reading head needs to be repaired
*xx*266	Ch1 No Position	Configurable		P39 [FB1 Loss Cfg]		Error reported by a linear Stahl encoder on Channel 1 - Indicates that no position value was available - only possible following powerup or reset
*xx*281	Ch1 Msg Cheksum	Configurable		P39 [FB1 Loss Cfg]		Indicates the option card has detected a serial communications checksum error while attempting to communicate with the encoder on channel 1.
*xx*282	Ch1 Timeout	Configurable		P39 [FB1 Loss Cfg]		Indicates the option card has detected a serial communications timeout error while attempting to communicate with the encoder on channel 1.
*xx*283	Ch1 Comm	Configurable		P39 [FB1 Loss Cfg]		Indicates the option card has detected a serial communications error (other than checksum or timeout) while attempting to communicate with the encoder on channel 1.
*xx*284	Ch1 Diagnostic	Configurable		P39 [FB1 Loss Cfg]		Indicates the option card has detected a powerup diagnostic test failure for encoder channel 1.
*xx*285	Ch1 SpplyVltgRng	Configurable		P39 [FB1 Loss Cfg]		Indicates that the voltage source to the encoder 1 is out of range.
*xx*286	Ch1 SC Amplitude	Configurable		P39 [FB1 Loss Cfg]		Indicates that the encoder 1 signal amplitude is out of tolerance.
*xx*287	Ch1 Open Wire	Configurable		P39 [FB1 Loss Cfg]		Indicates that an open wire condition has been detected for encoder 1.
*xx*288	Ch1 Quad Loss	Configurable		P39 [FB1 Loss Cfg]		Indicates that a signal quadrature error has been detected for encoder 1
*xx*289	Ch1 Phase Loss	Configurable		P39 [FB1 Loss Cfg]		Indicates that an A or B signal of an A quad B incremental encoder on Channel 1 is disconnected.
*xx*290	Ch1 Unsupp Enc	Configurable		P39 [FB1 Loss Cfg]		Indicates that the connected encoder on Channel 1 is not supported
*xx*300	Ch1 FreqExc Alm	Alarm 1		P39 [FB1 Loss Cfg]		Alarm reported by Heidenhain Encoder on Channel 1 with EnDat Interface - Frequency exceeded warning

Event No. (1)	Fault/Alarm Text	Type	Fault Action	Configuration Param	Auto Reset	Description
*xx*301	Ch1 TempExc Alm	Alarm 1		P39 [FB1 Loss Cfg]		Alarm reported by Heidenhain Encoder on Channel 1 with EnDat Interface - Temperature exceeded warning
*xx*302	Ch1 LightLim Alm	Alarm 1		P39 [FB1 Loss Cfg]		Alarm reported by Heidenhain Encoder on Channel 1 with EnDat Interface - Limit of light control reserve reached
*xx*303	Ch1 Battery Alm	Alarm 1		P39 [FB1 Loss Cfg]		Alarm reported by Heidenhain Encoder on Channel 1 with EnDat Interface - Battery warning
*xx*304	Ch1 RefPoint Alm	Alarm 1		P39 [FB1 Loss Cfg]		Alarm reported by Heidenhain Encoder on Channel 1 with EnDat Interface - Reference point not reached
*xx*308	Ch1 General Alm	Alarm 1		P39 [FB1 Loss Cfg]		Alarm reported by a Encoder on Channel 1 with BiSS Interface - A warning bit of the BiSS Single Cycle Data is set
*xx*315	Ch1 Optics Alarm	Alarm 1		P39 [FB1 Loss Cfg]		Alarm reported by a linear Stahl encoder on Channel 1 - Displays an alarm when the Stahl optical system requires cleaning
*xx*316	Ch1 OutOfRailAlm	Alarm 1		P39 [FB1 Loss Cfg]		Alarm reported by a linear Stahl encoder on Channel 1 - Indicates that the read encoder count is at the maximum value (524287)
*xx*412	Hardware Err	Configurable		Either P9 [FB0 Loss Cfg] or P39 [FB1 Loss Cfg]		Indicates that there is a Hardware Error on the Feedback Option module.
*xx*413	Firmware Err	Configurable		Either P9 [FB0 Loss Cfg] or P39 [FB1 Loss Cfg]		Indicates that there is a Firmware Error on the Feedback Option module. A Firmware Error occurs if the Hardware and the downloaded Firmware are not compatible.
*xx*416	EncOut Cflct	Alarm 1		Either P9 [FB0 Loss Cfg] or P39 [FB1 Loss Cfg]		Indicates that there is one of the following problems with the Encoder Output: • The selection in the P80 [Enc Out Sel] is not possible since the required pins on the terminal blocks are already used for Feedback 0 or 1 according to P6 [FB0 Device Sel] and P36 [FB1 Device Sel]. • P80 [Enc Out Sel] is set to 2 "Sine Cosine" and there is no signal connected to the pins 1…4 of TB 1. • P80 [Enc Out Sel] is set to 2 "Sine Cosine," the value of P15/45 [FBX IncAndSC PPR] is not a power of two, and P84 [EncOut Z PPR] is not set to 0 "1 ZPulse." This is not allowed. • P80 [Enc Out Sel] is set to 3 "Channel X" or 4 "Channel Y" and there is no encoder connected to that channel. • P80 [Enc Out Sel] is set to 3 "Channel X" or 4 "Channel Y" and there is a linear encoder connected to this channel.
*xx*417	Safety Cflct	Alarm 1		Either P9 [FB0 Loss Cfg] or P39 [FB1 Loss Cfg]		Indicates that the Safety DIP switches are in an invalid position.
*xx*420	FB0FB1 Cflct	Alarm 2				Indicates that the combination of the feedback selection done with P6 [FB0 Device Sel] and P36 [FB1 Device Sel] is invalid, i.e. both feedbacks have Sin-Cos-Signals (There is only place for one set of Sin-Cos-Signals on the Terminal Blocks). The drive cannot be started until this configuration conflict is resolved.
*xx*421	Initializing	Alarm 2				Indicates that the Universal Feedback State Machine is in the Initialize State. This Type 2 alarm makes sure that the motor cannot be started during this.

(1) *xx* indicates the port number. Refer to Fault and Alarm Display Codes on page 259 for an explanation.

Port Verification

When connecting to select devices, such as PowerFlex 750-Series drives, the Port Verification dialog box will display if device conflicts are found during the connection process. These conflicts typically require resolution prior to establishing the connection to the device.

The information and options available in this dialog box are detailed below:

Item	Description
Previous Setup	The device previously installed at the port identified.
Current Setup	The device currently installed at the port identified (if applicable).
(Device Not Found)	A message identifying the conflict at the identified port.
Changed	Indicates that the device previously installed at the port identified has been removed or changed to a different device.
Not supported - Must remove device before connection	Indicates that the device currently installed at the port identified has a firmware revision that is not compatible with the drive. The drive must be flash updated to be able to use this device or the device must be removed from the port before a connection can be made.
Not functioning - Must remove device before connection	Indicates that the device currently installed at the port identified is not functioning. The device must be removed from the port before a connection can be made.
Invalid Duplicate - Must remove device before connection	Indicates that the device currently installed at the port identified is already installed at another port for the device to which you are attempting to connect and the device cannot support the number of devices installed. The duplicate device must be removed from the port before a connection can be made.
Requires Configuration	Indicates that the device installed at the port identified requires configuration before a connection can be made.
Accept All	Accepts all configuration changes and continues the device connection process.
Cancel	Cancels the device connection process.

Common Symptoms and Corrective Actions

Drive does not Start from Start or Run Inputs wired to the terminal block.

Cause(s)	Indication	Corrective Action
Drive is Faulted	Flashing red status light	Clear fault. • Press Stop • Cycle power • "Clear Faults" on the HIM Diagnostic menu.
Incorrect input wiring. See Installation Instructions, publication 750-IN001, for wiring examples. • 2 wire control requires Run, Run Forward, Run Reverse or Jog input. • 3 wire control requires Start and Stop inputs. • Verify 24 Volt Common is connected to Digital Input Common.	None	Wire inputs correctly.

Cause(s)	Indication	Corrective Action
Incorrect digital input programming. • Mutually exclusive choices have been made (i.e., Jog and Jog Forward). • 2 wire and 3 wire programming may be conflicting. • Start configured without a Stop configured.	None	Configure input function.
	Flashing yellow status light and "DigIn Cnfg B" or "DigIn Cnfg C" indication on LCD HIM. P936 [Drive Status 2] shows type 2 alarm(s).	Resolve input function conflicts.
Terminal block does not have control.	None	Check P324 [Logic Mask].

Drive does not Start from HIM.

Cause(s)	Indication	Corrective Action
Drive is configured for 2 wire level control.	None	Change P150 [Digital In Conf] to correct control function.
Another device has Manual control.	None	
Port does not have control.	None	Change P324 [Logic Mask] to enable correct port.

Drive does not respond to changes in speed command.

Cause(s)	Indication	Corrective Action
No value is coming from the source of the command.	LCD HIM Status Line indicates "At Speed" and output is 0 Hz.	1. If the source is an analog input, check wiring and use a meter to check for presence of signal. 2. Check P2 [Commanded SpdRef] for correct source. (See page 47)
Incorrect reference source has been programmed.	None	3. Check P545 [Spd Ref A Sel] for the source of the speed reference. (See page 103) 4. Reprogram P545 [Spd Ref A Sel] for correct source. (See page 103)
Incorrect Reference source is being selected via remote device or digital inputs.	None	5. Check P935 [Drive Status 1], page 145, bits 12 and 13 for unexpected source selections. 6. Check P220 [Digital In Sts], page 67 to see if inputs are selecting an alternate source. 7. Check configuration of P173-175 [DI Speed Sel X] functions

Motor and/or drive will not accelerate to commanded speed.

Cause(s)	Indication	Corrective Action
Acceleration time is excessive.	None	Reprogram P535/536 [Accel Time X]. (See page 102)

Cause(s)	Indication	Corrective Action
Excess load or short acceleration times force the drive into current limit, slowing or stopping acceleration.	None	Check P935 [Drive Status 1], bit 27 to see if the drive is in Current Limit. (See page 145) Remove excess load or reprogram P535/536 [Accel Time X].(See page 102)
Speed command source or value is not as expected.	None	Check for the proper Speed Command using Steps 1 through 7 above.
Programming is preventing the drive output from exceeding limiting values.	None	Check P520 [Max Fwd Speed], P521 [Max Rev Speed] (See page 100) and P37 [Maximum Freq] (See page 50) to assure that speed is not limited by programming.

Motor operation is unstable.

Cause(s)	Indication	Corrective Action
Motor data was incorrectly entered or Autotune was not performed.	None	1. Correctly enter motor nameplate data. 2. Perform "Static Tune" or "Rotate Tune" Autotune procedure. See P70 [Autotune] on page 54

Drive will not reverse motor direction.

Cause(s)	Indication	Corrective Action
Digital input is not selected for reversing control.	None	Check that the DI Reversing function is correctly configured.
Digital input is incorrectly wired.	None	Check digital input wiring.
Direction mode parameter is incorrectly programmed.	None	Reprogram P308 [Direction Mode], page 75 for analog "Bipolar" or digital "Unipolar" control.
Motor wiring is improperly phased for reverse.	None	Switch two motor leads.
A bipolar analog speed command input is incorrectly wired or signal is absent.	None	1. Use meter to check that an analog input voltage is present. 2. Check bipolar analog signal wiring. Positive voltage commands forward direction. Negative voltage commands reverse direction.

Stopping the drive results in a Decel Inhibit fault.

Cause(s)	Indication	Corrective Action
The bus regulation feature is enabled and is halting deceleration due to excessive bus voltage. Excess bus voltage is normally due to excessive regenerated energy or unstable AC line input voltages. Internal timer has halted drive operation.	Decel Inhibit fault screen. LCD Status Line indicates "Faulted".	1. Reprogram parameters 372/373 [Bus Reg Mode X] to eliminate any "Adjust Freq" selection. 2. Disable bus regulation (parameters 372/373 [Bus Reg Mode X]) and add a dynamic brake. 3. Correct AC input line instability or add an isolation transformer. 4. Reset drive.

Technical Support Options

What You Need When You Call Tech Support

When you contact Technical Support, please be prepared to provide the following information:

- Order number
- Product catalog number and drives series number (if applicable)
- Product serial number
- Firmware revision level
- Fault code listed in P951 [Last Fault Code]
- Installed options and port assignments

Also be prepared with:

- A description of your application
- A detailed description of the problem
- A brief history of the drive installation
- First-time installation, product has not been running
- Established installation, product has been running

The data contained in the following parameters will help in initial troubleshooting of a faulted drive. You can use the table below to record the data provided in each parameter listed.

Parameter(s)	Name	Description	Parameter Data
956	Fault Frequency	Captures and displays the output speed of drive at time of last fault.	
957	Fault Amps	Captures and displays motor amps at time of last fault.	
958	Fault Bus Volts	Captures and displays the DC bus voltage of drive at time of last fault.	
954	Status1 at Fault	Captures and displays [Drive Status 1] bit pattern at time of last fault.	
955	Status2 at Fault	Captures and displays [Drive Status 2] bit pattern at time of last fault.	
962	AlarmA at Fault	Captures and displays [Alarm Status A] bit pattern at time of last fault.	
963	AlarmB at Fault	Captures and displays [Alarm Status B] bit pattern at time of last fault.	
951	Last Fault Code	A code that represents the fault that tripped the drive.	

Technical Support Wizards

If you are connected to a drive via DriveExplorer™ or DriveExecutive™, you can run a Tech Support wizard to gather information that will help diagnose problems with your drive and/or peripheral device. The information gathered by the wizard is saved as a text file and can be emailed to your remote technical support contact.

To run a Tech Support wizard in DriveExplorer, select **Wizards** from the **Actions** menu. In DriveExecutive, select **Wizards** from the **Tools** menu. Or, click the button. Follow the prompts to complete the wizard.

IMPORTANT The Tech Support wizard cannot be accessed when the Control Bar is launched.

Notes:

Control Block Diagrams

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List of PowerFlex 753 Control Block Diagrams

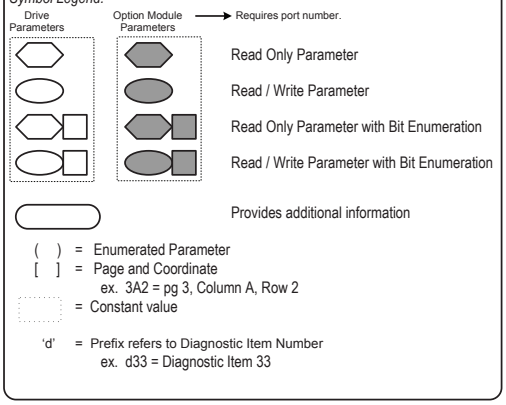
Flow diagrams on the following pages illustrate the PowerFlex 753 drive control algorithms.

For Information on …	See Page...
Flux Vector Overview	299
VF, SV Overview	300
Speed/Position Feedback	301
Speed Control - Reference Overview	302
Speed Control - Reference (1)	303
Speed Control - Reference (2)	304
Speed Control - Reference (3)	305
Speed Control - Reference (4)	306
Speed Control - Reference (5)	307
Speed Control - Regulator (FV)	308
Position Control - Reference	309
Position Control - Regulator	310
Position Control - Aux Functions	311
Position Control - Homing	312
Torque Control - Overview	313
Torque Control - Reference Scale & Trim	314
Torque Control - Torque	315
Torque Control - Current	316
Process Control (1)	317
Process Control (2)	318
MOP Control	319
Inputs & Outputs - Digital	320
Inputs & Outputs - Analog	321
Control Logic	322
Inverter Overload IT	323

Diagram Conventions and Definitions

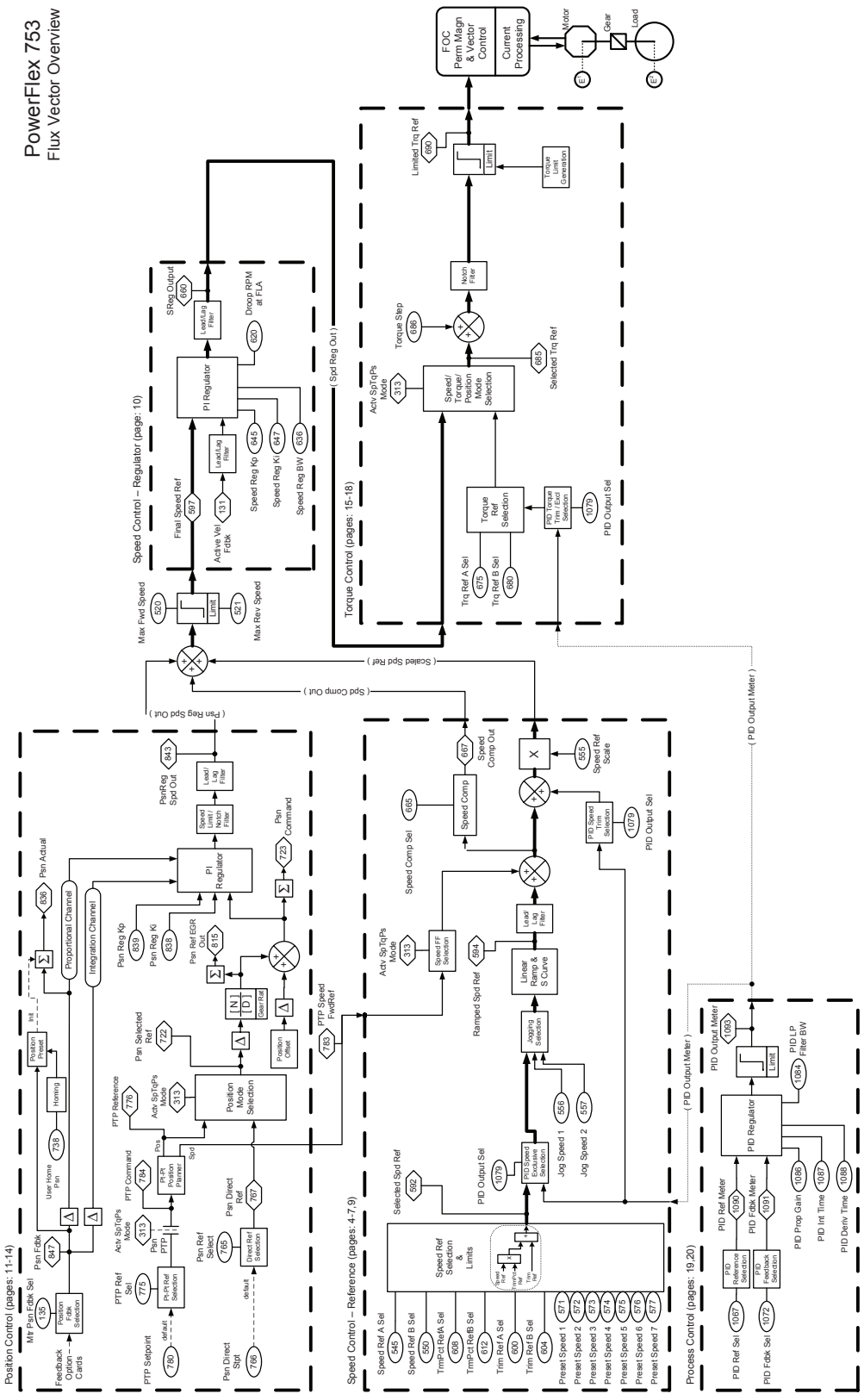
Definitions of the Per Unit system:
1.0 PU Position = Distance traveled / 1sec at Base Spd
1.0 PU Speed = Base Speed of the Motor
1.0 PU Torque = Base Torque of the Motor

Symbol Legend:



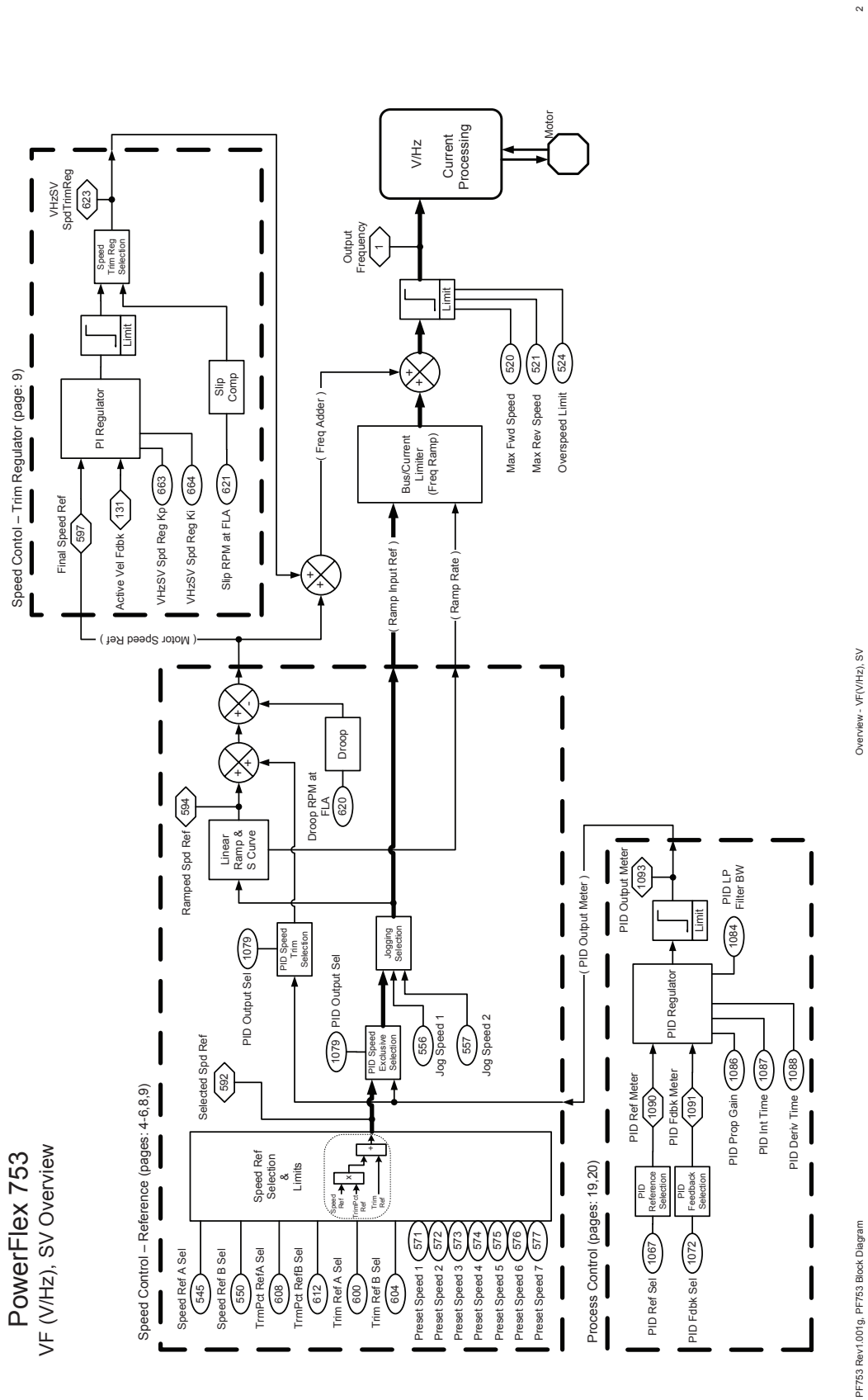
*** Notes, *Important*:**

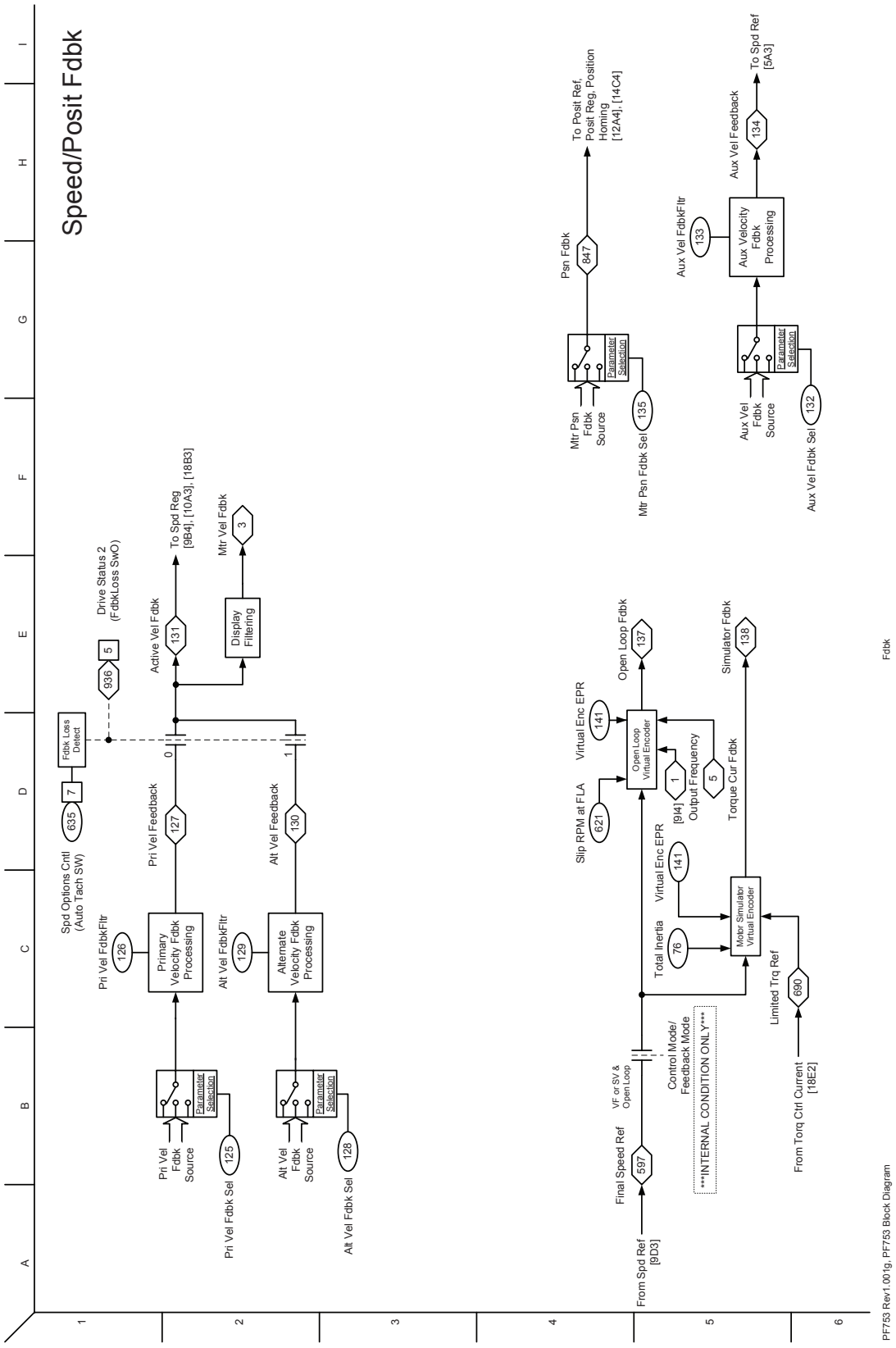
(1) These diagrams are for reference only and may not accurately reflect all logical control signals; actual functionality is implied by the approximated diagrams. Accuracy of these diagrams is not guaranteed.

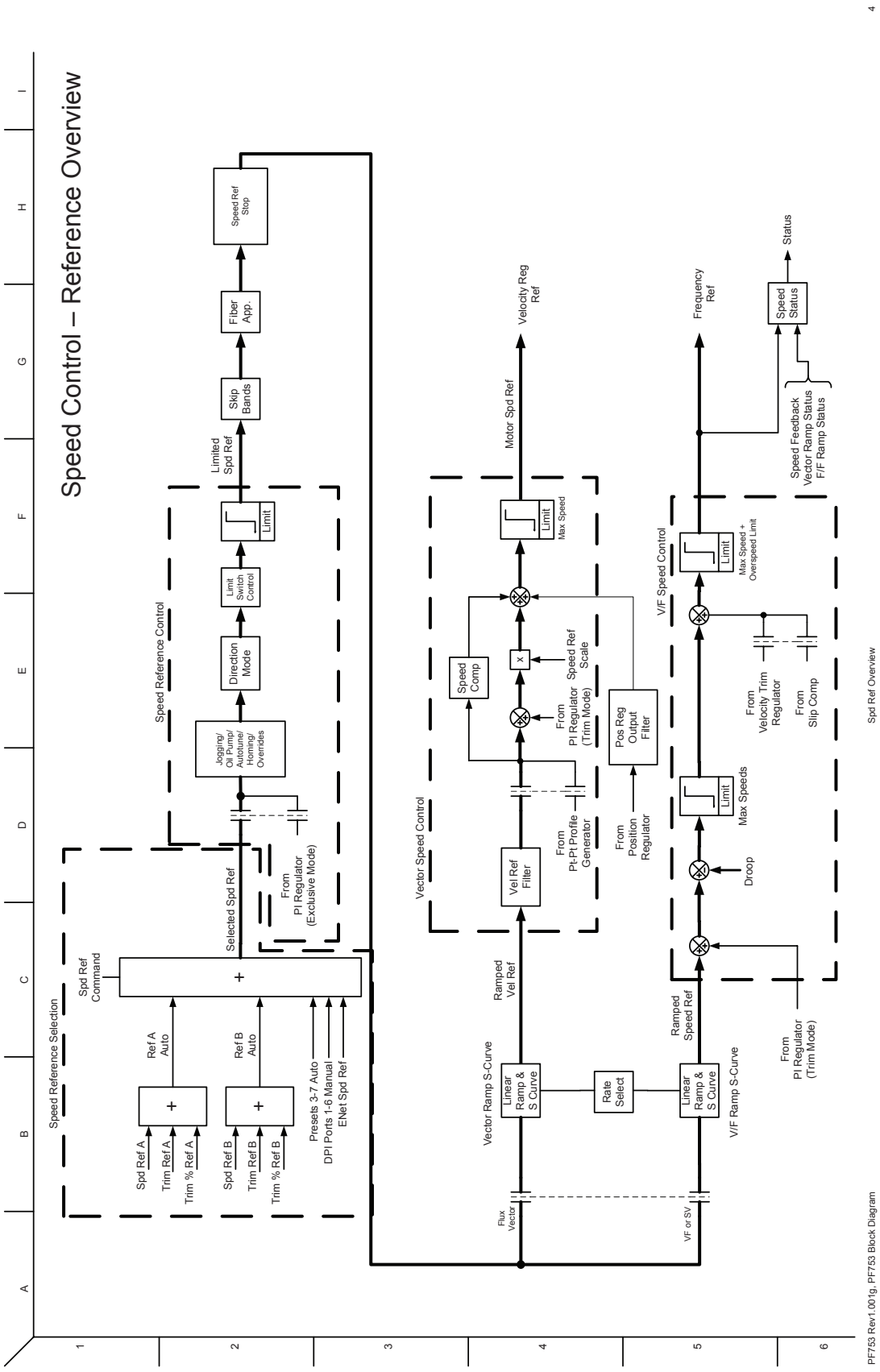


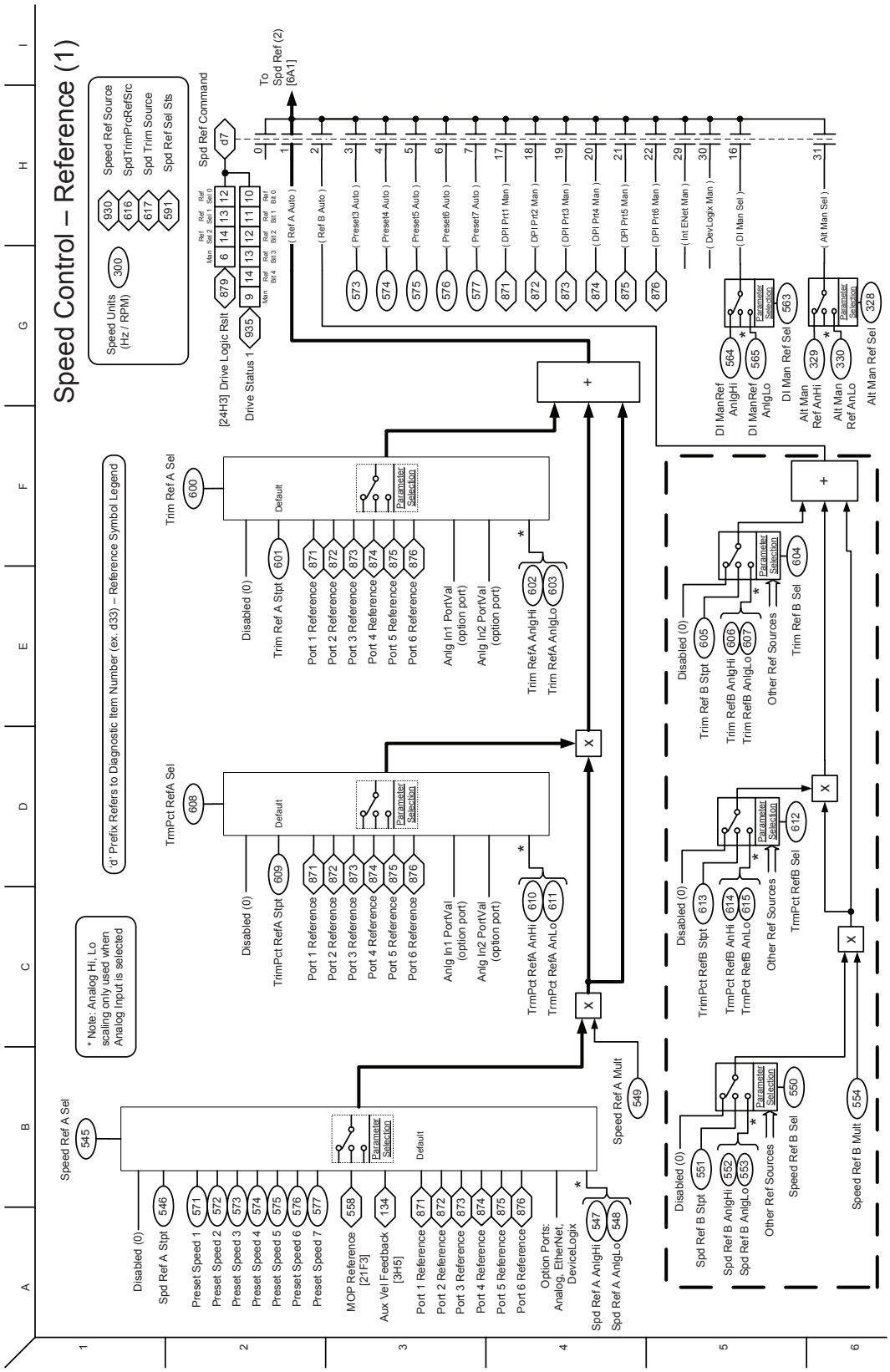
PF753 Rev1.001g. PF753 Block Diagram

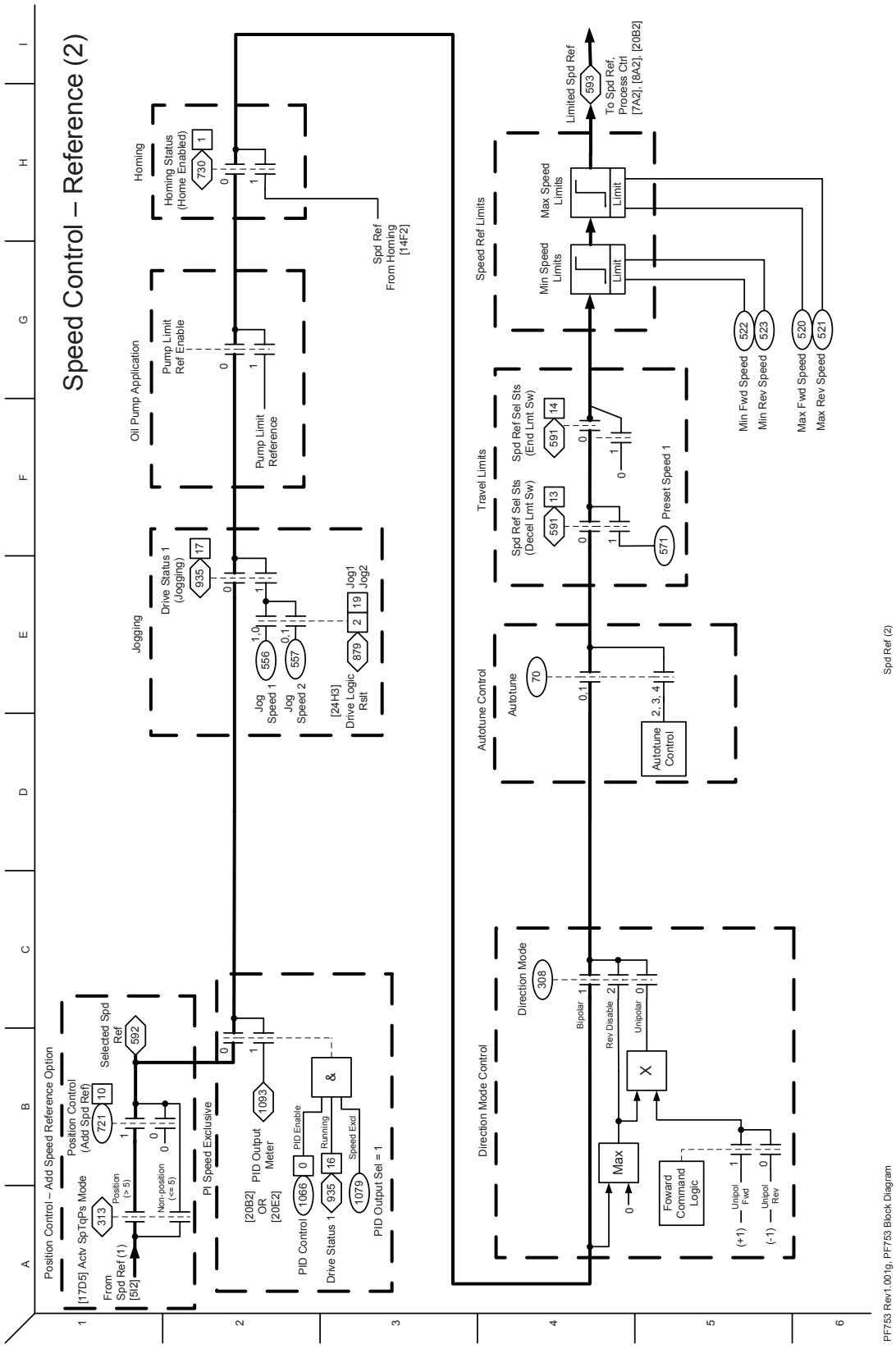
Overview - FV

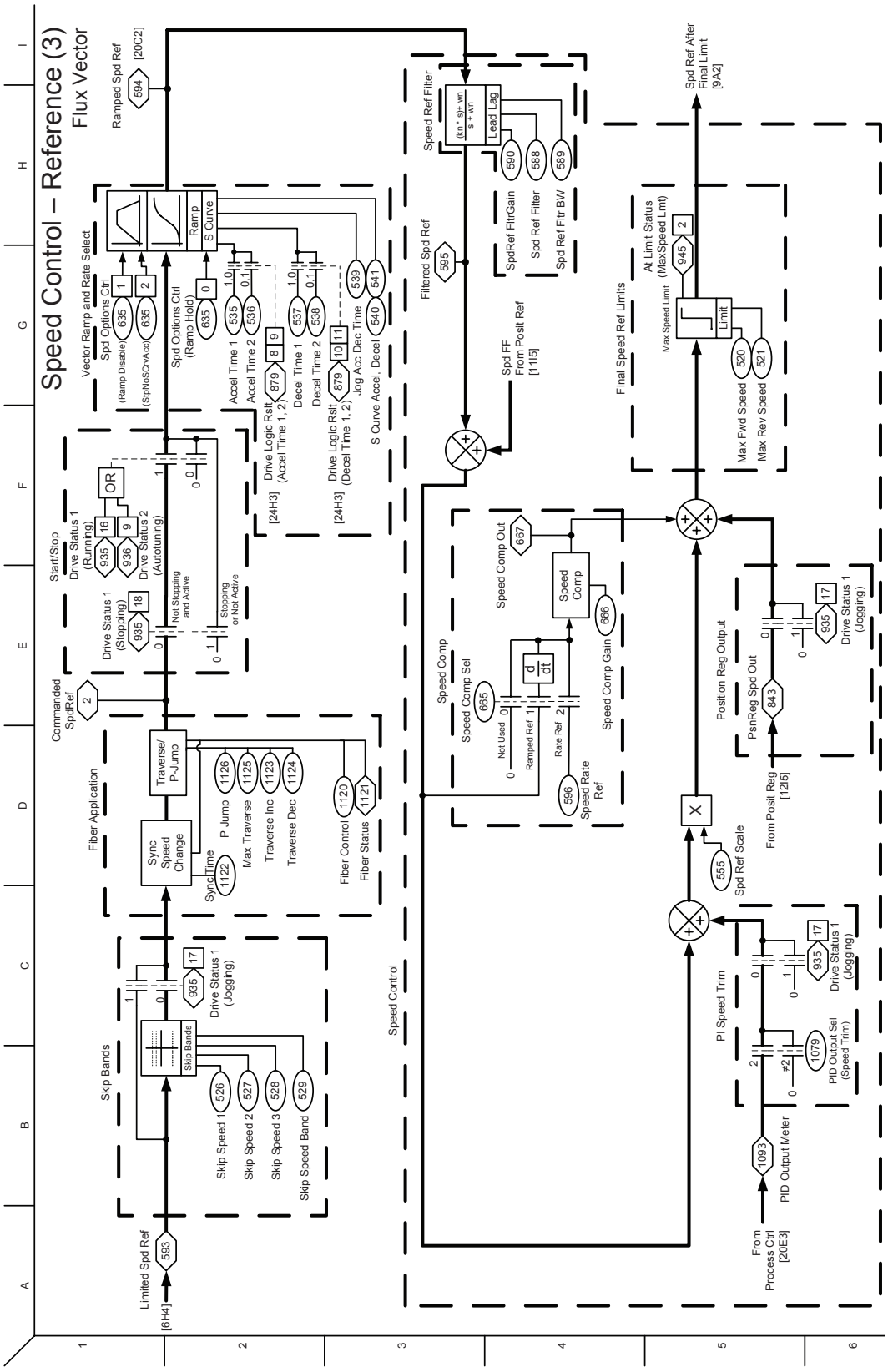

PowerFlex 753
VF (V/Hz), SV Overview
Speed Control – Reference (pages: 4-6,8,9)
Speed Ref A Sel
Speed Ref B Sel
TrmPct RefA Sel
TrmPct RefB Sel
Trim Ref A Sel
Trim Ref B Sel
Preset Speed 1
Preset Speed 2
Preset Speed 3
Preset Speed 4
Preset Speed 5
Preset Speed 6
Preset Speed 7
Speed Ref Selection & Limits
Selected Spd Ref
PID Output Sel
PID Speed Trim Selection
PID Speed Exclusive Selection
Jogging Selection
Jog Speed 1
Jog Speed 2
Ramped Spd Ref
Linear Ramp & S Curve
Droop RPM at FLA
Droop
(Motor Speed Ref)
(Ramp Input Ref)
(Ramp Rate)
(Freq Adder)
Speed Control – Trim Regulator (page: 9)
Final Speed Ref
Active Vel Fdbk
VHzSV Spd Reg Kp
VHzSV Spd Reg Ki
Slip RPM at FLA
PI Regulator
Limit
Slip Comp
VHzSV SpdTrimReg
Speed Trim Reg Selection
Bus/Current Limiter (Freq Ramp)
Max Fwd Speed
Max Rev Speed
Overspeed Limit
Output Frequency
Limit
V/Hz
Current Processing
Motor
Process Control (pages: 19,20)
(PID Output Meter)
PID Output Meter
PID Ref Meter
PID Fdbk Meter
PID Regulator
PID LP Filter BW
PID Reference Selection
PID Feedback Selection
PID Ref Sel
PID Fdbk Sel
PID Prop Gain
PID Int Time
PID Deriv Time
PF753 Rev1.001g, PF753 Block Diagram
Overview - VF(V/Hz), SV
2

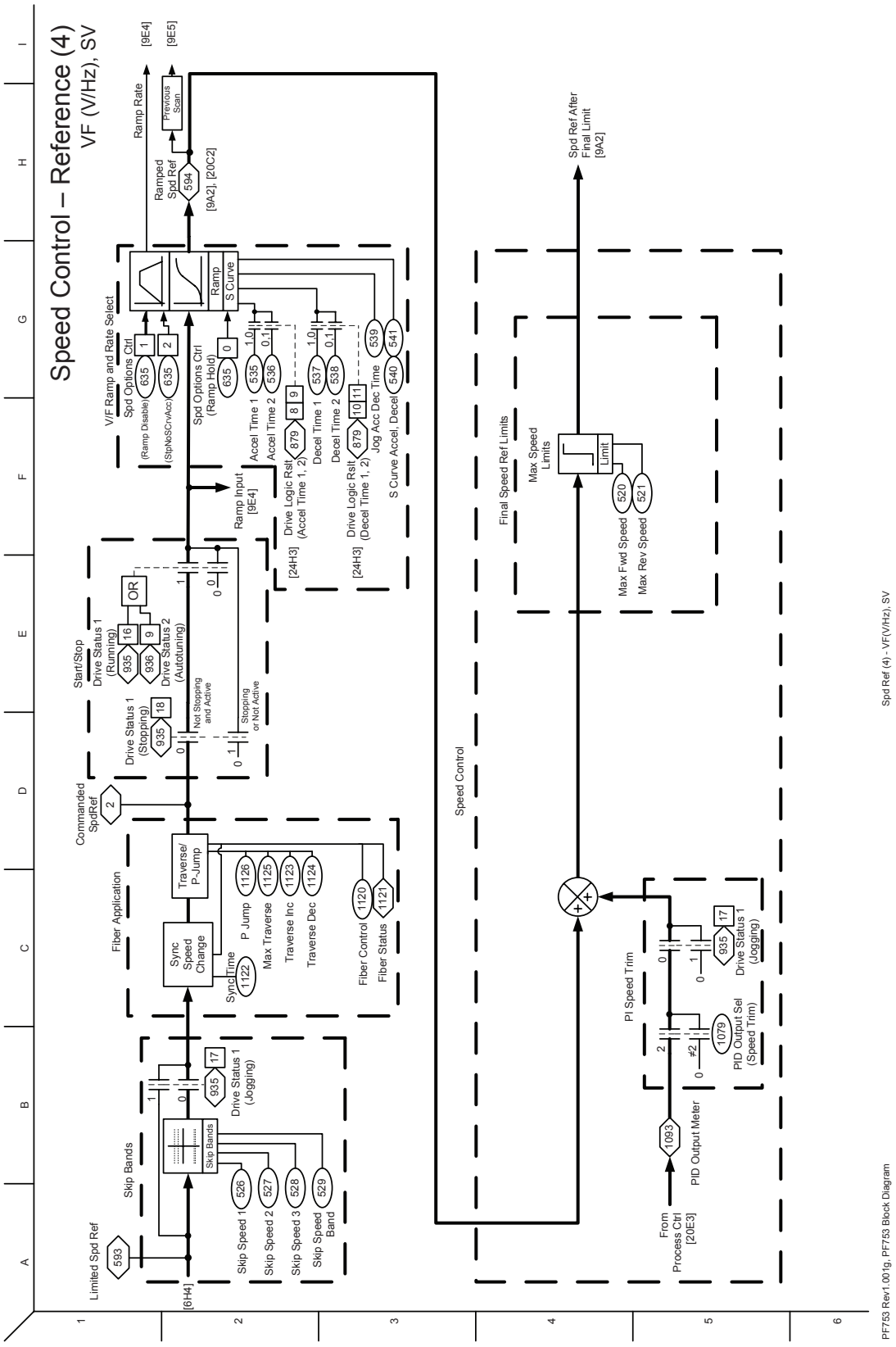

Speed/Posit Fdbk
Spd Options Cntl (Auto Tach SW)
635
7
Fdbk Loss Detect
Drive Status 2 (FdbkLoss SwO)
936
5
Pri Vel FdbkFltr
126
Primary Velocity Fdbk Processing
Pri Vel Feedback
127
Alt Vel FdbkFltr
129
Alternate Velocity Fdbk Processing
Alt Vel Feedback
130
Active Vel Fdbk
131
To Spd Reg [9B4], [10A3], [18B3]
Display Filtering
Mtr Vel Fdbk
3
Parameter Selection
Pri Vel Fdbk Source
125
Pri Vel Fdbk Sel
Alt Vel Fdbk Source
128
Alt Vel Fdbk Sel
Psn Fdbk
847
To Posit Ref, Posit Reg, Position Homing [12A4], [14C4]
Mtr Psn Fdbk Source
135
Mtr Psn Fdbk Sel
Aux Vel FdbkFltr
133
Aux Velocity Fdbk Processing
Aux Vel Feedback
134
To Spd Ref [5A3]
Aux Vel Fdbk Source
132
Aux Vel Fdbk Sel
Slip RPM at FLA
621
Virtual Enc EPR
141
Open Loop Virtual Encoder
Open Loop Fdbk
137
[94] Output Frequency
Torque Cur Fdbk
Simulator Fdbk
138
Total Inertia
76
Motor Simulator Virtual Encoder
Limited Trq Ref
690
From Torq Ctrl Current [18E2]
Final Speed Ref
597
From Spd Ref [9D3]
VF or SV & Open Loop
Control Mode/ Feedback Mode
INTERNAL CONDITION ONLY
PF753 Rev1.001g, PF753 Block Diagram
Fdbk
3

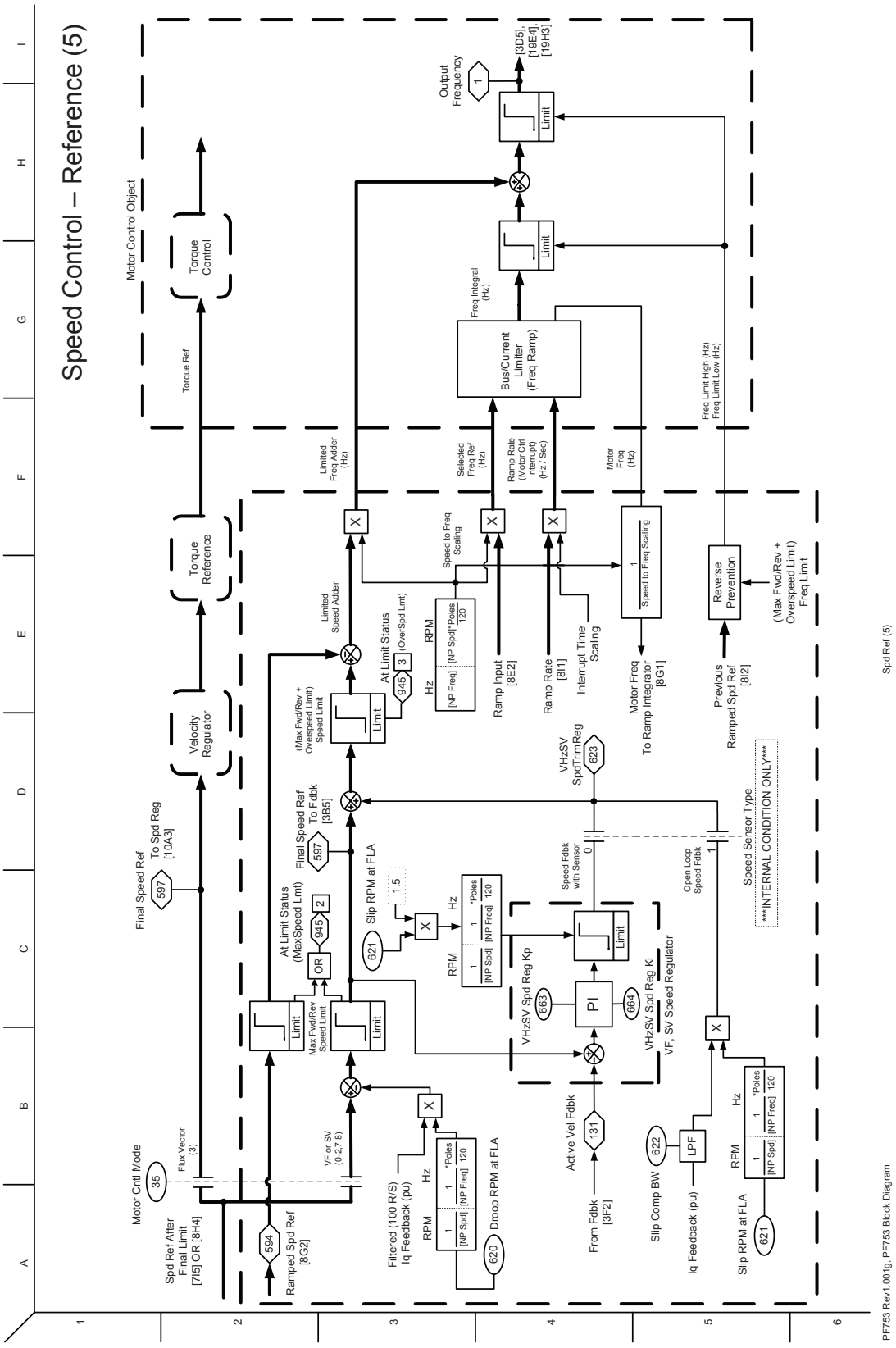

Speed Control – Reference Overview
Speed Reference Selection
Spd Ref Command
Ref A Auto
Ref B Auto
Spd Ref A
Trim Ref A
Trim % Ref A
Spd Ref B
Trim Ref B
Trim % Ref B
Presets 3-7 Auto
DPI Ports 1-6 Manual
ENet Spd Ref
Selected Spd Ref
From PI Regulator (Exclusive Mode)
Speed Reference Control
Jogging/ Oil Pump/ Autotune/ Homing/ Overrides
Direction Mode
Limit Switch Control
Limit
Limited Spd Ref
Skip Bands
Fiber App.
Speed Ref Stop
Vector Speed Control
Ramped Vel Ref
Vel Ref Filter
From Pt-Pt Profile Generator
From Position Regulator
Speed Comp
From PI Regulator (Trim Mode)
Speed Ref Scale
Pos Reg Output Filter
Limit
Max Speed
Motor Spd Ref
Velocity Reg Ref
Vector Ramp S-Curve
Linear Ramp & S Curve
Rate Select
Flux Vector
V/F Ramp S-Curve
Ramped Speed Ref
V/F or SV
From PI Regulator (Trim Mode)
V/F Speed Control
Droop
Max Speeds
Limit
Max Speed + Overspeed Limit
From Velocity Trim Regulator
From Slip Comp
Frequency Ref
Speed Status
Status
Speed Feedback
Vector Ramp Status
F/F Ramp Status
Spd Ref Overview
PF753 Rev1.001g, PF753 Block Diagram

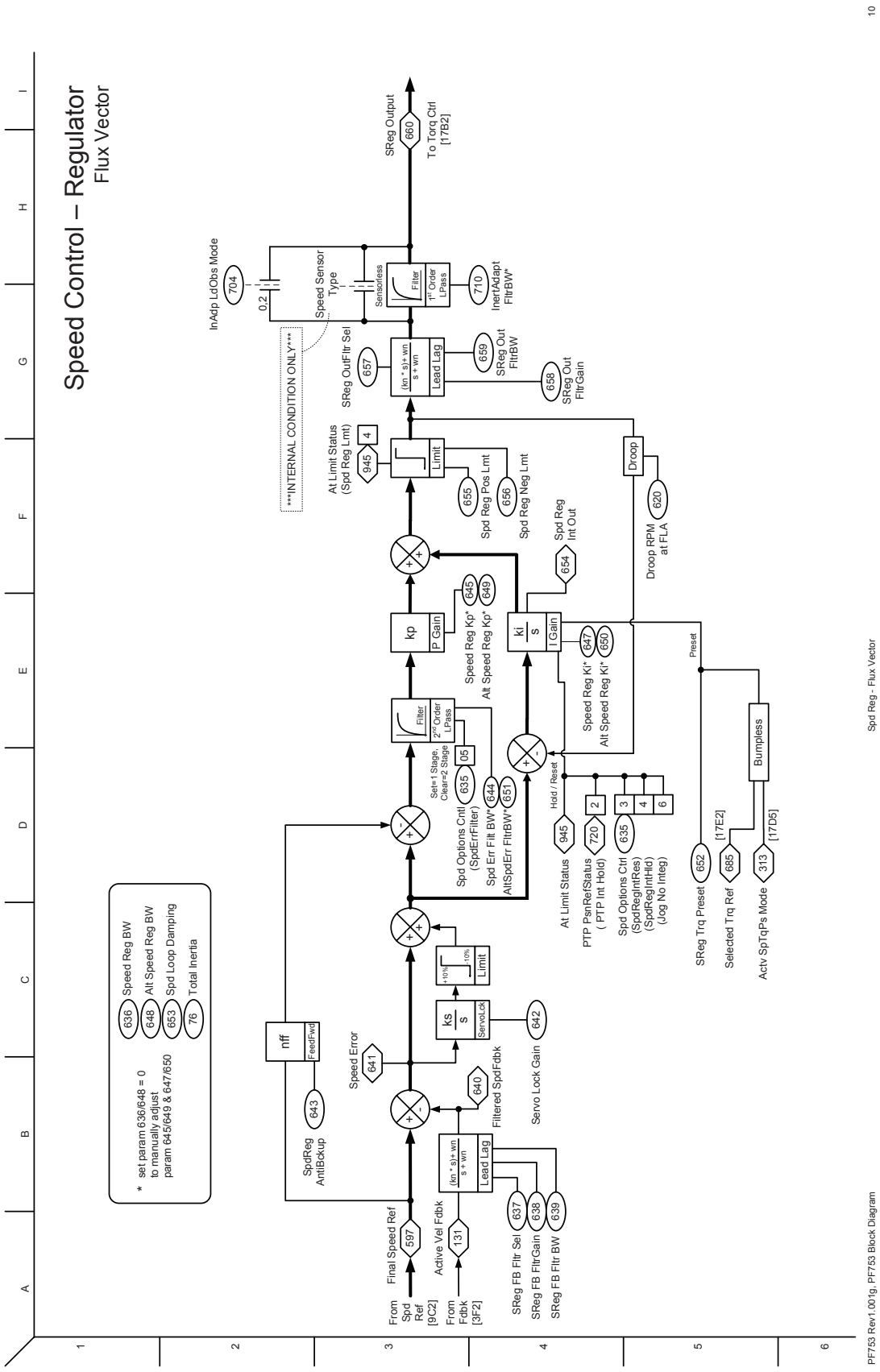

Speed Control – Reference (1)
Speed Units (Hz / RPM) 300
Speed Ref Source 930
SpdTrimPrcRefSrc 616
Spd Trim Source 617
Spd Ref Sel Sts 591
Spd Ref Command d7
To Spd Ref (2) [6A1]
[24H3] Drive Logic Rslt 879
Drive Status 1 935
'd' Prefix Refers to Diagnostic Item Number (ex. d33) – Reference Symbol Legend
* Note: Analog Hi, Lo scaling only used when Analog Input is selected
Speed Ref A Sel 545
Disabled (0)
Spd Ref A Stpt 546
Preset Speed 1 571
Preset Speed 2 572
Preset Speed 3 573
Preset Speed 4 574
Preset Speed 5 575
Preset Speed 6 576
Preset Speed 7 577
MOP Reference [21F3] 558
Aux Vel Feedback [3H5] 134
Port 1 Reference 871
Port 2 Reference 872
Port 3 Reference 873
Port 4 Reference 874
Port 5 Reference 875
Port 6 Reference 876
Option Ports: Analog, EtherNet, DeviceLogix
Spd Ref A AnlgHi 547
Spd Ref A AnlgLo 548
Speed Ref A Mult 549
Trim Ref A Sel 600
Trim Ref A Stpt 601
Trim RefA AnlgHi 602
Trim RefA AnlgLo 603
Anlg In1 PortVal (option port)
Anlg In2 PortVal (option port)
TrmPct RefA Sel 608
TrimPct RefA Stpt 609
TrmPct RefA AnHi 610
TrmPct RefA AnLo 611
Trim Ref B Sel 604
Trim Ref B Stpt 605
Trim RefB AnlgHi 606
Trim RefB AnlgLo 607
TrmPct RefB Sel 612
TrimPct RefB Stpt 613
TrmPct RefB AnHi 614
TrmPct RefB AnLo 615
Other Ref Sources
Speed Ref B Sel 550
Spd Ref B Stpt 551
Spd Ref B AnlgHi 552
Spd Ref B AnlgLo 553
Speed Ref B Mult 554
DI Man Ref Sel 563
DI Man Ref AnlgHi 564
DI Man Ref AnlgLo 565
Alt Man Ref Sel 328
Alt Man Ref AnHi 329
Alt Man Ref AnLo 330
Parameter Selection
Default
Spd Ref (1)
PF753 Rev1.001g, PF753 Block Diagram

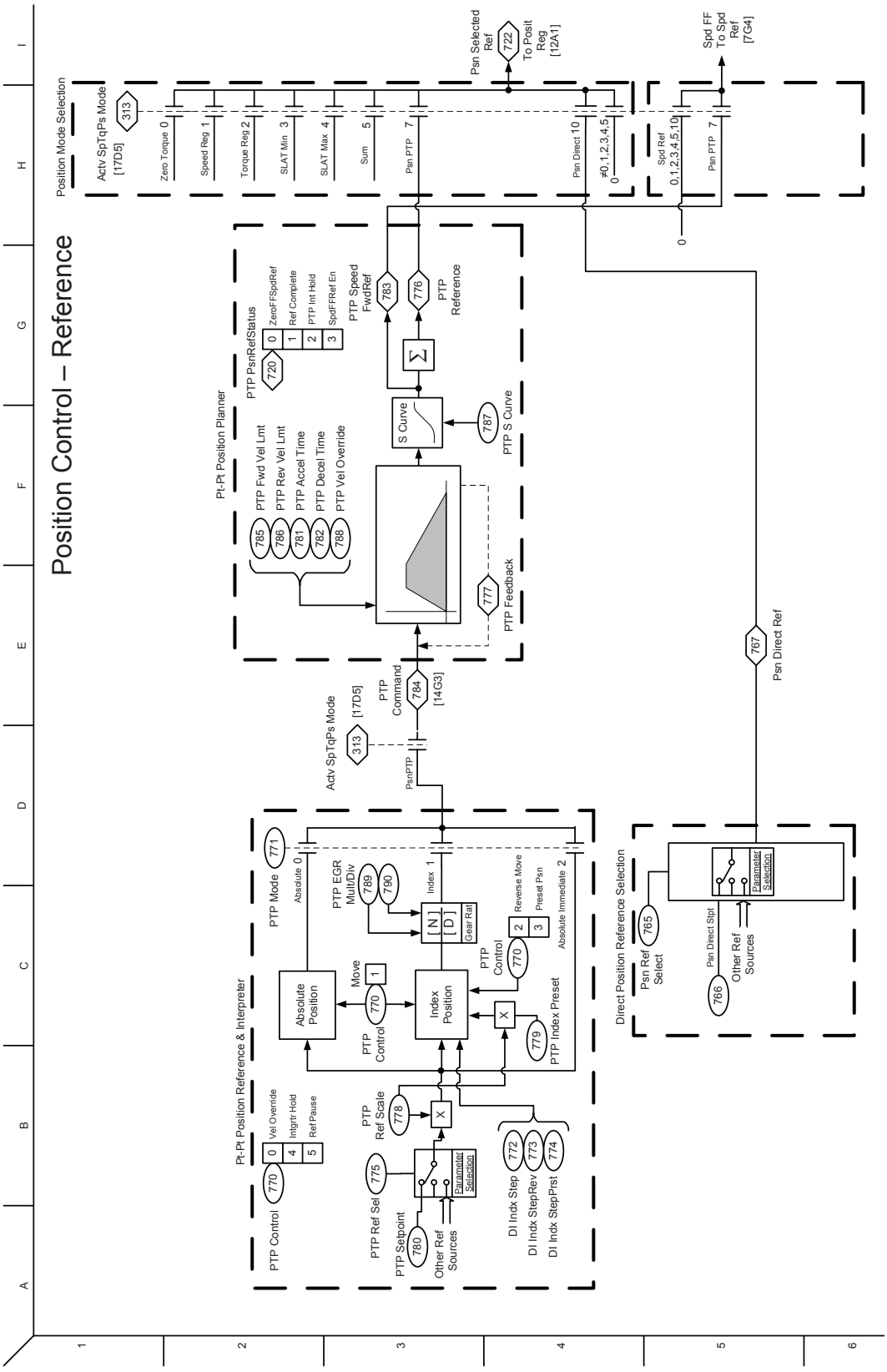

Speed Control – Reference (2)
Position Control – Add Speed Reference Option
[17D5] Actv SpTqPs Mode
313
From Spd Ref (1) [5I2]
Position (= 5)
Non-position (<> 5)
Position Control (Add Spd Ref)
721
10
Selected Spd Ref
592
PI Speed Exclusive
[20B2] OR [20E2]
PID Output Meter
1093
PID Control
1066
PID Enable
0
Drive Status 1
935
Running
16
PID Output Sel = 1
1079
Speed Excl
&
Jogging
Drive Status 1 (Jogging)
935
17
Jog Speed 1
556
Jog Speed 2
557
[24H3] Drive Logic Rslt
879
Jog1
Jog2
2
19
Oil Pump Application
Pump Limit Ref Enable
Pump Limit Reference
Homing
Homing Status (Home Enabled)
730
1
Spd Ref From Homing [14F2]
Autotune Control
Autotune
70
Autotune Control
2, 3, 4
Travel Limits
Spd Ref Sel Sts (Decel Limt Sw)
591
13
Spd Ref Sel Sts (End Limt Sw)
591
14
Preset Speed 1
571
Speed Ref Limits
Min Speed Limits
Limit
Max Speed Limits
Limit
Limited Spd Ref
593
To Spd Ref, Process Ctrl [7A2] [8A2], [20B2]
Min Fwd Speed
522
Min Rev Speed
523
Max Fwd Speed
520
Max Rev Speed
521
Direction Mode Control
Direction Mode
308
Bipolar
Rev Disable
Unipolar
X
Max
Foward Command Logic
(+1)
(-1)
Unipol Fwd
Unipol Rev
PF753 Rev1.001g, PF753 Block Diagram
Spd Ref (2)
6

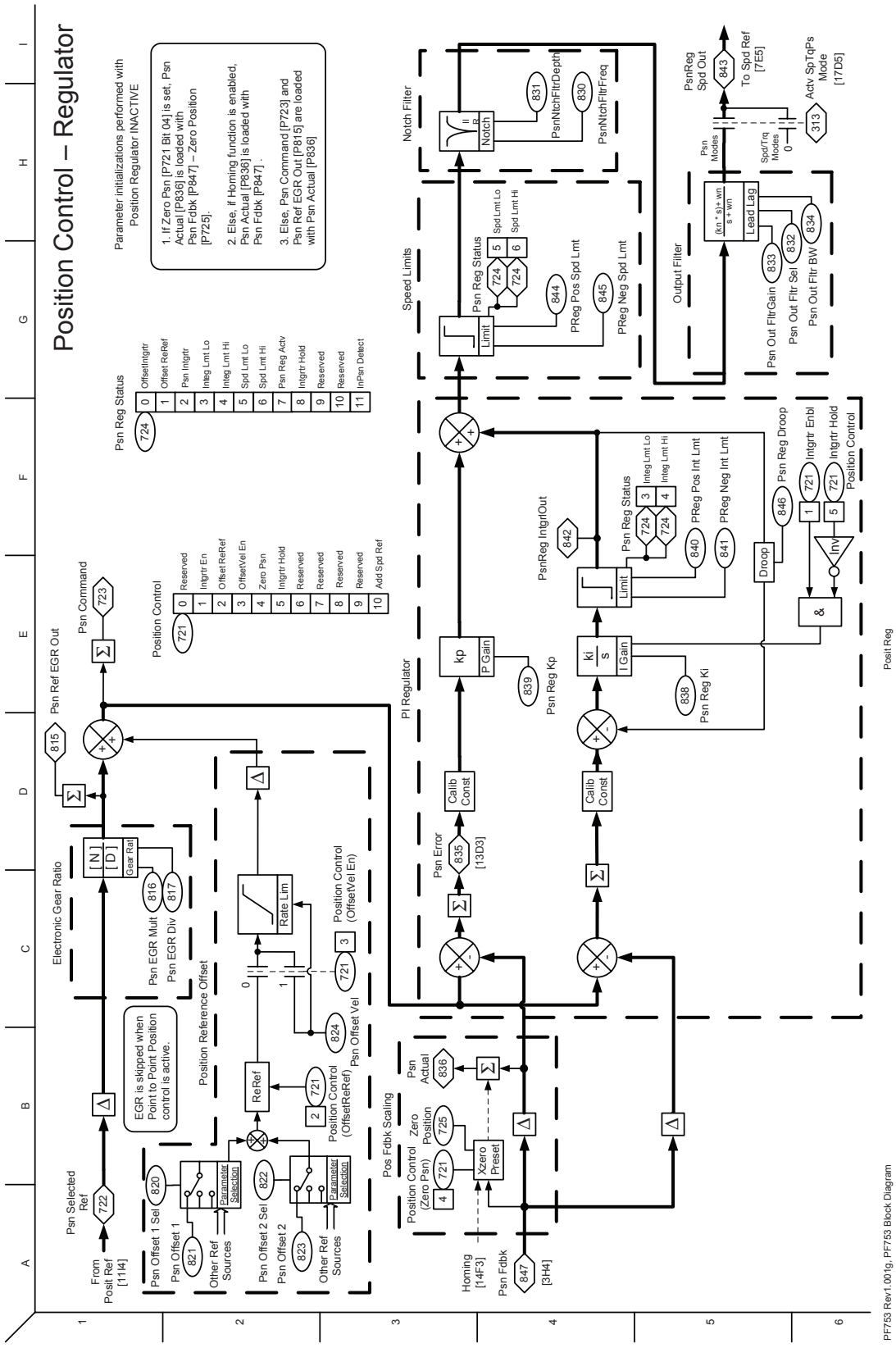

Speed Control – Reference (3)
Flux Vector
Ramped Spd Ref
[20C2]
Vector Ramp and Rate Select
Spd Options Ctrl
(Ramp Disable)
(StpNoSCrvAcc)
Spd Options Ctrl
(Ramp Hold)
Ramp
S Curve
Accel Time 1
Accel Time 2
Decel Time 1
Decel Time 2
Drive Logic Rslt
(Accel Time 1, 2)
Drive Logic Rslt
(Decel Time 1, 2)
Jog Acc Dec Time
S Curve Accel, Decel
Speed Ref Filter
Lead Lag
SpdRef FltrGain
Spd Ref Filter
Spd Ref Fltr BW
Filtered Spd Ref
Spd Ref After
Final Limit
[9A2]
Final Speed Ref Limits
At Limit Status
(MaxSpeed Lmt)
Max Speed Limit
Limit
Max Fwd Speed
Max Rev Speed
Spd FF
From Posit Ref
[11I5]
Start/Stop
Drive Status 1
(Running)
Drive Status 2
(Autotuning)
OR
Drive Status 1
(Stopping)
Not Stopping
and Active
Stopping
or Not Active
Commanded
SpdRef
Fiber Application
Traverse/
P-Jump
Sync
Speed
Change
SyncTime
P Jump
Max Traverse
Traverse Inc
Traverse Dec
Fiber Control
Fiber Status
Speed Comp
Speed Comp Out
Speed Comp Sel
Not Used
Ramped Ref
Rate Ref
Speed
Comp
Speed Comp Gain
Speed Rate
Ref
Position Reg Output
PsnReg Spd Out
From Posit Reg
[12I5]
Drive Status 1
(Jogging)
Skip Bands
Skip Speed 1
Skip Speed 2
Skip Speed 3
Skip Speed Band
Limited Spd Ref
[6H4]
Speed Control
Spd Ref Scale
PI Speed Trim
From
Process Ctrl
[20E3]
PID Output Meter
PID Output Sel
(Speed Trim)
PF753 Rev1.001g, PF753 Block Diagram
Spd Ref (3) - FV

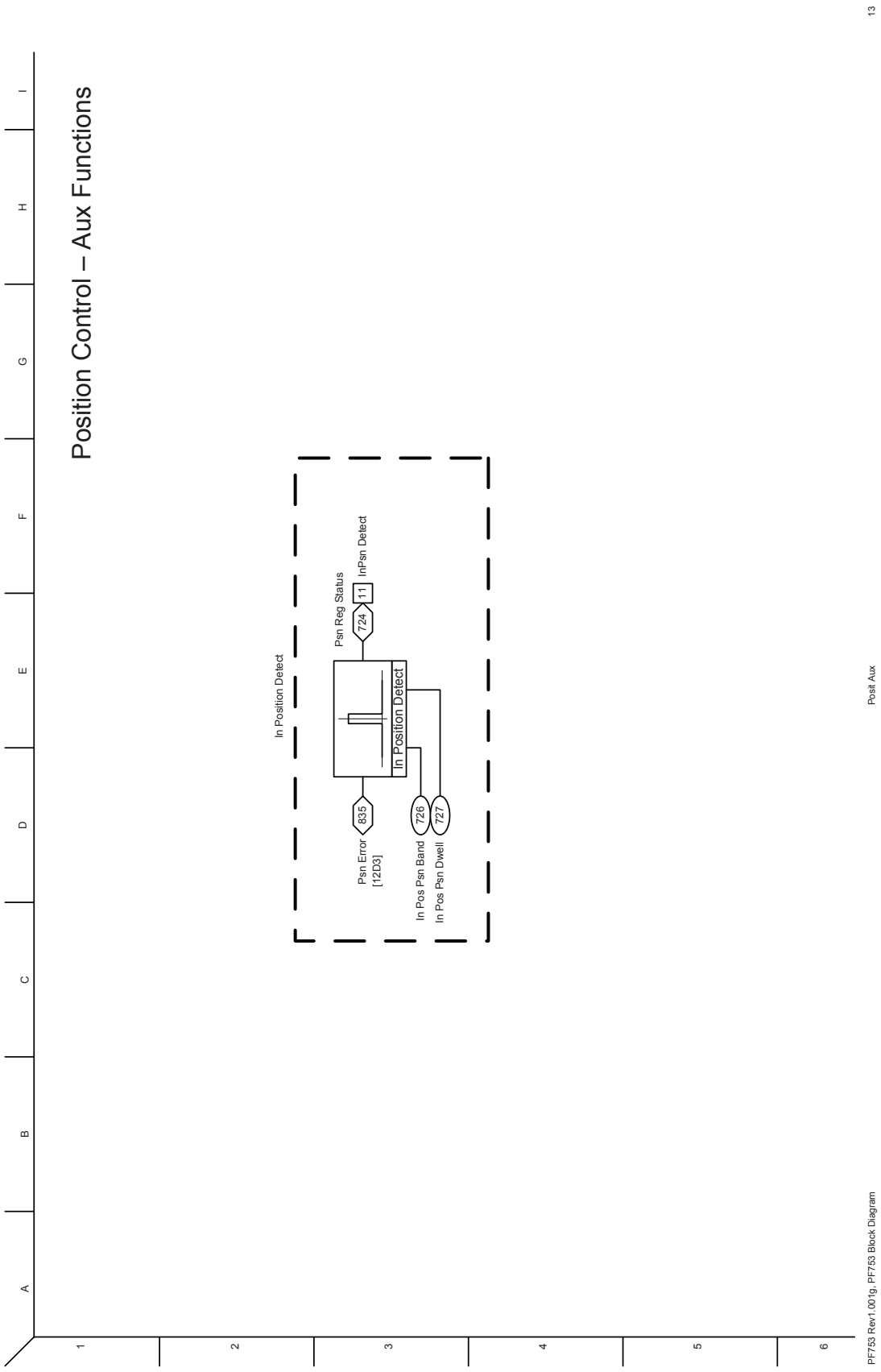

Speed Control – Reference (4)
VF (V/Hz), SV
Limited Spd Ref
593
[6H4]
Skip Bands
Skip Speed 1
526
Skip Speed 2
527
Skip Speed 3
528
Skip Speed Band
529
Drive Status 1 (Jogging)
935
17
Fiber Application
Sync Speed Change
Sync Time
1122
Traverse/ P-Jump
P Jump
1126
Max Traverse
1125
Traverse Inc
1123
Traverse Dec
1124
Fiber Control
1120
Fiber Status
1121
Commanded SpdRef
2
Start/Stop
Drive Status 1 (Running)
935
16
OR
Drive Status 2 (Autotuning)
936
9
Drive Status 1 (Stopping)
935
18
Not Stopping and Active
Stopping or Not Active
Ramp Input
[9E4]
V/F Ramp and Rate Select
Spd Options Ctrl
(Ramp Disable)
(StpNoSCrvAcc)
635
1
2
Spd Options Ctrl (Ramp Hold)
635
0
Ramp
S Curve
Accel Time 1
535
Accel Time 2
536
Decel Time 1
537
Decel Time 2
538
1.0
0.1
Drive Logic Rslt (Accel Time 1, 2)
879
[24H3]
8
9
Drive Logic Rslt (Decel Time 1, 2)
879
[24H3]
10
11
Jog Acc Dec Time
539
S Curve Accel, Decel
540
541
Ramp Rate
[9E4]
Previous Scan
Ramped Spd Ref
594
[9A2], [20C2]
Speed Control
Final Speed Ref Limits
Max Speed Limits
Limit
Max Fwd Speed
520
Max Rev Speed
521
Spd Ref After Final Limit
[9A2]
PI Speed Trim
From Process Ctrl
[20E3]
PID Output Meter
1093
PID Output Sel (Speed Trim)
1079
≠2
Drive Status 1 (Jogging)
935
17
PF753 Rev1.001g, PF753 Block Diagram
Spd Ref (4) - VF(V/Hz), SV
8

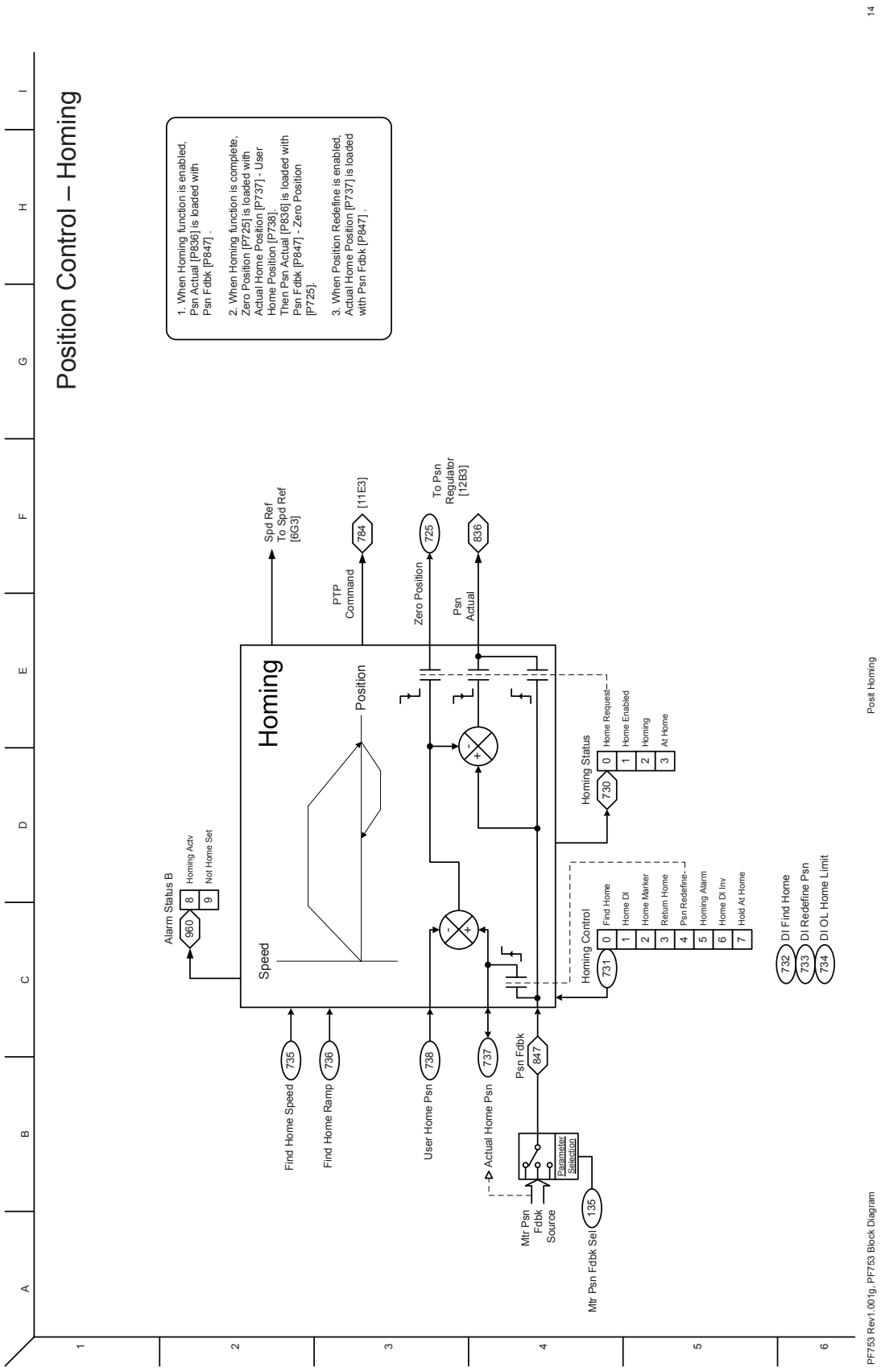

Speed Control – Reference (5)
Motor Control Object
Torque Control
Torque Ref
Torque Reference
Velocity Regulator
Motor Cntl Mode
Flux Vector (3)
VF or SV (0-2,7,8)
Spd Ref After Final Limit [7I5] OR [8H4]
Ramped Spd Ref [8G2]
Final Speed Ref To Spd Reg [10A3]
Filtered (100 R/S) Iq Feedback (pu)
Droop RPM at FLA
Active Vel Fdbk
From Fdbk [3F2]
Slip Comp BW
Iq Feedback (pu)
Slip RPM at FLA
VHzSV Spd Reg Kp
VHzSV Spd Reg Ki
VF, SV Speed Regulator
Speed Fdbk with Sensor
Open Loop Speed Fdbk
Speed Sensor Type
INTERNAL CONDITION ONLY
VHzSV SpdTrimReg
Final Speed Ref To Fdbk [3B5]
Limited Speed Adder
Limited Freq Adder (Hz)
(Max Fwd/Rev + Overspeed Limit) Speed Limit
Max Fwd/Rev Speed Limit
At Limit Status (MaxSpeed Lmt)
At Limit Status (OverSpd Lmt)
Slip RPM at FLA
Speed to Freq Scaling
Selected Freq Ref (Hz)
Ramp Rate (Motor Ctrl Interrupt) (Hz / Sec)
Freq Integral (Hz)
Bus/Current Limiter (Freq Ramp)
Motor Freq (Hz)
Freq Limit High (Hz)
Freq Limit Low (Hz)
Output Frequency
[3D5] [19E4] [19H3]
Ramp Input [8E2]
Ramp Rate [8I1]
Interrupt Time Scaling
Motor Freq To Ramp Integrator [8G1]
Previous Ramped Spd Ref [8I2]
Reverse Prevention
(Max Fwd/Rev + Overspeed Limit) Freq Limit
Spd Ref (5)
PF753 Rev1.001g, PF753 Block Diagram

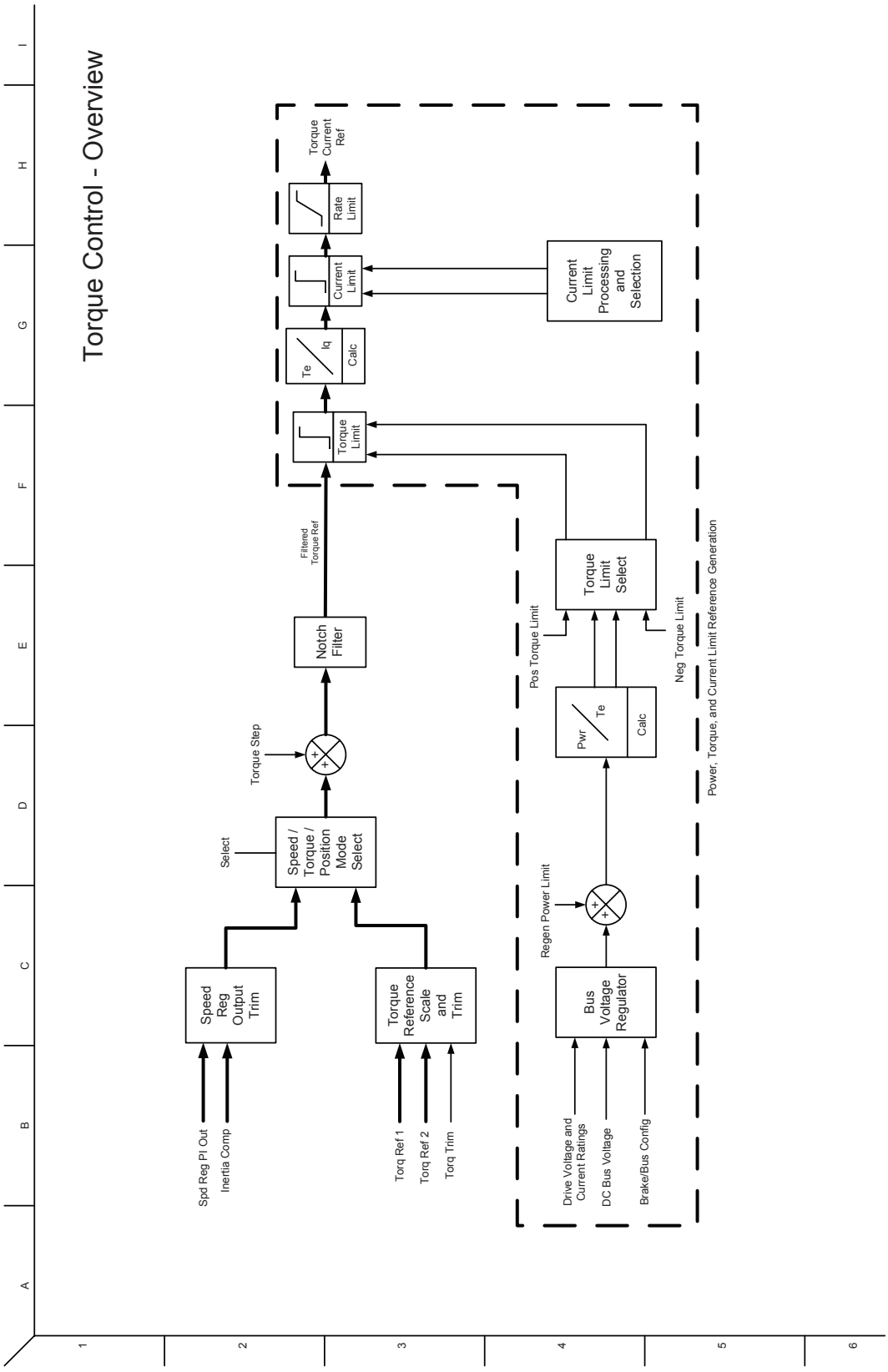

Speed Control – Regulator
Flux Vector
* set param 636/648 = 0 to manually adjust param 645/649 & 647/650
636 Speed Reg BW
648 Alt Speed Reg BW
653 Spd Loop Damping
76 Total Inertia
From Spd Ref [9C2]
Final Speed Ref
597
From Fdbk [3F2]
Active Vel Fdbk
131
SReg FB Fltr Sel
637
SReg FB FltrGain
638
SReg FB Fltr BW
639
(kn * s)+ wn / s + wn
Lead Lag
Filtered SpdFdbk
640
Servo Lock Gain
642
ks / s
ServoLck
+10%
-10%
Limit
SpdReg AntiBckup
643
nff
FeedFwd
Speed Error
641
Spd Options Cntl (SpdErrFilter)
635
Set=1 Stage, Clear=2 Stage
05
Filter
2nd Order LPass
Spd Err Filt BW*
644
AltSpdErr FltrBW*
651
kp
P Gain
Speed Reg Kp*
645
Alt Speed Reg Kp*
649
ki / s
I Gain
Speed Reg Ki*
647
Alt Speed Reg Ki*
650
Hold / Reset
Spd Reg Int Out
654
At Limit Status
945
PTP PsnRefStatus (PTP Int Hold)
720
Spd Options Ctrl (SpdRegIntRes) (SpdRegIntHld) (Jog No Integ)
635
2
3
4
6
Limit
At Limit Status (Spd Reg Lmt)
4
945
Spd Reg Pos Lmt
655
Spd Reg Neg Lmt
656
Droop
Droop RPM at FLA
620
Preset
SReg Trq Preset
652
Selected Trq Ref
685
[17E2]
Bumpless
Actv SpTqPs Mode
313
[17D5]
InAdp LdObs Mode
704
0.2
INTERNAL CONDITION ONLY
Speed Sensor Type
Sensorless
Filter
1st Order LPass
710
InertiAdapt FltrBW*
SReg Output
660
To Torq Ctrl [17B2]
SReg OutFltr Sel
657
(kn * s)+ wn / s + wn
Lead Lag
659
SReg Out FltrBW
658
SReg Out FltrGain
Spd Reg - Flux Vector
PF753 Rev1.001g, PF753 Block Diagram
10

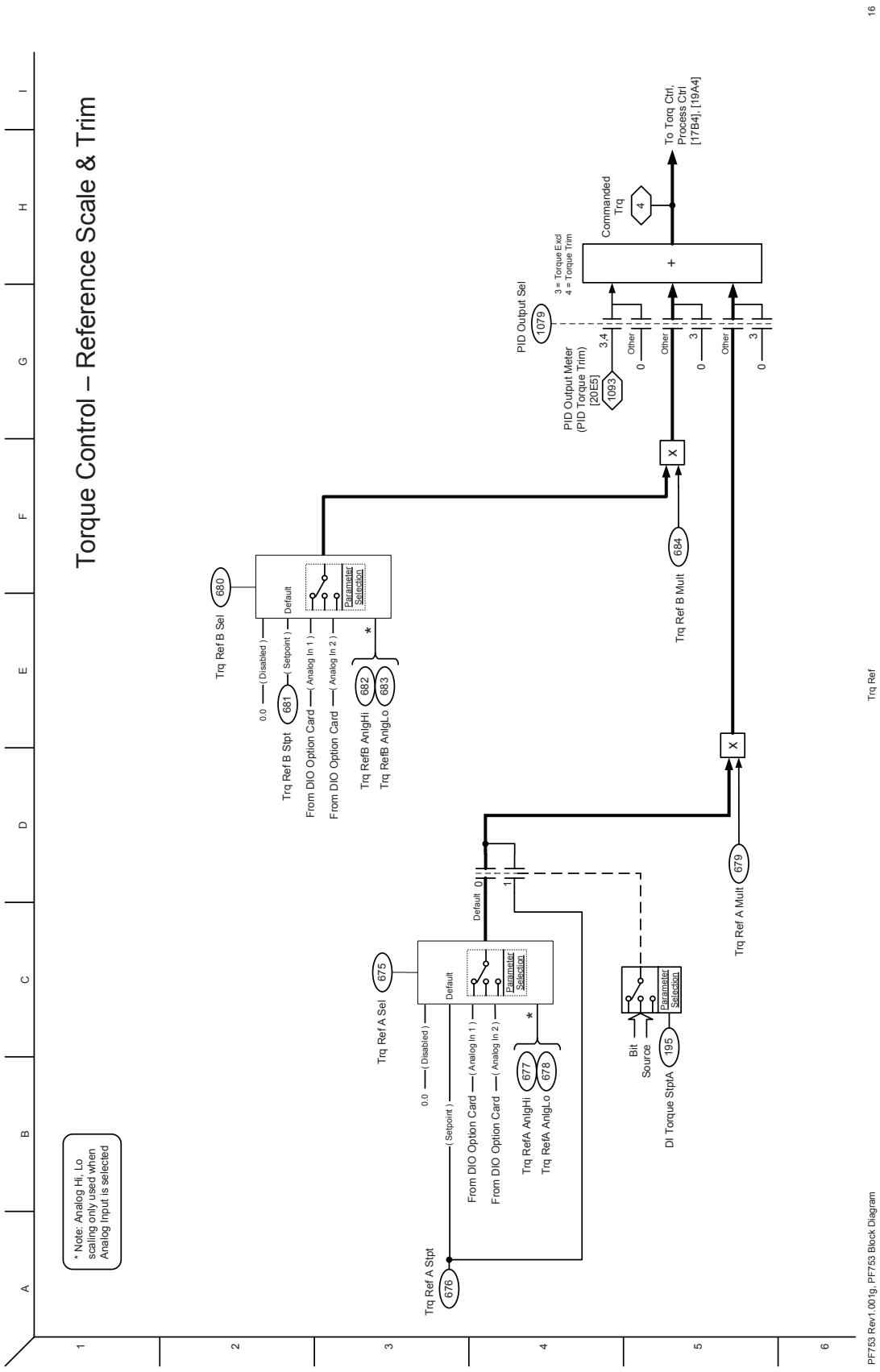

Position Control – Reference
Position Mode Selection
Actv SpTqPs Mode [17D5]
313
Zero Torque 0
Speed Reg 1
Torque Reg 2
SLAT Min 3
SLAT Max 4
Sum 5
Psn PTP 7
Psn Direct 10
≠0,1,2,3,4,5
Psn Selected Ref
722
To Posit Reg [12A1]
Spd Ref 0,1,2,3,4,5,10
Spd FF To Spd Ref [7G4]
Pt-Pt Position Planner
PTP PsnRefStatus
720
ZeroF FSpdRef
Ref Complete
PTP Int Hold
SpdF FRef En
PTP Speed FwdRef
783
776
PTP Reference
S Curve
787
PTP S Curve
PTP Fwd Vel Lmt
PTP Rev Vel Lmt
PTP Accel Time
PTP Decel Time
PTP Vel Override
785
786
781
782
788
777
PTP Feedback
PTP Command
784
[14G3]
Actv SpTqPs Mode
313
[17D5]
PsnPTP
767
Psn Direct Ref
Pt-Pt Position Reference & Interpreter
PTP Mode
771
Absolute 0
Index 1
Absolute Immediate 2
PTP EGR Mult/Div
789
790
[N]
[D]
Gear Rat
Reverse Move 2
Preset Psn 3
PTP Control
770
Absolute Position
Move 1
Index Position
X
PTP Index Preset
779
PTP Ref Scale
778
PTP Control
770
Vel Override 0
Integrtr Hold 4
Ref Pause 5
PTP Ref Sel
775
PTP Setpoint
780
Other Ref Sources
Parameter Selection
DI Indx Step
DI Indx StepRev
DI Indx StepPrst
772
773
774
Direct Position Reference Selection
Psn Ref Select
765
Psn Direct Stpt
Other Ref Sources
766
Parameter Selection
Posit Ref
PF753 Rev1.001g, PF753 Block Diagram

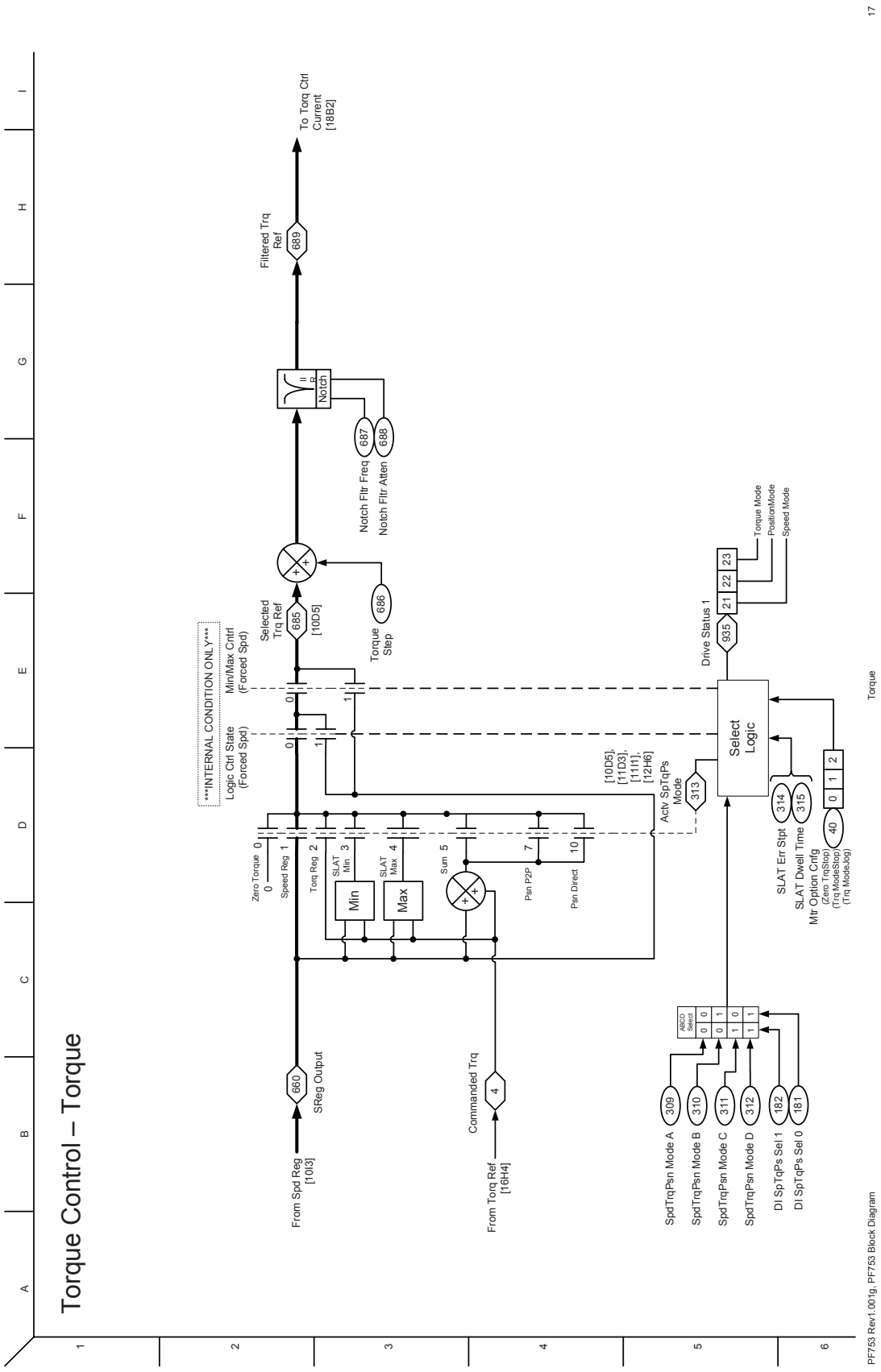

Position Control – Regulator
Parameter initializations performed with Position Regulator INACTIVE
1. If Zero Psn [P721 Bit 04] is set, Psn Actual [P836] is loaded with Psn Fdbk [P847] – Zero Position [P725].
2. Else, if Homing function is enabled, Psn Actual [P836] is loaded with Psn Fdbk [P847].
3. Else, Psn Command [P723] and Psn Ref EGR Out [P815] are loaded with Psn Actual [P836]
Psn Reg Status
724
0 OffsetIntgrtr
1 Offset ReRef
2 Psn Intgrtr
3 Integ Lmt Lo
4 Integ Lmt Hi
5 Spd Lmt Lo
6 Spd Lmt Hi
7 Psn Reg Actv
8 Intgrtr Hold
9 Reserved
10 Reserved
11 InPsn Detect
Position Control
721
0 Reserved
1 Intgrtr En
2 Offset ReRef
3 OffsetVel En
4 Zero Psn
5 Intgrtr Hold
6 Reserved
7 Reserved
8 Reserved
9 Reserved
10 Add Spd Ref
Psn Command
723
Psn Ref EGR Out
815
Electronic Gear Ratio
[N] [D]
Gear Rat
816 Psn EGR Mult
817 Psn EGR Div
EGR is skipped when Point to Point Position control is active.
Position Reference Offset
Rate Lim
Position Control (OffsetVel En)
721 3
824 Psn Offset Vel
Position Control (OffsetReRef)
721 2
ReRef
Psn Selected Ref
722
From Posit Ref [11I4]
Psn Offset 1 Sel
820
Psn Offset 1
821
Other Ref Sources
Parameter Selection
Psn Offset 2 Sel
822
Psn Offset 2
823
Other Ref Sources
Parameter Selection
Pos Fdbk Scaling
Position Control (Zero Psn)
721 4
Zero Position
725
Xzero Preset
Psn Actual
836
Homing [14F3]
Psn Fdbk
847 [3H4]
PI Regulator
kp
P Gain
839 Psn Reg Kp
ki/s
I Gain
838 Psn Reg Ki
Calib Const
Psn Error
835 [13D3]
PsnReg IntgrlOut
842
Psn Reg Status
724 3 Integ Lmt Lo
724 4 Integ Lmt Hi
840 PReg Pos Int Lmt
841 PReg Neg Int Lmt
Limit
Droop
846 Psn Reg Droop
1 721 Intgrtr Enbl
5 721 Intgrtr Hold
Position Control
Inv
&
Notch Filter
Notch
831 PsnNtchFltrDepth
830 PsnNtchFltrFreq
Speed Limits
Psn Reg Status
724 5 Spd Lmt Lo
724 6 Spd Lmt Hi
844 PReg Pos Spd Lmt
845 PReg Neg Spd Lmt
Limit
Output Filter
(kn * s)+ wn / s + wn
Lead Lag
Psn Out FltrGain
833
Psn Out Fltr Sel
832
Psn Out Fltr BW
834
Psn Modes
Spd/Trq Modes
0
PsnReg Spd Out
843
To Spd Ref [7E5]
Actv SpTqPs Mode [17D5]
313
PF753 Rev1.001g, PF753 Block Diagram
Posit Reg
12

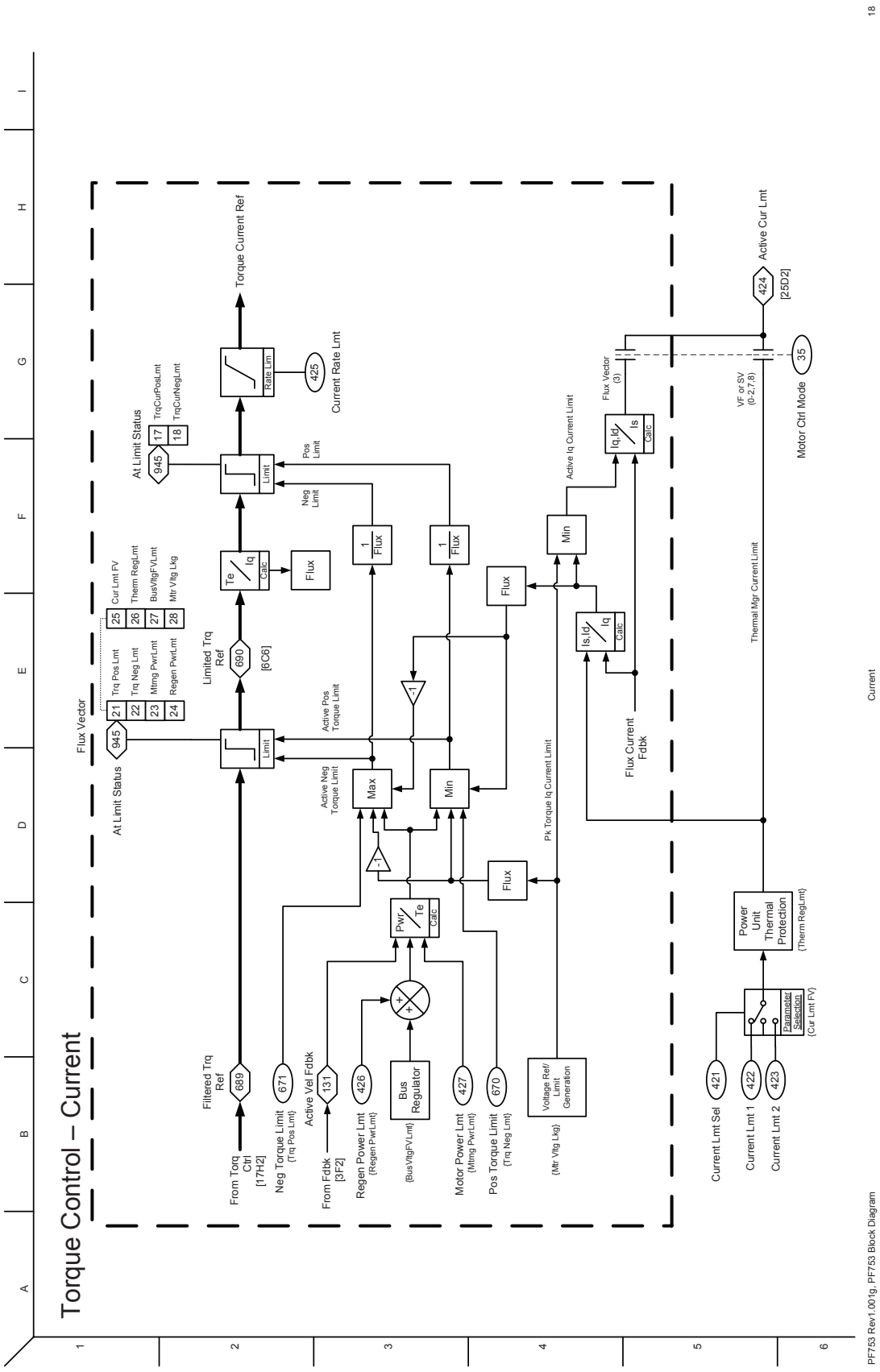

Position Control – Aux Functions
A
B
C
D
E
F
G
H
I
1
2
3
4
5
6
13
In Position Detect
Psn Reg Status
InPsn Detect
724
11
In Position Detect
835
726
727
Psn Error
[12D3]
In Pos Psn Band
In Pos Psn Dwell
Posit Aux
PF753 Rev1.001g, PF753 Block Diagram

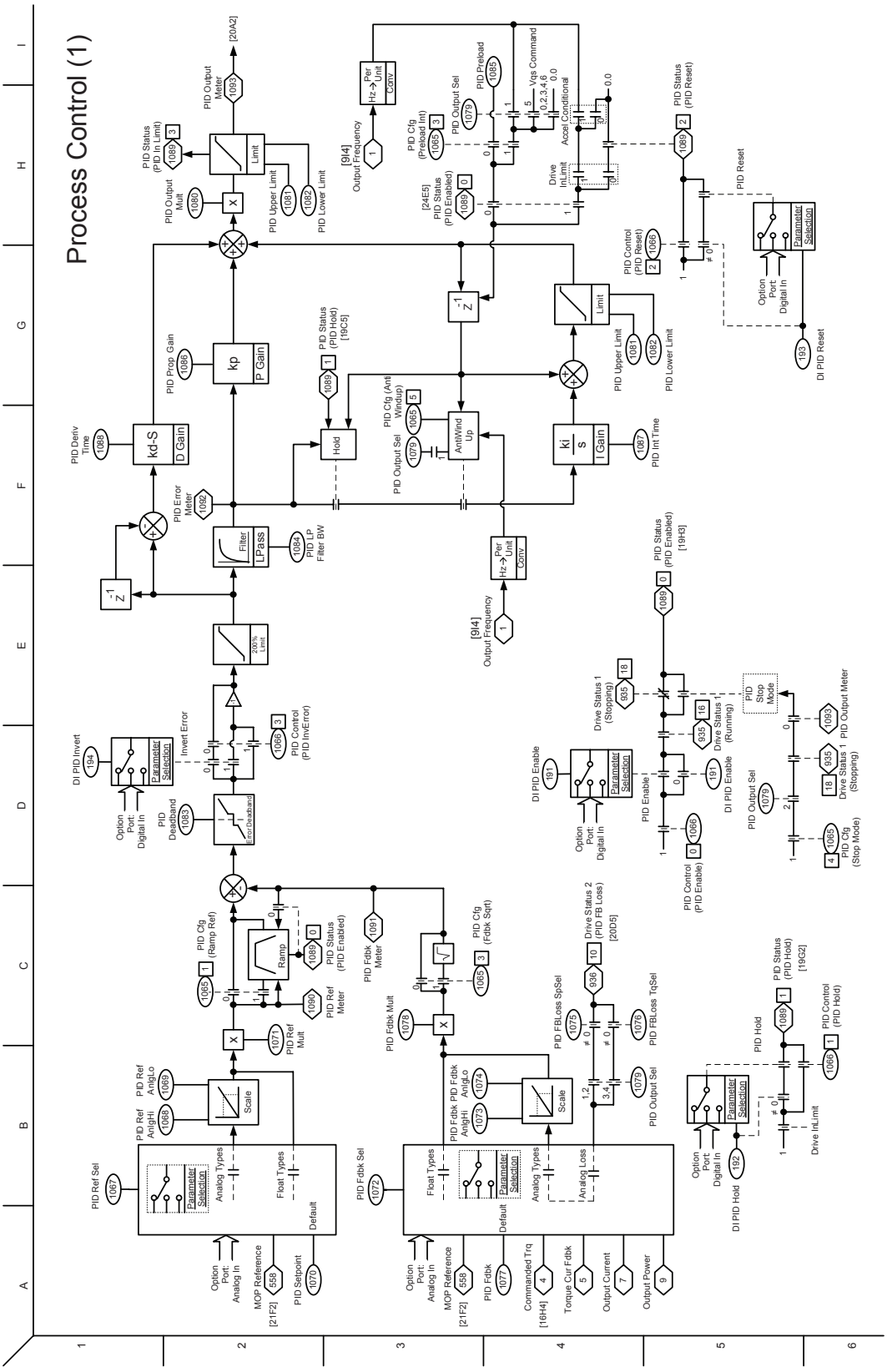

Position Control – Homing
1. When Homing function is enabled, Psn Actual [P836] is loaded with Psn Fdbk [P847] .
2. When Homing function is complete, Zero Position [P725] is loaded with Actual Home Position [P737] - User Home Position [P738]. Then Psn Actual [P836] is loaded with Psn Fdbk [P847] - Zero Position [P725].
3. When Position Redefine is enabled, Actual Home Position [P737] is loaded with Psn Fdbk [P847] .
Homing
Speed
Position
Alarm Status B
960
8 Homing Actv
9 Not Home Set
Spd Ref To Spd Ref [6G3]
PTP Command
784
[11E3]
Zero Position
725
Psn Actual
To Psn Regulator [12B3]
836
Homing Status
730
0 Home Request
1 Home Enabled
2 Homing
3 At Home
Homing Control
731
0 Find Home
1 Home DI
2 Home Marker
3 Return Home
4 Psn Redefine
5 Homing Alarm
6 Home DI Inv
7 Hold At Home
DI Find Home
DI Redefine Psn
DI OL Home Limit
732
733
734
Find Home Speed
735
Find Home Ramp
736
User Home Psn
738
Actual Home Psn
737
Psn Fdbk
847
Parameter Selection
Mtr Psn Fdbk Source
Mtr Psn Fdbk Sel
135
A
B
C
D
E
F
G
H
I
1
2
3
4
5
6
14
Posit Homing
PF753 Rev1.001g, PF753 Block Diagram

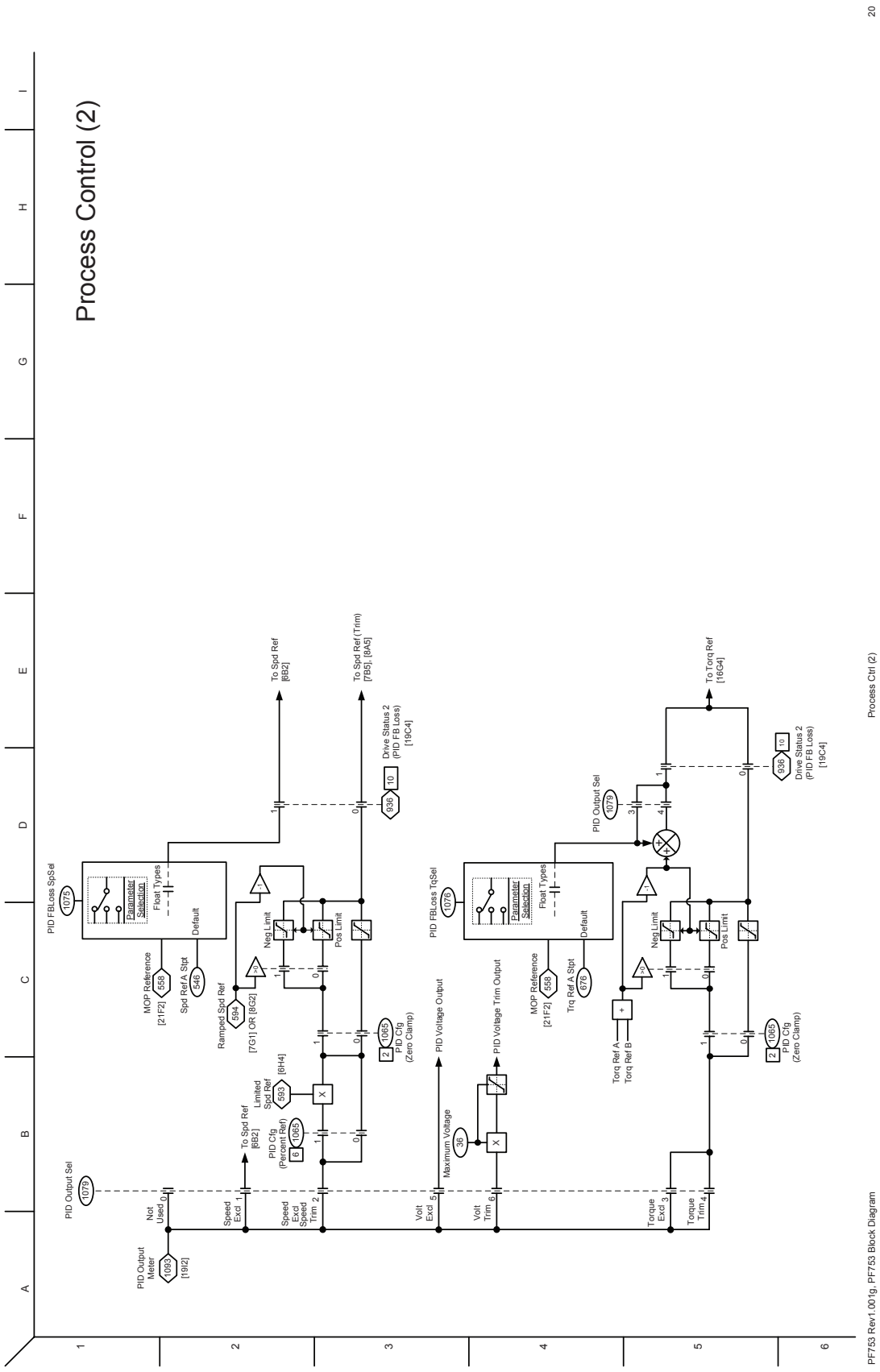

Torque Control - Overview
Spd Reg PI Out
Inertia Comp
Speed Reg Output Trim
Torq Ref 1
Torq Ref 2
Torq Trim
Torque Reference Scale and Trim
Drive Voltage and Current Ratings
DC Bus Voltage
Brake/Bus Config
Bus Voltage Regulator
Regen Power Limit
Pwr / Te Calc
Pos Torque Limit
Neg Torque Limit
Torque Limit Select
Power, Torque, and Current Limit Reference Generation
Current Limit Processing and Selection
Select
Speed / Torque / Position Mode Select
Torque Step
Notch Filter
Filtered Torque Ref
Torque Limit
Te / Iq Calc
Current Limit
Rate Limit
Torque Current Ref
PF753 Rev1.001g, PF753 Block Diagram
Trq Ctrl Overview
15

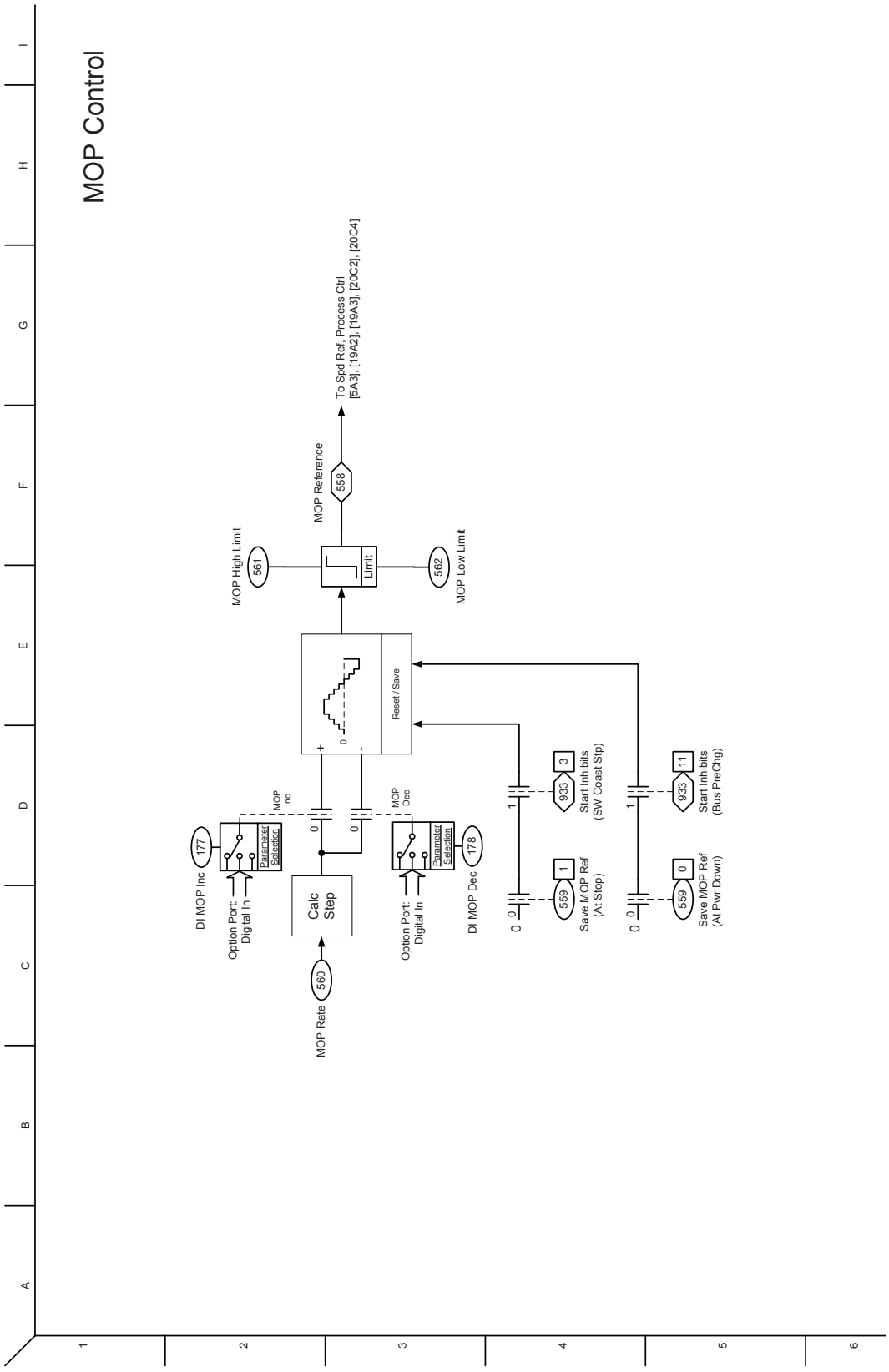

Torque Control – Reference Scale & Trim
* Note: Analog Hi, Lo scaling only used when Analog Input is selected
Trq Ref A Stpt
676
Trq Ref A Sel
675
Default
Parameter Selection
0.0
(Disabled)
(Setpoint)
(Analog In 1)
(Analog In 2)
From DIO Option Card
From DIO Option Card
Trq RefA AnlgHi
Trq RefA AnlgLo
677
678
Default 0
1
Bit Source
DI Torque StptA
195
Trq Ref A Mult
679
Trq Ref B Sel
680
Trq Ref B Stpt
681
Trq RefB AnlgHi
Trq RefB AnlgLo
682
683
X
Trq Ref B Mult
684
PID Output Sel
1079
PID Output Meter (PID Torque Trim) [20E5]
1093
3,4
Other
0
3
3 = Torque Excl
4 = Torque Trim
+
Commanded Trq
4
To Torq Ctrl, Process Ctrl [17B4], [19A4]
Trq Ref
PF753 Rev1.001g, PF753 Block Diagram
16

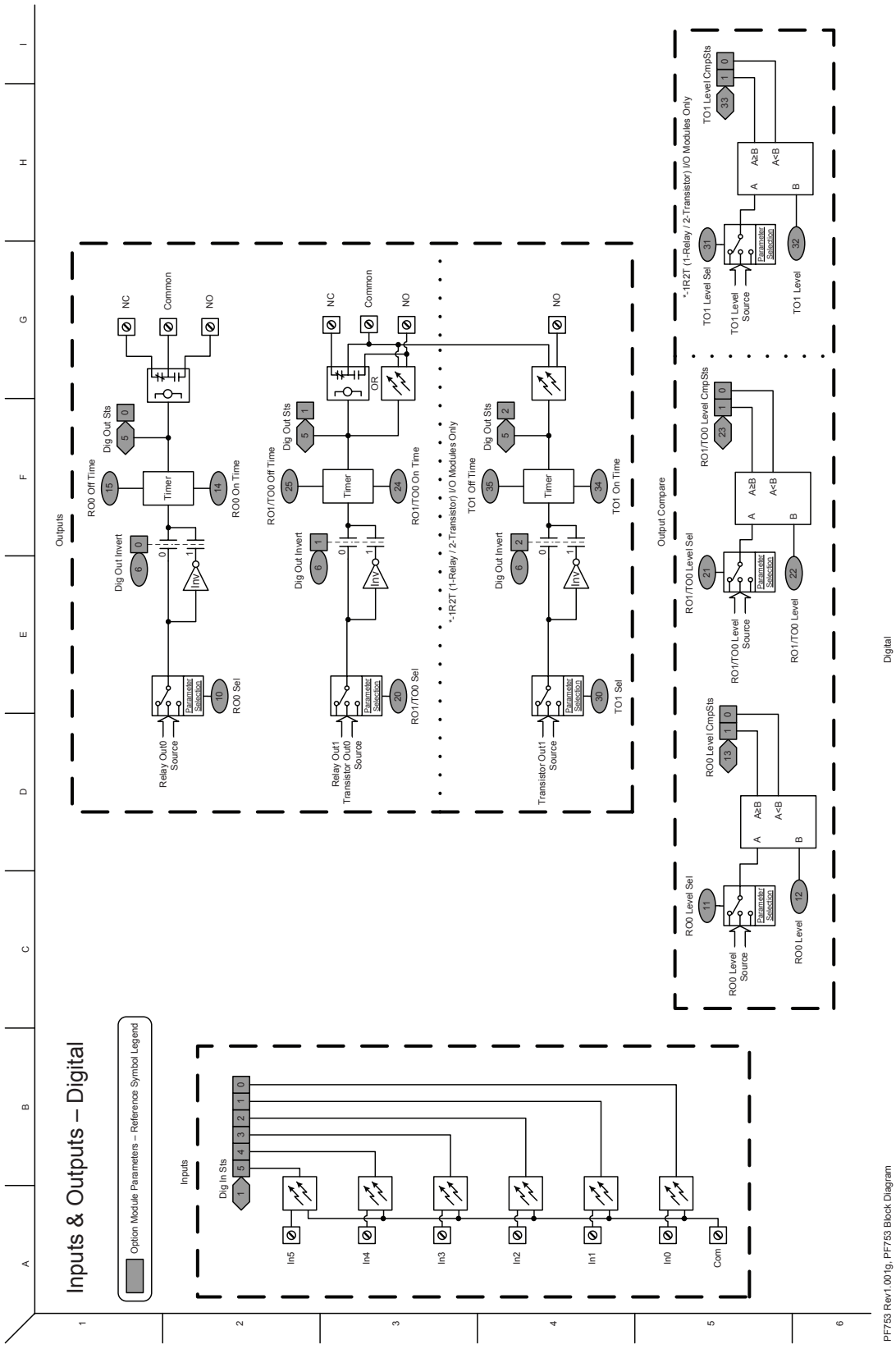

Torque Control – Torque
To Torq Ctrl Current [18B2]
Filtered Trq Ref
689
Notch
Notch Fltr Freq
687
Notch Fltr Atten
688
Selected Trq Ref
685
[10D5]
Torque Step
686
INTERNAL CONDITION ONLY
Min/Max Cntrl (Forced Spd)
Logic Ctrl State (Forced Spd)
Zero Torque 0
Speed Reg 1
Torq Reg 2
SLAT Min 3
SLAT Max 4
Sum 5
Psn P2P 7
Psn Direct 10
Min
Max
Actv SpTqPs Mode
313
[10D5], [11D3], [11I1], [12H6]
Drive Status 1
935
Torque Mode
PositionMode
Speed Mode
Select Logic
SLAT Err Stpt
314
SLAT Dwell Time
315
Mtr Option Cnfg
(Zero TrqStop)
(Trq ModeStop)
(Trq ModeJog)
40
SReg Output
660
From Spd Reg [10I3]
Commanded Trq
4
From Torq Ref [16H4]
AB/CD Select
SpdTrqPsn Mode A
309
SpdTrqPsn Mode B
310
SpdTrqPsn Mode C
311
SpdTrqPsn Mode D
312
DI SpTqPs Sel 1
182
DI SpTqPs Sel 0
181
Torque
PF753 Rev1.001g, PF753 Block Diagram

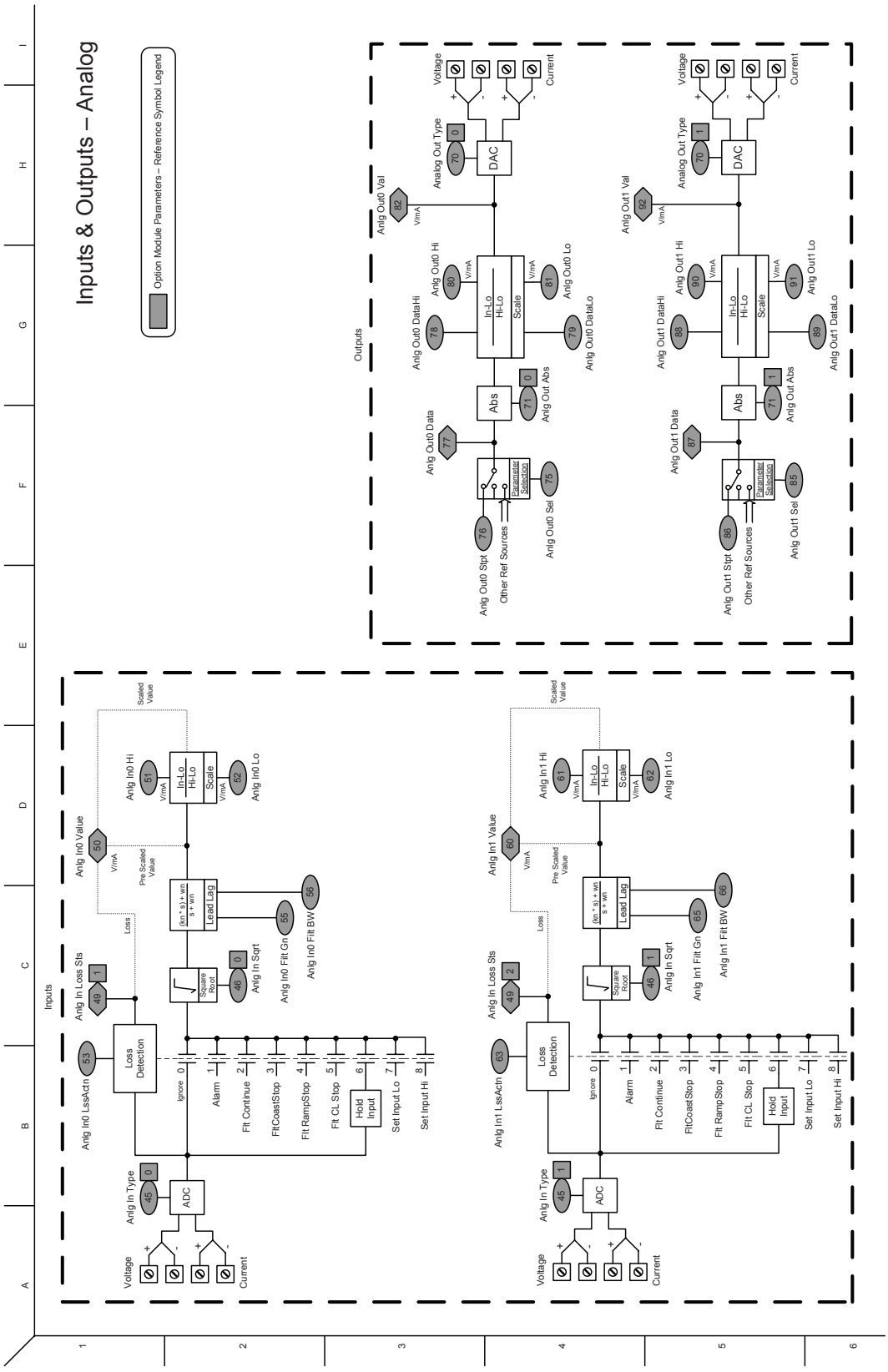

Torque Control – Current
Flux Vector
At Limit Status
945
Limit
Trq Pos Lmt
Trq Neg Lmt
Mtrng PwrLmt
Regen PwrLmt
21
22
23
24
Cur Lmt FV
Therm RegLmt
BusVltgFVLmt
Mtr Vltg Lkg
25
26
27
28
Limited Trq Ref
890
[6C6]
Active Pos Torque Limit
Active Neg Torque Limit
Max
Min
-1
Te / Iq Calc
Flux
1 / Flux
Pwr / Te Calc
Bus Regulator
Filtered Trq Ref
689
From Torq Ctrl [17H2]
Neg Torque Limit {Trq Pos Lmt}
671
Active Vel Fdbk
131
From Fdbk [3F2]
Regen Power Lmt {Regen PwrLmt}
426
{BusVltgFVLmt}
Motor Power Lmt {Mtrng PwrLmt}
427
Pos Torque Limit {Trq Neg Lmt}
670
Voltage Ref/ Limit Generation
{Mtr Vltg Lkg}
Pk Torque Iq Current Limit
Active Iq Current Limit
Flux Current Fdbk
Is,Id / Iq Calc
Iq,Id / Is Calc
Flux Vector (3)
VF or SV (0-2,7,8)
Motor Ctrl Mode
35
Thermal Mgr Current Limit
Active Cur Lmt
424
[25D2]
At Limit Status
945
Limit
TrqCurPosLmt
TrqCurNegLmt
17
18
Torque Current Ref
Rate Lim
425
Current Rate Lmt
Pos Limit
Neg Limit
Current Lmt Sel
421
Current Lmt 1
422
Current Lmt 2
423
Parameter Selection
{Cur Lmt FV}
Power Unit Thermal Protection
{Therm RegLmt}
Current
PF753 Rev1.001g, PF753 Block Diagram
18

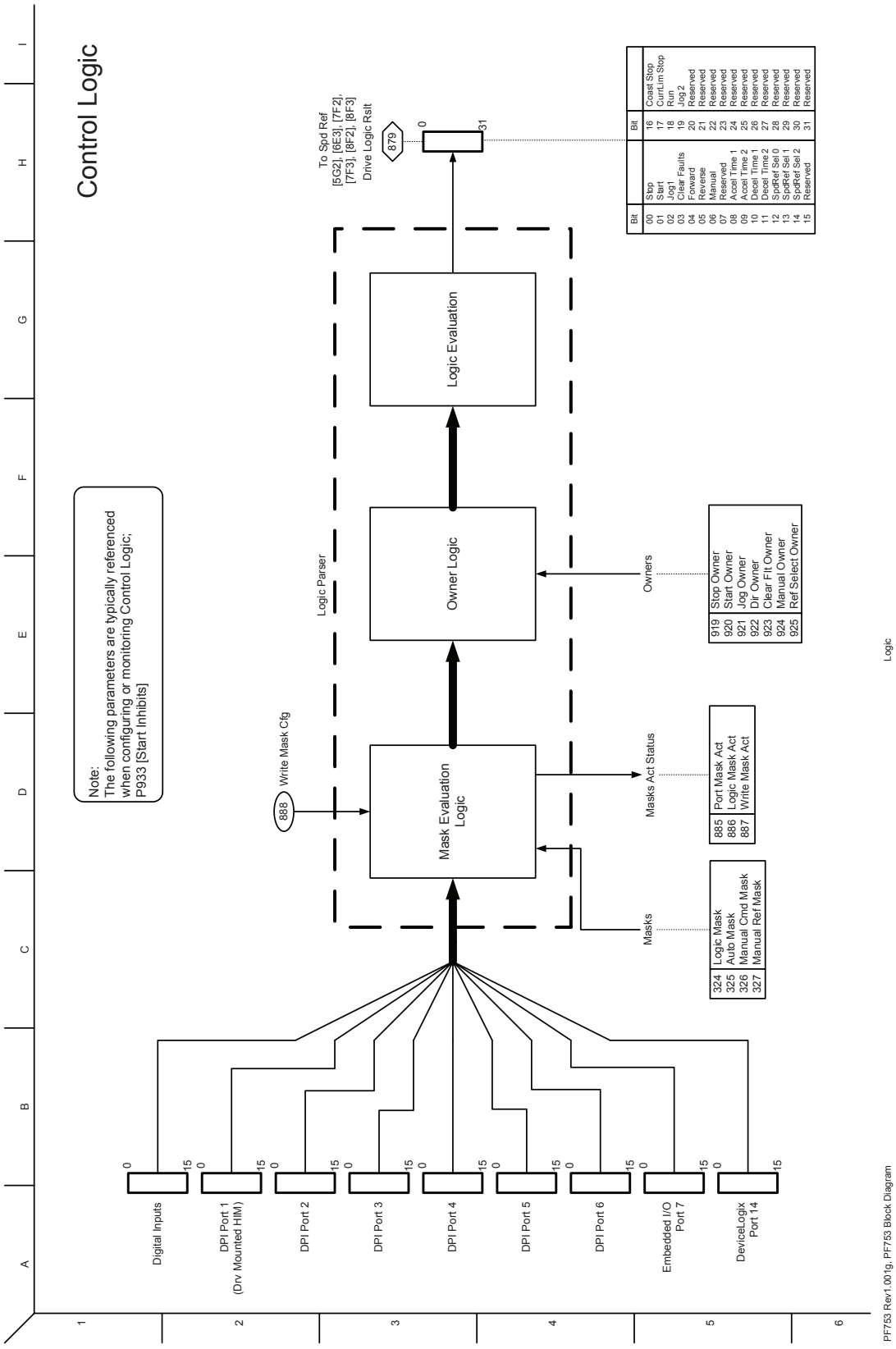

Process Control (1)
PID Ref Sel
PID Fdbk Sel
PID Prop Gain
PID Deriv Time
PID Error Meter
PID Output Meter
PID Output Mult
PID Upper Limit
PID Lower Limit
PID Status (PID In Limit)
PID Status (PID Hold) [19C5]
PID Cfg (Anti Windup)
PID Output Sel
PID Int Time
PID Preload
PID Cfg (Preload Int)
PID Status (PID Enabled)
Vqs Command
Accel Conditional
Drive InLimit
PID Control (PID Reset)
PID Status (PID Reset)
PID Reset
DI PID Reset
PID LP Filter BW
PID Deadband
Invert Error
PID Control (PID InvError)
DI PID Invert
PID Cfg (Ramp Ref)
PID Ref Mult
PID Ref Meter
PID Status (PID Enabled)
PID Ref AnlgHi
PID Ref AnlgLo
PID Fdbk Meter
PID Fdbk Mult
PID Cfg (Fdbk Sqrt)
PID Fdbk AnlgHi
PID Fdbk AnlgLo
PID FBLoss SpSel
PID FBLoss TqSel
Drive Status 2 (PID FB Loss) [20D5]
PID Hold
PID Status (PID Hold) [19D2]
PID Control (PID Hold)
DI PID Hold
Drive Status 1 (Stopping)
Drive Status 1 (Running)
PID Stop Mode
PID Enable
PID Control (PID Enable)
DI PID Enable
PID Status (PID Enabled) [19H3]
PID Cfg (Stop Mode)
Drive Status 1 (Stopping)
Option Port: Digital In
Option Port: Analog In
MOP Reference [21F2]
PID Setpoint
Commanded Trq [16H4]
Torque Cur Fdbk
Output Current
Output Power
PID Fdbk
Output Frequency
Per Unit Conv
Hz → Per Unit
Parameter Selection
Analog Types
Float Types
Default
Scale
Limit
Filter
LPass
Ramp
Hold
Anti/Wind Up
kp
P Gain
kd-S
D Gain
ki
s
I Gain
Deadband
200% Limit
Process Ctrl (1)
PF753 Rev1.001g, PF753 Block Diagram

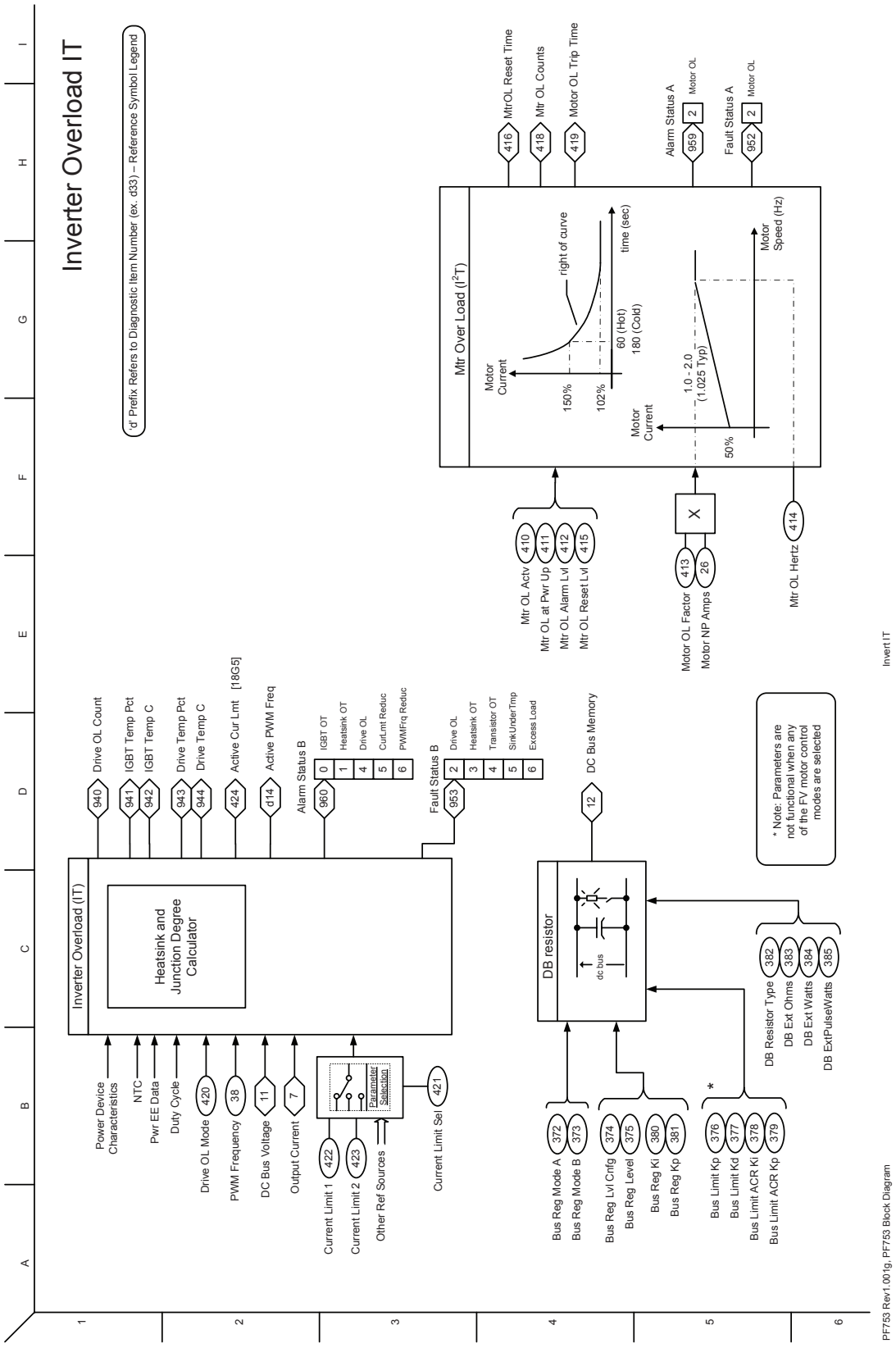

Process Control (2)
PID Output Sel
1075
PID Output Meter
1093
[1912]
Not Used 0
Speed Excl 1
Speed Excl Speed Trim 2
Torque Excl 3
Torque Trim 4
Volt Excl 5
Volt Trim 6
To Spd Ref [6B2]
PID Cfg (Percent Ref)
6
1065
Limited Spd Ref
583
[6H4]
Ramped Spd Ref
594
[7G1] OR [8G2]
MOP Reference
558
[21F2]
Spd Ref A Stpt
546
PID FBLoss SpSel
1075
Parameter Selection
Float Types
Default
Neg Limit
Pos Limit
To Spd Ref
[6B2]
To Spd Ref (Trim)
[7B5], [8A5]
Drive Status 2
(PID FB Loss)
[19C4]
936
10
PID Cfg
(Zero Clamp)
2
1065
PID Voltage Output
PID Voltage Trim Output
Maximum Voltage
36
PID FBLoss TqSel
1076
MOP Reference
558
[21F2]
Trq Ref A Stpt
676
PID Output Sel
1075
Torq Ref A
Torq Ref B
To Torq Ref
[16G4]
Process Ctrl (2)
PF753 Rev1.001g, PF753 Block Diagram


MOP Control
MOP Rate
560
Calc Step
MOP Inc
MOP Dec
DI MOP Inc
177
Option Port: Digital In
Parameter Selection
DI MOP Dec
178
Reset / Save
MOP Reference
558
To Spd Ref, Process Ctrl [5A3], [19A2],, [19A3], [20C2], [20C4]
MOP High Limit
561
MOP Low Limit
562
Limit
Save MOP Ref (At Stop)
559
Start Inhibits (SW Coast Stp)
933
Save MOP Ref (At Pwr Down)
Start Inhibits (Bus PreChg)
MOP
PF753 Rev1.001g, PF753 Block Diagram


Inputs & Outputs – Digital
Option Module Parameters – Reference Symbol Legend
Inputs
Dig In Sts
In5
In4
In3
In2
In1
In0
Com
Outputs
Dig Out Sts
Dig Out Invert
Timer
RO0 Off Time
RO0 On Time
RO0 Sel
Relay Out0 Source
NC
Common
NO
RO1/TO0 Off Time
RO1/TO0 On Time
RO1/TO0 Sel
Relay Out1 Transistor Out0 Source
OR
*-1R2T (1-Relay / 2-Transistor) I/O Modules Only
TO1 Off Time
TO1 On Time
TO1 Sel
Transistor Out1 Source
Output Compare
RO0 Level CmpSts
RO0 Level Sel
RO0 Level Source
RO0 Level
A≥B
A<B
RO1/TO0 Level CmpSts
RO1/TO0 Level Sel
RO1/TO0 Level Source
RO1/TO0 Level
TO1 Level CmpSts
TO1 Level Sel
TO1 Level Source
TO1 Level
Parameter Selection
Inv
Digital
PF753 Rev1.001g, PF753 Block Diagram


Inputs & Outputs – Analog
Option Module Parameters – Reference Symbol Legend
Outputs
Inputs
Voltage
Current
Analog In Type
ADC
Analog In Loss Sts
Analog In0 LssActn
Loss Detection
Ignore
Alarm
Flt Continue
FltCoastStop
Flt RampStop
Flt CL Stop
Hold Input
Set Input Lo
Set Input Hi
Square Root
Analog In Sqrt
Analog In0 Flt Gn
Analog In0 Flt BW
Lead Lag
Analog In0 Value
Pre Scaled Value
Scaled Value
In-Lo
Hi-Lo
Scale
Analog In0 Hi
Analog In0 Lo
Analog In1 LssActn
Analog In1 Value
Analog In1 Flt Gn
Analog In1 Flt BW
Analog In1 Hi
Analog In1 Lo
Analog Out Type
DAC
Analog Out0 Val
Analog Out0 Hi
Analog Out0 Lo
Analog Out0 DataHi
Analog Out0 DataLo
Abs
Analog Out Abs
Analog Out0 Data
Parameter Selection
Analog Out0 Sel
Analog Out0 Sptr
Other Ref Sources
Analog Out1 Val
Analog Out1 Hi
Analog Out1 Lo
Analog Out1 DataHi
Analog Out1 DataLo
Analog Out1 Data
Analog Out1 Sel
Analog Out1 Sptr
A
B
C
D
E
F
G
H
I
1
2
3
4
5
6
23
Analog
PF753 Rev1.001g, PF753 Block Diagram


Control Logic
Note:
The following parameters are typically referenced when configuring or monitoring Control Logic;
P933 [Start Inhibits]
Digital Inputs
DPI Port 1 (Drv Mounted HIM)
DPI Port 2
DPI Port 3
DPI Port 4
DPI Port 5
DPI Port 6
Embedded I/O Port 7
DeviceLogix Port 14
0
15
Logic Parser
Write Mask Cfg
888
Mask Evaluation Logic
Owner Logic
Logic Evaluation
Masks
Masks Act Status
Owners
324 Logic Mask
325 Auto Mask
326 Manual Cmd Mask
327 Manual Ref Mask
885 Port Mask Act
886 Logic Mask Act
887 Write Mask Act
919 Stop Owner
920 Start Owner
921 Jog Owner
922 Dir Owner
923 Clear Flt Owner
924 Manual Owner
925 Ref Select Owner
To Spd Ref [5G2], [6E3], [7F2], [7F3], [8F2], [8F3] Drive Logic Rslt
879
0
31
Bit
00 Stop
01 Start
02 Jog1
03 Clear Faults
04 Forward
05 Reverse
06 Manual
07 Reserved
08 Accel Time 1
09 Accel Time 2
10 Decel Time 1
11 Decel Time 2
12 SpdRef Sel 0
13 SpdRef Sel 1
14 SpdRef Sel 2
15 Reserved
16 Coast Stop
17 Curr/Lim Stop
18 Run
19 Jog 2
20 Reserved
21 Reserved
22 Reserved
23 Reserved
24 Reserved
25 Reserved
26 Reserved
27 Reserved
28 Reserved
29 Reserved
30 Reserved
31 Reserved
PF753 Rev1.001g, PF753 Block Diagram
Logic
24


Inverter Overload IT
'd' Prefix Refers to Diagnostic Item Number (ex. d33) – Reference Symbol Legend
Inverter Overload (IT)
Heatsink and Junction Degree Calculator
Power Device Characteristics
NTC
Pwr EE Data
Duty Cycle
Drive OL Mode 420
PWM Frequency 38
DC Bus Voltage 11
Output Current 7
Parameter Selection
Current Limit 1 422
Current Limit 2 423
Other Ref Sources
Current Limit Sel 421
Drive OL Count 940
IGBT Temp Pct 941
IGBT Temp C 942
Drive Temp Pct 943
Drive Temp C 944
Active Cur Lmt [18G5] 424
Active PWM Freq d14
Alarm Status B 960
0 IGBT OT
1 Heatsink OT
4 Drive OL
5 CurLmt Reduc
6 PWMFrq Reduc
Fault Status B 953
2 Drive OL
3 Heatsink OT
4 Transistor OT
5 SinkUnderTmp
6 Excess Load
DC Bus Memory 12
DB resistor
dc bus
* Note: Parameters are not functional when any of the FV motor control modes are selected
Bus Reg Mode A 372
Bus Reg Mode B 373
Bus Reg Lvl Cnfg 374
Bus Reg Level 375
Bus Reg Ki 380
Bus Reg Kp 381
Bus Limit Kp 376
Bus Limit Kd 377
Bus Limit ACR Ki 378
Bus Limit ACR Kp 379
DB Resistor Type 382
DB Ext Ohms 383
DB Ext Watts 384
DB ExtPulseWatts 385
Mtr Over Load (I²T)
Motor Current
150%
102%
right of curve
time (sec)
60 (Hot)
180 (Cold)
1.0 - 2.0 (1.025 Typ)
50%
Motor Speed (Hz)
Mtr OL Actv 410
Mtr OL at Pwr Up 411
Mtr OL Alarm Lvl 412
Mtr OL Reset Lvl 415
Motor OL Factor 413
Motor NP Amps 26
Mtr OL Hertz 414
MtrOL Reset Time 416
Mtr OL Counts 418
Motor OL Trip Time 419
Alarm Status A 959 2 Motor OL
Fault Status A 952 2 Motor OL
Invert IT
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25

List of PowerFlex 755 Control Block Diagrams

Flow diagrams on the following pages illustrate the PowerFlex 755 drive control algorithms.

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Speed Control - Reference (2)	331
Speed Control - Reference (3)	332
Speed Control - Reference (4)	333
Speed Control - Reference (5)	334
Speed Control - Regulator (FV)	335
Position Control - Reference	336
Position Control - Regulator	337
Position Control - Aux Functions	338
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Torque Control - Inertia Adaption	349
Torque Control - Load Observer / Estimator	350
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MOP Control	353
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Friction Compensation	358
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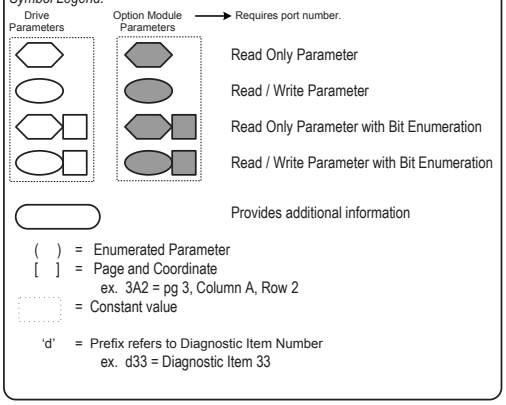
High Speed Trend Wizard	360

Diagram Conventions and Definitions

Definitions of the Per Unit system:
1.0 PU Position = Distance traveled / 1sec at Base Spd
1.0 PU Speed = Base Speed of the Motor
1.0 PU Torque = Base Torque of the Motor

Symbol Legend:

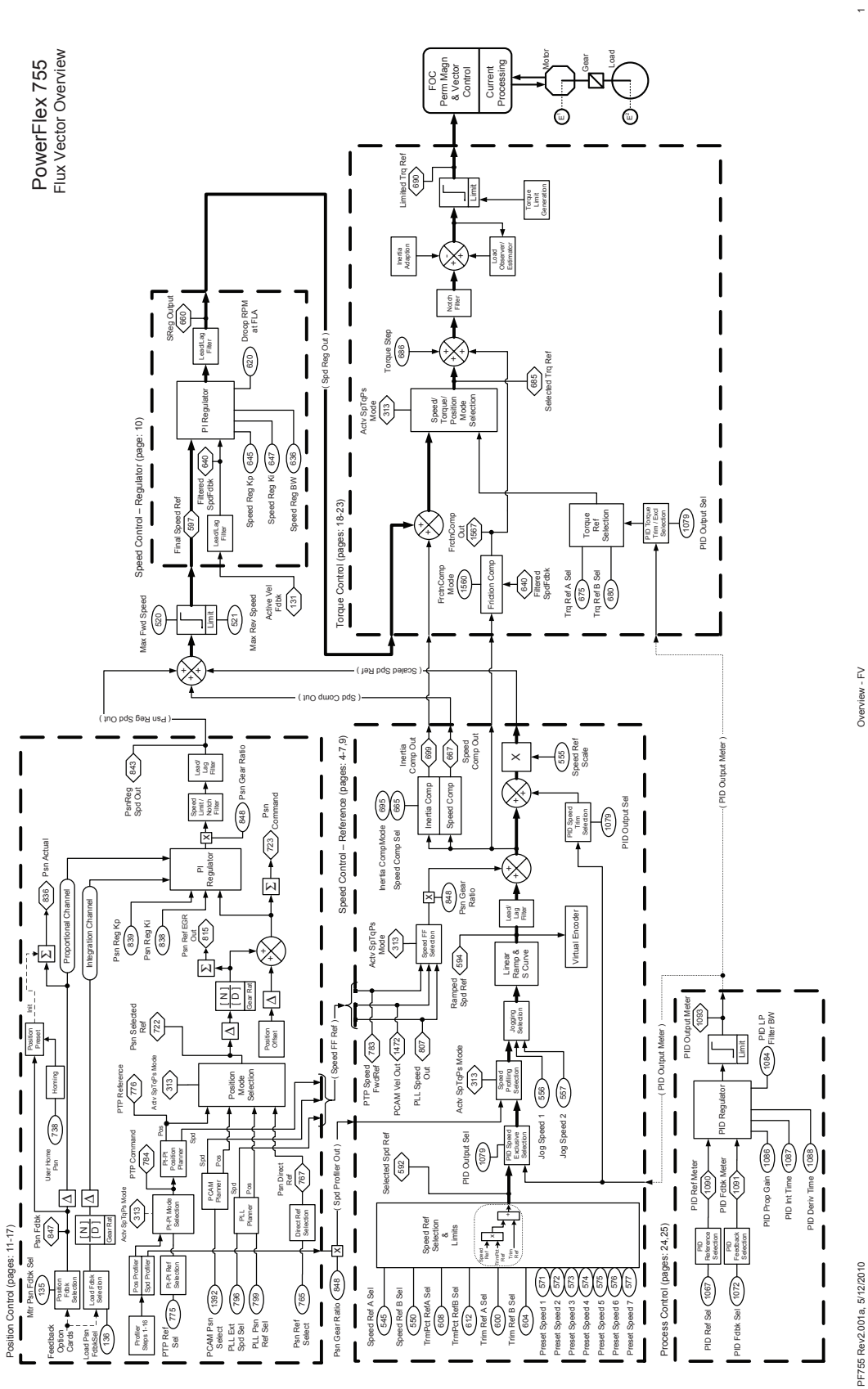


( ) = Enumerated Parameter
[ ] = Page and Coordinate
ex. 3A2 = pg 3, Column A, Row 2
= Constant value

'd' = Prefix refers to Diagnostic Item Number
ex. d33 = Diagnostic Item 33

*** Notes, *Important*:**

(1) These diagrams are for reference only and may not accurately reflect all logical control signals; actual functionality is implied by the approximated diagrams. Accuracy of these diagrams is not guaranteed.



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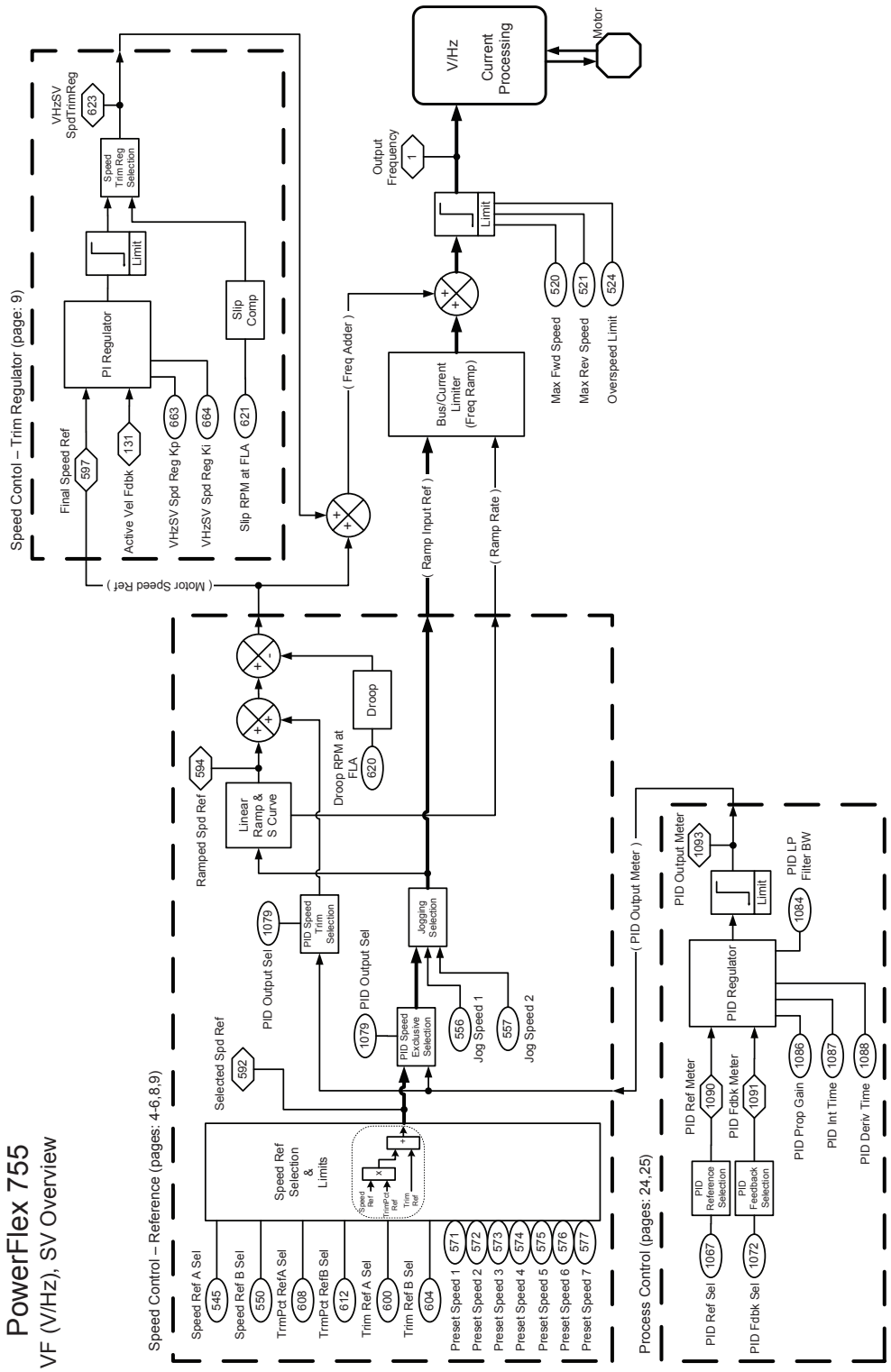
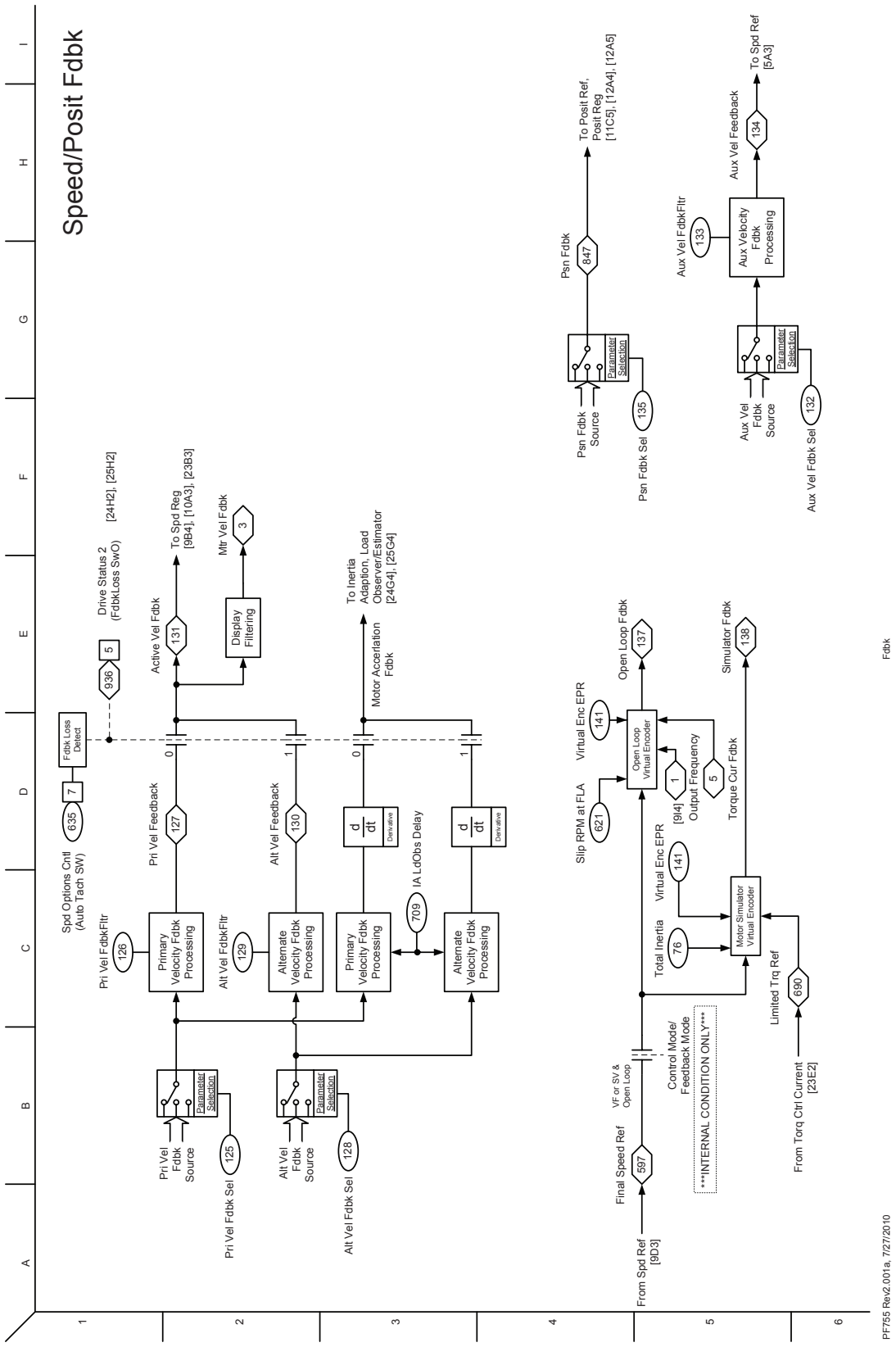
Overview - FV


PowerFlex 755
VF (V/Hz), SV Overview
Speed Contol – Trim Regulator (page: 9)
Speed Control – Reference (pages: 4-6,8,9)
Process Control (pages: 24,25)
V/Hz
Current
Processing
Motor
Output
Frequency
1
VHzSV
SpdTrimReg
623
Speed
Trim Reg
Selection
Limit
PI Regulator
Slip
Comp
Final Speed Ref
597
Active Vel Fdbk
131
VHzSV Spd Reg Kp
663
VHzSV Spd Reg Ki
664
Slip RPM at FLA
621
(Freq Adder)
Bus/Current
Limiter
(Freq Ramp)
Max Fwd Speed
520
Max Rev Speed
521
Overspeed Limit
524
(Motor Speed Ref)
(Ramp Input Ref)
(Ramp Rate)
Droop
Droop RPM at
FLA
620
Ramped Spd Ref
594
Linear
Ramp &
S Curve
PID Output Sel
1079
PID Speed
Trim
Selection
PID Output Sel
1079
PID Speed
Exclusive
Selection
Jogging
Selection
Jog Speed 1
556
Jog Speed 2
557
Selected Spd Ref
592
(PID Output Meter)
PID Output Meter
1093
Limit
PID LP
Filter BW
1084
PID Regulator
PID Ref Meter
1090
PID Fdbk Meter
1091
PID Prop Gain
1086
PID Int Time
1087
PID Deriv Time
1088
PID
Reference
Selection
PID
Feedback
Selection
PID Ref Sel
1067
PID Fdbk Sel
1072
Speed Ref
Selection
&
Limits
Speed
Ref
TrimPct
Ref
Trim
Ref
Speed Ref A Sel
545
Speed Ref B Sel
550
TrmPct RefA Sel
608
TrmPct RefB Sel
612
Trim Ref A Sel
600
Trim Ref B Sel
604
Preset Speed 1
571
Preset Speed 2
572
Preset Speed 3
573
Preset Speed 4
574
Preset Speed 5
575
Preset Speed 6
576
Preset Speed 7
577
PF755 Rev2.001a, 5/12/2010
Overview - VF (V/Hz), SV
2


Speed/Posit Fdbk
Spd Options Cntl (Auto Tach SW)
635
7
Fdbk Loss Detect
936
5
Drive Status 2 (FdbkLoss SwO)
[24H2], [25H2]
Pri Vel FdbkFltr
126
Primary Velocity Fdbk Processing
Pri Vel Feedback
127
Active Vel Fdbk
131
To Spd Reg [9B4], [10A3], [23B3]
Mtr Vel Fdbk
3
Display Filtering
Pri Vel Fdbk Source
Parameter Selection
Pri Vel Fdbk Sel
125
Alt Vel FdbkFltr
129
Alternate Velocity Fdbk Processing
Alt Vel Feedback
130
Alt Vel Fdbk Source
Alt Vel Fdbk Sel
128
Primary Velocity Fdbk Processing
IA LdObs Delay
709
Alternate Velocity Fdbk Processing
To Inertia Adaption, Load Observer/Estimator [24G4], [25G4]
Motor Acceration Fdbk
Derivative
Psn Fdbk
847
To Posit Ref, Posit Reg [11C5], [12A4], [12A5]
Psn Fdbk Source
Psn Fdbk Sel
135
Aux Vel FdbkFltr
133
Aux Velocity Fdbk Processing
Aux Vel Feedback
134
To Spd Ref [5A3]
Aux Vel Fdbk Source
Aux Vel Fdbk Sel
132
Slip RPM at FLA
621
Virtual Enc EPR
141
Open Loop Virtual Encoder
Open Loop Fdbk
137
[914] Output Frequency
Torque Cur Fdbk
Simulator Fdbk
138
Total Inertia
76
Motor Simulator Virtual Encoder
Limited Trq Ref
690
From Torq Ctrl Current [23E2]
VF or SV & Open Loop
Control Mode/ Feedback Mode
INTERNAL CONDITION ONLY
Final Speed Ref
597
From Spd Ref [9D3]
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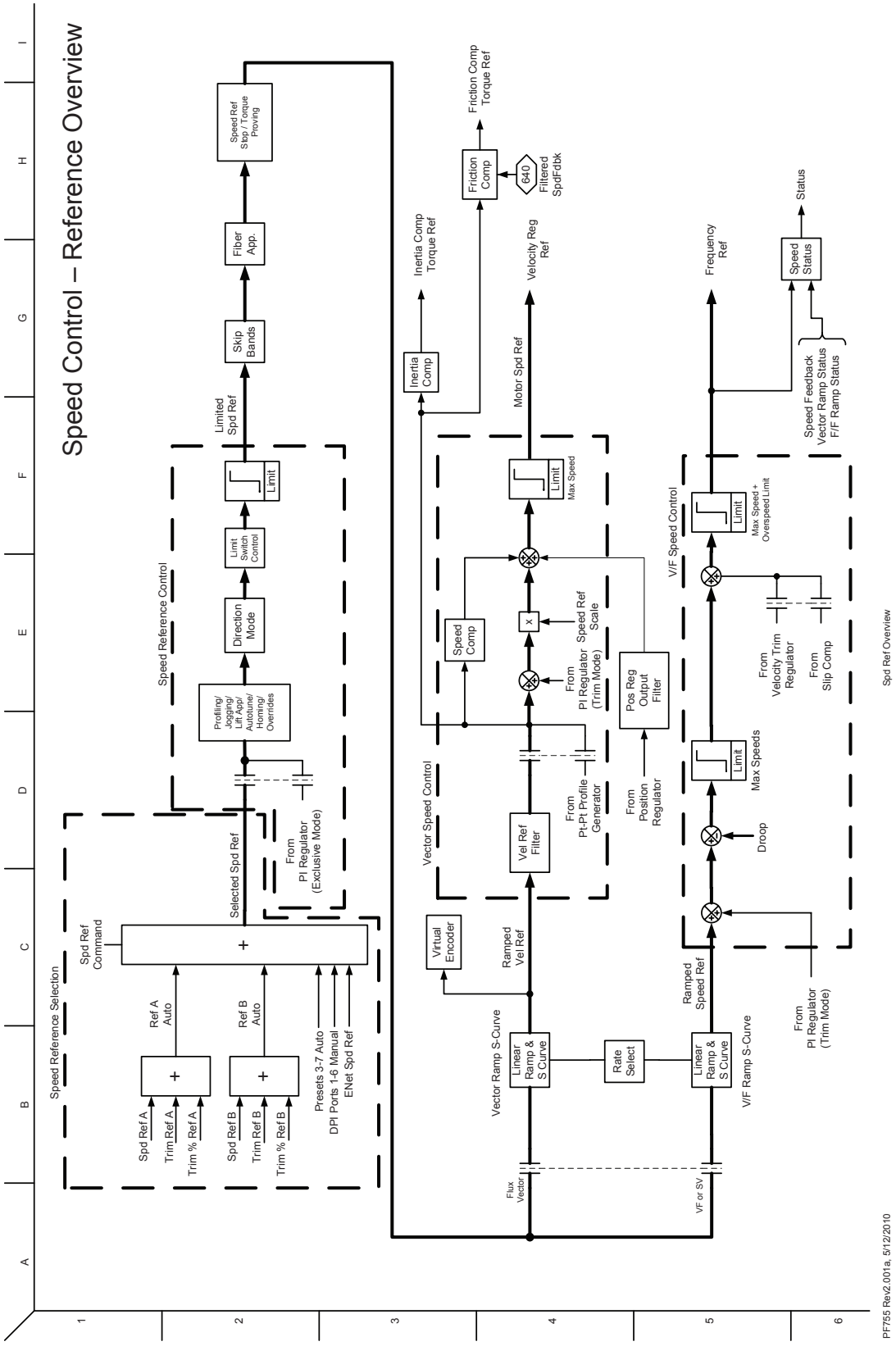
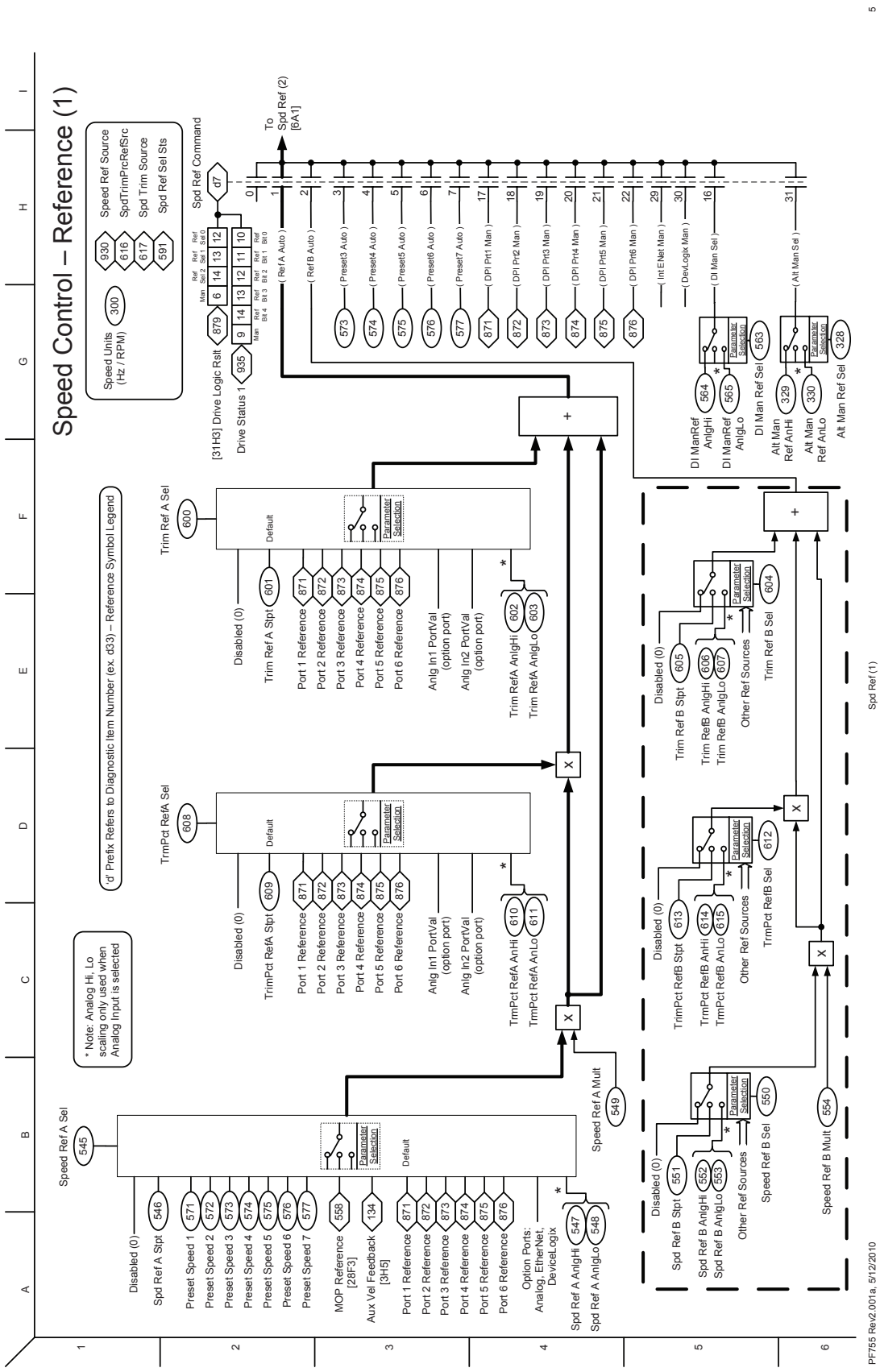
Fdbk
3


Speed Control – Reference Overview
Speed Reference Selection
Spd Ref Command
Ref A Auto
Ref B Auto
Spd Ref A
Trim Ref A
Trim % Ref A
Spd Ref B
Trim Ref B
Trim % Ref B
Presets 3-7 Auto
DPI Ports 1-6 Manual
ENet Spd Ref
Selected Spd Ref
From PI Regulator (Exclusive Mode)
Speed Reference Control
Profiling/ Jogging/ Lift App/ Autotune/ Homing/ Overrides
Direction Mode
Limit Switch Control
Limit
Limited Spd Ref
Skip Bands
Fiber App.
Speed Ref Step / Torque Proving
Vector Speed Control
Virtual Encoder
Ramped Vel Ref
Vel Ref Filter
From Pt-Pt Profile Generator
From Position Regulator
Pos Reg Output Filter
Speed Comp
From PI Regulator (Trim Mode)
Speed Ref Scale
Motor Spd Ref
Limit
Max Speed
Inertia Comp Torque Ref
Inertia Comp
Friction Comp Torque Ref
Friction Comp
640 Filtered SpdFdbk
Velocity Reg Ref
Vector Ramp S-Curve
Linear Ramp & S Curve
Rate Select
Flux Vector
V/F or SV
Ramped Speed Ref
V/F Ramp S-Curve
Linear Ramp & S Curve
From PI Regulator (Trim Mode)
V/F Speed Control
Limit
Max Speed + Overspeed Limit
Droop
Limit
Max Speeds
From Velocity Trim Regulator
From Slip Comp
Frequency Ref
Speed Status
Status
Speed Feedback
Vector Ramp Status
F/F Ramp Status
PF755 Rev2.001a, 5/12/2010
Spd Ref Overview


Speed Control – Reference (1)
'd' Prefix Refers to Diagnostic Item Number (ex. d33) – Reference Symbol Legend
* Note: Analog Hi, Lo scaling only used when Analog Input is selected
Speed Units (Hz / RPM) 300
930 Speed Ref Source
616 SpdTrimPrcRefSrc
617 Spd Trim Source
591 Spd Ref Sel Sts
Spd Ref Command d7
To Spd Ref (2) [6A1]
[31H3] Drive Logic Rslt 879
Drive Status 1 935
(Ref A Auto)
(Ref B Auto)
(Preset3 Auto)
(Preset4 Auto)
(Preset5 Auto)
(Preset6 Auto)
(Preset7 Auto)
(DPI Prt1 Man)
(DPI Prt2 Man)
(DPI Prt3 Man)
(DPI Prt4 Man)
(DPI Prt5 Man)
(DPI Prt6 Man)
(Int ENet Man)
(DevLogix Man)
(DI Man Sel)
(Alt Man Sel)
Speed Ref A Sel 545
Disabled (0)
Spd Ref A Stpt 546
Preset Speed 1 571
Preset Speed 2 572
Preset Speed 3 573
Preset Speed 4 574
Preset Speed 5 575
Preset Speed 6 576
Preset Speed 7 577
MOP Reference [28F3] 558
Aux Vel Feedback [3H5] 134
Port 1 Reference 871
Port 2 Reference 872
Port 3 Reference 873
Port 4 Reference 874
Port 5 Reference 875
Port 6 Reference 876
Option Ports: Analog, EtherNet, DeviceLogix
Spd Ref A AnlgHi 547
Spd Ref A AnlgLo 548
Speed Ref A Mult 549
Speed Ref B Mult 554
Speed Ref B Sel 550
Disabled (0)
Spd Ref B Stpt 551
Spd Ref B AnlgHi 552
Spd Ref B AnlgLo 553
Other Ref Sources
TrmPct Ref A Sel 608
Disabled (0)
TrmPct RefA Stpt 609
TrmPct RefA AnHi 610
TrmPct RefA AnLo 611
Anlg In1 PortVal (option port)
Anlg In2 PortVal (option port)
Trim Ref A Sel 600
Disabled (0)
Trim Ref A Stpt 601
Trim RefA AnlgHi 602
Trim RefA AnlgLo 603
TrmPct RefB Sel 612
Disabled (0)
TrmPct RefB Stpt 613
TrmPct RefB AnHi 614
TrmPct RefB AnLo 615
Trim Ref B Sel 604
Disabled (0)
Trim Ref B Stpt 605
Trim RefB AnlgHi 606
Trim RefB AnlgLo 607
DI ManRef AnlgHi 564
DI ManRef AnlgLo 565
DI Man Ref Sel 563
Alt Man Ref AnHi 329
Alt Man Ref AnLo 330
Alt Man Ref Sel 328
Parameter Selection
Default
Spd Ref (1)
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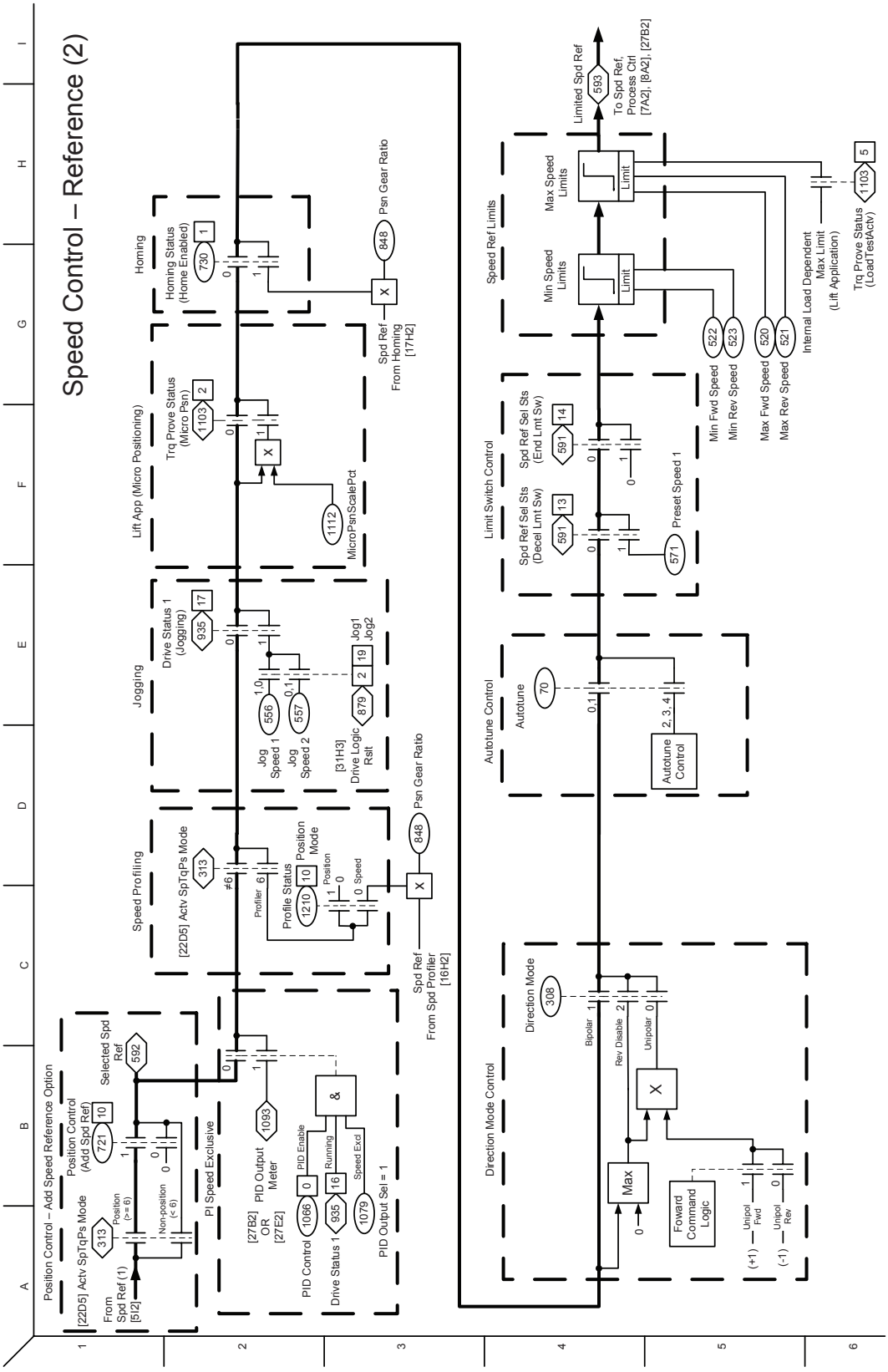
Speed Control – Reference (2)
Position Control – Add Speed Reference Option
[22D5] Activ SpTqPs Mode
313
Position (>= 6)
Non-position (< 6)
From Spd Ref (1) [5I2]
Position Control (Add Spd Ref)
721
Selected Spd Ref
592
PI Speed Exclusive
PID Output Meter
1093
[27B2] OR [27E2]
PID Control
1066
PID Enable
Drive Status 1
935
Running
16
Speed Excl
1079
PID Output Sel = 1
Speed Profiling
[22D5] Activ SpTqPs Mode
313
Profiler
Profile Status
1210
Position Mode
Position
Speed
Psn Gear Ratio
848
Spd Ref From Spd Profiler [16H2]
Jogging
Drive Status 1 (Jogging)
935
Jog Speed 1
556
Jog Speed 2
557
[31H3] Drive Logic Rslt
879
Jog1
Jog2
Lift App (Micro Positioning)
Trq Prove Status (Micro Psn)
1103
MicroPsnScalePct
1112
Homing
Homing Status (Home Enabled)
730
Psn Gear Ratio
848
Spd Ref From Homing [17H2]
Limit Switch Control
Spd Ref Sel Sts (Decel Lmt Sw)
591
Spd Ref Sel Sts (End Lmt Sw)
591
Preset Speed 1
571
Autotune Control
Autotune
70
Autotune Control
Direction Mode Control
Direction Mode
308
Bipolar
Rev Disable
Unipolar
Max
Foward Command Logic
Unipol Fwd
Unipol Rev
(+1)
(-1)
Speed Ref Limits
Min Speed Limits
Limit
Max Speed Limits
Limit
Min Fwd Speed
522
Min Rev Speed
523
Max Fwd Speed
520
Max Rev Speed
521
Internal Load Dependent Max Limit (Lift Application)
Trq Prove Status (LoadTestActv)
1103
5
Limited Spd Ref
593
To Spd Ref, Process Ctrl [7A2], [8A2], [27B2]
Spd Ref (2)
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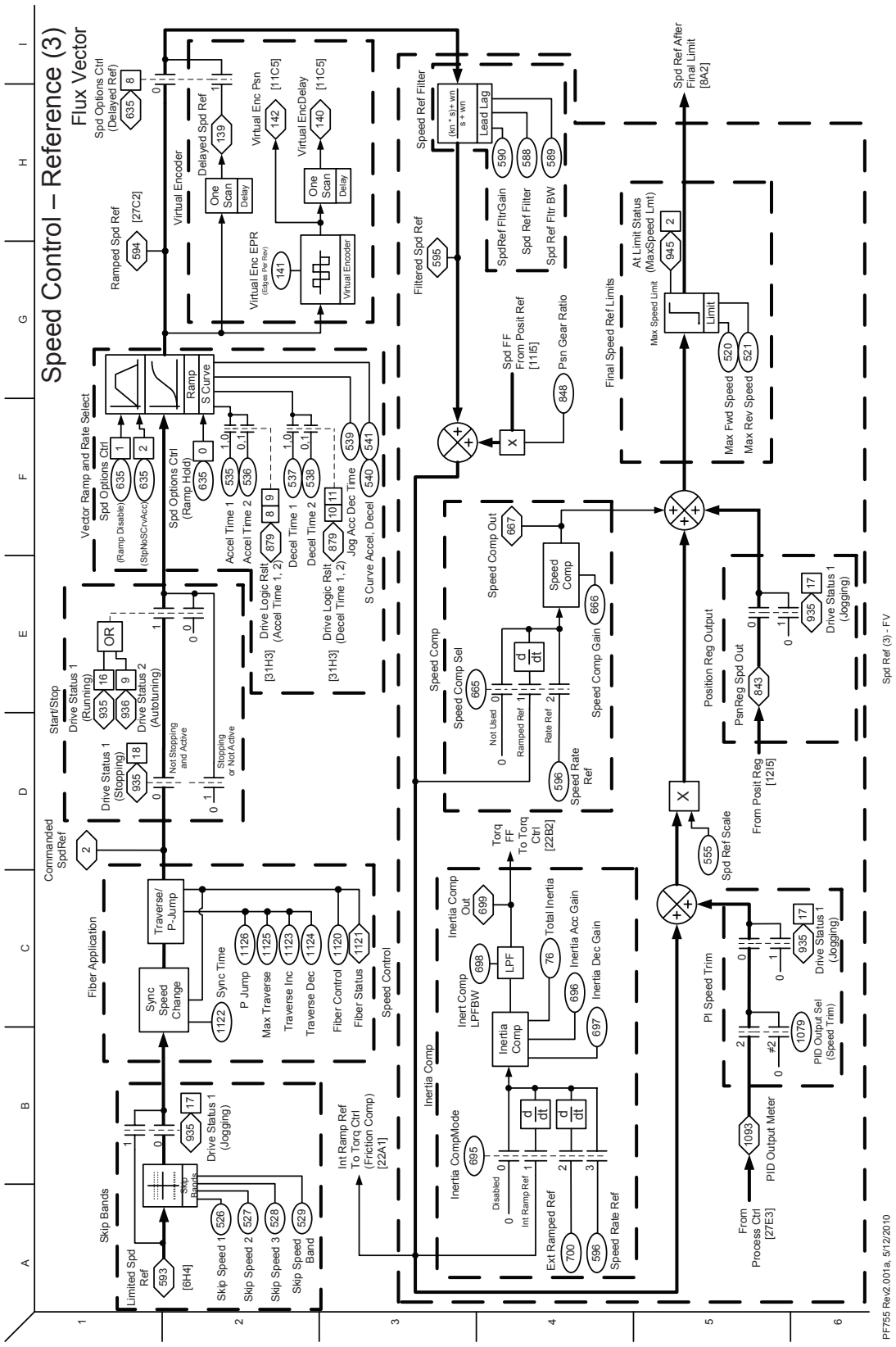
Speed Control – Reference (3)
Flux Vector
Commanded SpdRef
Fiber Application
Traverse/ P-Jump
Sync Speed Change
Sync Time
P Jump
Max Traverse
Traverse Inc
Traverse Dec
Fiber Control
Fiber Status
Speed Control
Skip Bands
Limited Spd Ref
Skip Speed 1
Skip Speed 2
Skip Speed 3
Skip Speed Band
Drive Status 1 (Jogging)
Int Ramp Ref To Torq Ctrl (Friction Comp) [22A1]
Inertia Comp
Inertia CompMode
Ext Ramped Ref
Speed Rate Ref
Inertia Comp Out
Inert Comp LPFBW
LPF
Total Inertia
Inertia Acc Gain
Inertia Dec Gain
Torq FF To Torq Ctrl [22B2]
Speed Comp
Speed Comp Sel
Speed Comp Out
Speed Comp Gain
Speed Rate Ref
Vector Ramp and Rate Select
Spd Options Ctrl (Ramp Disable)
Spd Options Ctrl (StpNoSCrvAcc)
Spd Options Ctrl (Ramp Hold)
Ramp
S Curve
Accel Time 1
Accel Time 2
Decel Time 1
Decel Time 2
Drive Logic Rslt (Accel Time 1, 2)
Drive Logic Rslt (Decel Time 1, 2)
Jog Acc Dec Time
S Curve Accel, Decel
Start/Stop
Drive Status 1 (Running)
Drive Status 2 (Autotuning)
Drive Status 1 (Stopping)
Not Stopping and Active
Stopping or Not Active
Spd Options Ctrl (Delayed Ref)
Virtual Encoder
Delayed Spd Ref
One Scan
Delay
Virtual Enc Psn
Virtual EncDelay
Virtual Enc EPR
Ramped Spd Ref
Filtered Spd Ref
Speed Ref Filter
SpdRef FltrGain
Spd Ref Filter
Spd Ref Fltr BW
Spd FF From Posit Ref [1115]
Psn Gear Ratio
Final Speed Ref Limits
At Limit Status (MaxSpeed Lmt)
Max Speed Limit
Limit
Max Fwd Speed
Max Rev Speed
Spd Ref After Final Limit [8A2]
Position Reg Output
PsnReg Spd Out
From Posit Reg [1215]
Spd Ref Scale
PI Speed Trim
PID Output Meter
From Process Ctrl [27E3]
PID Output Sel (Speed Trim)
Spd Ref (3) - FV
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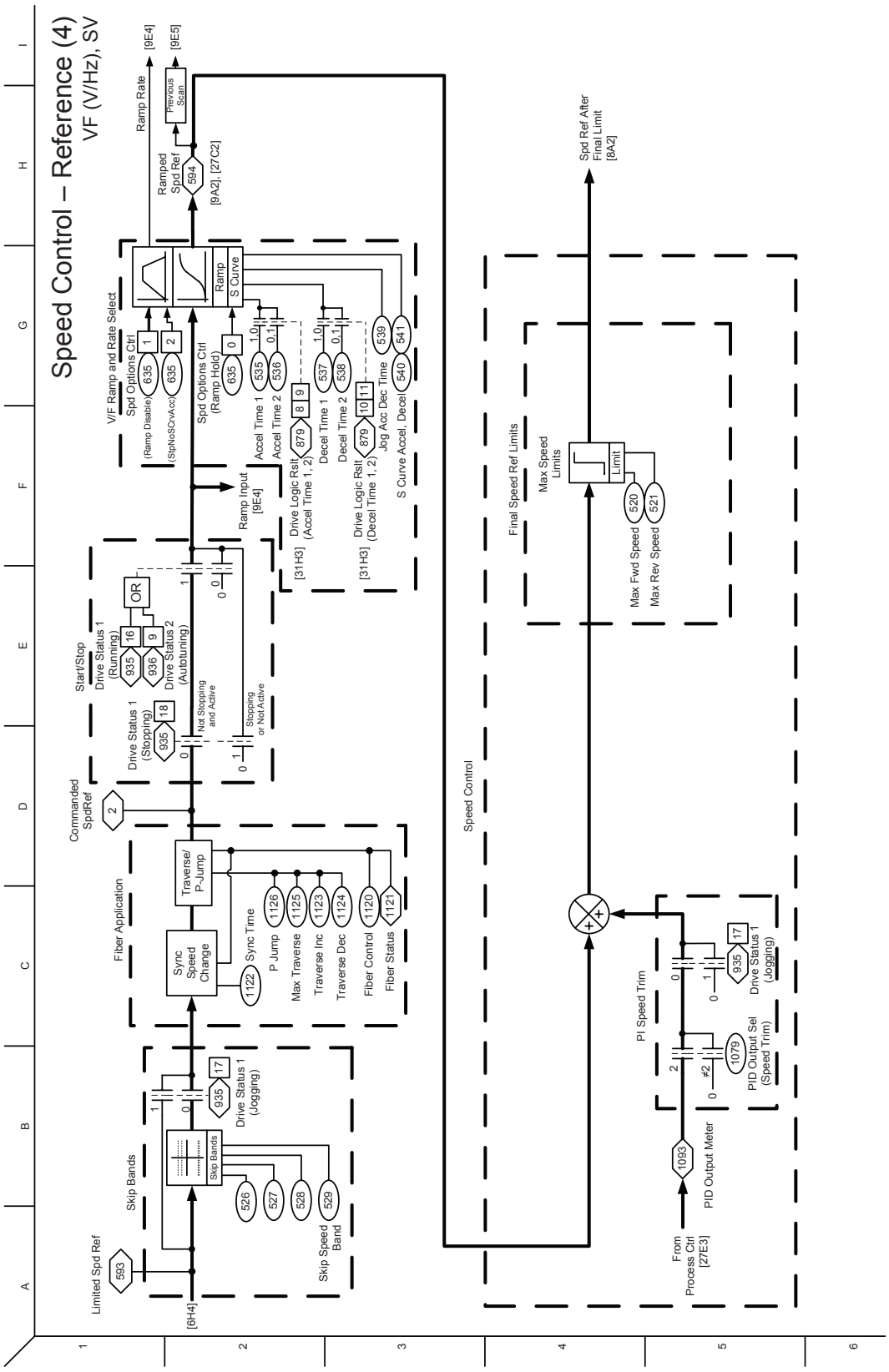
Speed Control – Reference (4)
VF (V/Hz), SV
Ramp Rate
[9E4]
[9E5]
Previous Scan
Ramped Spd Ref
594
[9A2], [27C2]
V/F Ramp and Rate Select
Spd Options Ctrl
(Ramp Disable)
635
(StpNoSCrvAcc)
Ramp
S Curve
Spd Options Ctrl
(Ramp Hold)
Accel Time 1
535
Accel Time 2
536
Drive Logic Rslt
(Accel Time 1, 2)
879
[31H3]
Decel Time 1
537
Decel Time 2
538
Drive Logic Rslt
(Decel Time 1, 2)
Jog Acc Dec Time
539
S Curve Accel, Decel
540
541
Ramp Input
[9E4]
Start/Stop
Drive Status 1
(Running)
935
Drive Status 2
(Autotuning)
936
OR
Drive Status 1
(Stopping)
Not Stopping and Active
Stopping or Not Active
Commanded SpdRef
Fiber Application
Traverse/ P-Jump
Sync Speed Change
Sync Time
1122
P Jump
1126
Max Traverse
1125
Traverse Inc
1123
Traverse Dec
1124
Fiber Control
1120
Fiber Status
1121
Skip Bands
Drive Status 1
(Jogging)
935
17
526
527
528
529
Skip Speed Band
Limited Spd Ref
593
[6H4]
Speed Control
Final Speed Ref Limits
Max Speed Limits
Limit
Max Fwd Speed
520
Max Rev Speed
521
Spd Ref After Final Limit
[8A2]
PI Speed Trim
PID Output Meter
1093
From Process Ctrl
[27E3]
PID Output Sel
(Speed Trim)
1079
Drive Status 1
(Jogging)
935
17
Spd Ref (4) - VF(V/Hz), SV
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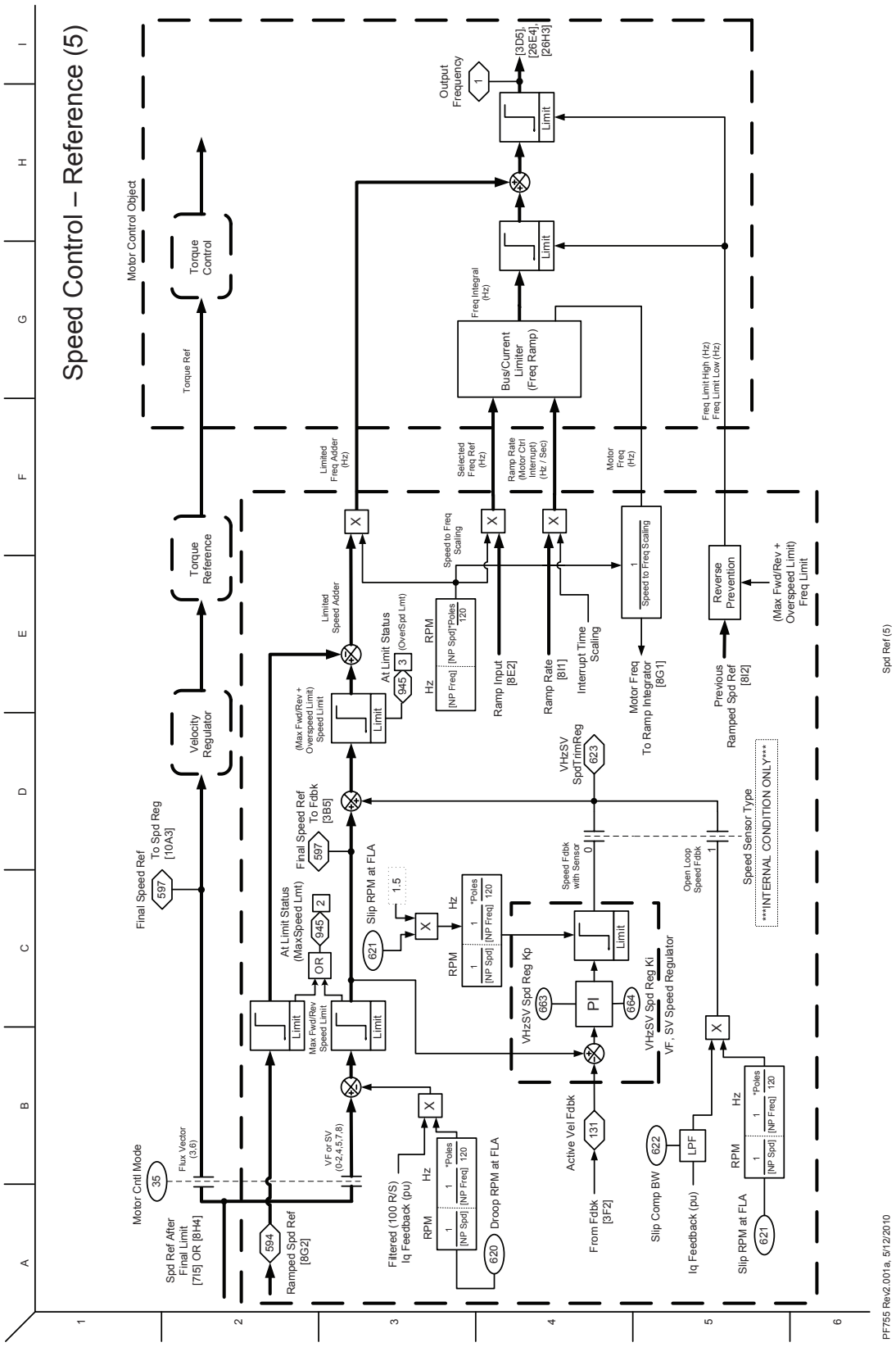
Speed Control – Reference (5)
Motor Control Object
Torque Ref
Torque Control
Torque Reference
Velocity Regulator
Limited Freq Adder (Hz)
Limited Speed Adder
Bus/Current Limiter (Freq Ramp)
Freq Integral (Hz)
Output Frequency
[3D5], [26E4], [26H3]
Limit
Selected Freq Ref (Hz)
Ramp Rate (Motor Ctrl Interrupt) (Hz / Sec)
Motor Freq (Hz)
Freq Limit High (Hz)
Freq Limit Low (Hz)
Speed to Freq Scaling
Ramp Input [8E2]
Ramp Rate [8I1]
Interrupt Time Scaling
Motor Freq To Ramp Integrator [8G1]
Reverse Prevention
Previous Ramped Spd Ref [8I2]
(Max Fwd/Rev + Overspeed Limit) Freq Limit
Spd Ref (5)
Final Speed Ref
To Spd Reg [10A3]
597
Final Speed Ref To Fdbk [3B5]
(Max Fwd/Rev + Overspeed Limit) Speed Limit
At Limit Status (OverSpd Lmt)
945
3
At Limit Status (MaxSpeed Lmt)
2
OR
Max Fwd/Rev Speed Limit
Slip RPM at FLA
621
1.5
RPM
Hz
[NP Spd]
[NP Freq]
*Poles
120
VHzSV SpdTrimReg
623
Speed Fdbk with Sensor
0
Open Loop Speed Fdbk
1
Speed Sensor Type
INTERNAL CONDITION ONLY
VHzSV Spd Reg Kp
663
PI
664
VHzSV Spd Reg Ki
VF, SV Speed Regulator
Active Vel Fdbk
131
From Fdbk [3F2]
Slip Comp BW
622
LPF
Iq Feedback (pu)
Slip RPM at FLA
621
Motor Cntl Mode
35
Flux Vector (3,6)
VF or SV (0-2,4,5,7,8)
Spd Ref After Final Limit [715] OR [8H4]
594
Ramped Spd Ref [8G2]
Filtered (100 R/S) Iq Feedback (pu)
Droop RPM at FLA
620
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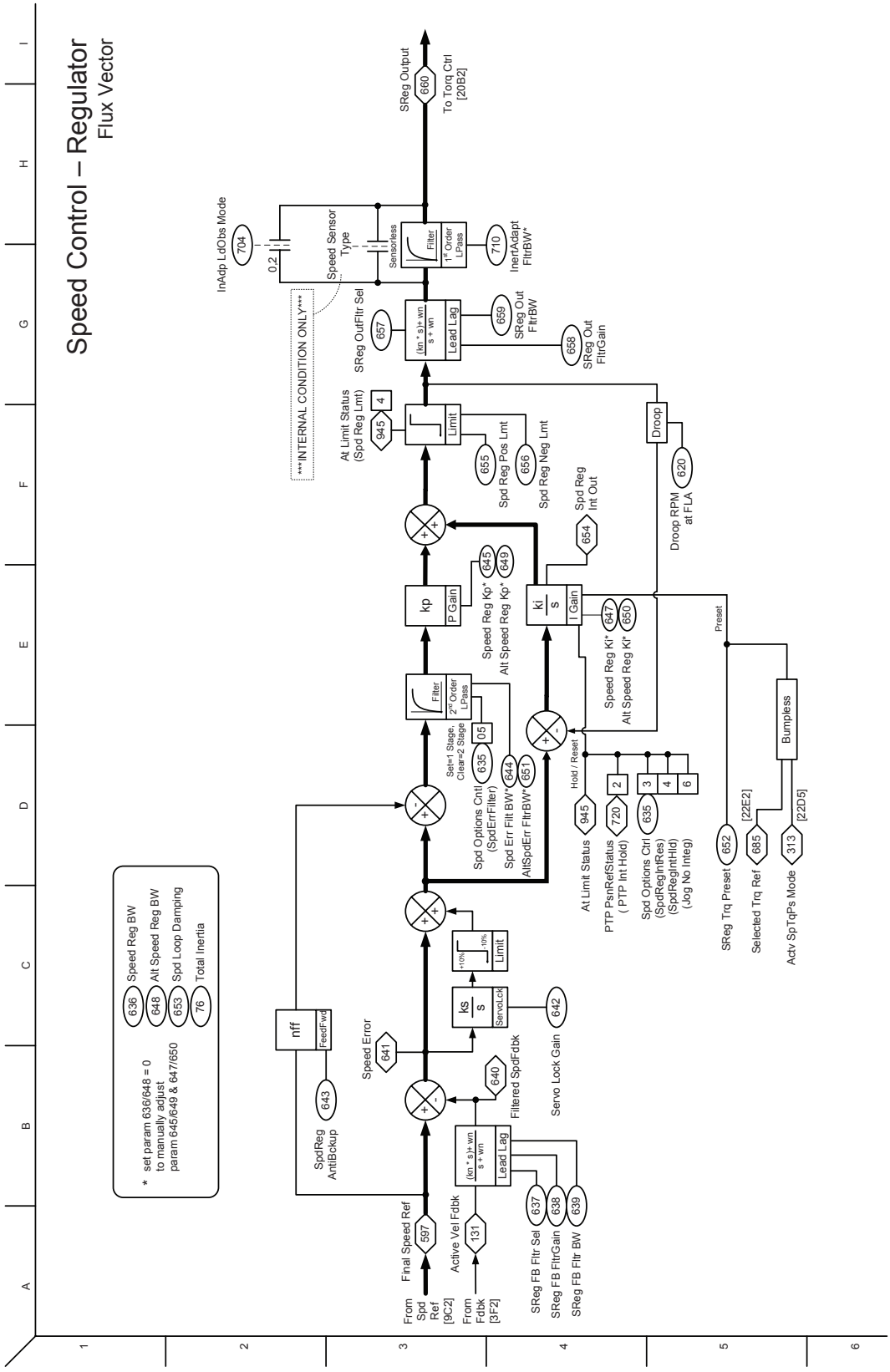
Speed Control – Regulator
Flux Vector
* set param 636/648 = 0 to manually adjust param 645/649 & 647/650
636 Speed Reg BW
648 Alt Speed Reg BW
653 Spd Loop Damping
76 Total Inertia
InAdp LdObs Mode
704
0.2
Speed Sensor Type
Sensorless
Filter 1st Order LPass
710 InertAdapt FltrBW*
*** INTERNAL CONDITION ONLY***
SReg Output
660
To Torq Ctrl [20B2]
SReg OutFltr Sel
657
(kn * s)+ wn / s + wn
Lead Lag
659 SReg Out FltrBW
658 SReg Out FltrGain
At Limit Status (Spd Reg Lmt)
4
945
Limit
655 Spd Reg Pos Lmt
656 Spd Reg Neg Lmt
Droop
620 Droop RPM at FLA
654 Spd Reg Int Out
kp
P Gain
645 Speed Reg Kp*
649 Alt Speed Reg Kp*
ki / s
I Gain
647 Speed Reg Ki*
650 Alt Speed Reg Ki*
Filter 2nd Order LPass
Set=1 Stage, Clear=2 Stage
05
635
Spd Options Cntl (SpdErrFilter)
644 Spd Err Filt BW*
651 AltSpdErr FltrBW*
Hold / Reset
945 At Limit Status
2
720 PTP PsnRefStatus (PTP Int Hold)
3
4
6
635 Spd Options Ctrl (SpdRegIntRes) (SpdRegIntHld) (Jog No Integ)
Preset
652 SReg Trq Preset [22E2]
685 Selected Trq Ref
Bumpless
313 Actv SpTqPs Mode [22D5]
nff
FeedFwd
643 SpdReg AntiBckup
Speed Error
641
ks / s
ServoLck
642 Servo Lock Gain
+10%
-10%
Limit
640 Filtered SpdFdbk
(kn * s)+ wn / s + wn
Lead Lag
637 SReg FB FltrSel
638 SReg FB FltrGain
639 SReg FB Fltr BW
From Spd Ref [9C2]
Final Speed Ref
597
From Fdbk [3F2]
Active Vel Fdbk
131
Spd Reg - Flux Vector
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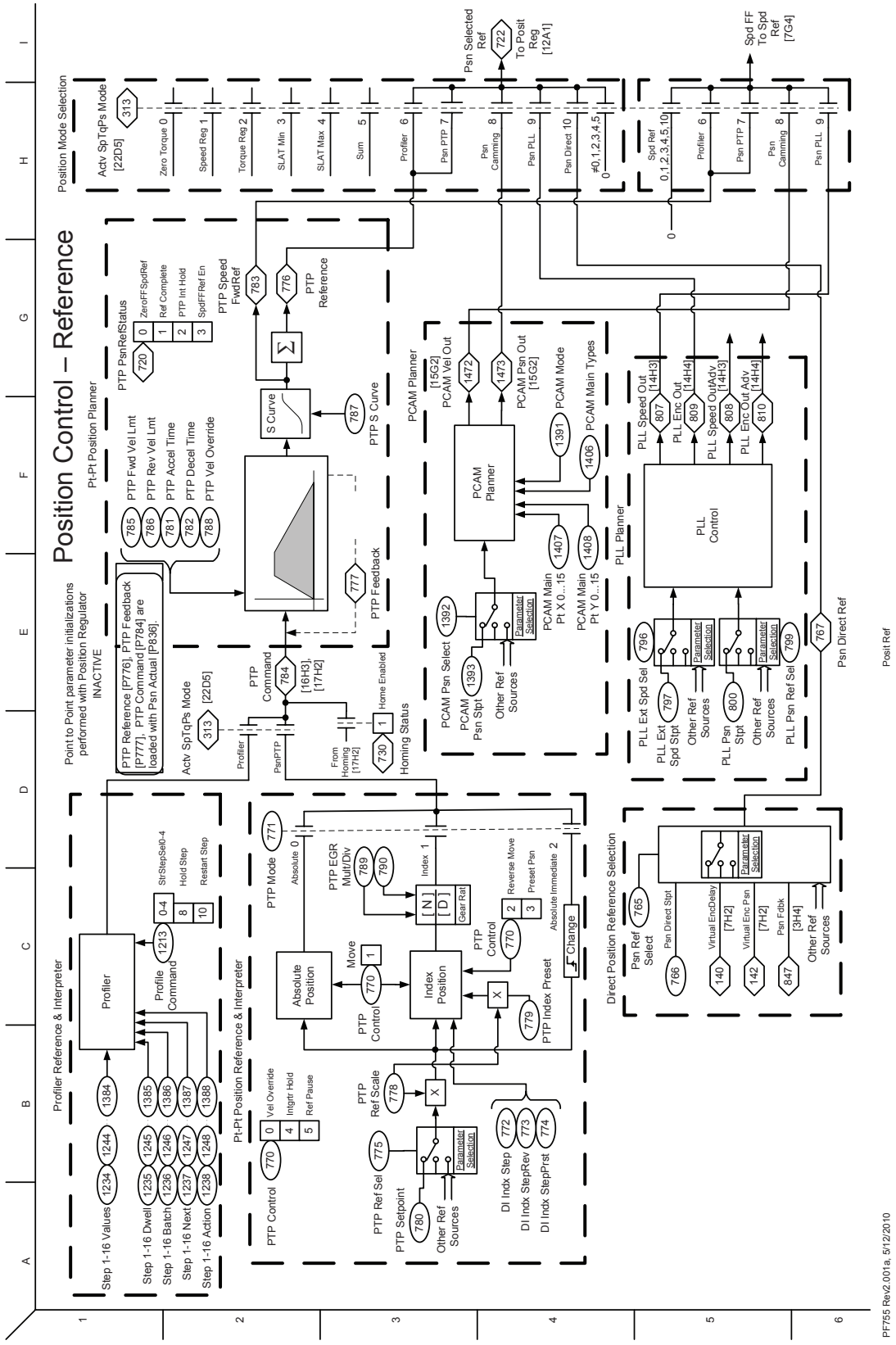
10


Position Control – Reference
Point to Point parameter initializations performed with Position Regulator INACTIVE
PTP Reference [P776], PTP Feedback [P777], PTP Command [P784] are loaded with Psn Actual [P836].
Pt-Pt Position Planner
Profiler Reference & Interpreter
Pt-Pt Position Reference & Interpreter
PLL Planner
Direct Position Reference Selection
Position Mode Selection
Actv SpTqPs Mode [22D5]
Zero Torque 0
Speed Reg 1
Torque Reg 2
SLAT Min 3
SLAT Max 4
Sum 5
Profiler 6
Psn PTP 7
Psn Camming 8
Psn PLL 9
Psn Direct 10
Psn Selected Ref
To Posit Reg [12A1]
Spd FF To Spd Ref [7G4]
PTP PsnRefStatus
ZeroFFSpdRef
Ref Complete
PTP Int Hold
SpdFFRef En
PTP Speed FwdRef
PTP Reference
PTP Fwd Vel Lmt
PTP Rev Vel Lmt
PTP Accel Time
PTP Decel Time
PTP Vel Override
S Curve
PTP S Curve
PTP Feedback
PTP Command
Actv SpTqPs Mode [22D5]
Profiler
PsnPTP
From Homing [17H2]
Home Enabled
Homing Status
PCAM Planner [15G2]
PCAM Vel Out
PCAM Psn Out [15G2]
PCAM Mode
PCAM Main Types
PCAM Psn Select
PCAM Psn Stpt
Other Ref Sources
PCAM Main Pt X 0...15
PCAM Main Pt Y 0...15
PLL Speed Out [14H3]
PLL Enc Out [14H4]
PLL Speed OutAdv [14H3]
PLL Enc Out Adv [14H4]
PLL Control
PLL Ext Spd Sel
PLL Ext Spd Stpt
PLL Psn Stpt
PLL Psn Ref Sel
Psn Direct Ref
Posit Ref
Step 1-16 Values
Step 1-16 Dwell
Step 1-16 Batch
Step 1-16 Next
Step 1-16 Action
Profiler
Profile Command
StrStepSel0-4
Hold Step
Restart Step
PTP Control
Vel Override
Intgrtr Hold
Ref Pause
PTP Mode
Absolute 0
PTP EGR Mult/Div
Index 1
Gear Ratio
Absolute Position
Move
Index Position
PTP Control
Reverse Move
Preset Psn
Absolute Immediate 2
Change
PTP Index Preset
PTP Ref Scale
PTP Ref Sel
PTP Setpoint
Other Ref Sources
DI Indx Step
DI Indx StepRev
DI Indx StepPrst
Psn Ref Select
Psn Direct Stpt
Virtual EncDelay [7H2]
Virtual Enc Psn [7H2]
Psn Fdbk [3H4]
Other Ref Sources
Parameter Selection
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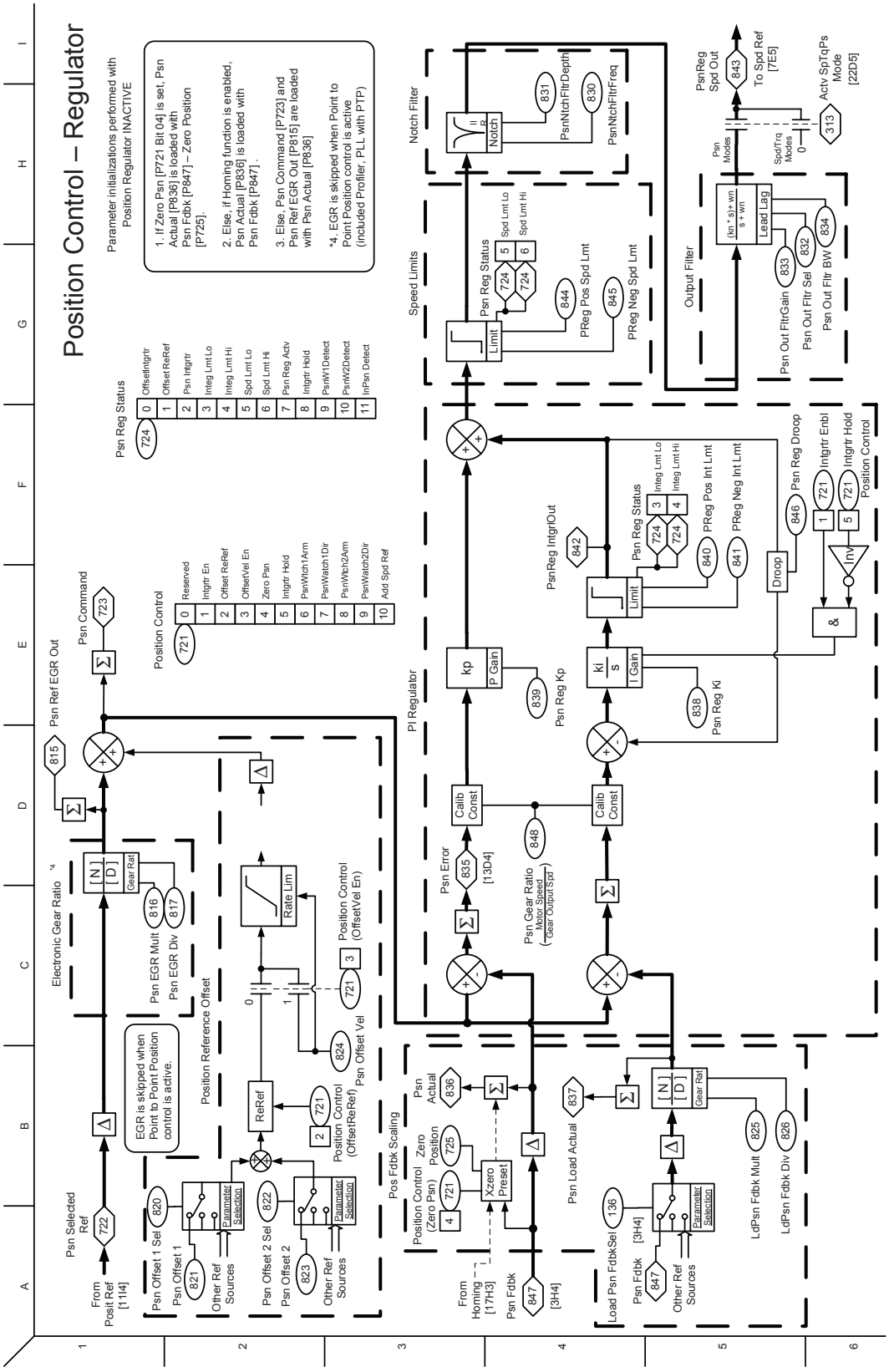
Position Control – Regulator
Parameter initializations performed with Position Regulator INACTIVE
1. If Zero Psn [P721 Bit 04] is set, Psn Actual [P836] is loaded with Psn Fdbk [P847] – Zero Position [P725].
2. Else, if Homing function is enabled, Psn Actual [P836] is loaded with Psn Fdbk [P847].
3. Else, Psn Command [P723] and Psn Ref EGR Out [P815] are loaded with Psn Actual [P836]
*4. EGR is skipped when Point to Point Position control is active (included Profiler, PLL with PTP)
Psn Reg Status
Position Control
Psn Command
Psn Ref EGR Out
Electronic Gear Ratio *4
Psn Selected Ref
From Posit Ref [114]
Psn Offset 1 Sel
Psn Offset 1
Other Ref Sources
Psn Offset 2 Sel
Psn Offset 2
Other Ref Sources
EGR is skipped when Point to Point Position control is active.
Psn EGR Mult
Psn EGR Div
Position Reference Offset
Rate Lim
ReRef
Position Control (OffsetReRef)
Position Control (OffsetVel En)
Psn Offset Vel
Pos Fdbk Scaling
Position Control (Zero Psn)
Zero Position
Xzero Preset
From Homing – [17H3]
Psn Fdbk
[3H4]
Psn Actual
Psn Load Actual
Load Psn FdbkSel
Psn Fdbk
Other Ref Sources
LdPsn Fdbk Mult
LdPsn Fdbk Div
PI Regulator
Psn Error
[13D4]
Psn Gear Ratio
Motor Speed
Gear Output Spd
Calib Const
kp
P Gain
Psn Reg Kp
ki
s
I Gain
Psn Reg Ki
PsnReg IntgrOut
Psn Reg Status
PReg Pos Int Lmt
PReg Neg Int Lmt
Droop
Psn Reg Droop
Intgrtr Enbl
Intgrtr Hold
Position Control
Speed Limits
Psn Reg Status
Limit
PReg Pos Spd Lmt
PReg Neg Spd Lmt
Notch Filter
Notch
PsnNtchFltrDepth
PsnNtchFltrFreq
Output Filter
Psn Out FltrGain
Psn Out Fltr Sel
Psn Out Fltr BW
Lead Lag
Psn Modes
Spd/Trq Modes
PsnReg Spd Out
To Spd Ref [7E5]
Actv SpTqPs Mode [22D5]
Posit Reg
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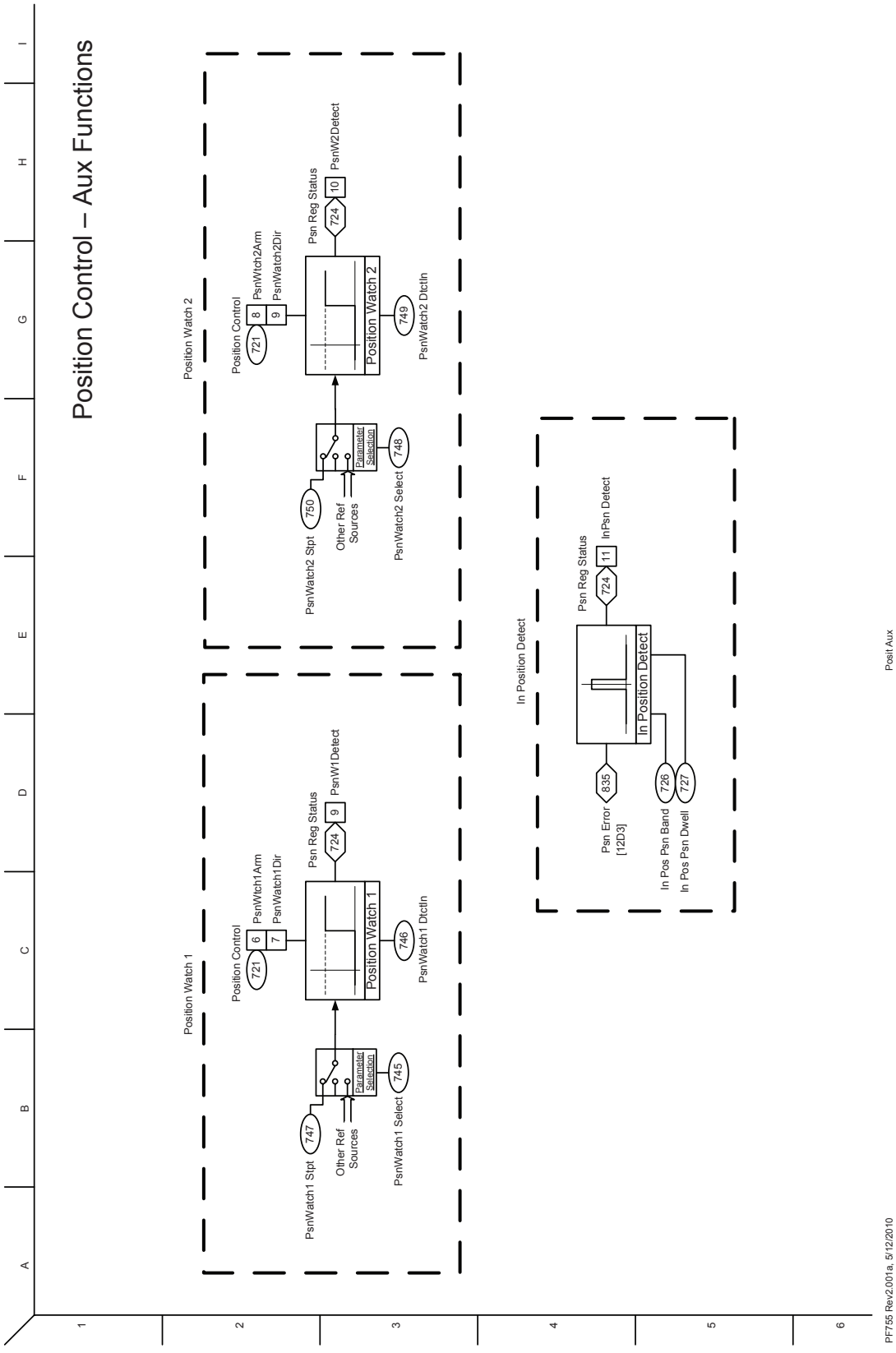
Position Control – Aux Functions
Position Watch 1
Position Control
721
6
PsnWtch1Arm
7
PsnWatch1Dir
Psn Reg Status
724
9
PsnW1Detect
Position Watch 1
746
PsnWatch1 DtctIn
PsnWatch1 Stpt
747
Other Ref Sources
Parameter Selection
PsnWatch1 Select
745
Position Watch 2
Position Control
721
8
PsnWtch2Arm
9
PsnWatch2Dir
Psn Reg Status
724
10
PsnW2Detect
Position Watch 2
749
PsnWatch2 DtctIn
PsnWatch2 Stpt
750
Other Ref Sources
Parameter Selection
PsnWatch2 Select
748
In Position Detect
Psn Reg Status
724
11
InPsn Detect
In Position Detect
Psn Error [12D3]
835
In Pos Psn Band
726
In Pos Psn Dwell
727
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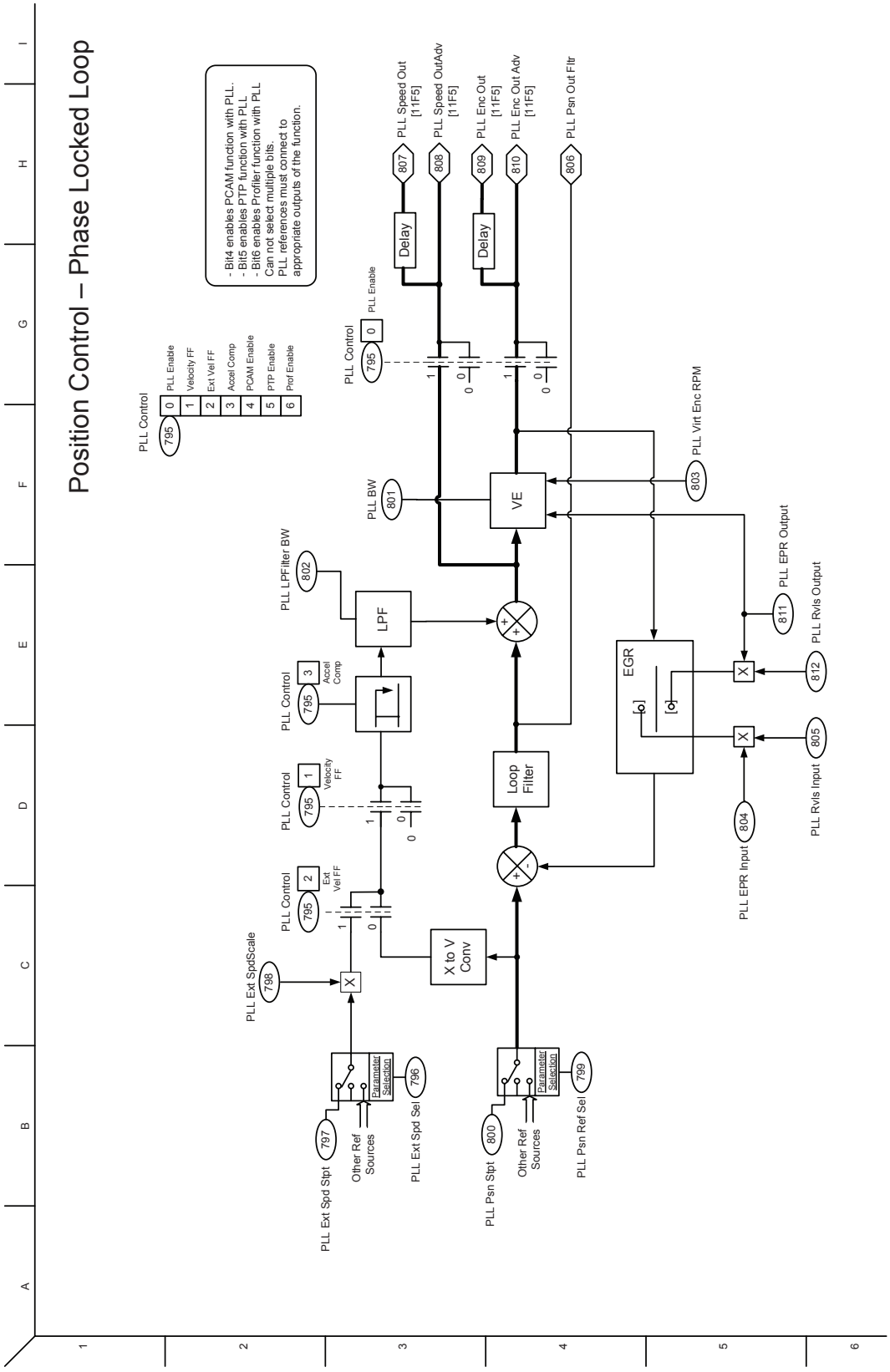
Posit Aux


Position Control – Phase Locked Loop
PLL Control
795
PLL Enable
Velocity FF
Ext Vel FF
Accel Comp
PCAM Enable
PTP Enable
Prof Enable
- Bit4 enables PCAM function with PLL.
- Bit5 enables PTP function with PLL
- Bit6 enables Profiler function with PLL
Can not select multiple bits.
PLL references must connect to
appropriate outputs of the function.
PLL Speed Out [11F5]
PLL Speed OutAdv [11F5]
PLL Enc Out [11F5]
PLL Enc Out Adv [11F5]
PLL Psn Out Fltr
807
808
809
810
806
Delay
PLL Enable
PLL BW
801
VE
PLL Virt Enc RPM
803
PLL LPFilter BW
802
LPF
PLL EPR Output
811
PLL Rvls Output
812
EGR
Accel Comp
Velocity FF
Ext Vel FF
X to V Conv
Loop Filter
PLL Ext SpdScale
798
PLL Ext Spd Stpt
797
Other Ref Sources
Parameter Selection
PLL Ext Spd Sel
796
PLL Psn Stpt
800
PLL Psn Ref Sel
799
PLL EPR Input
804
PLL Rvls Input
805
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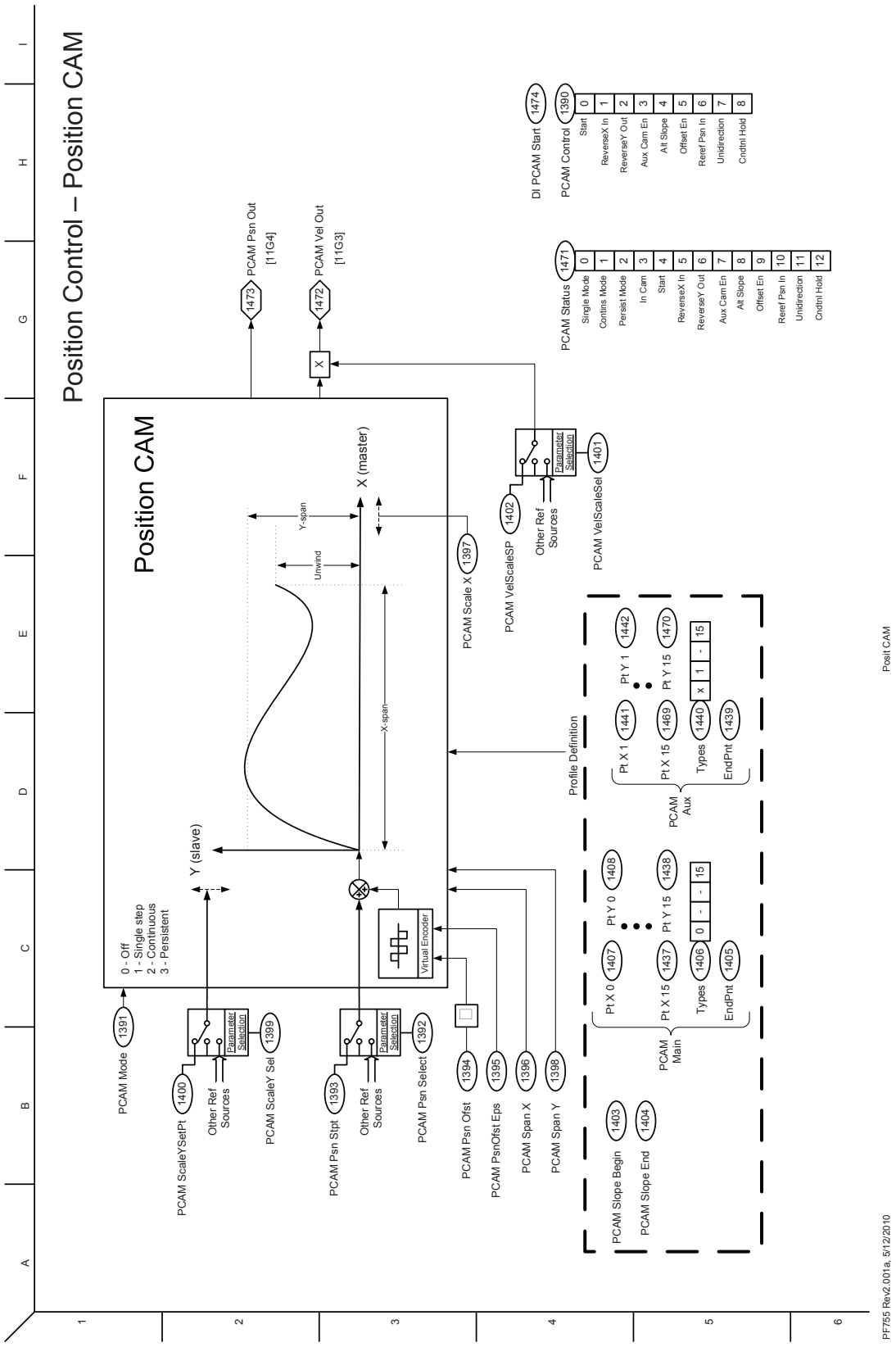
Posit PLL
14


Position Control – Position CAM
Position CAM
X (master)
Y (slave)
Y-span
Unwind
X-span
0 - Off
1 - Single step
2 - Continuous
3 - Persistent
Virtual Encoder
PCAM Mode 1391
PCAM ScaleYSetPt 1400
Other Ref Sources
Parameter Selection
PCAM ScaleY Sel 1399
PCAM Psn Stpt 1393
Other Ref Sources
Parameter Selection
PCAM Psn Select 1392
PCAM Psn Ofst 1394
PCAM PsnOfst Eps 1395
PCAM Span X 1396
PCAM Span Y 1398
PCAM Slope Begin 1403
PCAM Slope End 1404
PCAM Main
Pt X 0 1407
Pt X 15 1437
Pt Y 0 1408
Pt Y 15 1438
Types 1406 0 - - 15
EndPnt 1405
Profile Definition
PCAM Aux
Pt X 1 1441
Pt X 15 1469
Pt Y 1 1442
Pt Y 15 1470
Types 1440 x 1 - 15
EndPnt 1439
PCAM Scale X 1397
PCAM VelScaleSP 1402
Other Ref Sources
Parameter Selection
PCAM VelScaleSel 1401
X
PCAM Psn Out [11G4] 1473
PCAM Vel Out [11G3] 1472
DI PCAM Start 1474
PCAM Control 1390
Start 0
ReverseX In 1
ReverseY Out 2
Aux Cam En 3
Alt Slope 4
Offset En 5
Reref Psn In 6
Unidirection 7
Cndtnl Hold 8
PCAM Status 1471
Single Mode 0
Contins Mode 1
Persist Mode 2
In Cam 3
Start 4
ReverseX In 5
ReverseY Out 6
Aux Cam En 7
Alt Slope 8
Offset En 9
Reref Psn In 10
Unidirection 11
Cndtnl Hold 12
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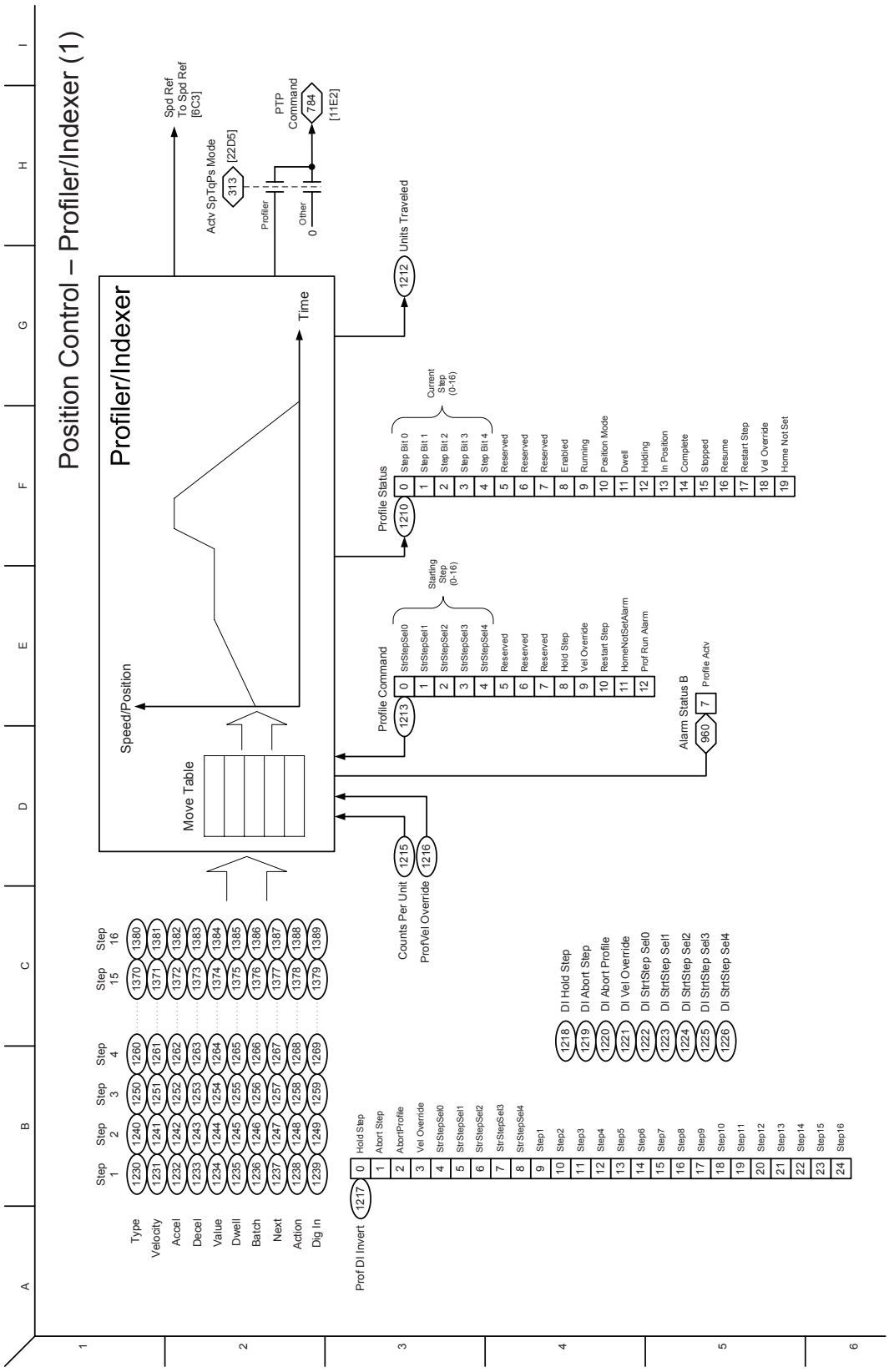
Posit CAM
15


Position Control – Profiler/Indexer (1)
Profiler/Indexer
Speed/Position
Time
Move Table
Spd Ref To Spd Ref [6C3]
Actv SpTqPs Mode [22D5]
313
Profiler
Other
0
PTP Command [11E2]
784
Units Traveled
1212
Profile Status
1210
Current Step (0-16)
Step Bit 0
Step Bit 1
Step Bit 2
Step Bit 3
Step Bit 4
Reserved
Reserved
Reserved
Enabled
Running
Position Mode
Dwell
Holding
In Position
Complete
Stopped
Resume
Restart Step
Vel Override
Home Not Set
Profile Command
1213
Starting Step (0-16)
StrtStepSel0
StrtStepSel1
StrtStepSel2
StrtStepSel3
StrtStepSel4
Reserved
Reserved
Reserved
Hold Step
Vel Override
Restart Step
HomeNotSetAlarm
Prof Run Alarm
Alarm Status B
960
Profile Actv
Counts Per Unit
1215
ProfVel Override
1216
Prof DI Invert
1217
Hold Step
Abort Step
AbortProfile
Vel Override
StrtStepSel0
StrtStepSel1
StrtStepSel2
StrtStepSel3
StrtStepSel4
Step1
Step2
Step3
Step4
Step5
Step6
Step7
Step8
Step9
Step10
Step11
Step12
Step13
Step14
Step15
Step16
DI Hold Step
DI Abort Step
DI Abort Profile
DI Vel Override
DI StrtStep Sel0
DI StrtStep Sel1
DI StrtStep Sel2
DI StrtStep Sel3
DI StrtStep Sel4
Type
Velocity
Accel
Decel
Value
Dwell
Batch
Next
Action
Dig In
Step 1
Step 2
Step 3
Step 4
Step 15
Step 16
Posit Profiler/Indexer (1)
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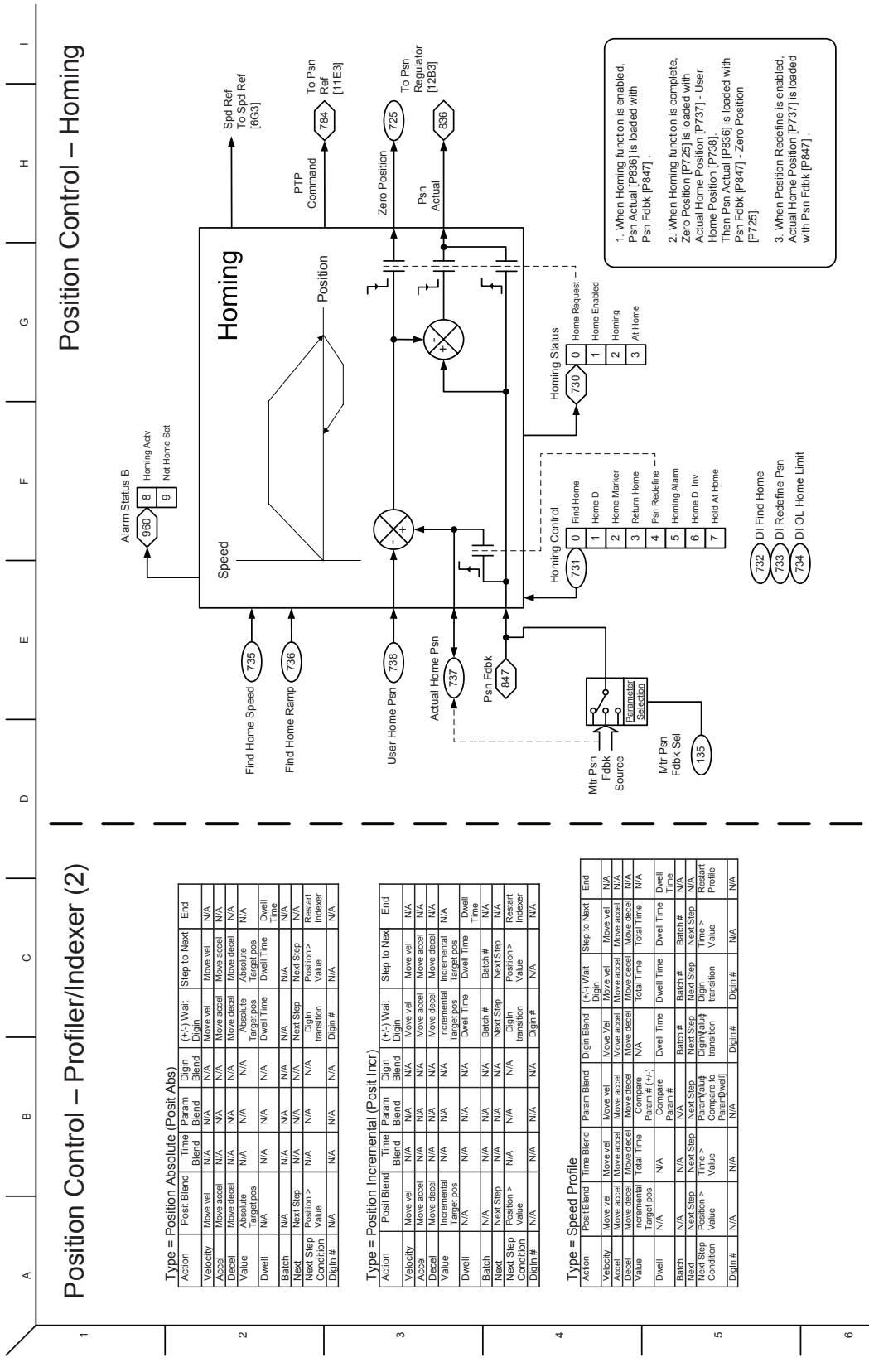
Position Control – Profiler/Indexer (2)
Position Control – Homing
Homing
Speed
Position
Alarm Status B
960
8
Homing Actv
9
Not Home Set
Find Home Speed
735
Find Home Ramp
736
User Home Psn
738
Actual Home Psn
737
Psn Fdbk
847
Mtr Psn Fdbk Source
Parameter Selection
Mtr Psn Fdbk Sel
135
Homing Control
731
0 Find Home
1 Home DI
2 Home Marker
3 Return Home
4 Psn Redefine
5 Homing Alarm
6 Home DI Inv
7 Hold At Home
732 DI Find Home
733 DI Redefine Psn
734 DI OL Home Limit
Homing Status
730
0 Home Request
1 Home Enabled
2 Homing
3 At Home
Spd Ref
To Spd Ref
[6G3]
PTP
Command
784
To Psn
Ref
[11E3]
Zero Position
725
Psn
Actual
836
To Psn
Regulator
[12B3]
1. When Homing function is enabled, Psn Actual [P836] is loaded with Psn Fdbk [P847] .
2. When Homing function is complete, Zero Position [P725] is loaded with Actual Home Position [P737] - User Home Position [P738]. Then Psn Actual [P836] is loaded with Psn Fdbk [P847] - Zero Position [P725].
3. When Position Redefine is enabled, Actual Home Position [P737] is loaded with Psn Fdbk [P847] .
Type = Position Absolute (Posit Abs)
Action | Posit Blend | Time Blend | Param Blend | Digin Blend | (+/-) Wait Digin | Step to Next | End
Velocity | Move vel | N/A | N/A | N/A | Move vel | Move vel | N/A
Accel | Move accel | N/A | N/A | N/A | Move accel | Move accel | N/A
Decel | Move decel | N/A | N/A | N/A | Move decel | Move decel | N/A
Value | Absolute Target pos | N/A | N/A | N/A | Absolute Target pos | Absolute Target pos | N/A
Dwell | N/A | N/A | N/A | N/A | Dwell Time | Dwell Time | Dwell Time
Batch | N/A | N/A | N/A | N/A | N/A | N/A | N/A
Next | Next Step | N/A | N/A | N/A | Next Step | Next Step | N/A
Next Step Condition | Position > Value | N/A | N/A | N/A | Digin transition | Position > Value | Restart Indexer
Digin # | N/A | N/A | N/A | N/A | Digin # | N/A | N/A
Type = Position Incremental (Posit Incr)
Action | Posit Blend | Time Blend | Param Blend | Digin Blend | (+/-) Wait Digin | Step to Nex | End
Velocity | Move vel | N/A | N/A | N/A | Move vel | Move vel | N/A
Accel | Move accel | N/A | N/A | N/A | Move accel | Move accel | N/A
Decel | Move decel | N/A | N/A | N/A | Move decel | Move decel | N/A
Value | Incremental Target pos | N/A | N/A | N/A | Incremental Target pos | Incremental Target pos | N/A
Dwell | N/A | N/A | N/A | N/A | Dwell Time | Dwell Time | Dwell Time
Batch | N/A | N/A | N/A | N/A | Batch # | Batch # | N/A
Next | Next Step | N/A | N/A | N/A | Next Step | Next Step | N/A
Next Step Condition | Position > Value | N/A | N/A | N/A | Digin transition | Position > Value | Restart Indexer
Digin # | N/A | N/A | N/A | N/A | Digin # | N/A | N/A
Type = Speed Profile
Action | Posit Blend | Time Blend | Param Blend | Digin Blend | (+/-) Wait Digin | Step to Next | End
Velocity | Move vel | Move vel | Move vel | Move Vel | Move vel | Move vel | N/A
Accel | Move accel | Move accel | Move accel | Move accel | Move accel | Move accel | N/A
Decel | Move decel | Move decel | Move decel | Move decel | Move decel | Move decel | N/A
Value | Incremental Target pos | Total Time | Compare Param # (+/-) | N/A | Total Time | Total Time | N/A
Dwell | N/A | N/A | Compare Param # | Dwell Time | Dwell Time | Dwell Time | Dwell Time
Batch | N/A | N/A | N/A | Batch # | Batch # | Batch # | N/A
Next | Next Step | Next Step | Next Step | Next Step | Next Step | Next Step | N/A
Next Step Condition | Position > Value | Time > Value | Param/Value Compare to Param/Dwell | Digin/Value transition | Digin transition | Time > Value | Restart Profile
Digin # | N/A | N/A | N/A | Digin # | Digin # | N/A | N/A
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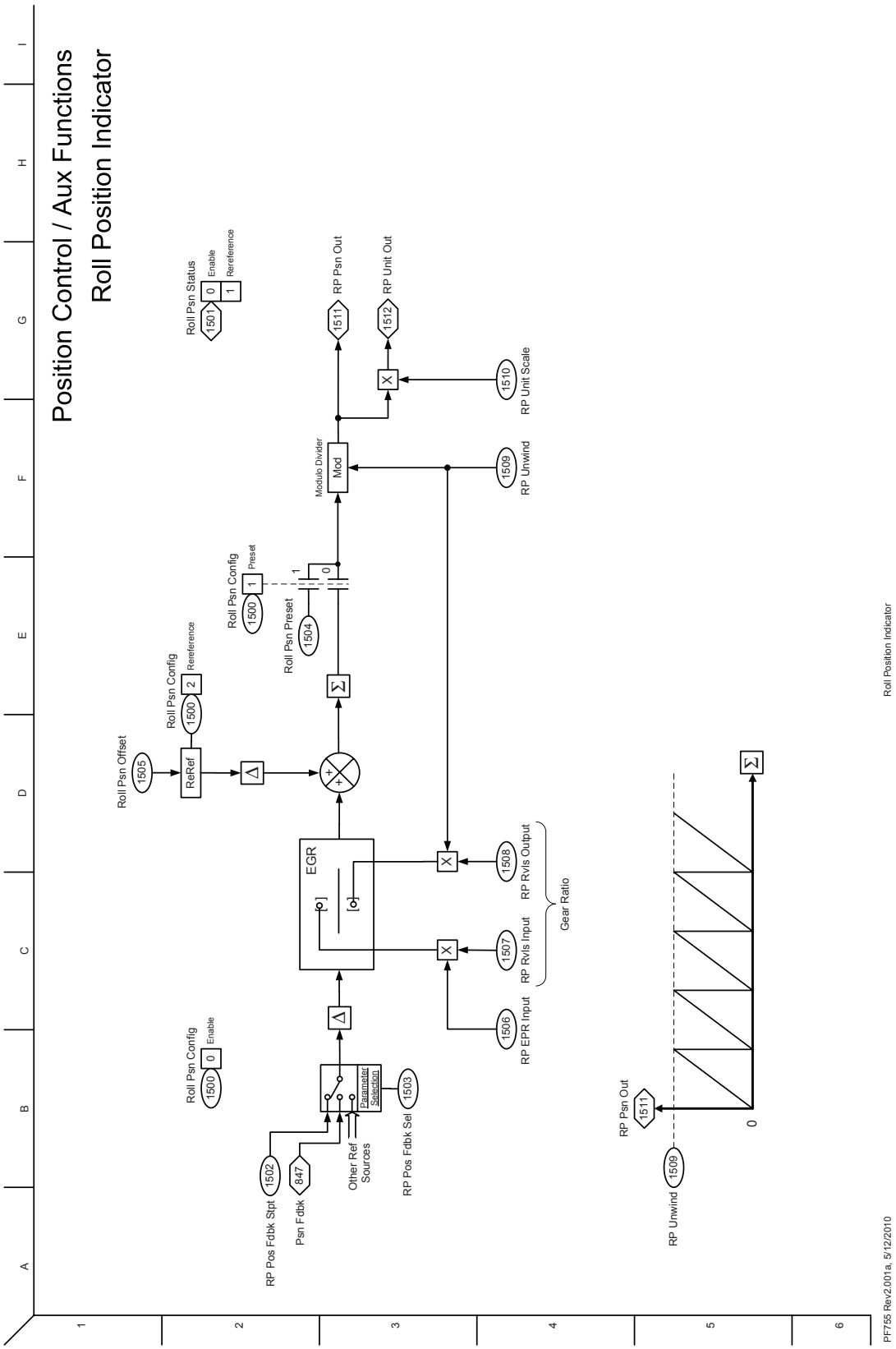
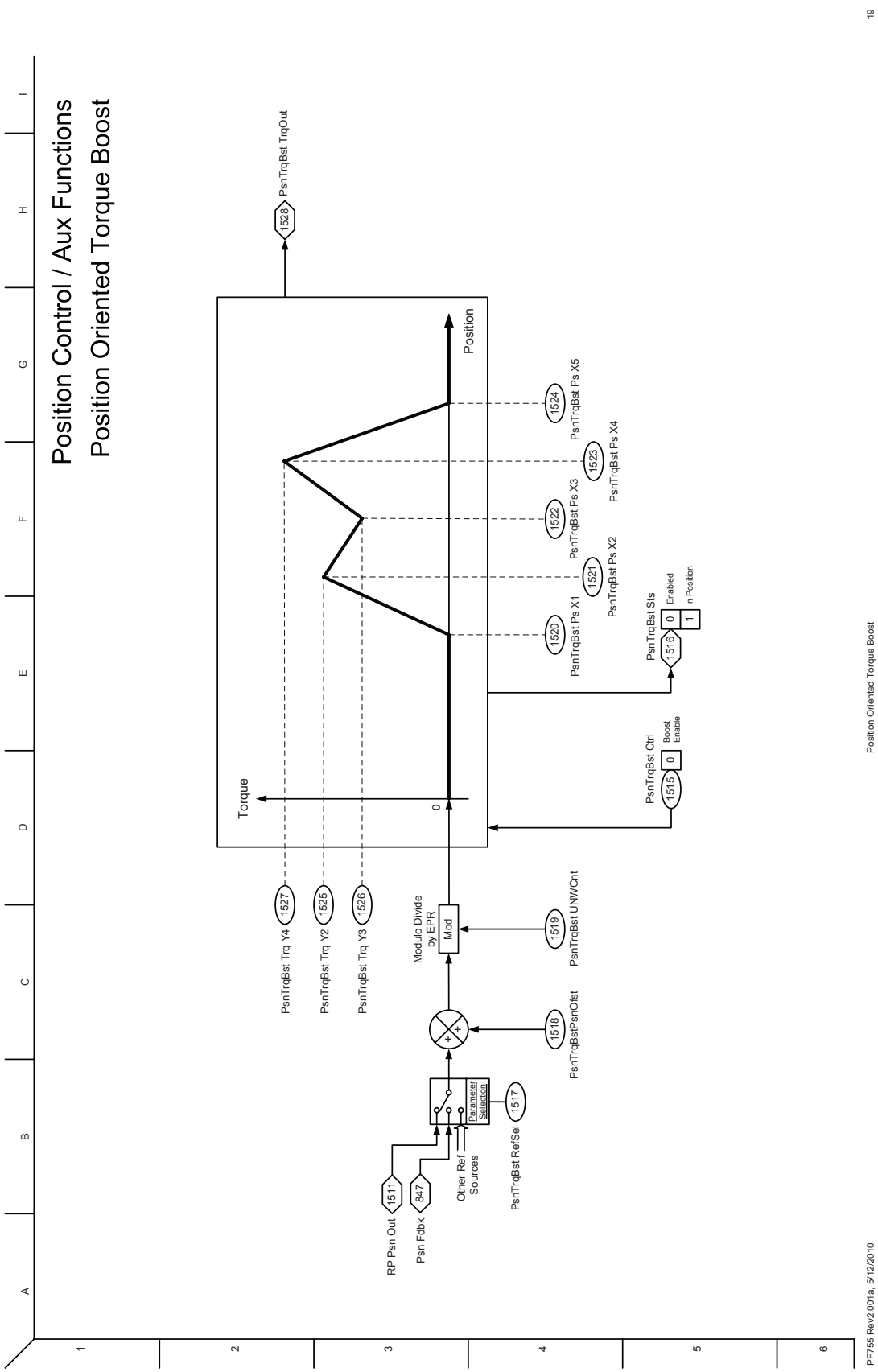
Posit Profiler/Indexer (2)
17


Position Control / Aux Functions
Roll Position Indicator
Roll Psn Status
Enable
Rereference
1501
RP Psn Out
1511
RP Unit Out
1512
RP Unit Scale
1510
Modulo Divider
Mod
RP Unwind
1509
Roll Psn Config
Preset
1500
Roll Psn Preset
1504
Roll Psn Config
Rereference
1500
Roll Psn Offset
1505
ReRef
EGR
RP Rvls Output
1508
RP Rvls Input
1507
RP EPR Input
1506
Gear Ratio
Roll Psn Config
Enable
1500
Parameter Selection
RP Pos Fdbk Sel
1503
RP Pos Fdbk Stpt
1502
Psn Fdbk
847
Other Ref Sources
RP Psn Out
1511
RP Unwind
1508
0
Roll Position Indicator
PF755 Rev2.001a, 5/12/2010


Position Control / Aux Functions
Position Oriented Torque Boost
PsnTrqBst TrqOut
1528
Position
Torque
0
1524
PsnTrqBst Ps X5
1523
PsnTrqBst Ps X4
1522
PsnTrqBst Ps X3
1521
PsnTrqBst Ps X2
1520
PsnTrqBst Ps X1
PsnTrqBst Sts
1516
Enabled
In Position
PsnTrqBst Ctrl
1515
Boost Enable
1527
PsnTrqBst Trq Y4
1525
PsnTrqBst Trq Y2
1526
PsnTrqBst Trq Y3
Modulo Divide by EPR
Mod
1519
PsnTrqBst UNWCnt
1518
PsnTrqBstPsnOfst
Parameter Selection
1517
PsnTrqBst RefSel
1511
RP Psn Out
847
Psn Fdbk
Other Ref Sources
Position Oriented Torque Boost
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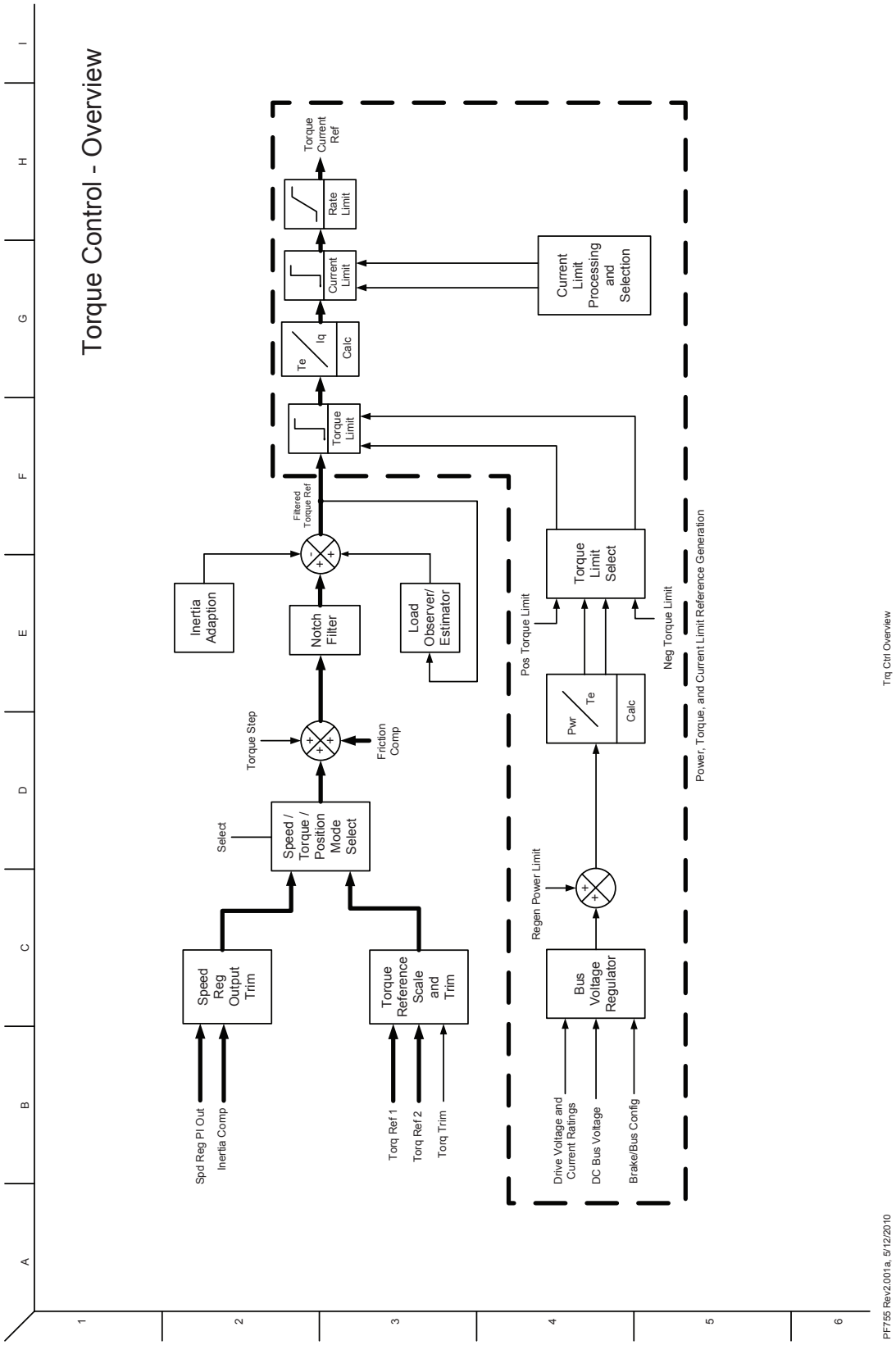
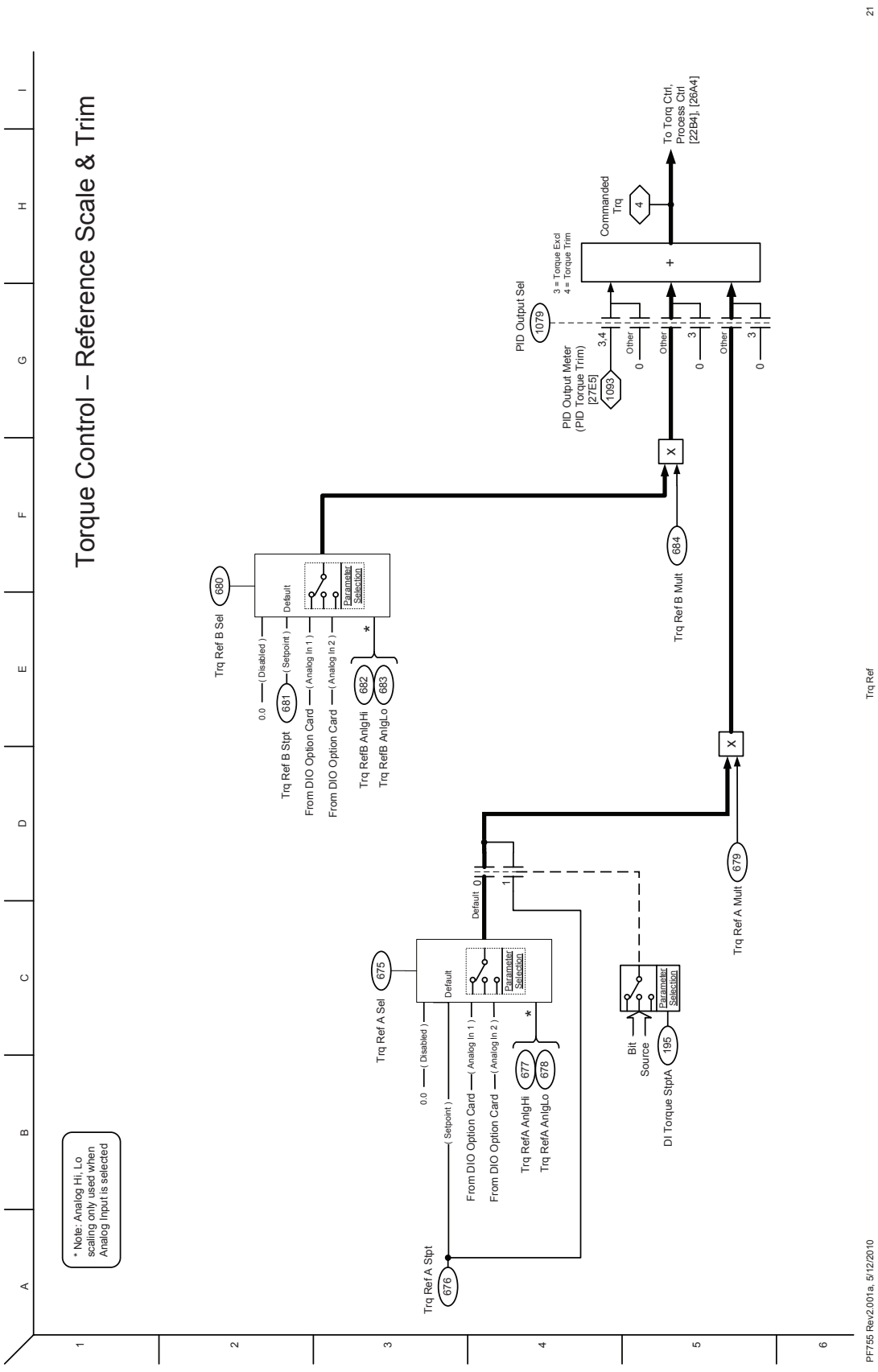

Torque Control - Overview
Torque Current Ref
Rate Limit
Current Limit
Current Limit Processing and Selection
Te / Iq Calc
Torque Limit
Filtered Torque Ref
Inertia Adaption
Notch Filter
Load Observer/ Estimator
Torque Step
Friction Comp
Select
Speed / Torque / Position Mode Select
Speed Reg Output Trim
Torque Reference Scale and Trim
Spd Reg PI Out
Inertia Comp
Torq Ref 1
Torq Ref 2
Torq Trim
Torque Limit Select
Pos Torque Limit
Neg Torque Limit
Pwr / Te Calc
Regen Power Limit
Bus Voltage Regulator
Drive Voltage and Current Ratings
DC Bus Voltage
Brake/Bus Config
Power, Torque, and Current Limit Reference Generation
Trq Ctrl Overview
PF755 Rev2.001a, 5/12/2010


Torque Control – Reference Scale & Trim
* Note: Analog Hi, Lo scaling only used when Analog Input is selected
Trq Ref A Stpt
676
Trq Ref A Sel
675
Default
Parameter Selection
0.0
(Disabled)
(Setpoint)
(Analog In 1)
(Analog In 2)
From DIO Option Card
From DIO Option Card
Trq RefA AnlgHi
Trq RefA AnlgLo
677
678
Bit
Source
DI Torque StptA
195
Trq Ref A Mult
679
Trq Ref B Sel
680
Trq Ref B Stpt
681
Trq RefB AnlgHi
Trq RefB AnlgLo
682
683
Trq Ref B Mult
684
PID Output Sel
1079
PID Output Meter (PID Torque Trim) [27E5]
1093
3,4
Other
3 = Torque Excl
4 = Torque Trim
Commanded Trq
4
To Torq Ctrl, Process Ctrl [22B4], [26A4]
Trq Ref
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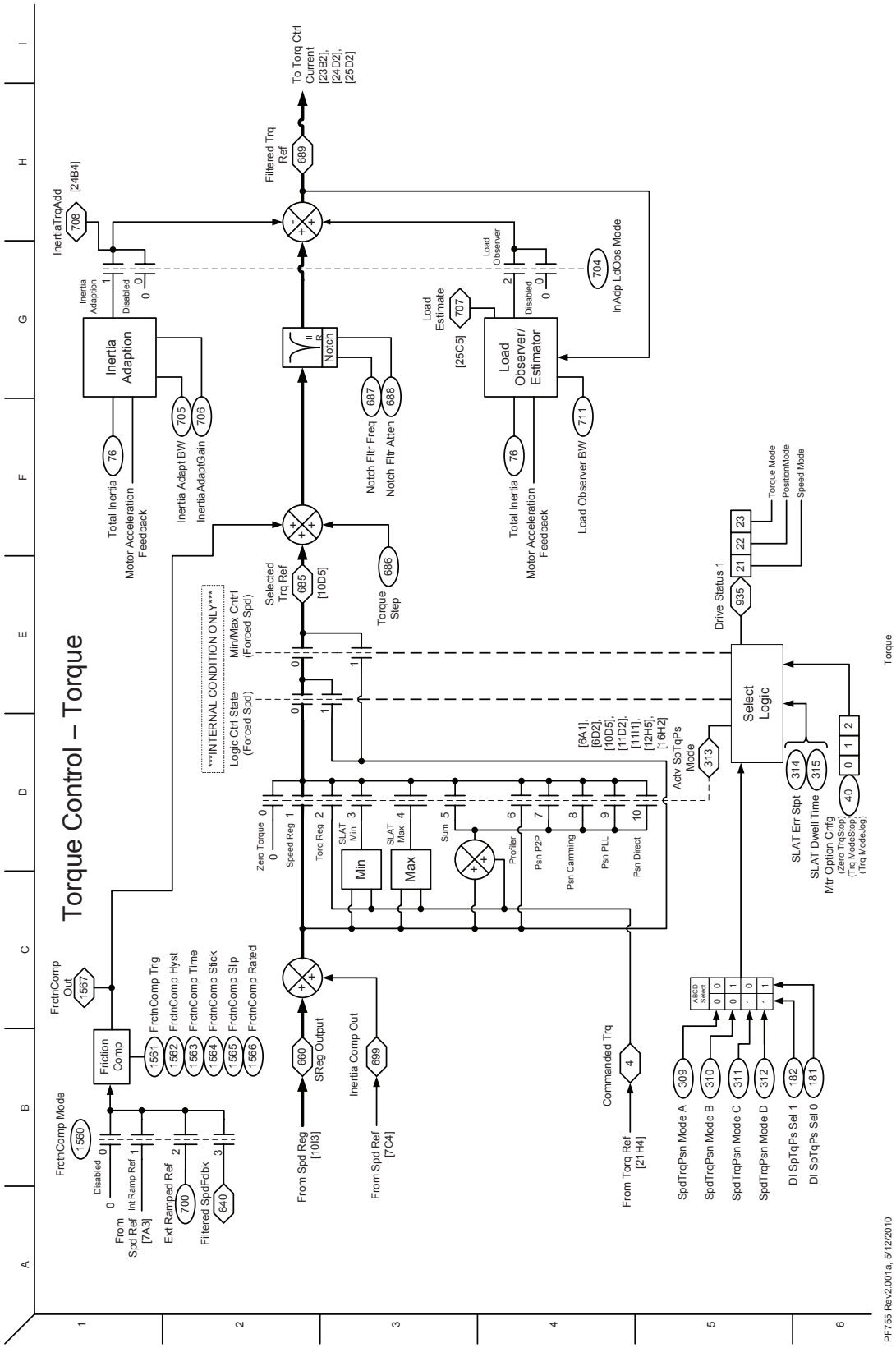
Torque Control – Torque
To Torq Ctrl Current [23B2], [24D2], [25D2]
Filtered Trq Ref
689
InertiaTrqAdd
708
[24B4]
Inertia Adaption
Disabled
Inertia Adaption
Total Inertia
Motor Acceleration Feedback
Inertia Adapt BW
InertiaAdaptGain
705
706
76
Notch
Notch Fltr Freq
Notch Fltr Atten
687
688
Load Observer
Load Estimate
707
[25C5]
Load Observer/ Estimator
Total Inertia
Motor Acceleration Feedback
Load Observer BW
711
InAdp LdObs Mode
704
Selected Trq Ref
685
[10D5]
Torque Step
686
INTERNAL CONDITION ONLY
Min/Max Cntrl (Forced Spd)
Logic Ctrl State (Forced Spd)
Zero Torque
Speed Reg
Torq Reg
SLAT Min
SLAT Max
Sum
Profiler
Psn P2P
Psn Camming
Psn PLL
Psn Direct
Min
Max
Actv SpTqPs Mode
313
[6A1], [6D2], [10D5], [11D2], [11I1], [12H5], [16H2]
Drive Status 1
935
Torque Mode
PositionMode
Speed Mode
Select Logic
SLAT Err Stpt
SLAT Dwell Time
Mtr Option Cnfg
(Zero TrqStop)
(Trq ModeStop)
(Trq ModeJog)
314
315
40
FrctnComp Mode
1560
Disabled
Int Ramp Ref
Ext Ramped Ref
Filtered SpdFdbk
From Spd Ref [7A3]
700
640
Friction Comp
FrctnComp Out
1567
FrctnComp Trig
FrctnComp Hyst
FrctnComp Time
FrctnComp Stick
FrctnComp Slip
FrctnComp Rated
1561
1562
1563
1564
1565
1566
From Spd Reg [10I3]
SReg Output
660
Inertia Comp Out
699
From Spd Ref [7C4]
Commanded Trq
4
From Torq Ref [21H4]
ABCD Select
SpdTrqPsn Mode A
SpdTrqPsn Mode B
SpdTrqPsn Mode C
SpdTrqPsn Mode D
DI SpTqPs Sel 1
DI SpTqPs Sel 0
309
310
311
312
182
181
Torque
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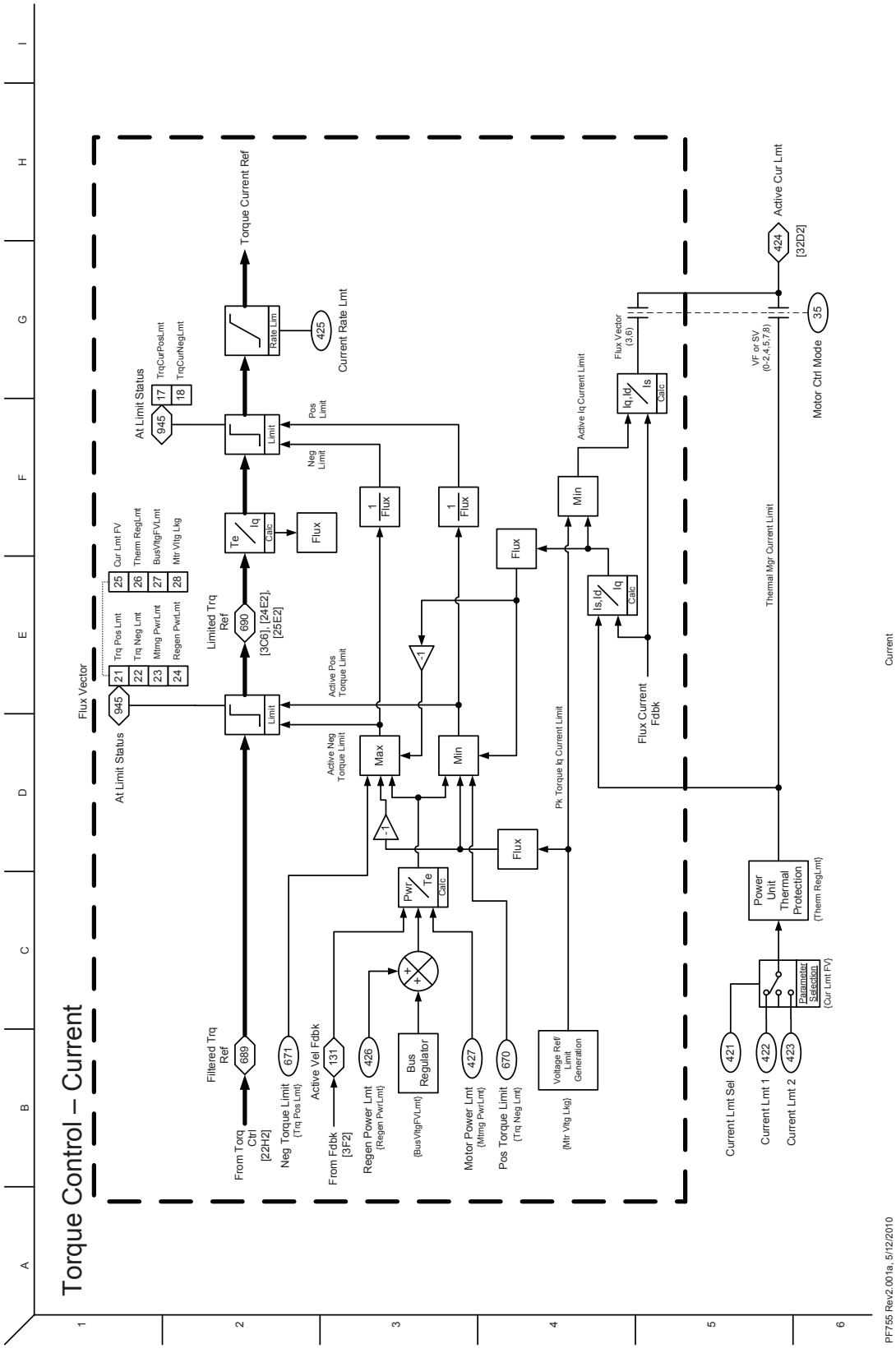
Torque Control – Current
Flux Vector
At Limit Status
945
Limit
Trq Pos Lmt
Trq Neg Lmt
Mtrng PwrLmt
Regen PwrLmt
Cur Lmt FV
Therm RegLmt
BusVltgFVLmt
Mtr Vltg Lkg
21
22
23
24
25
26
27
28
Limited Trq Ref
690
[3C6], [24E2], [25E2]
Active Pos Torque Limit
Active Neg Torque Limit
Max
Min
-1
Te / Iq Calc
Flux
1 / Flux
Pwr / Te Calc
Filtered Trq Ref
689
From Torq Ctrl [22H2]
Neg Torque Limit {Trq Pos Lmt}
671
Active Vel Fdbk
131
From Fdbk [3F2]
Regen Power Lmt {Regen PwrLmt}
426
Bus Regulator
{BusVltgFVLmt}
Motor Power Lmt {Mtrng PwrLmt}
427
Pos Torque Limit {Trq Neg Lmt}
670
Voltage Reff Limit Generation
{Mtr Vltg Lkg}
Pk Torque Iq Current Limit
Active Iq Current Limit
Is, Id / Iq Calc
Flux Current Fdbk
Flux Vector (3.6)
Iq, Id / Is Calc
Thermal Mgr Current Limit
VF or SV (0-2,4,5,7,8)
Motor Ctrl Mode
35
424
Active Cur Lmt
[32D2]
Torque Current Ref
Rate Lim
425
Current Rate Lmt
At Limit Status
945
17
18
TrqCurPosLmt
TrqCurNegLmt
Pos Limit
Neg Limit
Current Lmt Sel
Current Lmt 1
Current Lmt 2
421
422
423
Parameter Selection
{Cur Lmt FV}
Power Unit Thermal Protection
{Therm RegLmt}
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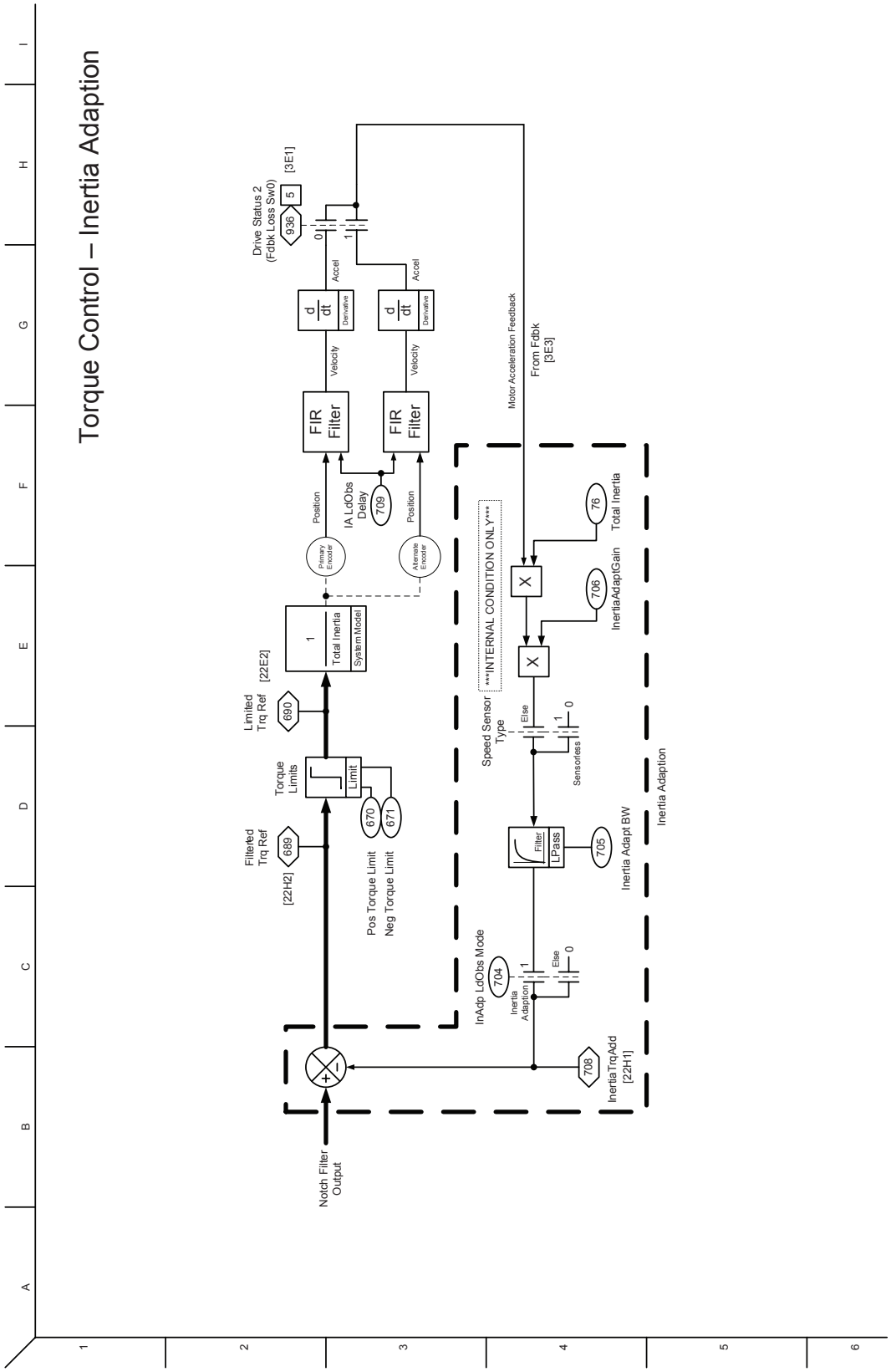
Current


Torque Control – Inertia Adaption
Notch Filter Output
Filtered Trq Ref
[22H2]
689
Torque Limits
Limit
670
671
Pos Torque Limit
Neg Torque Limit
Limited Trq Ref
[22E2]
690
1
Total Inertia
System Model
Position
Primary Encoder
Position
Alternate Encoder
IA LdObs Delay
709
FIR Filter
FIR Filter
Velocity
Accel
Derivative
d/dt
Drive Status 2
(Fdbk Loss Sw0)
936
5
[3E1]
Motor Acceleration Feedback
From Fdbk
[3E3]
INTERNAL CONDITION ONLY
Speed Sensor Type
Else
Sensorless
InAdp LdObs Mode
704
Inertia Adaption
Else
Filter
LPass
705
Inertia Adapt BW
Inertia Adaption
76
Total Inertia
706
InertiaAdaptGain
X
X
708
InertiaTrqAdd
[22H1]
Trq Inertia Adaption
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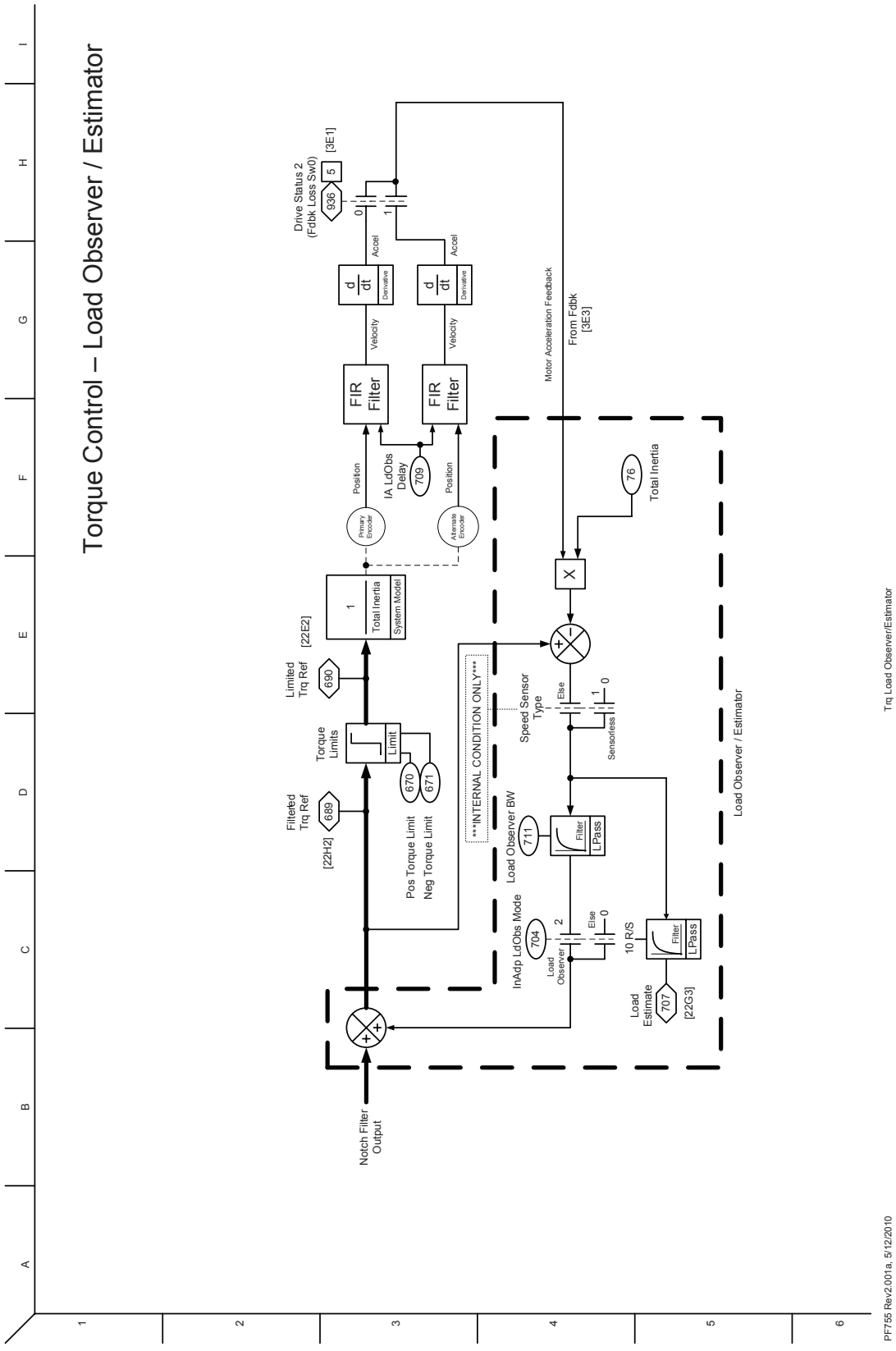
Torque Control – Load Observer / Estimator
Drive Status 2
(Fdbk Loss Sw0)
936
5
[3E1]
d/dt
Derivative
Accel
Velocity
FIR Filter
Position
IA LdObs Delay
709
Primary Encode
Alternate Encode
Motor Acceleration Feedback
From Fdbk
[3E3]
76
Total Inertia
1
Total Inertia
System Model
[22E2]
Limited Trq Ref
690
Torque Limits
Limit
670
671
Pos Torque Limit
Neg Torque Limit
Filtered Trq Ref
689
[22H2]
Notch Filter Output
INTERNAL CONDITION ONLY
Speed Sensor Type
Else
Sensorless
Load Observer BW
711
Filter
LPass
InAdp LdObs Mode
704
Load Observer
10 R/S
Load Estimate
707
[22G3]
Load Observer / Estimator
Trq Load Observer/Estimator
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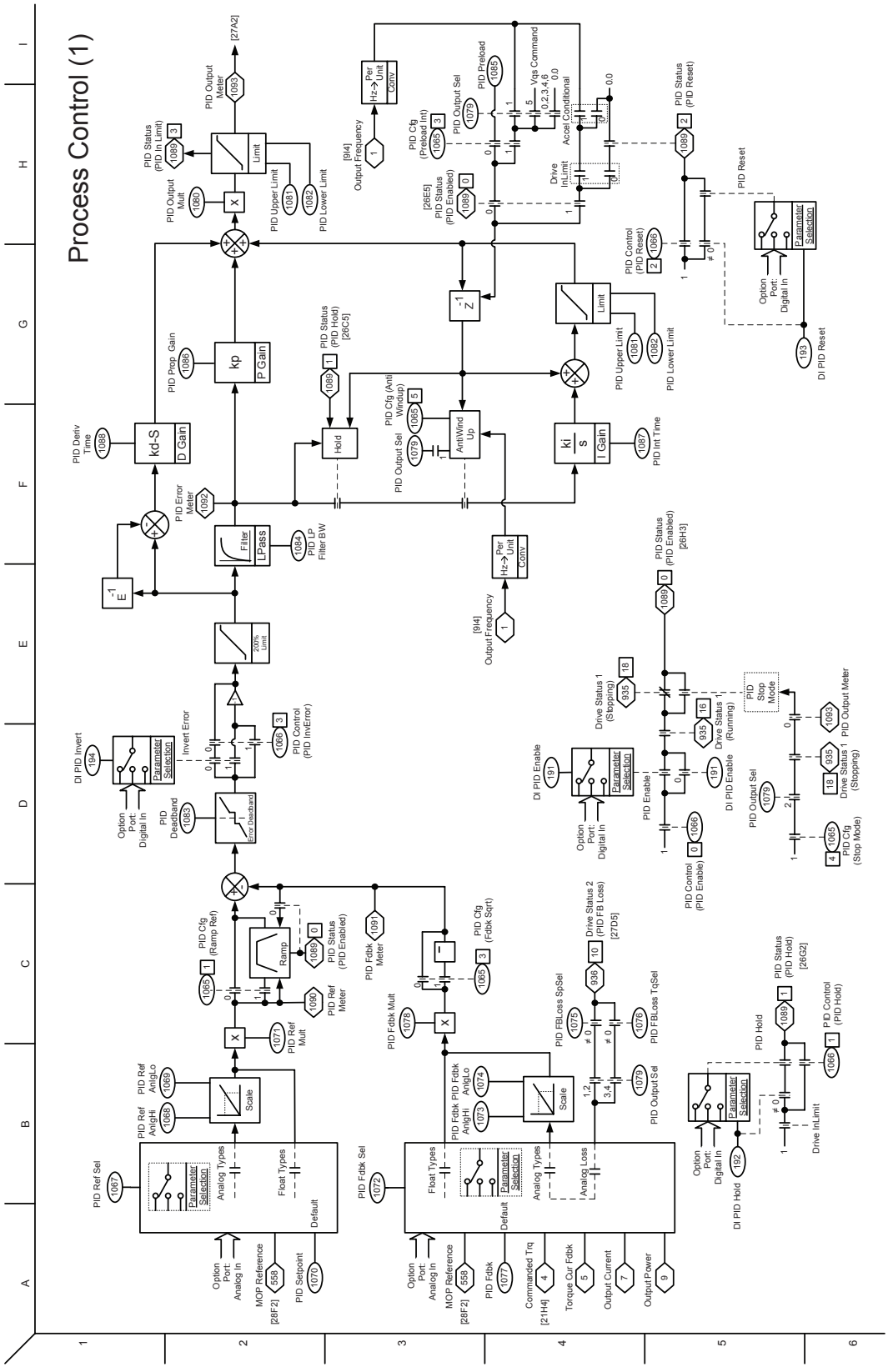
Process Control (1)
PID Ref Sel
PID Fdbk Sel
PID Setpoint
PID Fdbk
PID Error Meter
PID Output Meter
PID Prop Gain
PID Deriv Time
PID Int Time
PID Upper Limit
PID Lower Limit
PID Preload
PID Reset
DI PID Reset
DI PID Hold
DI PID Enable
DI PID Invert
PID Deadband
PID LP Filter BW
PID Ref Meter
PID Fdbk Meter
PID Ref Mult
PID Fdbk Mult
PID Output Mult
PID Output Sel
PID Cfg (Preload Int)
PID Cfg (Anti Windup)
PID Cfg (Ramp Ref)
PID Cfg (Fdbk Sqrt)
PID Cfg (Stop Mode)
PID Control (PID Reset)
PID Control (PID Enable)
PID Control (PID Hold)
PID Control (PID InvError)
PID Status (PID Reset)
PID Status (PID Enabled)
PID Status (PID Hold)
PID Status (PID In Limit)
PID Status (PID Enabled) [26E5]
PID Status (PID Hold) [26C5]
PID Status (PID Enabled) [26H3]
PID FBLoss SpSel
PID FBLoss TqSel
Drive Status 1 (Stopping)
Drive Status 1 (Running)
Drive Status 2 (PID FB Loss) [27D5]
Drive InLimit
Accel Conditional
Vqs Command
Output Frequency
Option Port: Analog In
Option Port: Digital In
MOP Reference [28F2]
Commanded Trq [21H4]
Torque Cur Fdbk
Output Current
Output Power
Analog Types
Float Types
Parameter Selection
Default
Scale
Ramp
Filter LPass
Limit
Hold
AntiWind Up
Hz→ Per Unit Conv
Error Deadband
200% Limit
P Gain
D Gain
I Gain
Process Ctrl (1)
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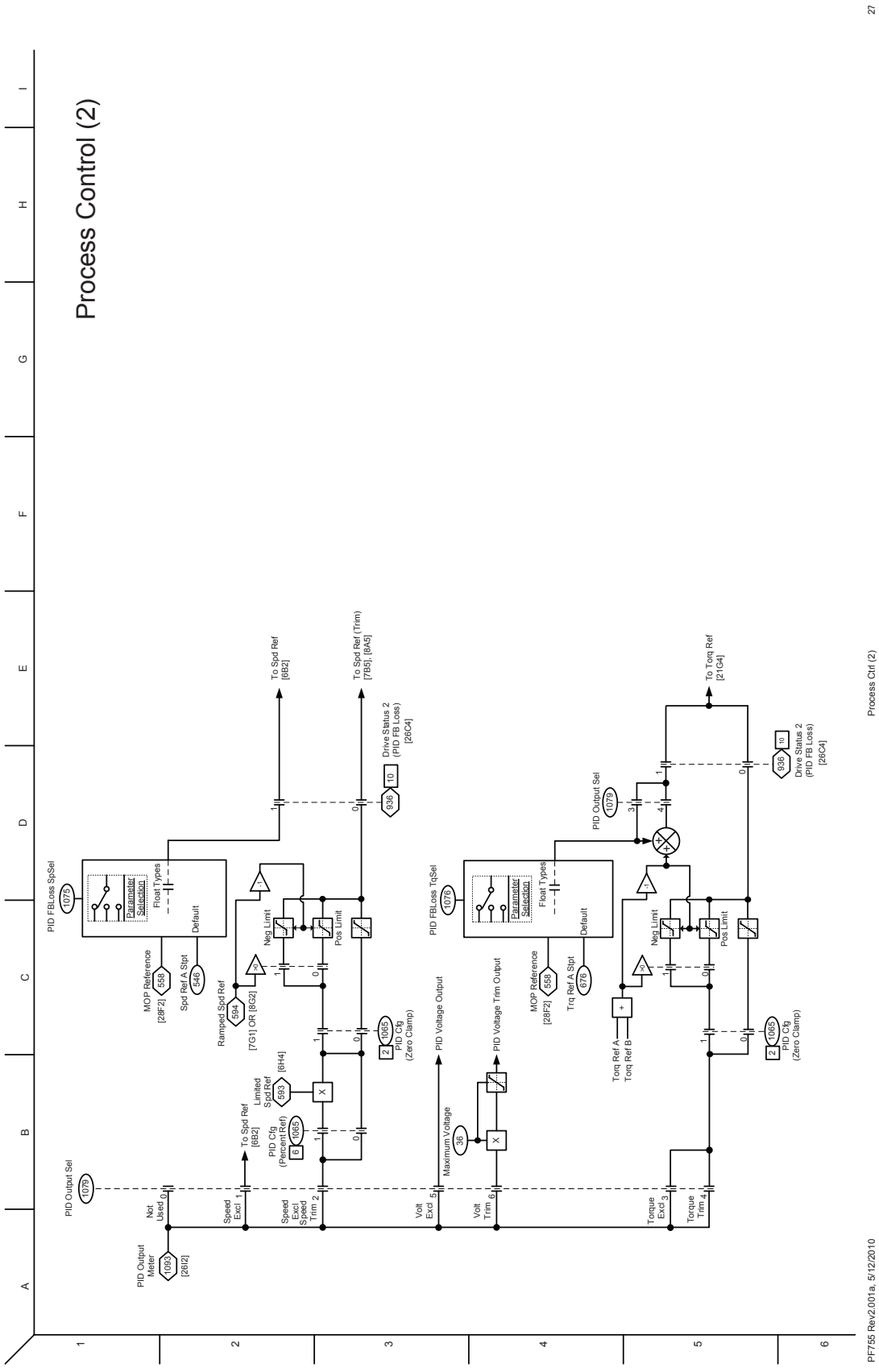
Process Control (2)
PID FBLoss SpdSel
1075
Parameter Selection
Float Types
Default
MOP Reference
[28F2]
558
Spd Ref A Stpt
546
Ramped Spd Ref
594
[7G1] OR [8G2]
Neg Limit
Pos Limit
To Spd Ref
[6B2]
To Spd Ref (Trim)
[7B5], [8A5]
Drive Status 2
(PID FB Loss)
[26C4]
936
PID Cfg
(Zero Clamp)
1065
Limited Spd Ref
593
[6H4]
PID Cfg
(Percent Ref)
PID Output Sel
1078
PID Output Meter
1083
[26I2]
Not Used
Speed Excl
Speed Excl Speed Trim
PID FBLoss TqSel
1076
PID Voltage Output
PID Voltage Trim Output
Maximum Voltage
38
Volt Excl
Volt Trim
Trq Ref A Stpt
676
To Torq Ref
[21G4]
Torque Excl
Torque Trim
Torq Ref A
Torq Ref B
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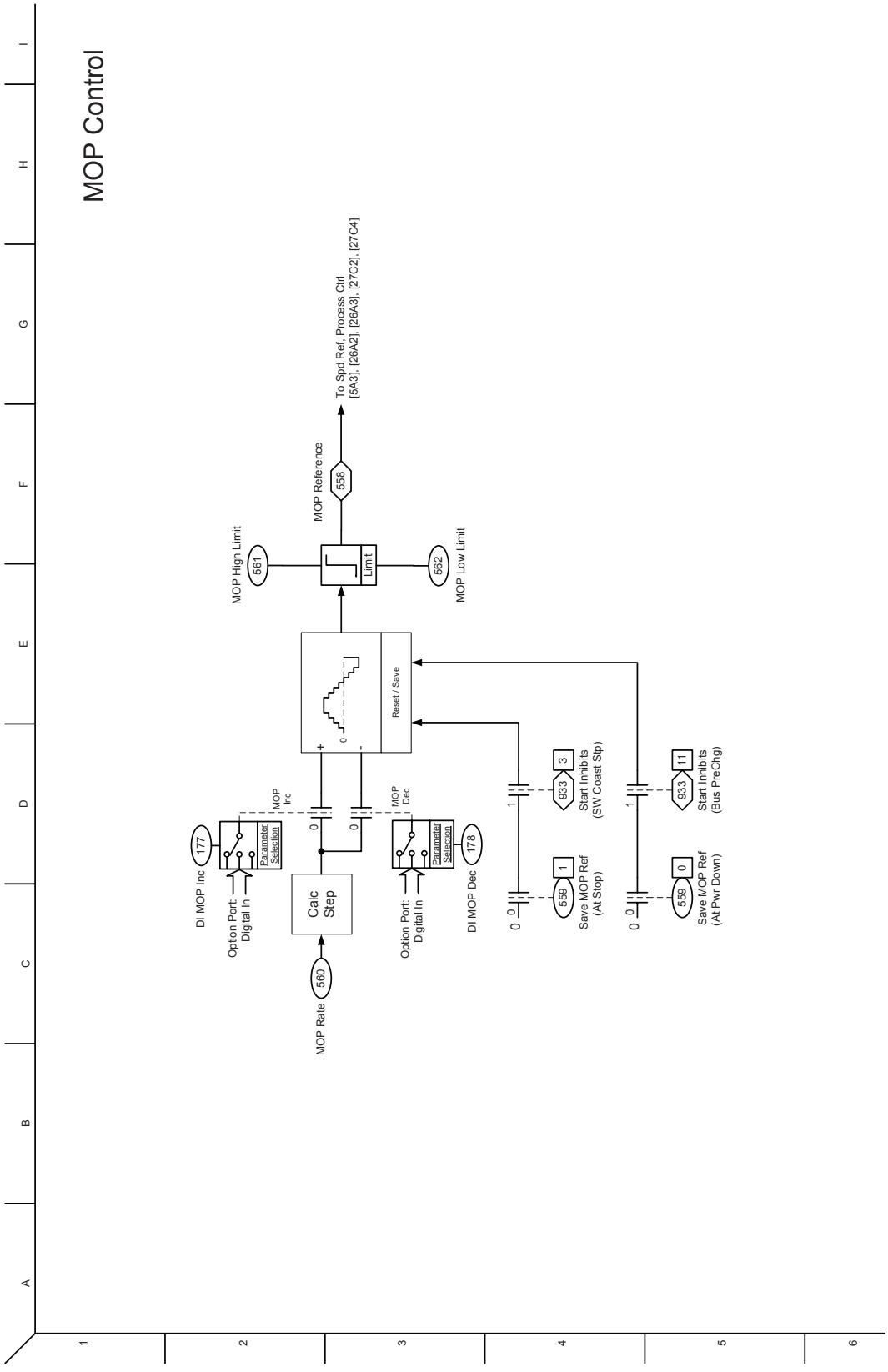
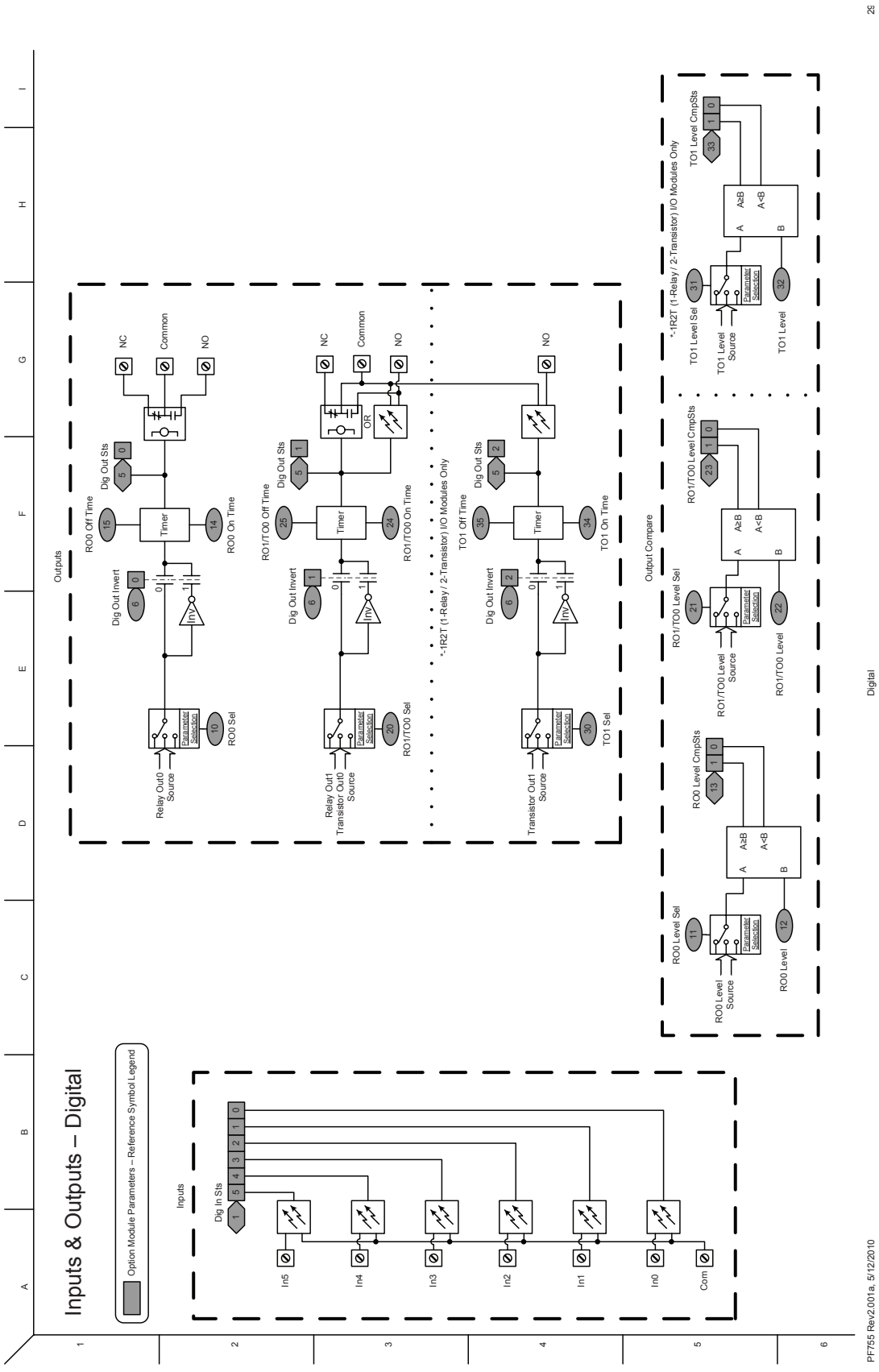
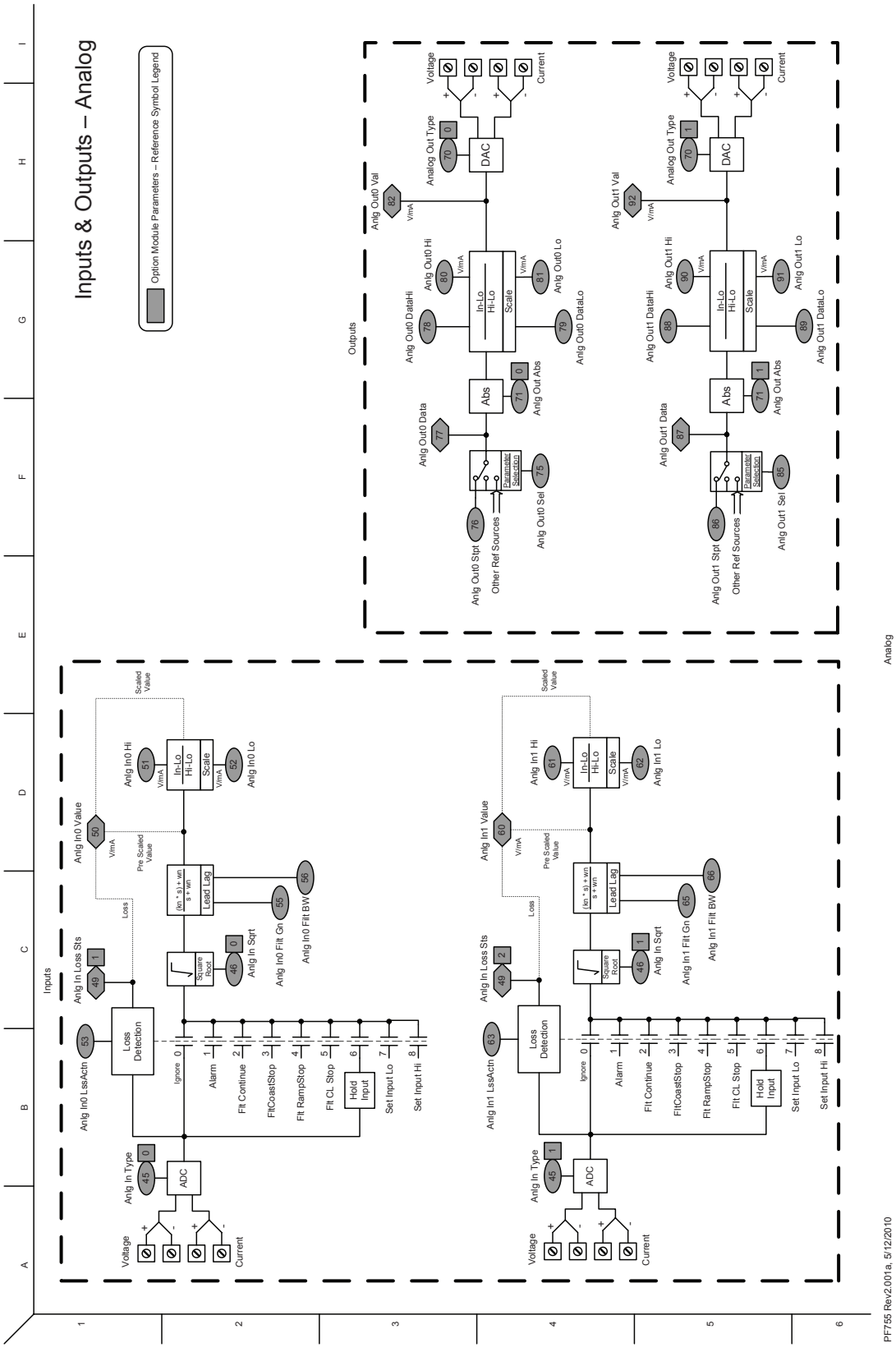
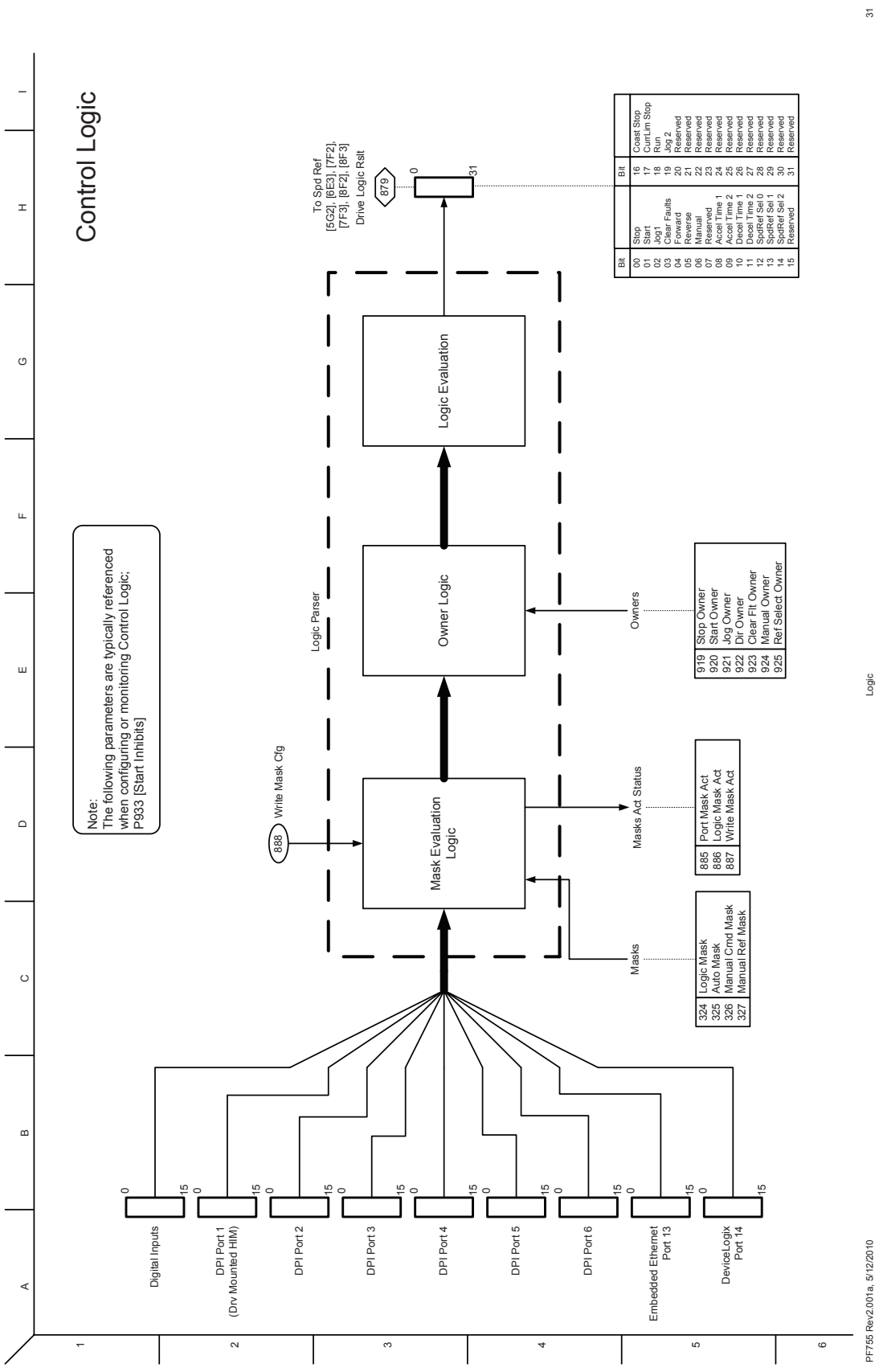
Process Ctrl (2)
27


MOP Control
MOP Rate
560
Calc Step
DI MOP Inc
177
Option Port: Digital In
Parameter Selection
MOP Inc
DI MOP Dec
178
MOP Dec
MOP High Limit
561
MOP Low Limit
562
Limit
MOP Reference
558
To Spd Ref, Process Ctrl [5A3], [26A2], [26A3], [27C2], [27C4]
Reset / Save
Save MOP Ref (At Stop)
559
Start Inhibits (SW Coast Stp)
933
Save MOP Ref (At Pwr Down)
Start Inhibits (Bus PreChg)
MOP
PF755 Rev2.001a, 5/12/2010


Inputs & Outputs – Digital
Option Module Parameters – Reference Symbol Legend
Inputs
Dig In Sts
In5
In4
In3
In2
In1
In0
Com
Outputs
RO0 Off Time
Timer
RO0 On Time
Dig Out Sts
Dig Out Invert
Inv
NC
Common
NO
Relay Out0 Source
RO0 Sel
RO1/TO0 Off Time
RO1/TO0 On Time
OR
Relay Out Transistor Out0 Source
RO1/TO0 Sel
*-1R2T (1-Relay / 2-Transistor) I/O Modules Only
TO1 Off Time
TO1 On Time
Transistor Out Source
TO1 Sel
Output Compare
RO0 Level Sel
RO0 Level Source
RO0 Level
RO0 Level CmpSts
A≥B
A<B
RO1/TO0 Level Sel
RO1/TO0 Level Source
RO1/TO0 Level
RO1/TO0 Level CmpSts
TO1 Level Sel
TO1 Level Source
TO1 Level
TO1 Level CmpSts
Parameter Selection
Digital
PF755 Rev2.001a, 5/12/2010



PF755 Rev2.001a, 5/12/2010


Control Logic
Note:
The following parameters are typically referenced when configuring or monitoring Control Logic; P933 [Start Inhibits]
Logic Parser
Write Mask Cfg
888
Mask Evaluation Logic
Owner Logic
Logic Evaluation
To Spd Ref [5G2], [6E3], [7F2], [7F3], [8F2], [8F3]
Drive Logic Rslt
879
0
31
Masks
Masks Act Status
Owners
324 Logic Mask
325 Auto Mask
326 Manual Cmd Mask
327 Manual Ref Mask
885 Port Mask Act
886 Logic Mask Act
887 Write Mask Act
919 Stop Owner
920 Start Owner
921 Jog Owner
922 Dir Owner
923 Clear Fit Owner
924 Manual Owner
925 Ref Select Owner
Bit
00 Stop
01 Start
02 Jog1
03 Clear Faults
04 Forward
05 Reverse
06 Manual
07 Reserved
08 Accel Time 1
09 Accel Time 2
10 Decel Time 1
11 Decel Time 2
12 SpdRef Sel 0
13 SpdRef Sel 1
14 SpdRef Sel 2
15 Reserved
16 Coast Stop
17 CurrLim Stop
18 Run
19 Jog 2
20 Reserved
21 Reserved
22 Reserved
23 Reserved
24 Reserved
25 Reserved
26 Reserved
27 Reserved
28 Reserved
29 Reserved
30 Reserved
31 Reserved
Digital Inputs
DPI Port 1 (Drv Mounted HIM)
DPI Port 2
DPI Port 3
DPI Port 4
DPI Port 5
DPI Port 6
Embedded Ethernet Port 13
DeviceLogix Port 14
0
15
A
B
C
D
E
F
G
H
I
1
2
3
4
5
6
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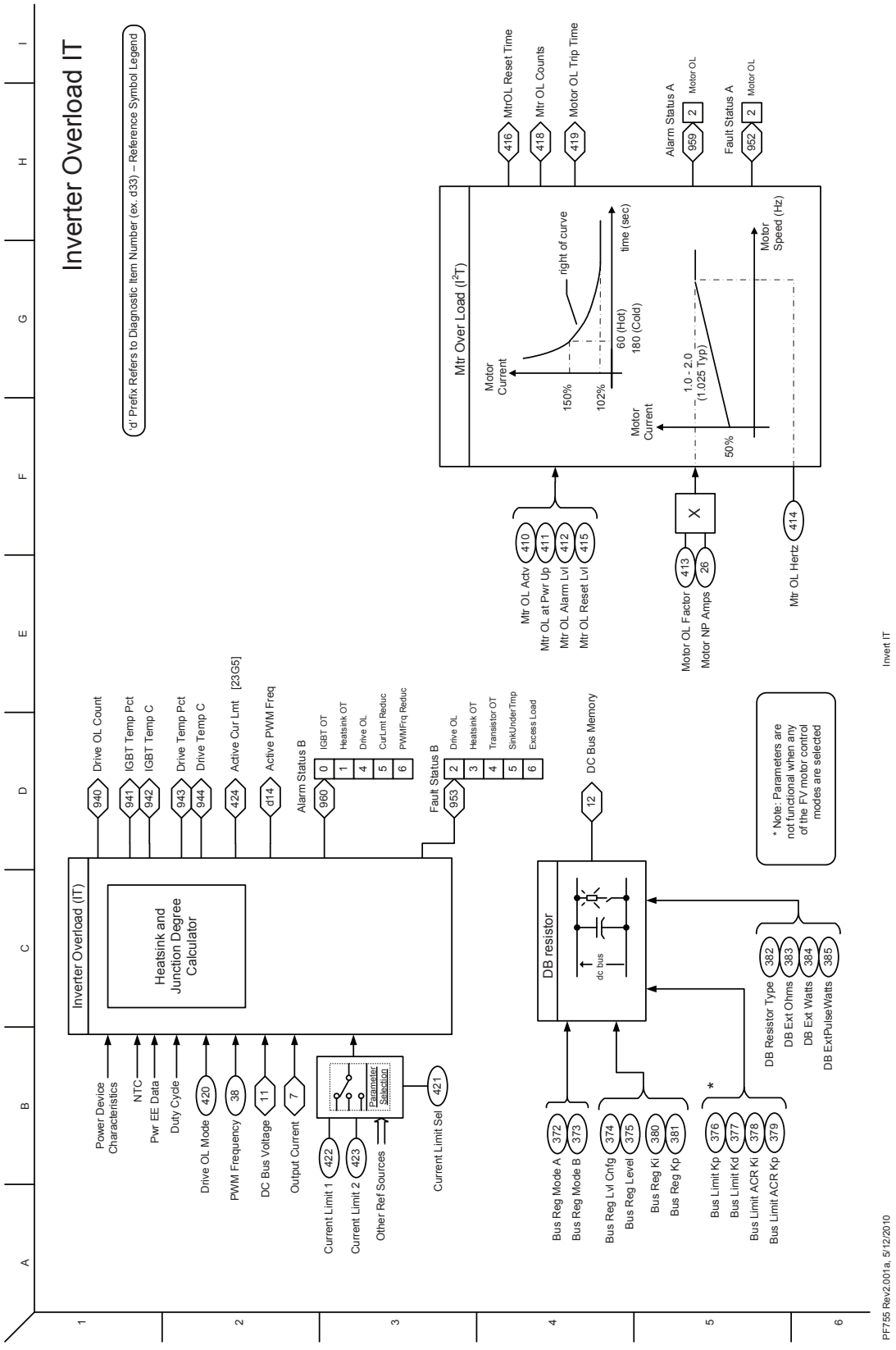
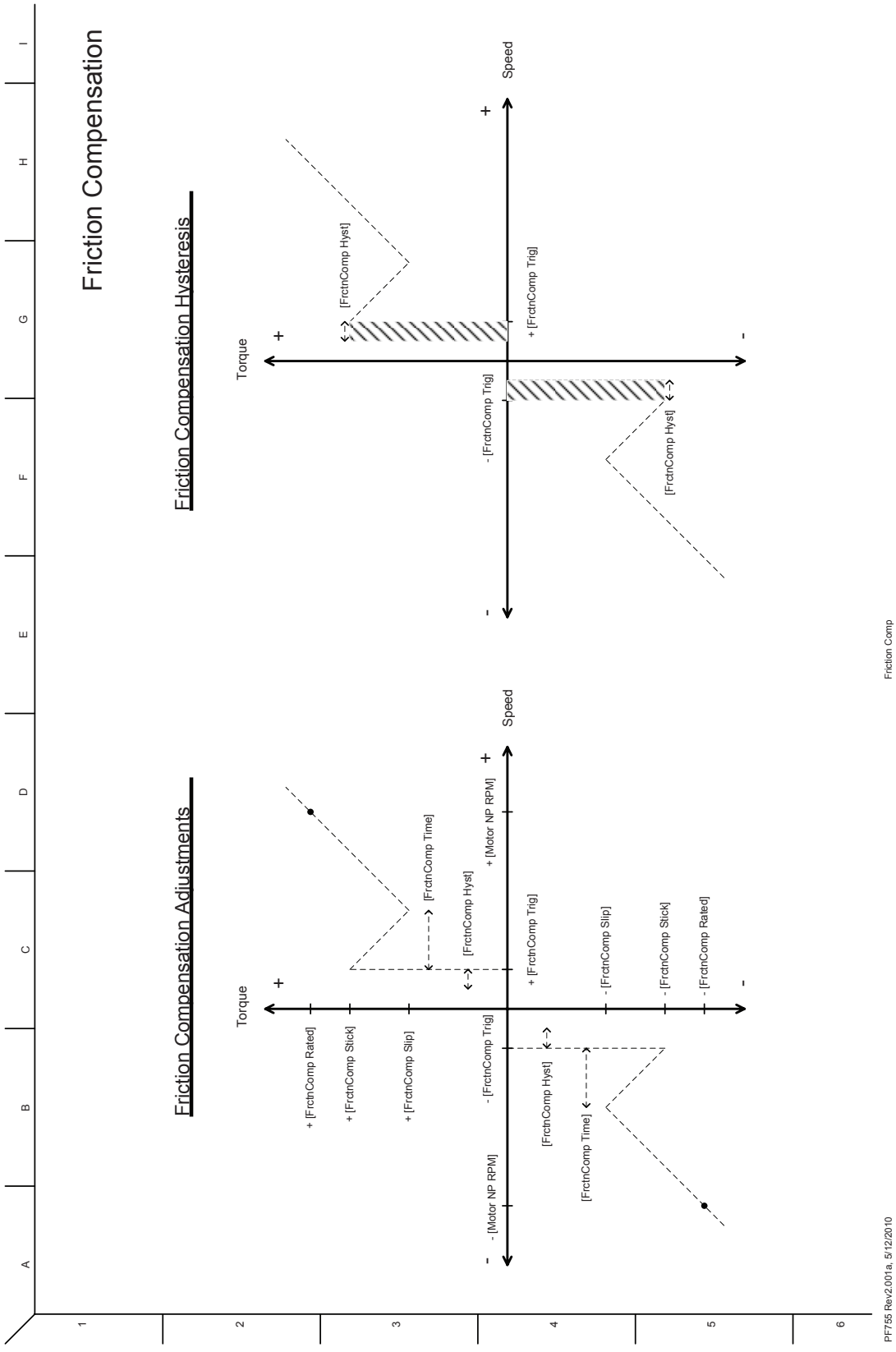
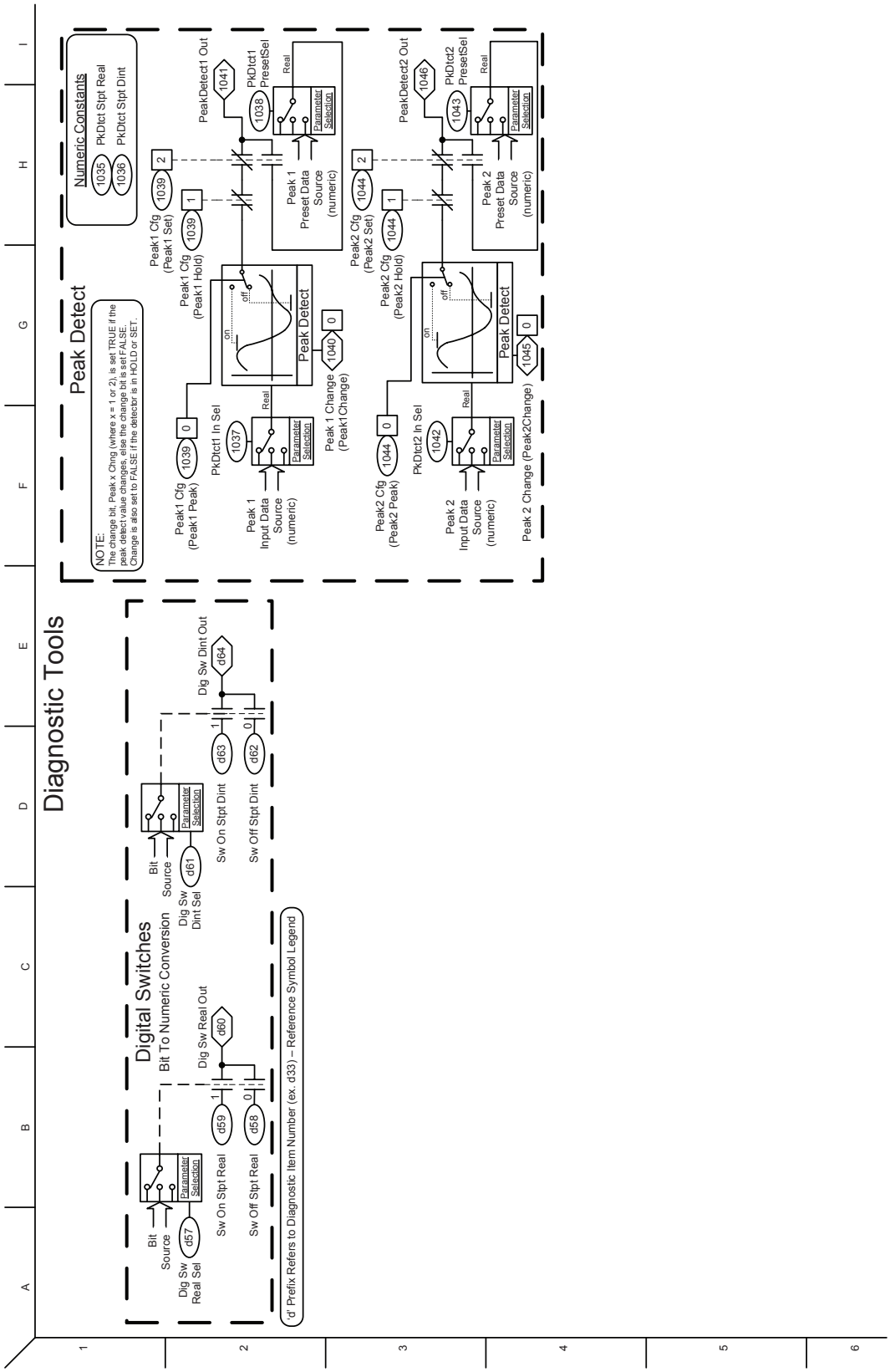
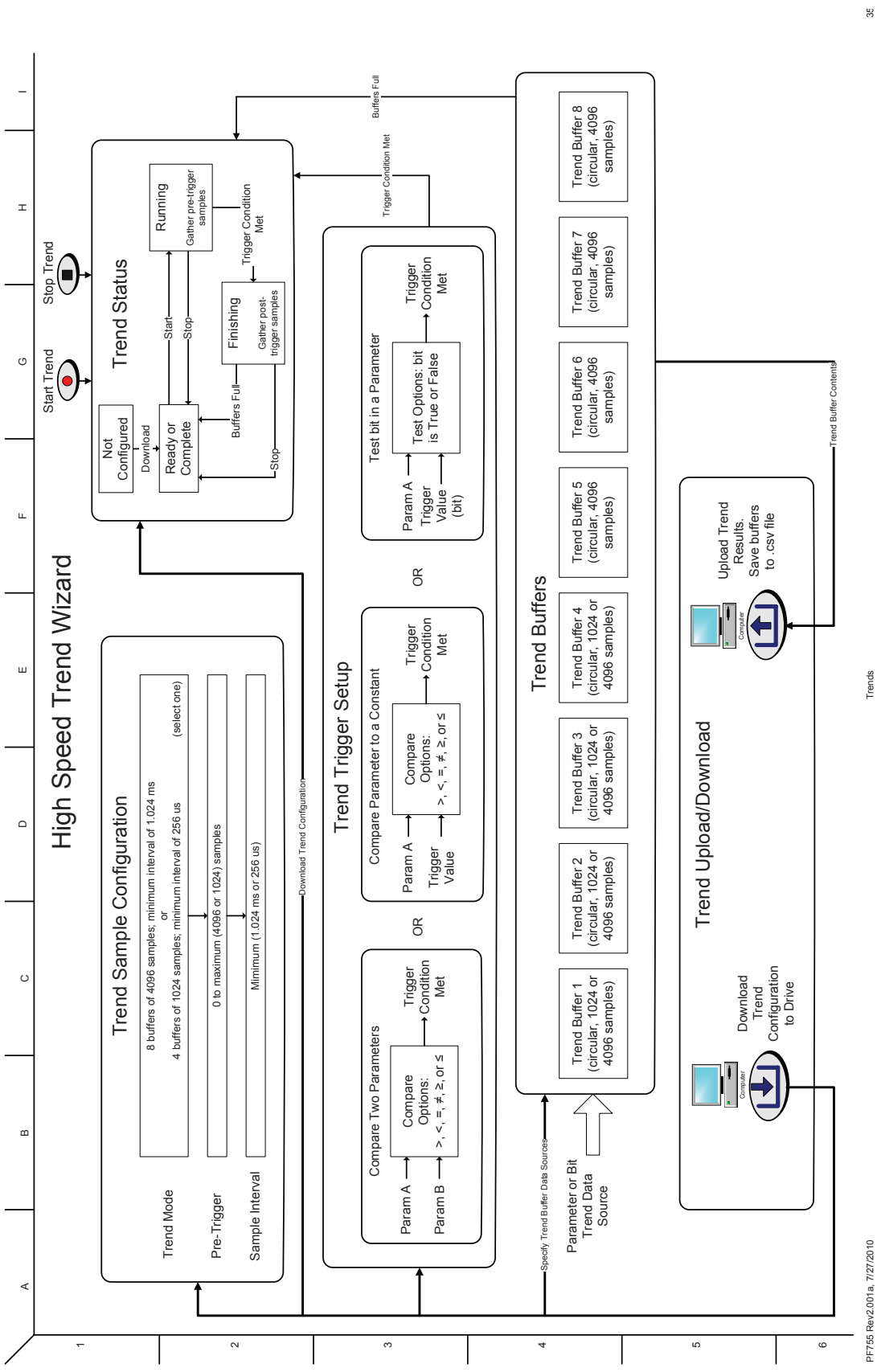
Logic


Inverter Overload IT
d' Prefix Refers to Diagnostic Item Number (ex. d33) – Reference Symbol Legend
Inverter Overload (IT)
Heatsink and Junction Degree Calculator
Power Device Characteristics
NTC
Pwr EE Data
Duty Cycle
Drive OL Mode 420
PWM Frequency 38
DC Bus Voltage 11
Output Current 7
Current Limit 1 422
Current Limit 2 423
Other Ref Sources
Parameter Selection
Current Limit Sel 421
Drive OL Count 940
IGBT Temp Pct 941
IGBT Temp C 942
Drive Temp Pct 943
Drive Temp C 944
Active Cur Lmt [23G5] 424
Active PWM Freq d14
Alarm Status B 960
0 IGBT OT
1 Heatsink OT
4 Drive OL
5 CurLmt Reduc
6 PWMFrq Reduc
Fault Status B 953
2 Drive OL
3 Heatsink OT
4 Transistor OT
5 SinkUnderTmp
6 Excess Load
DC Bus Memory 12
DB resistor
dc bus
Bus Reg Mode A 372
Bus Reg Mode B 373
Bus Reg Lvl Cnfg 374
Bus Reg Level 375
Bus Reg Ki 380
Bus Reg Kp 381
Bus Limit Kp 376
Bus Limit Kd 377
Bus Limit ACR Ki 378
Bus Limit ACR Kp 379
DB Resistor Type 382
DB Ext Ohms 383
DB Ext Watts 384
DB ExtPulseWatts 385
* Note: Parameters are not functional when any of the FV motor control modes are selected
Mtr Over Load (I²T)
Motor Current
150%
102%
right of curve
60 (Hot)
180 (Cold)
time (sec)
Motor Current
50%
1.0 - 2.0 (1.025 Typ)
Motor Speed (Hz)
MtrOL Reset Time 416
Mtr OL Counts 418
Motor OL Trip Time 419
Alarm Status A 959 2 Motor OL
Fault Status A 952 2 Motor OL
Mtr OL Actv 410
Mtr OL at Pwr Up 411
Mtr OL Alarm Lvl 412
Mtr OL Reset Lvl 415
Motor OL Factor 413
Motor NP Amps 26
Mtr OL Hertz 414
PF755 Rev2.001a, 5/12/2010
Invert IT
32


Friction Compensation
Friction Compensation Hysteresis
Torque
Speed
+
-
+ [FrctnComp Hyst]
+ [FrctnComp Trig]
- [FrctnComp Trig]
[FrctnComp Hyst]
Friction Compensation Adjustments
+ [FrctnComp Rated]
+ [FrctnComp Stick]
+ [FrctnComp Slip]
[FrctnComp Time]
[FrctnComp Hyst]
+ [Motor NP RPM]
+ [FrctnComp Trig]
- [FrctnComp Slip]
- [FrctnComp Stick]
- [FrctnComp Rated]
- [FrctnComp Trig]
[FrctnComp Hyst]
[FrctnComp Time]
- [Motor NP RPM]
PF755 Rev2.001a, 5/12/2010
Friction Comp
33


Diagnostic Tools
Digital Switches
Bit To Numeric Conversion
Dig Sw Real Sel
Bit Source
Parameter Selection
d57
Sw On Stpt Real
d59
Sw Off Stpt Real
d58
Dig Sw Real Out
d60
Dig Sw Dint Sel
d61
Sw On Stpt Dint
d63
Sw Off Stpt Dint
d62
Dig Sw Dint Out
d64
'd' Prefix Refers to Diagnostic Item Number (ex. d33) – Reference Symbol Legend
Peak Detect
NOTE:
The change bit, Peak x Chng (where x = 1 or 2), is set TRUE if the peak detect value changes, else the change bit is set FALSE. Change is also set to FALSE if the detector is in HOLD or SET.
Numeric Constants
1035
PkDtct Stpt Real
1036
PkDtct Stpt Dint
Peak1 Cfg (Peak1 Sel)
1039
2
Peak1 Cfg (Peak1 Hold)
1039
1
Peak1 Cfg (Peak1 Peak)
1039
0
PkDtct1 In Sel
1037
Peak 1 Input Data Source (numeric)
Peak 1 Preset Data Source (numeric)
1038
PkDtct1 PresetSel
Real
Peak Detect
on
off
Peak 1 Change (Peak1Change)
1040
0
PeakDetect1 Out
1041
Peak2 Cfg (Peak2 Sel)
1044
2
Peak2 Cfg (Peak2 Hold)
1044
1
Peak2 Cfg (Peak2 Peak)
1044
0
PkDtct2 In Sel
1042
Peak 2 Input Data Source (numeric)
Peak 2 Preset Data Source (numeric)
1043
PkDtct2 PresetSel
Peak 2 Change (Peak2Change)
1045
0
PeakDetect2 Out
1046
A
B
C
D
E
F
G
H
I
1
2
3
4
5
6
Diag
34
PF755 Rev2.001a, 5/12/2010


High Speed Trend Wizard
Trend Sample Configuration
Trend Mode
8 buffers of 4096 samples; minimum interval of 1.024 ms
or
4 buffers of 1024 samples; minimum interval of 256 us
(select one)
Pre-Trigger
0 to maximum (4096 or 1024) samples
Sample Interval
Mimimum (1.024 ms or 256 us)
Download Trend Configuration
Trend Status
Not Configured
Download
Ready or Complete
Start Trend
Stop Trend
Start
Stop
Running
Gather pre-trigger samples
Trigger Condition Met
Finishing
Gather post-trigger samples
Buffers Full
Stop
Buffers Full
Trigger Condition Met
Trend Trigger Setup
Compare Two Parameters
Param A
Param B
Compare Options: >, <, =, ≠, ≥, or ≤
Trigger Condition Met
OR
Compare Parameter to a Constant
Param A
Trigger Value
Compare Options: >, <, =, ≠, ≥, or ≤
Trigger Condition Met
OR
Test bit in a Parameter
Param A
Trigger Value (bit)
Test Options: bit is True or False
Trigger Condition Met
Specify Trend Buffer Data Sources
Parameter or Bit Trend Data Source
Trend Buffers
Trend Buffer 1 (circular, 1024 or 4096 samples)
Trend Buffer 2 (circular, 1024 or 4096 samples)
Trend Buffer 3 (circular, 1024 or 4096 samples)
Trend Buffer 4 (circular, 1024 or 4096 samples)
Trend Buffer 5 (circular, 4096 samples)
Trend Buffer 6 (circular, 4096 samples)
Trend Buffer 7 (circular, 4096 samples)
Trend Buffer 8 (circular, 4096 samples)
Trend Buffer Contents
Trend Upload/Download
Computer
Download Trend Configuration to Drive
Computer
Upload Trend Results. Save buffers to .csv file
Trends
PF755 Rev2.001a, 7/27/2010

Application Notes

efesotomasyon.com

Communication Configurations

20-COMM-* Network Adapter Compatibility

Some 20-COMM adapters can be used with PowerFlex 750-Series drives. See "20-COMM Carrier" in the Installation Instructions, publication 750-IN001, for more information.

IMPORTANT When a 20-COMM Carrier (20-750-20COMM) is used to install a 20-COMM adapter on a 750-Series drive, the upper word (Bits 16…31) of the Logic Command Word and Logic Status Word are not accessible. The upper word is only used and accessible on 750-Series communication modules (20-750-*) and the embedded EtherNet/IP on PowerFlex 755 drives.

Typical Programmable Controller Configurations

IMPORTANT If block transfers are programmed to continuously write information to the drive, care must be taken to properly format the block transfer. If attribute 10 is selected for the block transfer, values will be written only to RAM and will not be saved by the drive. This is the preferred attribute for continuous transfers. If attribute 9 is selected, each program scan will complete a write to the drives non-volatile memory (EEprom). Since the EEprom has a fixed number of allowed writes, continuous block transfers will quickly damage the EEprom. Do Not assign attribute 9 to continuous block transfers. Refer to the individual communications adapter User Manual for additional details.

Logic Command/Status Words

Table 1 - Logic Command Word

| Logic Bits | | |

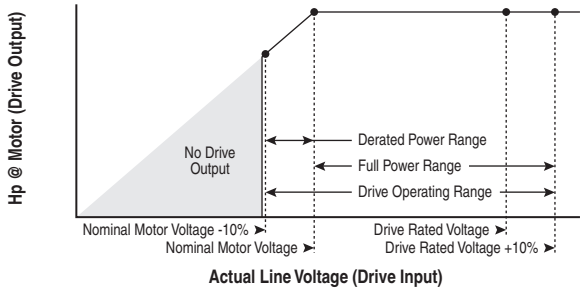
Table 2 - Logic Status Word

Logic Bits																													
31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	Command	Description
																															x	Run Ready	0 = Not Ready to Run 1 = Ready to Run
																														x		Active	0 = Not Active 1 = Active
																												x				Command Direction	0 = Reverse 1 = Forward
																											x					Actual Direction	0 = Reverse 1 = Forward
																										x						Accelerating	0 = Not Accelerating 1 = Accelerating
																									x							Decelerating	0 = Not Decelerating 1 = Decelerating
																								x								Alarm	0 = No Alarm (Par. 959 & 960) 1 = Alarm
																							x									Fault	0 = No Fault (Par. 952 & 953) 1 = Fault
																							x									At Setpt Spd	0 = Not at Setpoint Speed 1 = At Setpoint Speed
																						x										Manual	0 = Manual Mode Not Active 1 = Manual Mode Active
																					x											Spd Ref ID 0	00000 = Reserved 00001 = Auto Ref A (par. 545) 00010 = Auto Ref B (Par. 550) 00011 = Auto Preset Speed 3 (Par. 573) 00100 = Auto Preset Speed 4 (Par. 574) 00101 = Auto Preset Speed 5 (Par. 575) 00110 = Auto Preset Speed 6 (Par. 576) 00111 = Auto Preset Speed 7 (Par. 577) 01000 = Reserved 01001 = Reserved 01010 = Reserved 01011 = Reserved 01100 = Reserved 01101 = Reserved 01110 = Reserved 01111 = Reserved 10000 = Man Port 0 10001 = Man Port 1 10010 = Man Port 2 10011 = Man Port 3 10100 = Man Port 4 10101 = Man Port 5 10110 = Man Port 6 10111 = Reserved 11000 = Reserved 11001 = Reserved 11010 = Reserved 11011 = Reserved 11100 = Reserved 11101 = Man Port 13 (Emb. ENET) 11110 = Man Port 14 (Drive Logix) 11111 = Alternate Man Ref Sel
																			x													Spd Ref ID 2	
																		x														Spd Ref ID 3	
																	x															Spd Ref ID 4	
																x																Reserved	
															x																	Running	0 = Not Running 1 = Running
														x																		Jogging	0 = Not Jogging (Par. 556 & 557) 1 = Jogging
													x																			Stopping	0 = Not Stopping 1 = Stopping
												x																				DC Brake	0 = Not DC Brake 1 = DC Brake
											x																					DB Active	0 = Not Dynamic Brake Active 1 = Dynamic Brake Active
										x																						Speed Mode	0 = Not Speed Mode (Par. 309) 1 = Speed Mode
									x																							Position Mode	0 = Not Position Mode (Par. 309) 1 = Position Mode
								x																								Torque Mode	0 = Not Torque Mode (Par. 309) 1 = Torque Mode
							x																									At Zero Speed	0 = Not at Zero Speed 1 =At Zero Speed
						x																										At Home	0 = Not at Home 1 = At Home
					x																											At Limit	0 = Not at Limit 1 = At Limit
				x																												Current Limit	0 = Not at Current Limit 1 = At Current Limit
			x																													Bus Freq Reg	0 = Not Bus Freq Reg 1 = Bus Freq Reg
		x																														Enable On	0 = Not Enable On 1 = Enable On
	x																															Motor Overload	0 = Not Motor Overload 1 = Motor Overload
x																																Regen	0 = Not Regen 1= Regen

Voltage Tolerance

Drive Rating	Nominal Line Voltage	Nominal Motor Voltage	Drive Full Power Range	Drive Operating Range
380…400	380	380	380…528	342…528
	400	400	400…528	
	480	460	460…528	

Drive Full Power Range =	Nominal Motor Voltage to Drive Rated Voltage + 10%. Rated current is available across the entire Drive Full Power Range
Drive Operating Range =	Lowest Nominal Motor Voltage - 10% to Drive Rated Voltage + 10%. Drive Output is linearly derated when Actual Line Voltage is less than the Nominal Motor Voltage

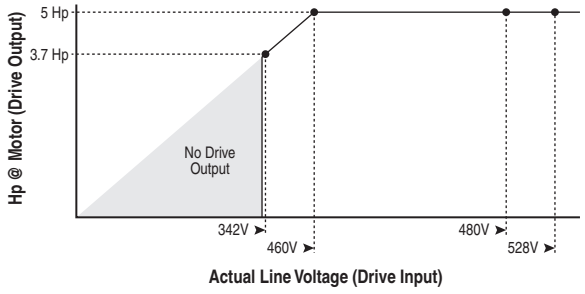


Example:

Calculate the maximum power of a 5 Hp, 460V motor connected to a 480V rated drive supplied with 342V Actual Line Voltage input.

- Actual Line Voltage / Nominal Motor Voltage = 74.3%
- 74.3% × 5 HP = 3.7 HP
- 74.3% × 60 Hz = 44.6 Hz

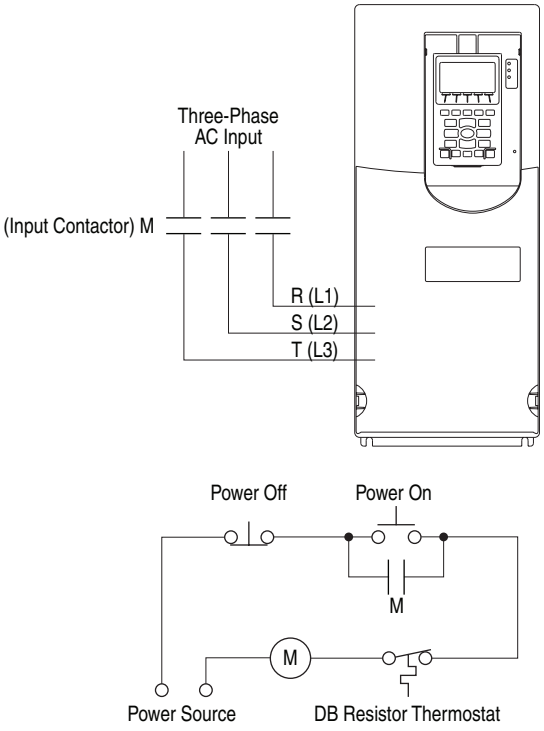
At 342V Actual Line Voltage, the maximum power the 5 HP, 460V motor can produce is 3.7 HP at 44.6 Hz.



External Brake Resistor

ATTENTION: The drive does not offer protection for externally mounted brake resistors. A risk of fire exists if external braking resistors are not protected. External resistor packages must be self-protected from over temperature or a circuit equivalent to the one shown below must be supplied.

Figure 1 - External Brake Resistor Circuitry



Lifting/Torque Proving

The TorqProve™ feature of PowerFlex 750-Series drives is intended for applications where proper coordination between motor control and a mechanical brake is required. Prior to releasing a mechanical brake, the drive will check motor output phase continuity and verify proper motor control (torque proving). The drive will also verify that the mechanical brake has control of the load prior to releasing drive control (brake proving). After the drive sets the brake, motor movement is monitored to ensure the brakes ability to hold the load.

ATTENTION: Loss of control in suspended load applications can cause personal injury and/or equipment damage. Loads must always be controlled by the drive or a mechanical brake. Parameters 1100…1113 are designed for lifting/torque proving applications. It is the responsibility of the engineer and/or end user to configure drive parameters, test any lifting functionality and meet safety requirements in accordance with all applicable codes and standards.

TorqProve can be operated with an encoder or encoderless. See "Attention" on page 367 prior to the use of TorqProve with no encoder.

TorqProve functionality with an encoder includes:

- Torque Proving (includes flux up and last torque measurement)
- Brake Proving
- Brake Slip (feature slowly lowers load if brake slips/fails)
- Float Capability (ability to hold full torque at zero speed)
- Micro-Positioning
- Fast Stop
- Speed Deviation Fault, Output Phase Loss Fault, Encoder Loss Fault.

Encoderless TorqProve functionality includes:

- Torque Proving (includes flux up and last torque measurement)
- Micro-Positioning
- Fast Stop
- Speed Deviation Fault, Output Phase Loss Fault.

IMPORTANT Brake Slip detection and Float capability (ability to hold load at zero speed) are not available in encoderless TorqProve.

ATTENTION: User must read the following prior to the use of TorqProve with no encoder.
Encoderless TorqProve must be limited to lifting applications where personal safety is not a concern. Encoders offer additional protection and must be used where personal safety is a concern. Encoderless TorqProve cannot hold a load at zero speed without a mechanical brake and does not offer additional protection if the brake slips/fails. Loss of control in suspended load applications can cause personal injury and/or equipment damage.
It is the responsibility of the engineer and/or user to configure drive parameters, test any lifting functionality and meet safety requirements in accordance with all applicable codes and standards. If encoderless TorqProve is desired, the user must certify the safety of the application. To acknowledge that the end user has read this "Attention" and properly certified their encoderless application, bit 3 ("EncIsTrqProv") of [Mtr Options Cnfg], parameter 40 must be changed to a "1." This will remove Alarm 28, "TP Encls Config" and allow bit 1 of Parameter 1100 to be changed to a "1" enabling encoderless TorqProve.

Tuning The Motor For Torque Prove Applications

It is possible to use the Start-Up routine to tune the motor (See page 19). However, it is recommended that the motor be disconnected from the hoist/crane equipment during the routine

ATTENTION: To guard against personal injury and/or equipment damage caused by unexpected brake release, verify that the digital output used for brake connections and/or programming. The PowerFlex 750-Series drive **will not control the mechanical brake until TorqProve is enabled**. If the brake is connected to a digital output, it could be released. If necessary, **disconnect the digital output until wiring/programming can be completed and verified**.

Crane Setup with Encoder Feedback

These setup instructions assume the following.

- Drive and motor size have been carefully selected
- External braking resistor has been properly sized
- The drive is at factory defaults.
  If not, unplug the output relay terminal block and issue a reset to factory defaults for the HOST and all PORTS. Plug terminal block back in.
- Programming is done via DriveExecutive or DriveExplorer
- Crane control is done via Run forward / Run Reverse inputs
- Mechanical brake control is wired to Output Relay 0
- The drive is equipped with a single incremental(20-750-ENC-1) or dual incremental encoder board (20-750-DENC-1)
- The encoder is mounted on the back of the motor (not behind the gearbox)
- Encoder specification: Quadrature differential (A, A-, B, B-), Line driver output, Minimum 1000PPR 5V or 12V signals (12V preferred)

ATTENTION: Loss of control in suspended load applications can cause personal injury and/or equipment damage. Loads must always be controlled by the drive or a mechanical brake. Parameters 1100…1113 are designed for lifting/torque proving applications. It is the responsibility of the engineer and/or end user to configure drive parameters, test any lifting functionality and meet safety requirements in accordance with all applicable codes and standards.

Set Up Drive

1. Adjust parameter settings and enter nameplate data.

Parameter	Setting
Braking Details	
P370 [Stop Mode A]	1 "Ramp"
P372 [Bus Reg Mode A]	2 "Dyn Brake" (Dynamic Braking)
P382 [DB Resistor Type]	1 "External"
P383 [DB Ext Ohms]	Total Ohm value of external resistor.
P384 [DB Ext Watts]	Total real watt rating of external resistor.
P385 [DB ExtPulseWatts]	Maximum value for properly sized resistor.
P426 [Regen Power Lmt]	–800% (Minimum Value)
Motor Nameplate Data	
P25 [Motor NP Volts]	Motor nameplate voltage.
P26 [Motor NP Amps]	Motor nameplate current.
P27 [Motor NP Hertz]	Motor nameplate frequency.
P28 [Motor NP RPM]	Motor nameplate speed.
P29 [Mtr NP Pwr Units]	0 "HP" or 1 "kW"
P30 [Motor NP Power]	Motor nameplate power rating.
P31 [Motor Poles]	Number of motor poles.
Motor Control	
P35 [Motor Ctrl Mode]	3 "Induction FV"
Maximum Frequency	
P37 [Maximum Freq]	Motor nameplate frequency.
Drive Duty Rating	
P306 [Duty Rating]	1 "Heavy Duty"
Overload Hertz	
P414 [Mtr OL Hertz]	0.00 (Ensures that no current derating is applied.)
Autotune Torque	
P71 [Autotune Torque]	100.00% (Used during rotate tuning and inertia tuning.)
Protection	
P420 [Drive OL Mode]	1 "Reduce PWM"
P422 [Current Limit 1]	200% of P26 [Motor NP Amps]
P444 [OutPhaseLossActn]	3 "FltCoastStop"

Motor Tune Routines

Static Tune
This routine measures motor characteristics with the brake set (brake closed).

Rotate Tune
This routine gives better results if connected equipment allows. This routine requires the mechanical brake to open and the motor should be allowed to run at minimum of 70% of nominal speed.

Inertia Tune
This routine measures the time to accelerate the system to the nominal speed.

Static Tune

During a Static Tune, the mechanical brake remains set.

1. Enter Static Tune parameter settings.

Drive Parameter	Setting
P70 [Autotune]	2 "Static Tune"
I/O Module Parameter (Port X)	**Setting**
P10 [RO0 Sel]	0.00 "Disabled"

2. Click on the Controls icon to open the Control Bar.

3. Press the Start button on the Control Bar.

   When the Static Tune routine is complete, P70 [Autotune] changes to 0 "Ready".

Verify Drive Direction

1. Perform a Direction Test to verify proper direction of crane.

I/O Module Parameter (Port X)	Setting
P164 [DI Run Forward]	Port Number, P1 [Dig In Sts], Bit X (Run Fwd Input)
P165 [DI Run Reverse]	Port Number, P1 [Dig In Sts], Bit X (Run Rev Input)

IMPORTANT At this point the crane can be started via the crane control unit.

Drive Parameter	Setting
P545 [Spd Ref A Sel]	Port 0, P571 [Preset Speed 1]
P571 [Preset Speed 1]	15 Hz (Set to low speed for direction test.)
P535 [Accel Time 1]	2.00 Secs
P537 [Decel Time 1]	2.00 Secs
I/O Module Parameter (Port X)	**Setting**
P10 [RO0 Sel]	Port 0, P935 [Drive Status 1], Bit 16 "Running"

IMPORTANT At this point the mechanical brake will open when the drive is running.

2. Run crane with the crane control unit and verify that the direction is correct.

   If crane direction is not correct, change motor direction.

Drive Parameter	Setting
P40 [Mtr Options Cnfgl]	Bit 4 "Mtr Lead Rev" = 1 (Reversed)

   Run crane with the crane control unit and verify that the direction is now correct.

   Move crane hook to a position that will allow sufficient travel in both directions.

Verify Encoder Direction

1. If a Dual Incremental Encoder option module (20-750-DENC-1) is used, and only one encoder is connected, disable the encoder loss fault of the unused channel.

Drive Parameter	Setting
P132 [Aux Vel Fdbk Sel]	Encoder Port Number, Enc 0 FB (Selects Channel 0)

Encoder Module Parameter (Port X)	Setting
P13 [Enc 1 FB Lss Cfg]	0 "Ignore" (Disables Channel 1)
P2 [Enc 0 PPR]	Real pulses per revolution (For example 1024).

2. Run the crane upwards or downwards and monitor the sign (+ or –) of the output frequency on the HIM display or via software. Compare this to the sign of P134 [Aux Vel Feedback]. Both signals must have the same sign (both positive or both negative).

   If signals do not match, change the encoder direction setting.

Encoder Module Parameter (Port X)	Setting
P1 [Enc 0 Cfg]	Bit 5 "Direction" = 1 (Invert)

3. Run the crane upwards or downwards and check if the sign of both speeds match.

Drive Parameter	Setting
P125 [Pri Vel Fdbk Sel]	Encoder Port Number, P1 [Dig In Sts]

   The encoder direction now matches the motor direction.

Rotate Tune

During a Rotate Tune routine, the motor will run for 20 seconds in the commanded direction. In Flux vector control, the Rotate Tune routine shall be executed in a no load or lightly loaded condition such as the motor connected to a gearbox, cable drum, or cable and hook.

IMPORTANT Ensure that the Rotate Tune routine can be stopped if an end travel condition is likely to occur.

If the motor is connected to a load, determine whether there is enough travel distance for the Rotate Tune sequence to complete. If required, run the crane hook to top or bottom for more travel distance in the opposite direction.

If the Rotate Tune routine fails due to motor loading, rerun the Static Tune routine and skip this routine.

1. Enter Rotate Tune parameter settings.

Drive Parameter	Setting
P70 [Autotune]	3 "Rotate Tune"
P520 [Max Fwd Speed]	Forward speed limit used during Autotune. 70% P27 [Motor NP Hertz] minimum.
P521 [Max Rev Speed]	Reverse speed limit used during Autotune. 70% P27 [Motor NP Hertz] minimum.

Encoder Module Parameter (Port X)	Setting
P10 [RO0 Sel]	Port 0, P935 [Drive Status 1], Bit 1 "Active"

2. Press the Start button on the Control Bar.

   When the Rotate Tune routine is complete, P70 [Autotune] changes to 0 "Ready".

   Check tuning results in P73 [IR Voltage Drop], P74 Ixo Voltage Drop], and P75 [Flux Current Ref].

Inertia Tune

The Inertia Tune routine measures the time to accelerate the system (with load) using P71 [Autotune Torque] to the nominal speed. The test speed can be limited by reducing P520 [Max Fwd Speed] and P521 [Max Rev Speed]. The fastest test is achieved with P71 [Autotune Torque] set to a high value and P520 [Max Fwd Speed] and P521 [Max Rev Speed] set to a low value.

Because loading varies in crane applications, the result of an Inertia Tune is more or less irrelevant as it is for one condition only.

Step 8 outlines manually setting tuning values.

IMPORTANT Ensure that the Inertia Tune routine can be stopped if an end travel condition is likely to occur.

1. Enter Inertia Tune parameter settings.

Drive Parameter	Setting
P70 [Autotune]	4 "Inertia Tune"

2. Press the Start button on the Control Bar.

   When the Rotate Tune routine is complete, P70 [Autotune] changes to 0 "Ready".

   Check tuning results in P76 [Total Inertia].

   When using an encoder the drive and motor can hold zero speed with full load even with an opened mechanical brake.

3. Set minimum speed.

Drive Parameter	Setting
P522 [Min Fwd Speed]	0.00
P523 [Min Rev Speed]	0.00

4. Set maximum speed limits.

Drive Parameter	Setting
P520 [Max Fwd Speed]	Forward speed limit used during normal operation. Not more than the motor nominal frequency.
P521 [Max Rev Speed]	Reverse speed limit used during normal operation. Not more than the motor nominal frequency.

5. Set digital input functions.

   Speed Select Inputs

Drive Parameter	Setting
P173…175 [DI Speed Sel X]	I/O Port Number, P1 [Dig In Sts], Bit X

   Clear Fault Input

Drive Parameter	Setting
P156 [DI Clear Fault]	I/O Port Number, P1 [Dig In Sts], Bit X

6. Set speed reference.

   Program preset speeds according to Speed Select inputs used.

Input Status (1 = Input Actuated)			Auto Reference Source
DI Speed Sel 2	DI Speed Sel 1	DI Speed Sel 0	
0	0	0	Reference A
0	0	1	Reference A
0	1	0	Reference B
0	1	1	Preset Speed 3
1	0	0	Preset Speed 4
1	0	1	Preset Speed 5
1	1	0	Preset Speed 6
1	1	1	Preset Speed 7

I/O Module Parameter (Port X)	Setting
P10 [RO0 Sel]	Port 0, P935 [Drive Status 1], Bit 16 “Running”

7. Run crane with crane control unit.

   Verify speed references by checking P930 [Speed Ref Source].

8. Set speed loop tuning.

Drive Parameter	Setting
P636 [Speed Reg BW]	20 R/S Defines the reactivity of the speed regulator. This is used to calculate Kp and Ki gains.
P76 [Total Inertia]	1.5 Secs This value can be increased or decreased depending on Speed regulator response.

P645 [Speed Reg Kp] = P636 [Speed Reg BW] x P76 [Total Inertia] = BW x J (Inertia)

Torque Prove

Carefully perform the following steps in the order presented.

1. Enter Torque Prove parameter settings.

I/O Module Parameter (Port X)	Setting
P10 [RO0 Sel]	0.00 (Disabled)
P6 [Dig Out Invert]	Bit 0 "Relay Out 0" = 1 (Output Inverted)
P10 [RO0 Sel]	Port 0, P1103 [Trq Prove Status], Bit 4 "Brake Set" = 1

Drive Parameter	Setting
P1100 [Trq Prove Cfg]	Bit 0 "TP Enable" = 1

   Once Torque Prove is activated the drive is in alarm state.

2. Select the source of position feedback.

Drive Parameter	Setting
P135 [Mtr Psn Fdbk Sel]	Encoder Port Number, P4 [Enc 0 FB]

3. Set the time to decrease motor torque during Brake Slip test.

Drive Parameter	Setting
P1104 [Trq Lmt SlewRate]	10.000 Secs (Default)

4. Set speed deviation.

Drive Parameter	Setting
P1105 [Speed Dev Band]	Start with default Hz or RPM.

   Increase this setting if the drive faults on F20 [TorqPrv Spd Band].

5. Set speed deviation level.

Drive Parameter	Setting
P1106 [SpdBand Intgrtr]	0.060 Secs (Default)

   Increase this setting if the drive faults on F20 [TorqPrv Spd Band].

6. Set brake release time.

Drive Parameter	Setting
P1107 [Brk Release Time]	0.100 Secs (Default)

   Increase or decrease this setting depending on the time required to open the brake.

7. Set brake set time.

Drive Parameter	Setting
P1108 [Brk Set Time]	0.100 Secs (Default)

   Increase or decrease this setting depending on the time required to close the brake.

8. Set allowable brake slip.

Drive Parameter	Setting
P1109 [Brk Alarm Travel]	1.00 (Default)

   Sets the number of motor revolutions the motor is allowed to lower the load when a brake slip has been detected.

9. Set brake slip definition.

Drive Parameter	Setting
P1110 [Brk Slip Count]	250.00 (Default)

Sets the number of encoder counts to define a brake slippage condition. Counts = Encoder PPR x 4

10. Set brake float tolerance.

Drive Parameter	Setting
P1111 [Float Tolerance]	Use default Hz or RPM.

Sets the level at which the float timer will start counting.

11. Set brake float time.

Drive Parameter	Setting
P1113 [ZeroSpdFloatTime]	5.000 Secs (Default)

Sets the time to maintain zero speed with brake open when the run command has been released.

Setup Complete

The drive is now setup and Torque Prove for the mechanical brake control is activated. The load can now be applied.

At this point DriveObserver can be used to optimize the speed loop tuning. Use a 30 second time scaling on the X-axis

12. Using DriveObserver, setup the following traces.

Drive Parameter	Setting
P3 [Mtr Vel Fdbk]	Scaled to minimum and maximum speed limits.
P594 [Ramped Spd Ref]	Scaled to minimum and maximum speed limits.
P7 [Output Current]	Scaled to current limit value.
P11 [DC Bus Volts]	Default scaling.
P5 [Torque Cur Fdbk] (Optional)	Default scaling.

Run the crane up and down under full load. Adjust acceleration and deceleration rates if required.

Troubleshooting

The following faults commonly occur during drive commissioning.

F4 “Undervoltage”

- If the mains supply is still present, reduce the undervoltage level at P461 [UnderVltg Level].

F5 “Overvoltage”

- Monitor the DC Bus voltage while operating the crane. When lowering the load the DC bus voltage should be limited to 750VDC.
- Verify that the external resistor is correctly connected / wired
- Verify that the parameter settings as stated in Point 1.
- Monitor bit 20 DB active of P935 Drive Status 1. This bit will come on when dynamic braking is active.

F20 “TrqProve Spd Band” (Speed deviation fault)

- This fault is only active when TorqProve is enabled.
- Speed loop tuning not correct. Increase P636 [Speed Reg BW] or P76 [Total Inertia]. If values are too high the regulator will become unstable.
- P3 [Mtr Vel Fdbk] should follow P594 [Ramped Spd Ref] as best as possible.
- Drive is going into current limit. Drive is undersized or acceleration / deceleration are set too fast.
- Brake is not opening. Check for faulty brake rectifier.

For more fault information, refer to Chapter 3.

Crane Setup - Encoderless

These setup instructions assume the following.

- Drive and motor size have been carefully selected
- External braking resistor has been properly sized
- The drive is at factory defaults.
  If not, unplug the output relay terminal block and issue a reset to factory defaults for the HOST and all PORTS. Plug terminal block back in.
- Programming is done via DriveExecutive or DriveExplorer
- Crane control is done via Run forward / Run Reverse inputs
- Mechanical brake control is wired to Output Relay 0

ATTENTION: Loss of control in suspended load applications can cause personal injury and/or equipment damage. Loads must always be controlled by the drive or a mechanical brake. Parameters 1100…1113 are designed for lifting/torque proving applications. It is the responsibility of the engineer and/or end user to configure drive parameters, test any lifting functionality and meet safety requirements in accordance with all applicable codes and standards.

Set Up Drive

1. Adjust parameter settings and enter nameplate data.

Parameter	Setting
Braking Details	
P370 [Stop Mode A]	1 "Ramp"
P372 [Bus Reg Mode A]	2 "Dyn Brake" (Dynamic Braking)
P382 [DB Resistor Type]	1 "External"
P383 [DB Ext Ohms]	Total Ohm value of external resistor.
P384 [DB Ext Watts]	Total real watt rating of external resistor.
P385 [DB ExtPulseWatts]	Maximum value for properly sized resistor.
P426 [Regen Power Lmt]	–800% (Minimum Value)
Motor Nameplate Data	
P25 [Motor NP Volts]	Motor nameplate voltage.
P26 [Motor NP Amps]	Motor nameplate current.
P27 [Motor NP Hertz]	Motor nameplate frequency.
P28 [Motor NP RPM]	Motor nameplate speed.
P29 [Mtr NP Pwr Units]	0 "HP" or 1 "kW"
P30 [Motor NP Power]	Motor nameplate power rating.
P31 [Motor Poles]	Number of motor poles.
Motor Control	
P35 [Motor Ctrl Mode]	3 "Induction FV"
Motor Slip	
P621 [Slip RPM at FLA]	Synchronous Speed – P28 [Motor NP RPM] Example: 6 pole – 980 RPM motor Synchronous Speed = (NP frequency x 60 Secs)/pole pairs (50 Hz x 60 Secs) / 3 = 1000 RPM Slip = Synchronous Speed – Motor NP RPM = 1000 –980 = 20 RPM (enter 20 in P621)
Drive Duty Rating	
P306 [Duty Rating]	1 "Heavy Duty"
Overload Hertz	
P414 [Mtr OL Hertz]	0.00 (Ensures that no current derating is applied.)
Autotune Torque	
P71 [Autotune Torque]	100.00% (Used during rotate tuning and inertia tuning.)
Protection	
P420 [Drive OL Mode]	1 "Reduce PWM"
P422 [Current Limit 1]	200% of P26 [Motor NP Amps]
P444 [OutPhaseLossActn]	3 "FltCoastStop"

Motor Tune Routines

Static Tune
This routine measures motor characteristics with the brake set (brake closed).

Rotate Tune
This routine gives better results if connected equipment allows. This routine requires the mechanical brake to open and the motor should be allowed to run at minimum of 70% of nominal speed.

Inertia Tune
This routine measures the time to accelerate the system to the nominal speed.

Static Tune

During a Static Tune, the mechanical brake remains set.

1. Enter Static Tune parameter settings.

Drive Parameter	Setting
P70 [Autotune]	2 “Static Tune”
I/O Module Parameter (Port X)	**Setting**
P10 [RO0 Sel]	0.00 “Disabled”

2. Click on the Controls icon to open the Control Bar.

3. Press the Start button on the Control Bar.

   When the Static Tune routine is complete, P70 [Autotune] changes to 0 “Ready”.

Verify Drive Direction

1. Perform a Direction Test to verify proper direction of crane.

I/O Module Parameter (Port X)	Setting
P164 [DI Run Forward]	Port Number, P1 [Dig In Sts], Bit X (Run Fwd Input)
P165 [DI Run Reverse]	Port Number, P1 [Dig In Sts], Bit X (Run Rev Input)

IMPORTANT At this point the crane can be started via the crane control unit.

Drive Parameter	Setting
P545 [Spd Ref A Sel]	Port 0, P571 [Preset Speed 1]
P571 [Preset Speed 1]	15 Hz (Set to low speed for direction test.)
P535 [Accel Time 1]	2.00 Secs
P537 [Decel Time 1]	2.00 Secs
I/O Module Parameter (Port X)	**Setting**
P10 [RO0 Sel]	Port 0, P935 [Drive Status 1], Bit 16 “Running”

IMPORTANT At this point the mechanical brake will open when the drive is running.

2. Run crane with the crane control unit and verify that the direction is correct.

   If crane direction is not correct, change motor direction.

Drive Parameter	Setting
P40 [Mtr Options Cnfgl]	Bit 4 “Mtr Lead Rev” = 1 (Reversed)

   Run crane with the crane control unit and verify that the direction is now correct.

   Move crane hook to a position that will allow sufficient travel in both directions.

Rotate Tune

During a Rotate Tune routine, the motor will run for 20 seconds in the commanded direction. The Rotate Tune routine shall be executed in a no load or lightly loaded condition such as the motor connected to a gearbox, cable drum, or cable and hook.

IMPORTANT Ensure that the Rotate Tune routine can be stopped if an end travel condition is likely to occur.

If the motor is connected to a load, determine whether there is enough travel distance for the Rotate Tune sequence to complete. If required, run the crane hook to top or bottom for more travel distance in the opposite direction.

If the Rotate Tune routine fails due to motor loading, rerun the Static Tune routine and skip this routine.

1. Enter Rotate Tune parameter settings.

Drive Parameter	Setting
P70 [Autotune]	3 "Rotate Tune"
P520 [Max Fwd Speed]	Forward speed limit used during Autotune. 70% P27 [Motor NP Hertz] minimum.
P521 [Max Rev Speed]	Reverse speed limit used during Autotune. 70% P27 [Motor NP Hertz] minimum.

Encoder Module Parameter (Port X)	Setting
P10 [RO0 Sel]	Port 0, P935 [Drive Status 1], Bit 1 "Active"

2. Press the Start button on the Control Bar.

   When the Rotate Tune routine is complete, P70 [Autotune] changes to 0 "Ready".

   Check tuning results in P73 [IR Voltage Drop], P74 Ixo Voltage Drop], and P75 [Flux Current Ref].

Inertia Tune

The Inertia Tune routine measures the time to accelerate the system (with load) using P71 [Autotune Torque] to the nominal speed. The test speed can be limited by reducing P520 [Max Fwd Speed] and P521 [Max Rev Speed]. The fastest test is achieved with P71 [Autotune Torque] set to a high value and P520 [Max Fwd Speed] and P521 [Max Rev Speed] set to a low value.

Because loading varies in crane applications, the result of an Inertia Tune is more or less irrelevant as it is for one condition only.

Step 8 outlines manually setting tuning values.

IMPORTANT Ensure that the Inertia Tune routine can be stopped if an end travel condition is likely to occur.

1. Enter Inertia Tune parameter settings.

Drive Parameter	Setting
P70 [Autotune]	4 “Inertia Tune”

2. Press the Start button on the Control Bar.

   When the Rotate Tune routine is complete, P70 [Autotune] changes to 0 “Ready”.

   Check tuning results in P76 [Total Inertia].

3. Set minimum speed.

Drive Parameter	Setting
P522 [Min Fwd Speed]	2 x Slip Frequency of Motor. (From motor nameplate.)
P523 [Min Rev Speed]	2 x Slip Frequency of Motor. (From motor nameplate.)

4. Set maximum speed limits.

Drive Parameter	Setting
P520 [Max Fwd Speed]	Forward speed limit used during normal operation. Not more than the motor nominal frequency.
P521 [Max Rev Speed]	Reverse speed limit used during normal operation. Not more than the motor nominal frequency.

5. Set digital input functions.

Speed Select Inputs

Drive Parameter	Setting
P173…175 [DI Speed Sel X]	I/O Port Number, P1 [Dig In Sts], Bit X

Clear Fault Input

Drive Parameter	Setting
P156 [DI Clear Fault]	I/O Port Number, P1 [Dig In Sts], Bit X

6. Set speed reference.

Program preset speeds according to Speed Select inputs used.

Input Status (1 = Input Actuated)			Auto Reference Source
DI Speed Sel 2	DI Speed Sel 1	DI Speed Sel 0	
0	0	0	Reference A
0	0	1	Reference A
0	1	0	Reference B
0	1	1	Preset Speed 3
1	0	0	Preset Speed 4
1	0	1	Preset Speed 5
1	1	0	Preset Speed 6
1	1	1	Preset Speed 7

I/O Module Parameter (Port X)	Setting
P10 [RO0 Sel]	Port 0, P935 [Drive Status 1], Bit 16 “Running”

7. Run crane with crane control unit.

Verify speed references by checking P930 [Speed Ref Source].

8. Set speed loop tuning.

Drive Parameter	Setting
P636 [Speed Reg BW]	20 R/S Defines the reactivity of the speed regulator. This is used to calculate Kp and Ki gains.
P76 [Total Inertia]	1.5 Secs This value can be increased or decreased depending on Speed regulator response.

P645 [Speed Reg Kp] = P636 [Speed Reg BW] x P76 [Total Inertia] = BW x J (Inertia)

Torque Prove

Carefully perform the following steps in the order presented.

1. Enter Torque Prove parameter settings.

I/O Module Parameter (Port X)	Setting
P10 [RO0 Sel]	0.00 (Disabled)
P6 [Dig Out Invert]	Bit 0 “Relay Out 0” = 1 (Output Inverted)
P10 [RO0 Sel]	Port 0, P1103 [Trq Prove Status], Bit 4 “Brake Set” = 1

Drive Parameter	Setting
P1100 [Trq Prove Cfg]	Bit 0 “TP Enable” = 1 Bit 1 “Encoderless” = 1 Bit 5 “BrkSlipEncls” = 1

IMPORTANT Once Torque Prove is activated the drive is in an alarm state as described on page page 367. Carefully read the Attention statement and acknowledge it by setting the required parameter.

2. Set speed deviation.

Drive Parameter	Setting
P1105 [Speed Dev Band]	10 Hz

This setting can be lowered once the system has been tuned. The lower this value, the faster the protection.

3. Set speed deviation level.

Drive Parameter	Setting
P1106 [SpdBand Intgrtr]	0.200 Secs (Default)

This setting can be lowered once the system has been tuned. The lower this value, the faster the protection.

4. Set brake float tolerance.

Drive Parameter	Setting
P1111 [Float Tolerance]	2 to 3 times Slip Frequency of Motor.

Sets the level where the mechanical brake will set in encoderless mode.

Setup Complete

The drive is now setup and Torque Prove for the mechanical brake control is activated. The load can now be applied.

At this point DriveObserver can be used to optimize the speed loop tuning. Use a 30 second time scaling on the X-axis

5. Using DriveObserver, setup the following traces.

Drive Parameter	Setting
P3 [Mtr Vel Fdbk]	Scaled to minimum and maximum speed limits.
P594 [Ramped Spd Ref]	Scaled to minimum and maximum speed limits.
P7 [Output Current]	Scaled to current limit value.
P11 [DC Bus Volts]	Default scaling.
P5 [Torque Cur Fdbk] (Optional)	Default scaling.

Run the crane up and down under full load. Adjust acceleration and deceleration rates if required.

Troubleshooting

The following faults commonly occur during drive commissioning.

F4 “Undervoltage”

- If the mains supply is still present, reduce the undervoltage level at P461 [UnderVltg Level].

F5 “Overvoltage”

- Monitor the DC Bus voltage while operating the crane. When lowering the load the DC bus voltage should be limited to 750VDC.
- Verify that the external resistor is correctly connected / wired
- Verify that the parameter settings as stated in Point 1.
- Monitor bit 20 DB active of P935 Drive Status 1. This bit will come on when dynamic braking is active.

F20 “TrqProve Spd Band” (Speed deviation fault)

- This fault is only active when TorqProve is enabled.
- Speed loop tuning not correct. Increase P636 [Speed Reg BW] or P76 [Total Inertia]. If values are too high the regulator will become unstable.
- P3 [Mtr Vel Fdbk] should follow P594 [Ramped Spd Ref] as best as possible.
- Drive is going into current limit. Drive is undersized or acceleration / deceleration are set too fast.
- Brake is not opening. Check for faulty brake rectifier.

For more fault information, refer to Chapter 3.

Universal Feedback Encoder Option Module

efesotomasyon.com

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Specifications

IMPORTANT The Universal Feedback Encoder can only be used with PowerFlex 755 drives.

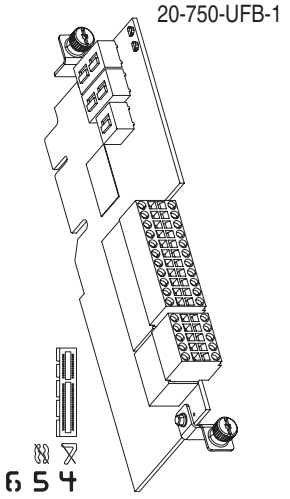


Table 3 - Universal Feedback Option Module LED Indication

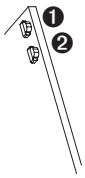
	LED	Name	Color	State	Description
	❶	Board	Unlit	Off	Not powered.
			Green	Flashing	Initializing, not active. Communication lost, attempting to reconnect.
				Steady	Operational, no faults are present.
			Red	Flashing	Module error. • Check P1 [Module Sts]
				Steady	Normal operation.
					Module is booting.
					Fatal module error. • Cycle power • Flash update module firmware • Replace module
			Yellow	Flashing	A type 2 alarm condition exists. • Check P1 [Module Sts]
				Steady	A type 1 alarm condition exists. • Check P1 [Module Sts]
			Yellow / Green	Flashing Alternately	Module is flash updating.
	❷	DPI	Unlit	Off	Not powered. Not communicating.
			Green	Flashing	Module is attempting to communicate with the DPI host.
				Steady	• Properly connected and communicating. • Module is flash updating.
			Red	Flashing	Module is not communicating with the DPI host.
				Steady	DPI communication failure such as invalid port.
			Yellow	Flashing	Normal operation.
				Steady	Peripheral is connected to a SCANport product and does not support a SCANport compatibility mode.

Table 4 - Universal Feedback Option Module DIP Switch Settings (Safety Application)

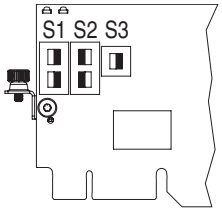
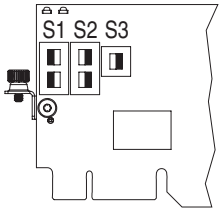
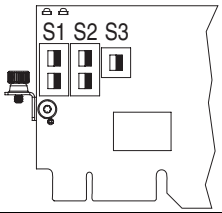
Safety Channel Selection	DIP Switch Settings
Primary Safety Channel To connect feedback signals to the Primary Safety Channel, set: S1 sliders to ON S2 sliders to OFF S3 slider to ON	
Secondary Safety Channel To connect feedback signals to the Secondary Safety Channel, set: S1 sliders to OFF S2 sliders to ON S3 slider to ON	
Primary and Secondary Safety Channels To connect feedback signals to both the Primary and Secondary Safety Channels, set: S1 sliders to ON S2 sliders to ON S3 slider to ON	

Table 5 - Universal Feedback Incremental AquadB Encoder

Consideration	Description
Input	Differential or Single Ended operation, Constant Current Sink operation ~10 mA
	3.5V DC minimum to 7.5V DC maximum sourcing 10 mA minimum high state voltage of 3.5V DC maximum low state voltage of 0.4V DC
Maximum Cable Length:	30 m (100 ft) @ 5V, 183 m (600 ft) @ 12V
Maximum Input Frequency	250 kHz

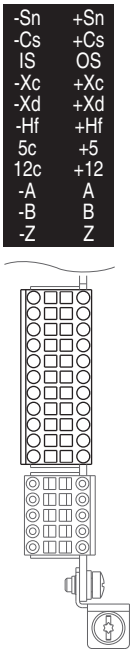
Table 6 - Supported Encoders

Consideration	Heidenhain (EnDat)	SSI	Stegmann (Hiperface)	BiSS	Stahl (linear)	Temposonics (linear)
Encoder Voltage Supply	5V @ 250 mA	10.5V @ 250 mA	10.5V @ 250 mA	10.5V @ 250 mA	External Supplied 24V	External Supplied 24V
High-Resolution Signal	Sine/Cosine 1V P-P	Sine/Cosine 1V P-P	Sine/Cosine 1V P-P	Sine/Cosine 1V P-P	n/a	n/a
Maximum Cable Length	100 m	100 m	90 m	100 m	100 m	100 m
Update Rate(1)	102.4 µs	102.4 µs	102.4 µs	102.4 µs	0.5/1.0/1.5/2.0 ms	0.5/1.0/1.5/2.0 ms
Maximum Input Frequency	163.8 kHz	163.8 kHz	163.8 kHz	163.8 kHz	n/a	n/a

(1) The Universal Feedback Encoder Option Module will acquire the position with the update rates displayed.

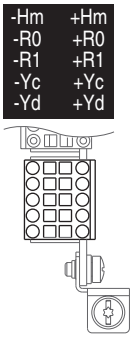
Terminal Block Designations

Table 7 - Universal Feedback Encoder Option Module TB1 Terminal Designations



Terminal	Name	Description
-Sn	Sine (–)	Negative Sine signal
+Sn	Sine (+)	Positive Sine signal
-Cs	Cosine (–)	Negative Cosine signal
+Cs	Cosine (+)	Positive Cosine signal
Is	Inner Shield	Heidenhain inner shield terminal
Os	Outer Shield	Cable shield terminal
-Xc	Channel X Clock (–)	Negative clock terminal (Channel X)
+Xc	Channel X Clock (+)	Positive clock terminal (Channel X)
-Xd	Channel X Data (–)	Negative data terminal (Channel X)
+Xd	Channel X Data (+)	Positive data terminal (Channel X)
-Hf	Heidenhain Supply Feedback (–)	For incremental feedback applications, tie terminal -Hf to 5c and terminal +Hf to +5 for proper voltage regulation.
+Hf	Heidenhain Supply Feedback (+)	
5c	Common	+5V Common
+5	+5 Volt DC Power	Power supply for encoder 250 mA
12c	Common	+12V Common
+12	+12 Volt DC Power	Power supply for encoder (10.5V @ 250 mA)
-A	Encoder A (NOT)	Single channel or quadrature A input or encoder output.
A	Encoder A	
-B	Encoder B (NOT)	Quadrature B input or encoder output.
B	Encoder B	
-Z	Encoder Z (NOT)	Pulse, marker or registration input or encoder output.
Z	Encoder Z	

Table 8 - Universal Feedback Encoder Option Module TB2 Terminal Designations



Terminal	Name	Description
-Hm	Home Input (–)	12V DC @ 9 mA to 24V DC @ 40 mA
+Hm	Home Input (+)	
-R0	Registration Input 0 (–)	Positive and negative encoder registration terminals. 12V DC @ 9 mA to 24V DC @ 40 mA
+R0	Registration Input 0 (+)	
-R1	Registration Input 1 (–)	
+R1	Registration Input 1 (+)	
-Yc	Channel Y Clock (–)	Negative clock terminal (Channel Y)
+Yc	Channel Y Clock (+)	Positive clock terminal (Channel Y)
-Yd	Channel Y Data (–)	Negative data terminal (Channel Y)
+Yd	Channel Y Data (+)	Positive data terminal (Channel Y)

IMPORTANT Only one linear feedback device can be connected to the option module. Wire the device to either Channel X on TB1 or Channel Y on TB2.

Parameter Access

Refer to the Enhanced PowerFlex 7-Class Human Interface Module (HIM) User Manual, publication 20HIM-UM001, for instructions on how to access parameters on an option module.

Parameter Descriptions

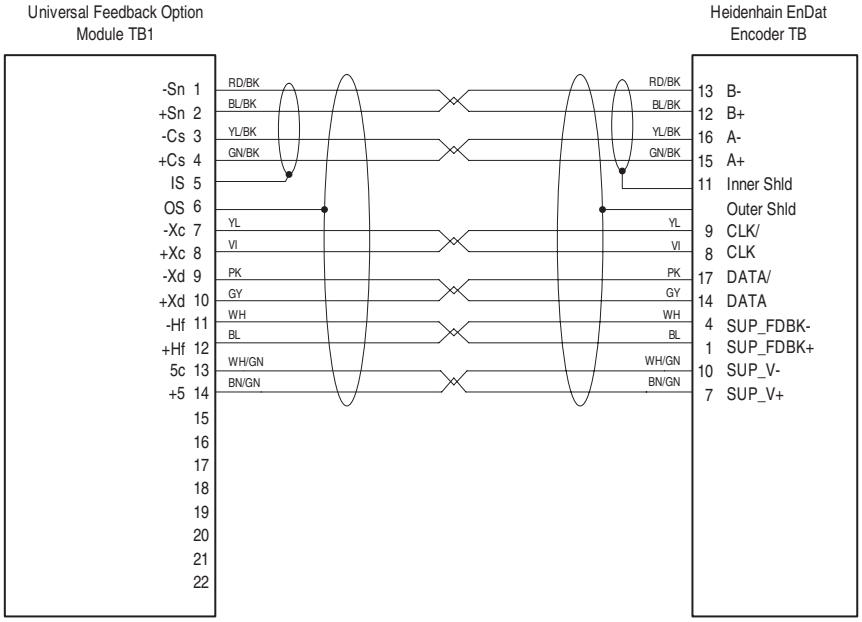
Universal Feedback option module parameter descriptions begin on page page 284.

Wiring Examples

The following table includes a list of motor, feedback device and cable wiring examples.

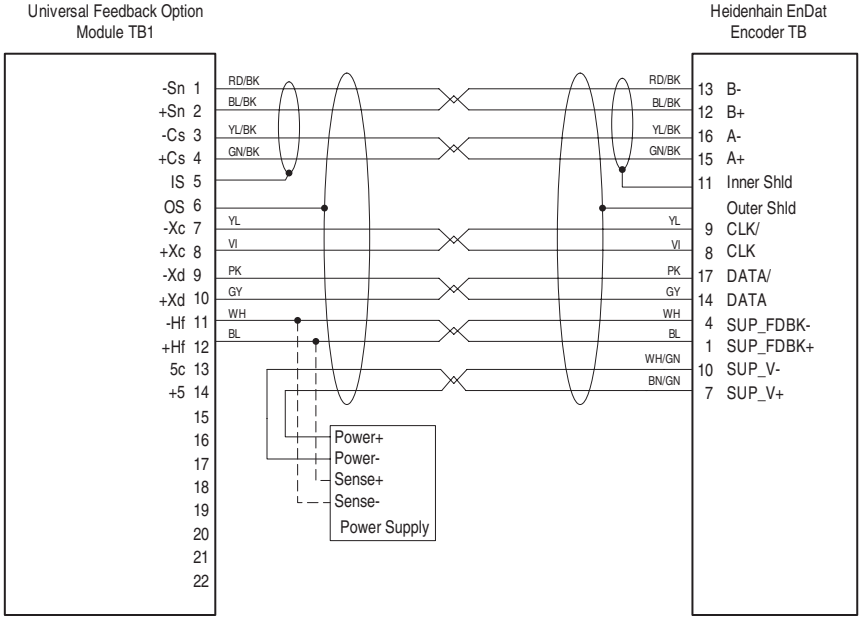
If you are using this motor and/or feedback device…	and this cable…	See this wiring example…
Heidenhain EnDat angle encoder (e.g., RCN729/829) with internal power supply	supplied with encoder	Figure 2 on page 390
Heidenhain EnDat angle encoder with external power supply	supplied with encoder	Figure 3 on page 390
Heidenhain Non-EnDat rotary encoder with internal power supply	PUR cable supplied with encoder	Figure 4 on page 391
Heidenhain EnDat rotary encoder (ECN 412 EnDat01) with internal power supply	supplied with encoder	Figure 5 on page 391
Heidenhain EnDat rotary encoder (ECN 412 EnDat01) with internal power supply	PUR cable supplied with encoder	Figure 6 on page 392
460V MP series motor and Stegmann rotary encoder	2090-CDNFDMP-SXX	Figure 7 on page 392
	2090-XXNFMP-SXX	Figure 8 on page 393
Allen-Bradley 1326AB-BXXXX-M2L, -M2KXL, -S2I or -S2KXL motor and Stegmann rotary encoder	2090-CDNFDMP-SXX	Figure 7 on page 392
	2090-XXNFMP-SXX	Figure 8 on page 393
230V MP series motor and a Stegmann rotary encoder	2090-UXNFDMP-SXX	Figure 9 on page 393
	2090-XXNFMP-SXX	Figure 10 on page 394
Stegmann rotary encoder	1326-CECU-XXL-XXX	Figure 11 on page 394
	Pre-attached, shielded, twisted pair	Figure 12 on page 395
	Shielded, twisted pair cable with an 8-pin Berg style connector	Figure 13 on page 395
	Shielded, twisted pair cable with a 10-pin MS style connector	Figure 14 on page 396
	Shielded, twisted pair cable with a 12-pin DIN style connector	Figure 15 on page 396
460V MP series motor and a rotary encoder	2090-CDNFDMP-SXX	Figure 16 on page 397
	2090-XXNFMP-SXX	Figure 16 on page 397
Allen-Bradley 1326AB-BXXXX-M2L, -S2I or -S2KXL motor and a rotary encoder	2090-XXNFMP-SXX	Figure 16 on page 397
230V MP series motor and a rotary encoder	2090-UXNFDMP-SXX	Figure 17 on page 397
	2090-XXNFMP-SXX	Figure 17 on page 397
Linear sensor	MDI RG Connector	Figure 18 on page 398
	P Integral Cable	Figure 18 on page 398
Registration sensor	supplied with sensor	Figure 19 on page 399
Simulated Incremental encoder output	customer supplied	Figure 20 on page 400

Figure 2 - Heidenhain EnDat Angle Encoder with Internal Power Supply



Note: Refer to Installation Instructions supplied with encoder for additional information.

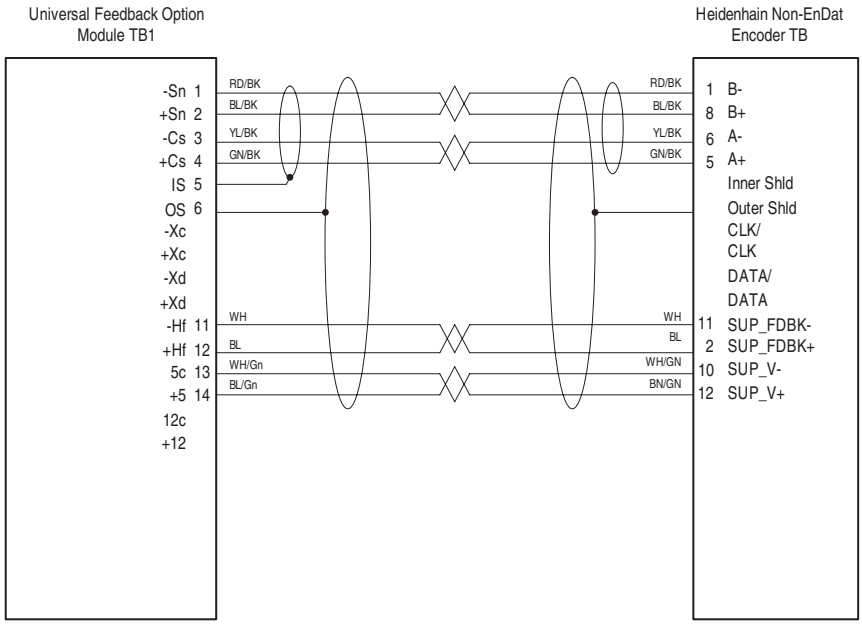
Figure 3 - Heidenhain EnDat Angle Encoder with External Power Supply



Notes: Refer to Installation Instructions supplied with encoder for additional information. The external power supply must be 3.6V to 5.25V, max. 350mA.

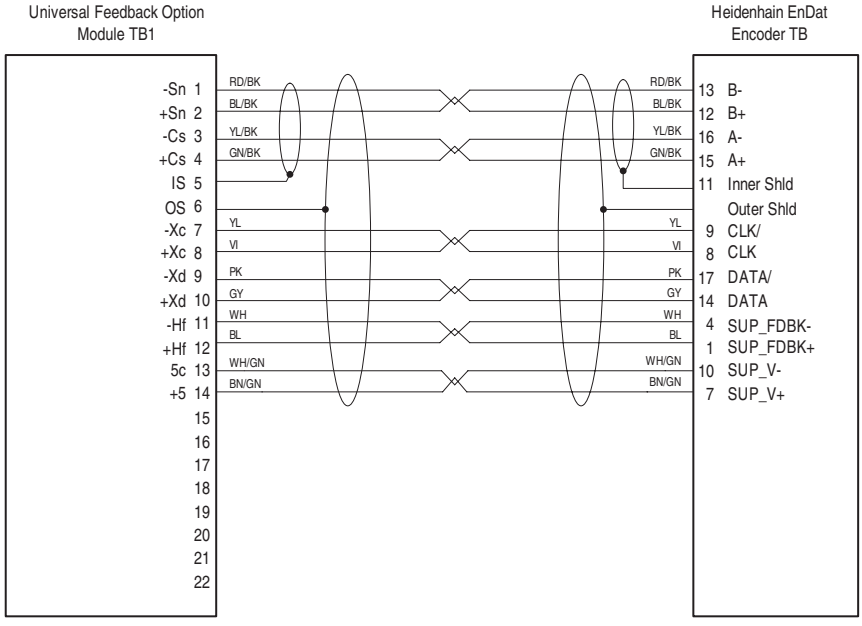
TB1-14 (Power+) and TB1-13 (Power-) must not be connected to the encoder. The brown/green and white/green conductors must be connected to the external power supply. If the external power supply does not have sense connections, the supply feedback (sense) connections should still be made from the encoder to the universal board (TB1-11,12).

Figure 4 - Heidenhain Non-EnDat Rotary Encoder with Internal Power Supply



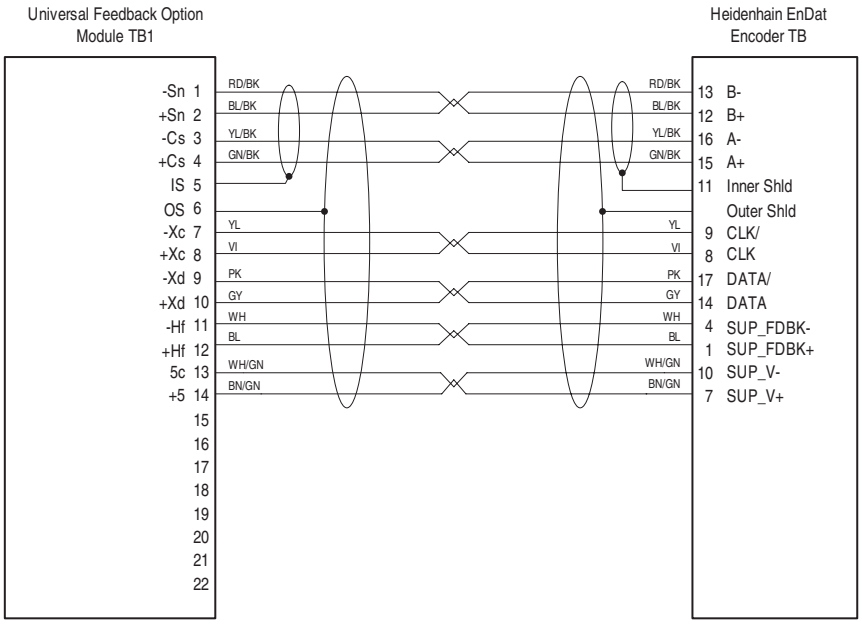
Note: Refer to Installation Instructions supplied with encoder for additional information.

Figure 5 - Heidenhain EnDat Rotary Encoder (ECN 412 EnDat01) with Internal Power Supply



Note: Refer to Installation Instructions supplied with encoder for additional information.

Figure 6 - Heidenhain EnDat Rotary Encoder (ECN 412 EnDat01) with Internal Power Supply



Note: Refer to Installation Instructions supplied with encoder for additional information.

Figure 7 - 460V MP Series or Allen-Bradley 1326AB-BXXXX-M2L, -M2KXL, -S2I or -S2KXL Motor and a Stegmann Rotary Encoder connected via a 2090-CDNFDMP-SXX Cable

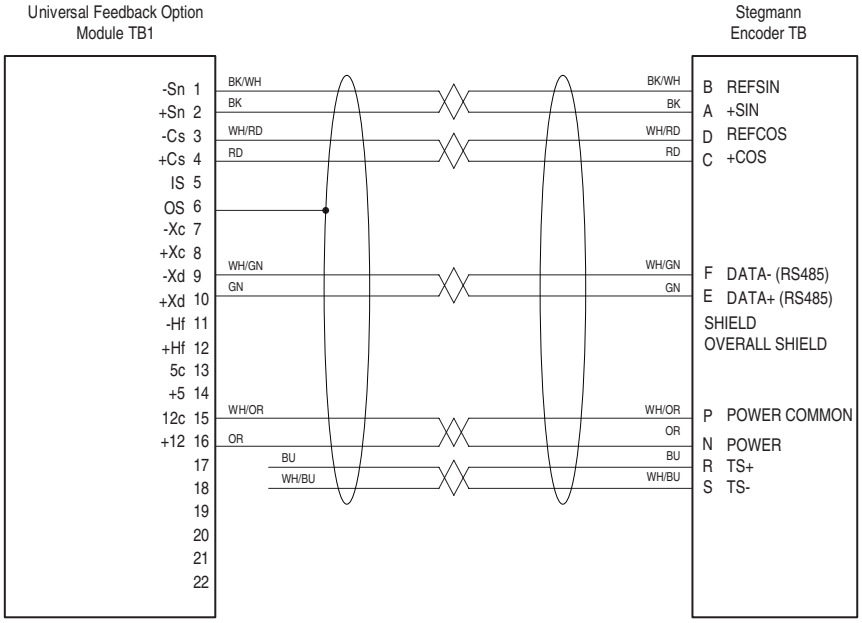
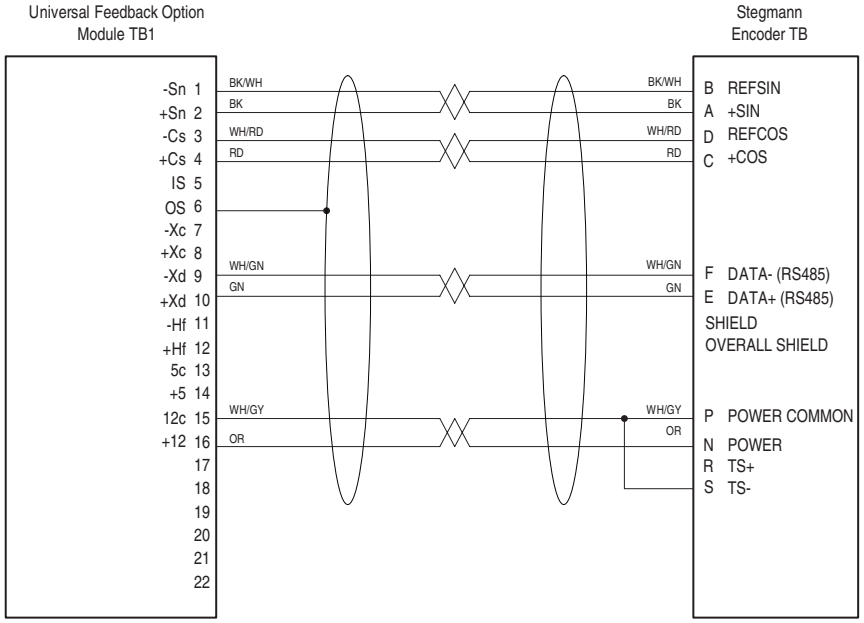


Figure 8 - 460V MP Series or Allen-Bradley 1326AB-BXXXX-M2L, -M2KXL, -S2I or -S2KXL Motor and a Stegmann Rotary Encoder connected via a 2090-XXNFMP-SXX Cable



Note: The Thermal Switch cannot be accessed using the 2090-XXNFMP-SXX cable.

Figure 9 - 230V MP Series Motor and a Stegmann Rotary Encoder connected via a 2090-UXNFDMP-SXX Cable

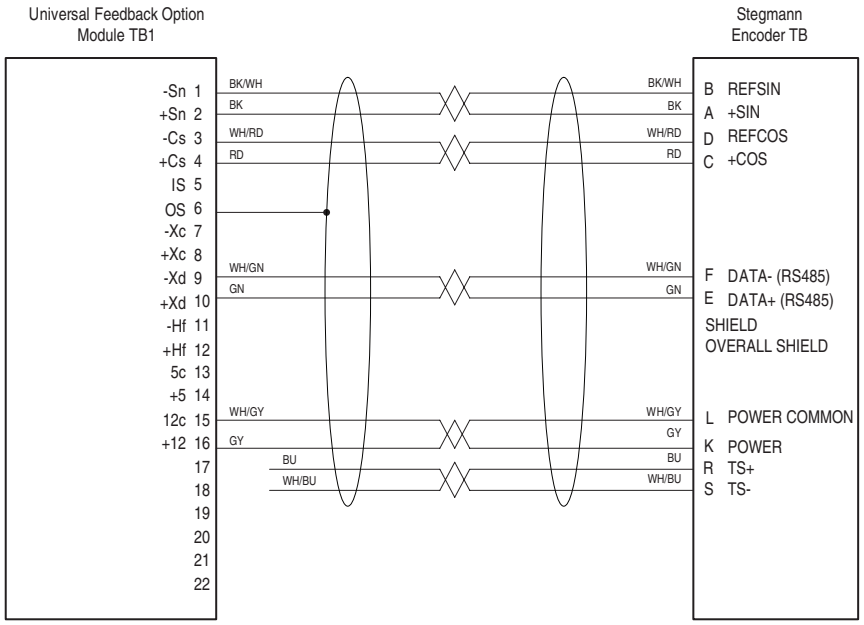
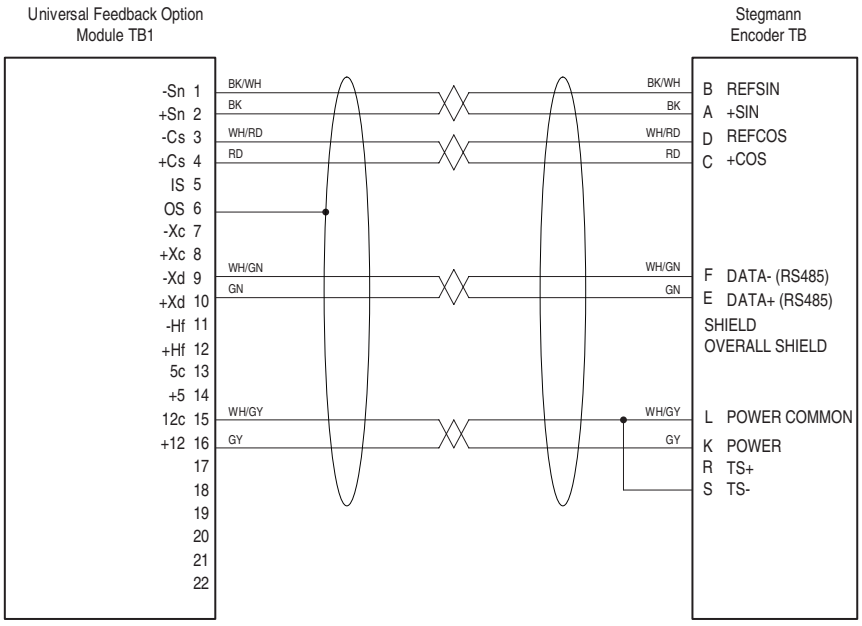


Figure 10 - 230V MP Series Motor and a Stegmann Rotary Encoder connected via a 2090-XXNFMP-SXX Cable



Note: The Thermal Switch cannot be accessed using the 2090-XXNFMP-SXX cable.

Figure 11 - Stegmann Rotary Encoder connected via a 1326-CECU-XXL-XXX Cable

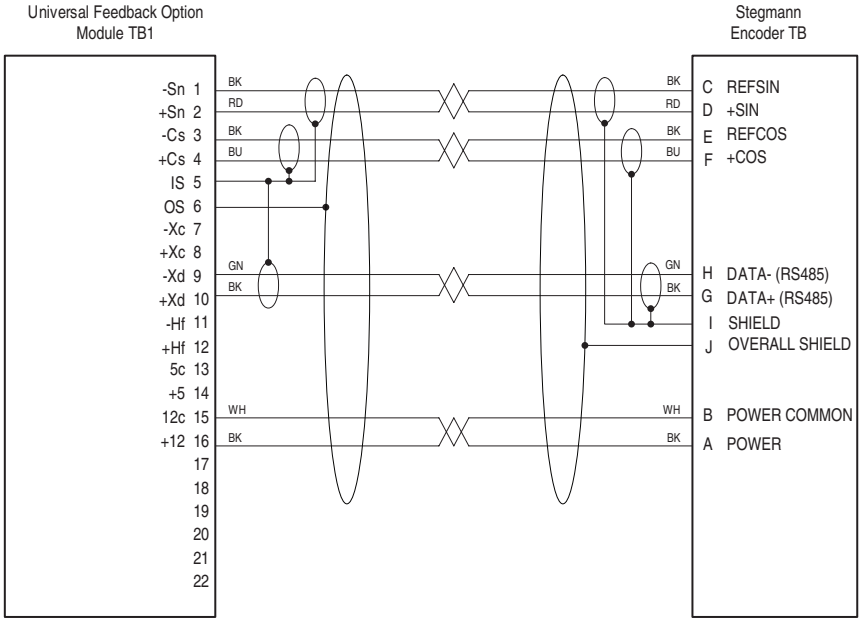


Figure 12 - Stegmann Rotary Encoder connected via a Pre-Attached, Shielded, Twisted Pair Cable

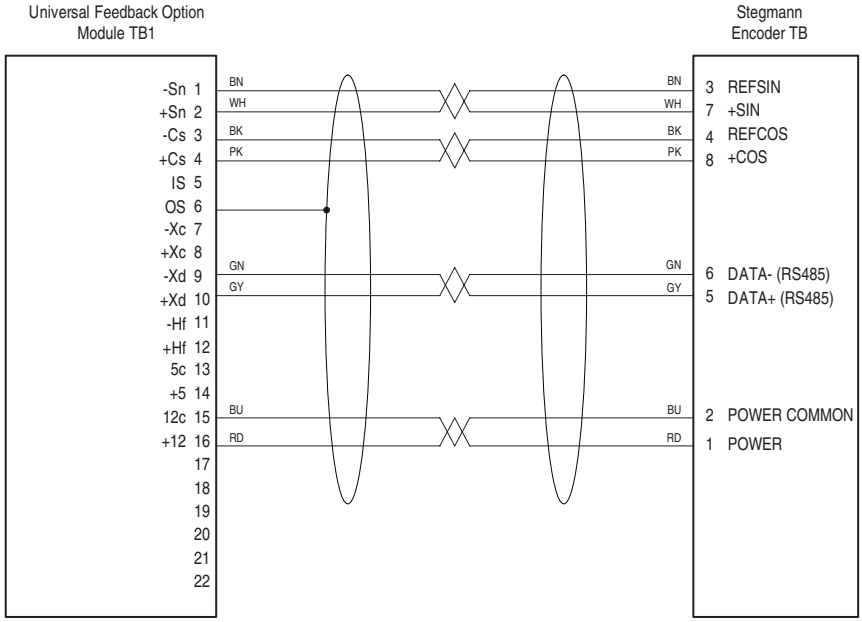


Figure 13 - Stegmann Rotary Encoder Connected via a Shielded, Twisted Pair Cable with an 8-pin Berg Style Connector

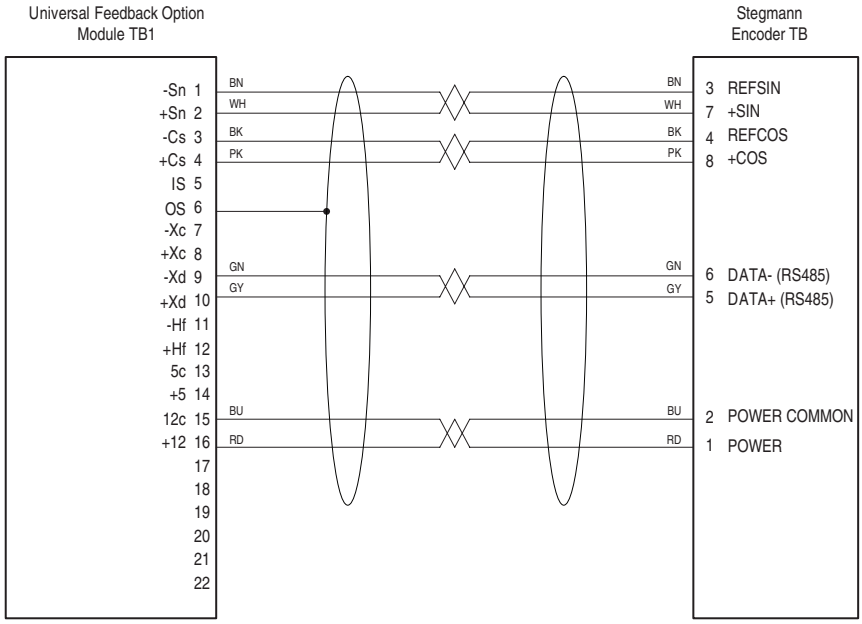


Figure 14 - Stegmann Rotary Encoder Connected via a Shielded, Twisted Pair Cable with a 10-pin MS Style Connector

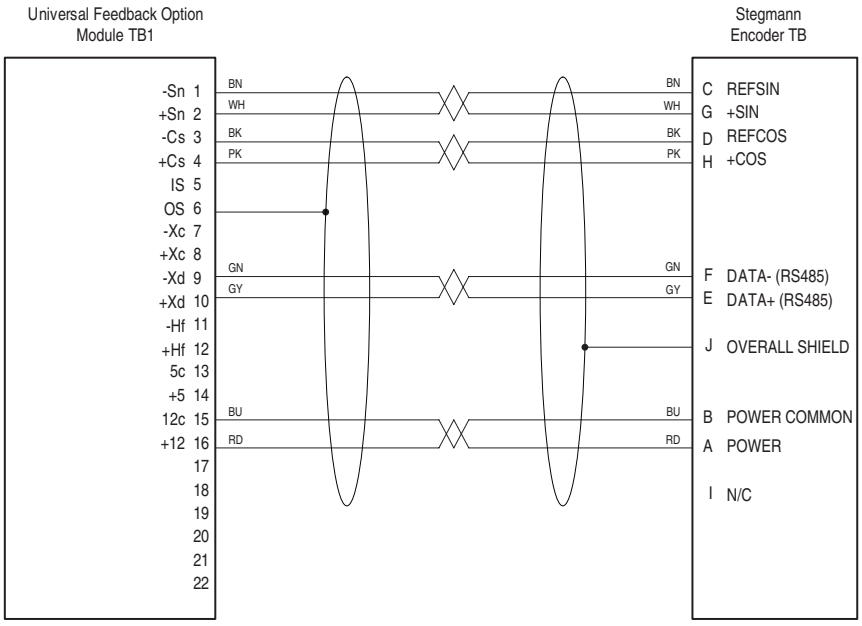


Figure 15 - Stegmann Rotary Encoder Connected via a Shielded, Twisted Pair Cable with a 12-pin DIN Style Connector

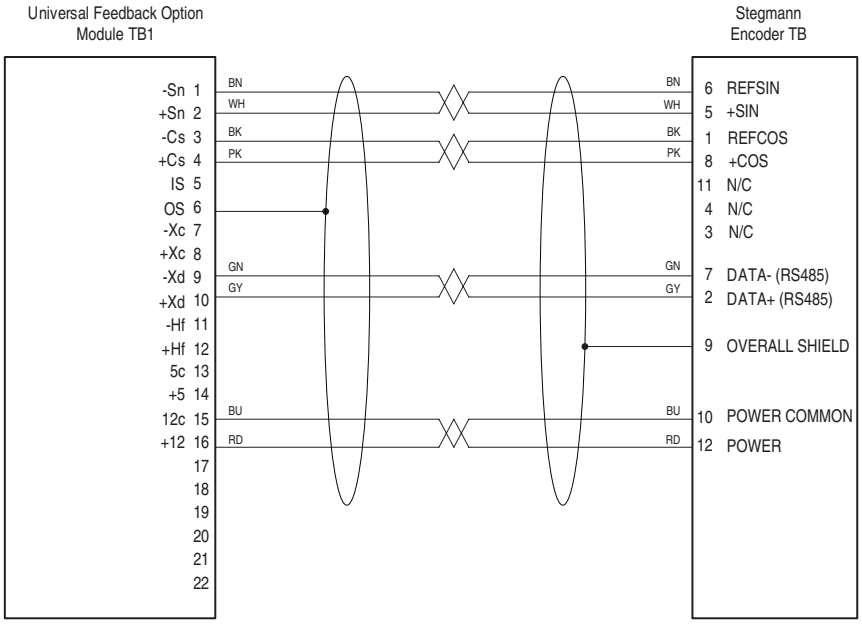


Figure 16 - 460V MP Series Motor and a Rotary Encoder Connected via a 2090-CDNFDMP-SXX or 2090-XXNFMP-SXX Cable or Allen-Bradley 1326AB-BXXXX-M2L, -S2I or -S2KXL Motor and a Rotary Encoder Connected via a 2090-XXNFMP-SXX Cable

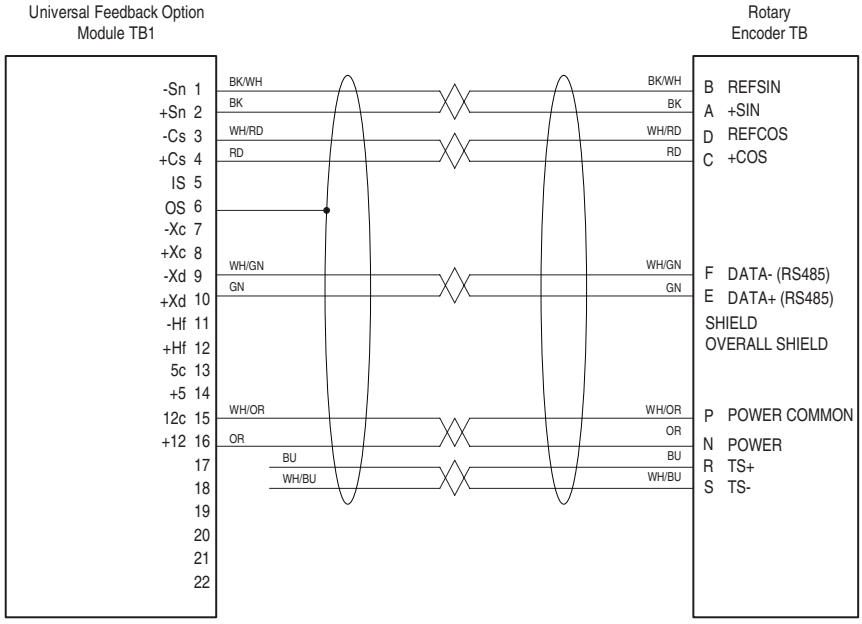


Figure 17 - 230V MP Series Motor and a Rotary Encoder Connected via a 2090-UXNFDMP-SXX or 2090-XXNFMP-SXX Cable

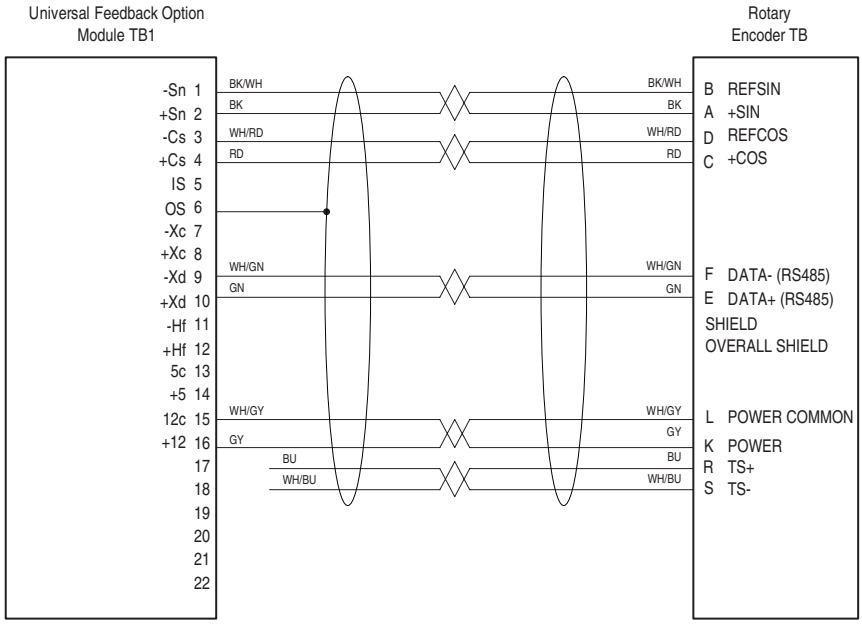


Figure 18 - Linear Sensor with MDI RG Connector or P Integral Cable

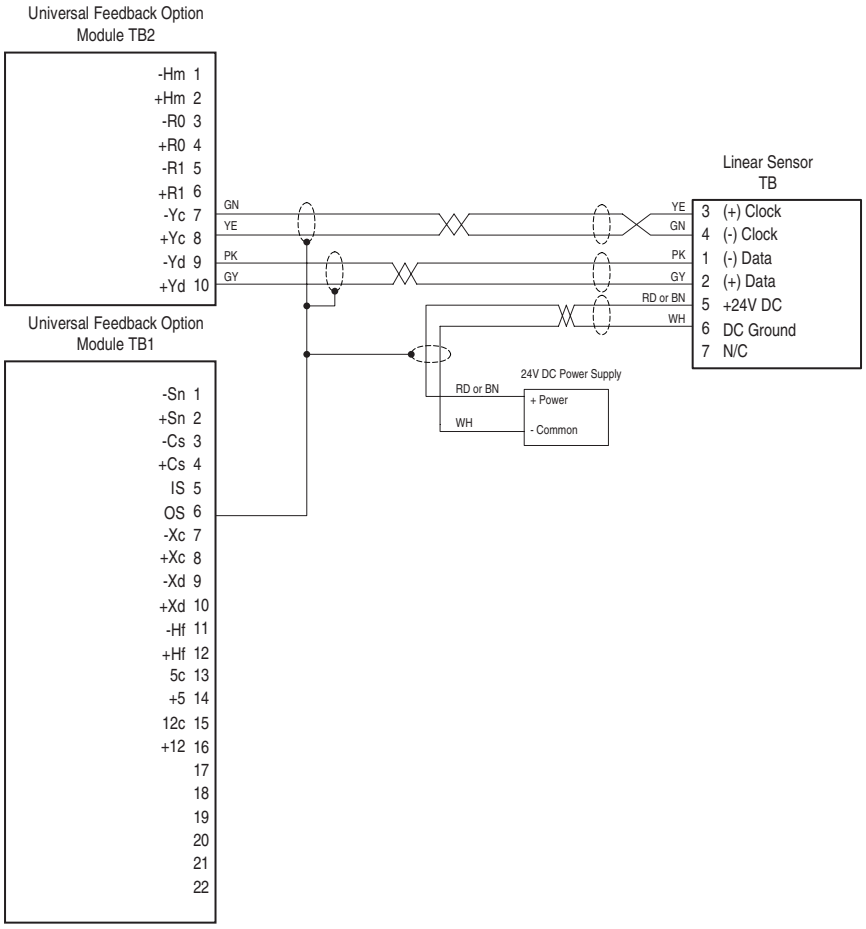


Figure 19 - Registration Sensor

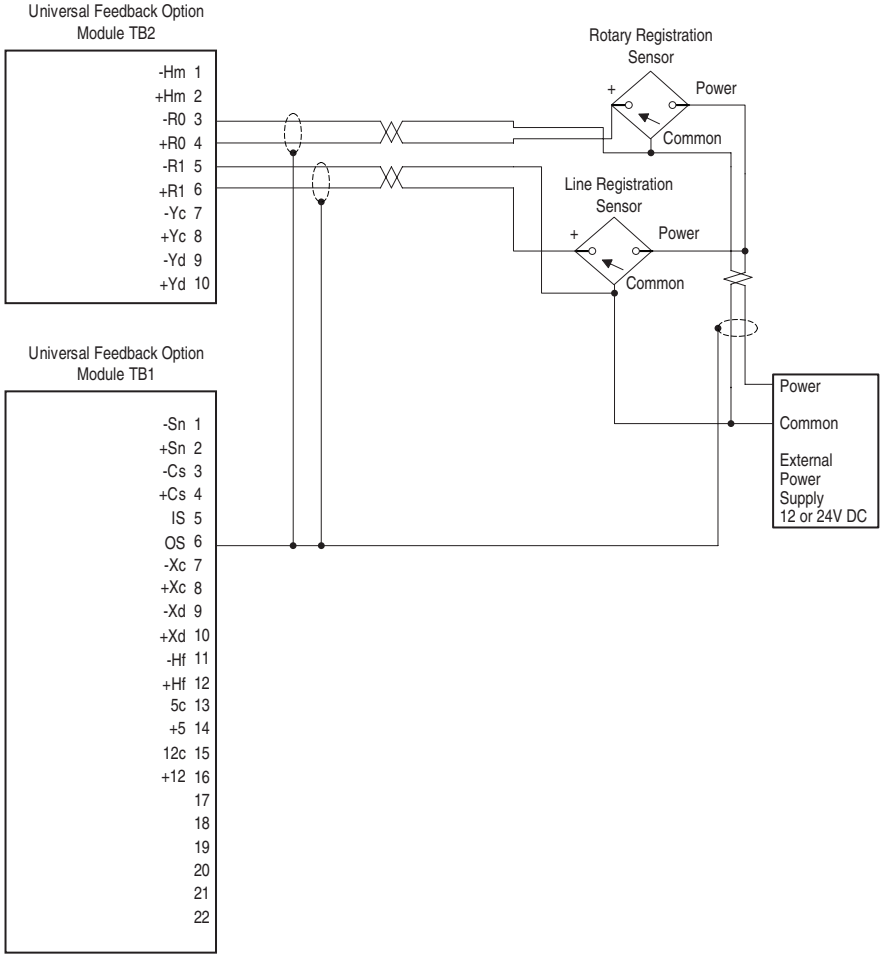
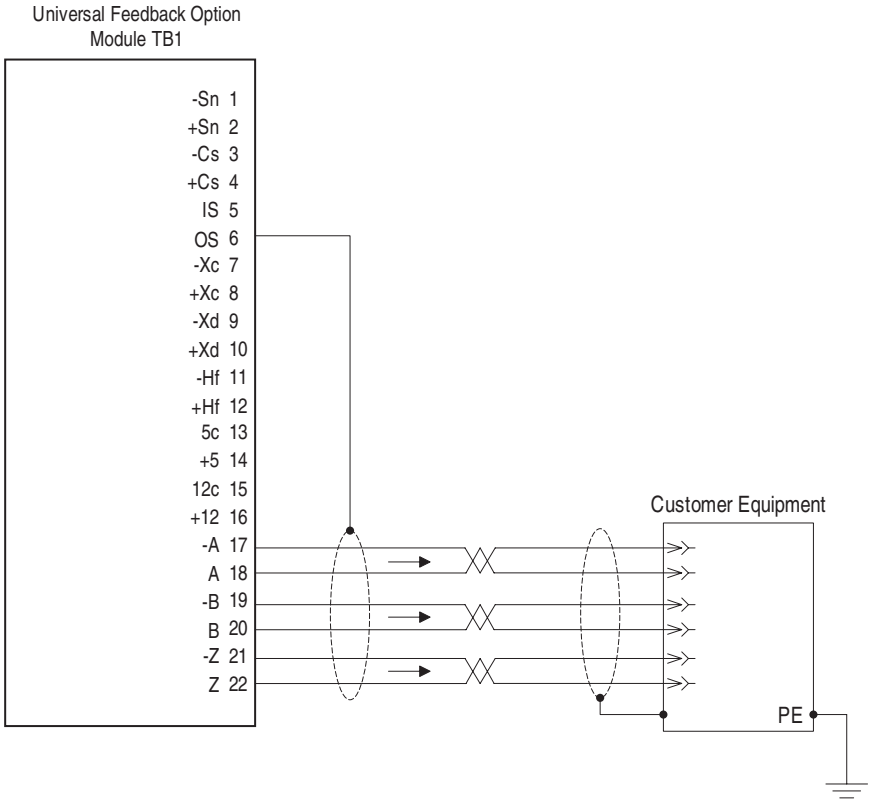


Figure 20 - Simulated Incremental Encoder Output



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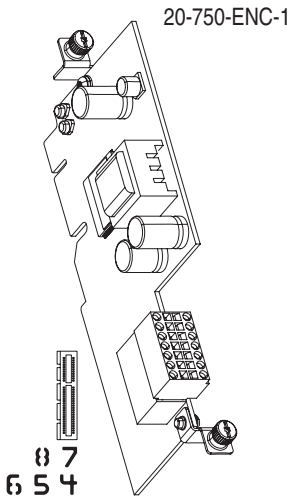
Incremental Encoder Option Modules

For information on . .	See page . .
Specifications	401
Wiring Examples	404

Specifications

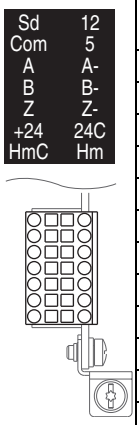


Single Incremental Encoder

Table 9 - Single Incremental Encoder Specifications

Consideration	Description
Input	Differential or Single Ended operation, Constant Current Sink operation ~10 mA
	5V DC minimum to 15V DC maximum sourcing 10 mA minimum high state voltage of 3.5V DC maximum low state voltage of 0.4V DC
Maximum Cable Length	30 m (100 ft) @ 5V, 183 m (600 ft) @ 12V
Maximum Input Frequency	250 kHz

Table 10 - TB1 Terminal Designations



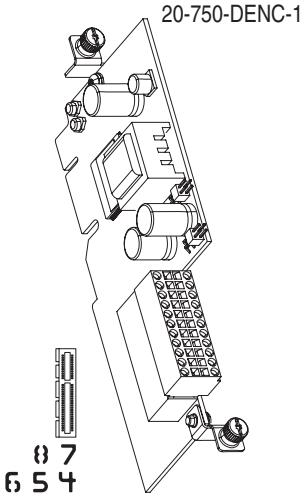
Terminal	Name	Description
Sd	Shield	Terminating point for wire shields when an EMC plate or conduit box is not installed.
12	+12 Volt DC Power	Power supply for encoder 250 mA.
Com	Common	+12V and +5V Common
5	+5 Volt DC Power	Power supply for encoder 250 mA.
A	Encoder A	Single channel or quadrature A input.
A-	Encoder A (NOT)	
B	Encoder B	Quadrature B input.
B-	Encoder B (NOT)	
Z	Encoder Z	Pulse, marker or registration input.
Z-	Encoder Z (NOT)	
+24	+24 Volt	Power source for homing input.
24C	Common	
HmC	Homing Input Common	Captures the AB edge counter.
Hm	Homing Input	

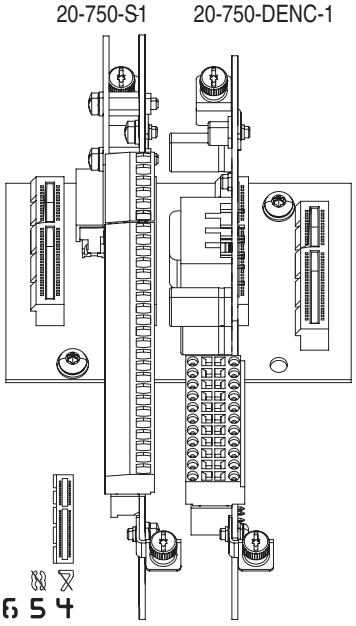
Parameter Access

Refer to the Enhanced PowerFlex 7-Class Human Interface Module (HIM) User Manual, publication 20HIM-UM001, for instructions on how to access parameters on an option module.

Parameter Descriptions

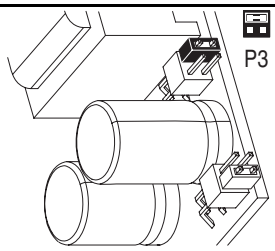
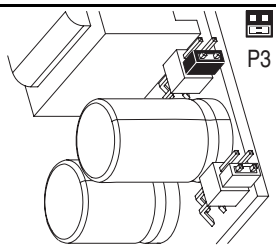
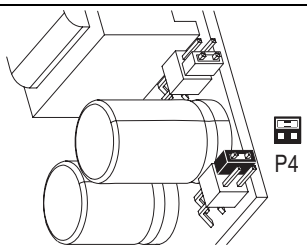
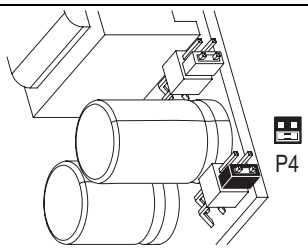
Single Incremental Encoder option module parameter descriptions begin on page page 225.





Dual Incremental Encoder

Table 11 - Dual Incremental Encoder Jumper Settings

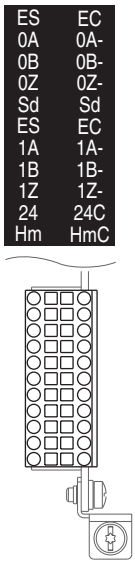
Jumper	Enabled Position	Storage Position
P3 - Safety Jumper Enables use with speed monitoring safety option (20-750-S1).		
P4 - 12V Jumper Enables use with 12 volt supply in "Enabled" position and 5 volt supply in "Storage" position.		

IMPORTANT When the Dual Incremental Encoder option is used with the Safe Speed Monitor option, both modules must be installed on the same backplane (posts 6, 5, 4).

Table 12 - Dual Incremental Encoder Specifications

Consideration	Description
Input	Differential or Single Ended operation, Constant Current Sink operation ~10 mA
	5V DC minimum to 15V DC maximum sourcing 10 mA minimum high state voltage of 3.5V DC maximum low state voltage of 0.4V DC
Maximum Cable Length	30 m (100 ft) @ 5V, 183 m (600 ft) @ 12V
Maximum Input Frequency	250 kHz

Table 13 - Dual Incremental Encoder Terminal Designations



Terminal	Name	Description
ES	+12 or +5 Volt DC Power	Power supply for Encoder 0, 250 mA.
EC	Common	+12V and +5V Encoder 0, common
0A	Encoder 0: A	Single channel or quadrature A input.
0A-	Encoder 0: A (NOT)	
0B	Encoder 0: B	Quadrature B input.
0B-	Encoder 0: B (NOT)	
0Z	Encoder 0: Z	Pulse, marker or registration input.
0Z-	Encoder 0: Z (NOT)	
Sd	Encoder Shield	Terminating point for wire shields when an EMC plate or conduit box is not installed.
Sd	Encoder Shield	
ES	+12 or +5 Volt DC Power	Power supply for Encoder 1, 250 mA.
EC	Common	+12V and +5V Encoder 1, common
1A	Encoder 1: A	Single channel or quadrature A input.
1A-	Encoder 1: A (NOT)	
1B	Encoder 1: B	Quadrature B input.
1B-	Encoder 1: B (NOT)	
1Z	Encoder 1: Z	Pulse, marker or registration input.
1Z-	Encoder 1: Z (NOT)	
24	+24 Volt	Power source for homing input.
24C	Common	
Hm	Homing Input	Captures the AB edge counter.
HmC	Homing Input Common	

Parameter Access

Refer to the Enhanced PowerFlex 7-Class Human Interface Module (HIM) User Manual, publication 20HIM-UM001, for instructions on how to access parameters on an option module.

Parameter Descriptions

Dual Incremental Encoder option module parameter descriptions begin on page page 227.

Wiring Examples

Single Incremental Encoder Option Module Connections

Figure 21 - Differential Dual Channel with Z Channel

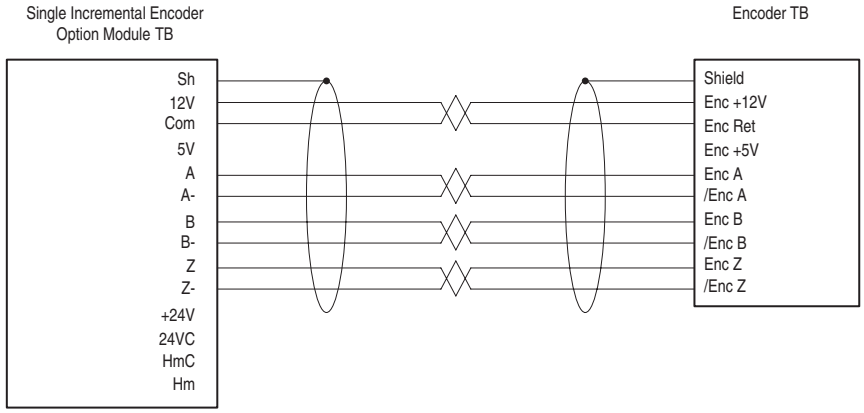


Figure 22 - Differential Dual Channel without Z Channel

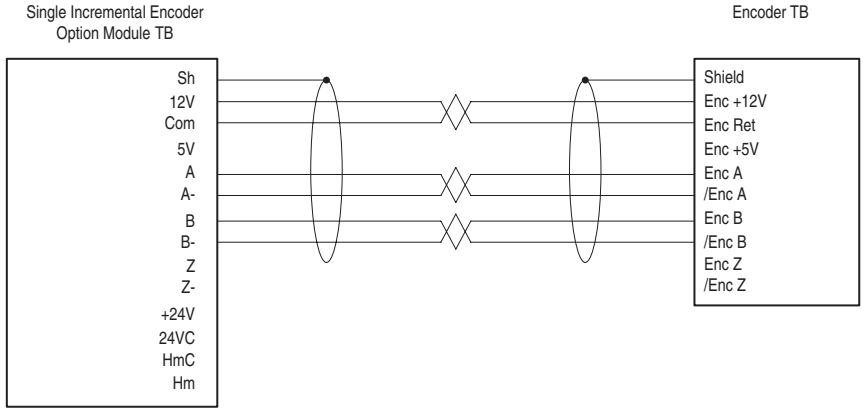


Figure 23 - Differential Dual Channel with Z Channel with External Power Supply

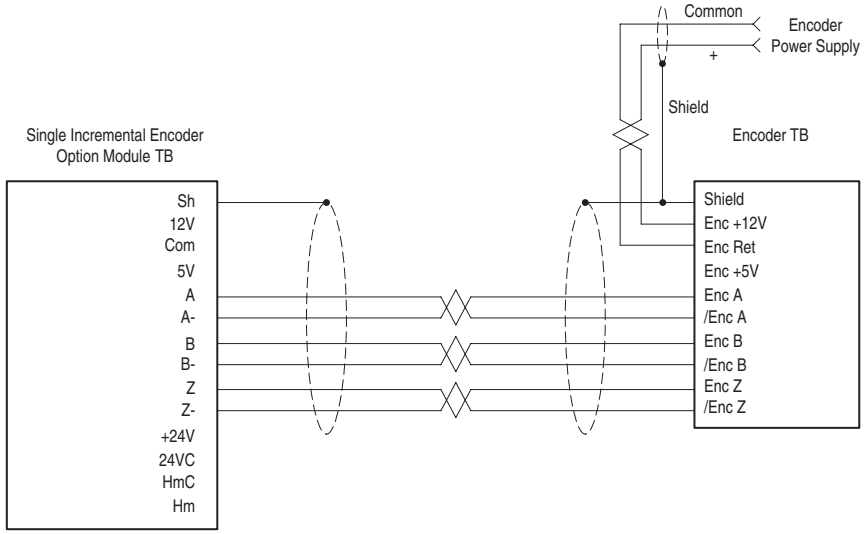
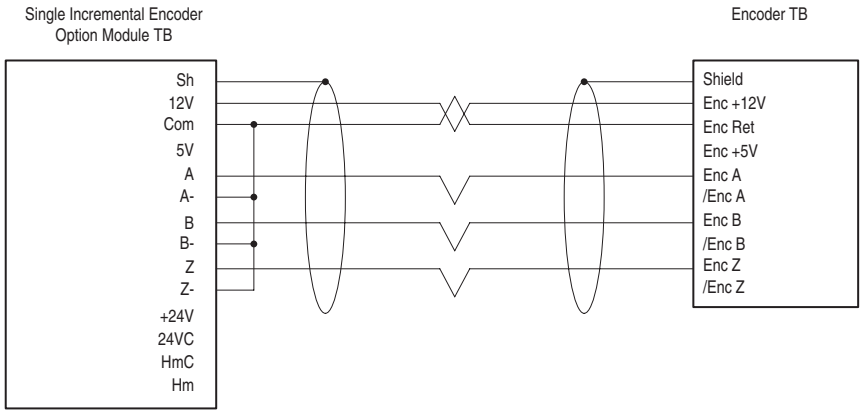
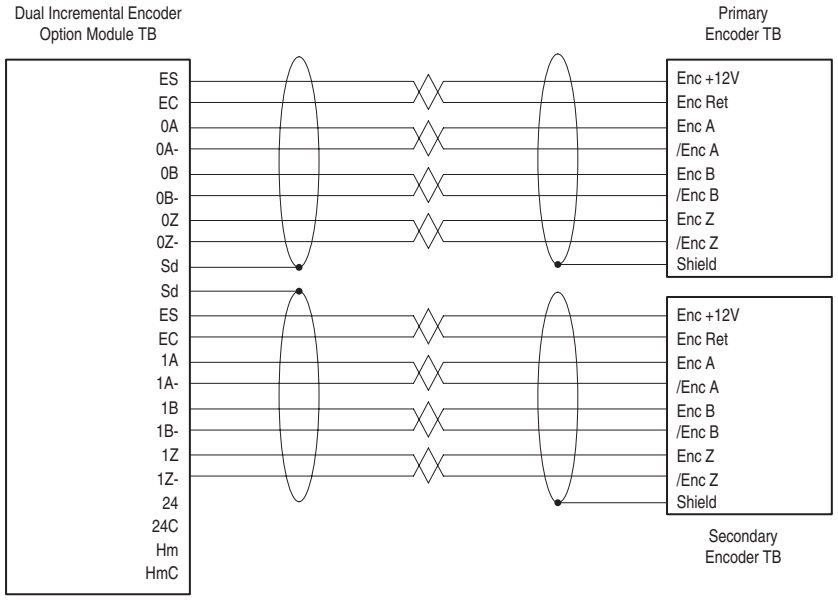


Figure 24 - Single-Ended, Dual Channel



Dual Incremental Encoder Option Module Connections

Figure 25 - Differential Dual Channel with Z Channel



Notes:

Using DeviceLogix

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Introduction

DeviceLogix (DLX) is an embedded component located in Port 14 of PowerFlex 750-Series drives. It is used to control outputs and manage status information locally within the drive. It can function stand-alone or complimentary to supervisory control.

IMPORTANT The Human Interface Module (HIM) CopyCat function does not work with the following firmware versions.

- PowerFlex 753 firmware version 1.005
- PowerFlex 755 firmware versions 1.009 or 1.010.

DeviceLogix programming for PowerFlex 750-Series drives is accomplished through a DeviceLogix Editor component (icon), which is incorporated in the following versions of drive software:

Drive Software Tool	PowerFlex 755 v1.xx	PowerFlex 753 v1.xx PowerFlex 755 v2.xx
DriveExplorer	v6.0**1** (and higher)	v6.0**2** (and higher)
DriveTools SP / DriveExecutive	v5.0**1** (and higher)	v5.0**2** (and higher)
DeviceLogix 5000 Drive Add-On Profiles	v2.0**1** (and higher)	v2.0**2** (and higher)

Only the drive software tools listed above can be used to program the DeviceLogix component in PowerFlex 750-Series drives. Other DeviceLogix Editors, such as RSNetWorx for DeviceNet, cannot be used.

IMPORTANT DeviceLogix projects created with PowerFlex 755 firmware versions 1.009 or 1.010 may not work with firmware version 2.002 or greater. These projects may need to be opened and adjusted in an editor (for example DriveExplorer or DriveExecutive) before being downloaded to the drive.

Note the following feature differences between the drive firmware releases:

	PowerFlex 755 v1.xx	**PowerFlex 753 v1.xx** **PowerFlex 755 v2.xx**
DeviceLogix Library	Version 3	Version 4
Maximum number of function blocks	90	225
Program update time per number of blocks used	5 ms (fixed): 1…45 blocks 10 ms (fixed): 46…90 blocks	5 ms (fixed): 1…45 blocks 10 ms (fixed): 46…90 blocks 15 ms (fixed): 91…135 blocks 20 ms (fixed): 136…180 blocks 25 ms (fixed): 181…225 blocks

Version 3 of the DeviceLogix library introduced the following new features:

- Analog instructions (compute, math, compare, etc.)
- Multiple I/O enable line object support
- Cut and Paste capability
- Screen format retention
- Online Help / Bit tool tip

Version 4 of the DeviceLogix library added the following new features:

- Macro Block instruction – a custom function block element that contains other function blocks programmed by the user to perform a specific task(s)
- PID instruction

Note: PowerFlex 755 v1.xxx drives can be flash updated to v2.xxx to take advantage of the new features in the Version 4 release of the DeviceLogix library and the increased number of function blocks.

The PowerFlex 750-Series DeviceLogix can provide basic logic capability for applications that can allow a 5...25 ms scan time depending on program size, plus the time it takes to update the I/O. It can be used in both networked and stand-alone environments. It can also operate autonomous of the drive. For example, it can continue executing if the drive is faulted, or disconnected from AC input power (requires PowerFlex 750-Series 24 VDC auxiliary power supply option, catalog number 20-750-APS).

There is no data retention in DeviceLogix during a power cycle. Timer and Counter accumulators, calculation results, latched bits, etc. will be cleared.

Parameters

The following are the DeviceLogix parameters (located in Port 14).

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
HOST GROUPS	Analog Outputs	**1** Thru **14**	**DLX Out 01** **DLX Out 14** Fourteen floating point outputs that can be controlled by the DeviceLogix program. These are typically mapped to a parameter to write its value. It can also be mapped to the Reference Command.	Default: Min/Max:	0 0 / 159999	RW	Real
		15 **16**	**DLX Out 15** **DLX Out 16** Two unsigned 32-bit integer outputs that can be controlled by the DeviceLogix program. These are typically mapped to a parameter to write its value.	Default: Min/Max:	0 0 / 159999	RW	32-bit Integer
	Analog Inputs	**17** Thru **30**	**DLX In 01** **DLX In 14** Fourteen floating point inputs that can be read by the DeviceLogix program. These are typically mapped to a parameter to read its value. It can also be mapped to Common Feedback.	Default: Min/Max:	0 0 / 159999	RW	Real
		31 **32**	**DLX In 15** **DLX In 16** Two unsigned 32-bit integer inputs that can be read by the DeviceLogix program. These are typically mapped to a parameter to read its value. It can also be mapped to Real Time Clock values.	Default: Min/Max:	0 0 / 159999	RW	32-bit Integer
	Digital Inputs	**33** Thru **48**	**DLX DIP 01** **DLX DIP 16** Sixteen digital inputs that can be read by the DeviceLogix program. These are typically mapped to an input point in an I/O option module or to Logic Status bits.	Default: Min/Max:	0.00 0 / 159999.15	RW	32-bit Integer
	Status & Cntl	**49**	**DLX DigIn Sts** Provides the individual on/off status of the 16 DLX DIP's.				
		50	**DLX DigOut Sts** Provides the individual on/off status of the DLX Logic Command word bits.				
		51	**DLX DigOut Sts2** Provides the individual on/off status of the 16 DLX DOPs.				

49 DLX DigIn Sts

Options	DLX DIPVal16	DLX DIPVal15	DLX DIPVal14	DLX DIPVal13	DLX DIPVal12	DLX DIPVal11	DLX DIPVal10	DLX DIPVal9	DLX DIPVal8	DLX DIPVal7	DLX DIPVal6	DLX DIPVal5	DLX DIPVal4	DLX DIPVal3	DLX DIPVal2	DLX DIPVal1
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Condition Off
1 = Condition On

50 DLX DigOut Sts

Options	DLX CmdSts16	DLX CmdSts15	DLX CmdSts14	DLX CmdSts13	DLX CmdSts12	DLX CmdSts11	DLX CmdSts10	DLX CmdSts9	DLX CmdSts8	DLX CmdSts7	DLX CmdSts6	DLX CmdSts5	DLX CmdSts4	DLX CmdSts3	DLX CmdSts2	DLX CmdSts1
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Condition Off
1 = Condition On

51 DLX DigOut Sts2

Options	DLX DOPSts16	DLX DOPSts15	DLX DOPSts14	DLX DOPSts13	DLX DOPSts12	DLX DOPSts11	DLX DOPSts10	DLX DOPSts9	DLX DOPSts8	DLX DOPSts7	DLX DOPSts6	DLX DOPSts5	DLX DOPSts4	DLX DOPSts3	DLX DOPSts2	DLX DOPSts1
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Condition Off
1 = Condition On

File	Group	No.	Display Name Full Name Description	Values		Read-Write	Data Type
Host Groups	Status & Cntl	**52**	**DLX Prog Cond** Defines the action that will be taken when the DLX logic is disabled. "Fault" (0) – Drive is faulted and stopped. "Stop" (1) – Drive is stopped, but not faulted. "Zero Data" (2) – Output data sent to the drive from DLX is zeroed (does not command a stop). "Hold Last" (3) – Drive continues in its present state.	Default: Options:	0 = "Fault" 0 = "Fault" 1 = "Stop" 2 = "Zero Data" 3 = "Hold Last"	RW	32-bit Integer
		53	**DLX Operation** Contains both operation commands as well as status information.	Default: Options:	5 = "Logic Disabled" 0 = "Enable Logic" 1 = "Disable Logic" 2 = "Reset Program" 3 = "Save Program" 4 = "Load Program" 5 = "Logic Disabled" 6 = "Logic Enabled"	RW	32-bit Integer
	Internal Regs	**54** Thru **69**	**DLX Real SP1** **DLX Real SP16** Sixteen 32-bit Real scratchpad registers for DLX program use.	Default: Min/Max:	0 –/+220000000	RW	Real
		70 Thru **77**	**DLX DINT SP1** **DLX DINT SP8** Eight 32-bit Integer scratchpad registers for DLX program use.	Default: Min/Max:	0 –2147483648 / 2147483647	RW	32-bit Integer
		78 Thru **81**	**DLX Bool SP1** **DLX Bool SP4** Four 32-bit Boolean scratchpad registers (128 bits total) for DLX program use.				
		82 Thru **89**	**DLX Real InSP1** **DLX Real InSP8** Eight 32-bit Real scratchpad registers for DLX program input use.	Default: Min/Max:	0 –/+220000000	RW	Real
		90 Thru **97**	**DLX Real OutSP1** **DLX Real OutSP8** Eight 32-bit Real scratchpad registers for DLX program output use.	Default: Min/Max:	0 –/+220000000	RW	Real
		98 Thru **101**	**DLX DINT InSP1** **DLX DINT InSP4** Four 32-bit Integer scratchpad registers for DLX program input use.	Default: Min/Max:	0 –2147483648 / 2147483647	RW	32-bit Integer
		102 Thru **105**	**DLX DINT OutSP1** **DLX DINT OutSP4** Four 32-bit Integer scratchpad registers for DLX program output use.	Default: Min/Max:	0 –2147483648 / 2147483647	RW	32-bit Integer

Options	Bit 15	Bit 14	Bit 13	Bit 12	Bit 11	Bit 10	Bit 9	Bit 8	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0	Bit 15	Bit 14	Bit 13	Bit 12	Bit 11	Bit 10	Bit 9	Bit 8	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

0 = Condition Off
1 = Condition On

Function Block Elements

The following function block elements are available:

Bit and Analog I/O[1]	
Process	ALM TDG PID
Filter	LPF
Select/Limit	SEL HLL
Statistical	MAVE
Timer/Counter	TONR TOFR PULR CTU CTUD
Compare	MEQ EQU NEQ LES GRT LEQ GEQ
Compute/Math	ADD SUB MUL DIV MOD SQR NEG ABS XPY
Move/Logical	BAND BOR BXOR BNOT BNAND BNOR BXNOR SETD RSTD
Macro Block	

[1] Bit and Analog I/O do not count against the Function Block total. All other elements count, with each instance counting as one Function Block.

The DeviceLogix Editor provides a graphical interface for configuring Function Blocks to provide local control within the drive. DeviceLogix Editor navigation and programming basics is not covered in this manual. Refer to the DeviceLogix User Manual, publication RA-UM003A for additional information. It can be found on the RA Literature Library web site at: http://www.rockwellautomation.com/literature.

Macro Blocks

Up to three Macro Blocks can be created by the user and each can be used 10 times. The selections will be empty until a Macro Block gets created. The icon text associated with each Macro Block is also created by the user.

Bit and Analog I/O Points

The DeviceLogix controller in Port 14 uses (48) bit inputs, (48) bit outputs, (24) analog inputs, and (17) analog outputs to interact with the other ports in the drive (both drive and peripheral parameters).

Bit Inputs

Available bit inputs to the DeviceLogix program include:

Bit Inputs	Description
(16) Hardware Boolean Inputs • DIP1 to DIP 16	These correlate with DeviceLogix Port 14 parameters P33 [DLX DIP 01] to P48 [DLX DIP 16]
(32) Network Boolean Inputs • Ready, Active, Alarm, Faulted, etc.	These correlate with the DeviceLogix Logic Status word for the drive. Refer to page 363 for details on the Logic Status word bits.

Bit inputs are used to connect to real-world input devices (push buttons, photoeyes, etc.) that are wired to an I/O option module in the drive, monitor drive status, or to read a bit in a bit-enumerated parameter.

Bit Outputs

Available bit outputs from the DeviceLogix program include:

Bit Outputs	Description
(16) Hardware Boolean Outputs • DOP1 to DOP 16	These correlate with the bits in DeviceLogix Port 14 parameter P51 [DLX DigOut Sts2]
(32) Network Boolean Outputs • Stop, Start, Jog1, Clear Faults, etc.	These correlate with the DeviceLogix Logic Command word for the drive. Refer to page 362 for details on the Logic Command word bits. These bits can also be monitored in DeviceLogix Port 14 parameter P50 [DLX DigOut Sts].

Bit Outputs are used to connect to real-world output devices (pilot lights, relays, etc.) that are wired to an I/O option module in the drive, to directly control the drive via Logic Command bits, or to write a bit in a bit-enumerated parameter.

Analog Inputs

Available analog inputs to the DeviceLogix program include:

Analog Inputs	Description
(12) Hardware Analog Inputs • DLX Real InSP1 to DLX Real InSP8 (Real) • DLX DINT InSP1 to DLX DINT InSP4 (DINT)	Scratchpad registers for DLX program input use.
(17) Network Analog Inputs • Common Feedback (Real) • DLX In 01 to DLX In 14 (Real) • DLX In 15 to DLX In 16 (DINT)	The Common Feedback correlates with the Feedback word for the drive. The DLX In's correlate with DeviceLogix Port 14 parameters P17 [DLX In 01] to P32 [DLX In 16]
(7) Miscellaneous Analog Inputs • Real Time Clock data	Year, Month, Day, DayofWeek, Hour, Minute, and Second from the Real Time Clock in the drive

Analog Inputs are typically used to connect to real-world input devices (sensor, potentiometer, etc.) that are wired to an I/O option module in the drive, monitor drive Feedback, read the real Time Clock, or to read a drive / peripheral parameter.

Note: Hardware Analog Inputs are available in the PowerFlex 753 and v2.xxx (and higher) PowerFlex 755 drives.

Analog Outputs

Available analog outputs from the DeviceLogix program include:

Analog Outputs	Description
(12) Hardware Analog Outputs • DLX Real OutSP1 to DLX Real OutSP8 (Real) • DLX DINT OutSP1 to DLX DINT OutSP4 (DINT)	Scratchpad registers for DLX program output use.
(17) Network Analog Outputs • Reference Command (Real) • DLX Out 01 to DLX Out 14 (Real) • DLX Out 15 to DLX Out 16 (DINT)	The Reference Command correlates with the Reference word for the drive. The DLX Out's correlate with DeviceLogix Port 14 parameters P1 [DLX Out 01] to P16 [DLX Out 16]

Analog Outputs are typically used to connect to real-world output devices (meter panel, valve, etc.) that are wired to an I/O option module in the drive, control the Reference to the drive, or to write a drive / peripheral parameter.

Note: Hardware Analog Outputs are available in the PowerFlex 753 and v2.xxx (and higher) PowerFlex 755 drives.

Tips

Data types

Note that different data types are supported by the DeviceLogix Analog In/Out parameters. For example, P17 [DLX In 01] is a Real whereas P32 [DLX In 16] is a DINT. Be sure to assign a DLX In / Out to a parameter that has the same data type.

Function Block elements also support different data types. Click on the

Properties Button in the upper right-hand corner of each element to display the Function Block's properties. The Function Data Type field displays the supported data types. Note that if Real DLX Ins are used with a Function Block element configured for DINT (typical default), the fraction will be truncated.

PowerFlex 755 v1.xxx Firmware Datalinks and internal DeviceLogix scratchpad registers (P54…P81)

DLX In's and DLX Out's are Datalinks and can not be directly mapped to each other or another Datalink, such as a Datalink in the Port 13 Embedded EtherNet/IP. Use the DeviceLogix internal scratchpad registers to pass data between the Datalinks.

Example 1 – Reading data from the network

A value from the network is input to DLX Real SP 1.

N:P.P#	Name	Value
[11: 13.1]	DL From Net 01	Port 14: DLX Real SP1

DLX Real SP1 is read by DLX In 01 and can now be used as an Analog Input in the DeviceLogix program.

N:P.P#	Name	Value
[11: 14.17]	DLX In 01	Port 14: DLX Real SP1

DLX Real SP1 is the intermediary register that allows the two Datalinks to work together.

Example 2 – Writing data to the network

The DeviceLogix program controls an Analog Output value in DLX Out 01 which is written to DLX Real SP2.

N:P.P#	Name	Value
[11: 14.1]	DLX Out 01	Port 14: DLX Real SP2

The DLX Real SP2 value is output to the network.

N:P.P#	Name	Value
[11: 13.17]	DL To Net 01	Port 14: DLX Real SP2

DLX Real SP2 is the intermediary register that allows the two Datalinks to work together.

PowerFlex 753 (all) and PowerFlex 755 v2.xxx (and higher) Datalinks and internal DeviceLogix scratchpad registers (P82…P105)

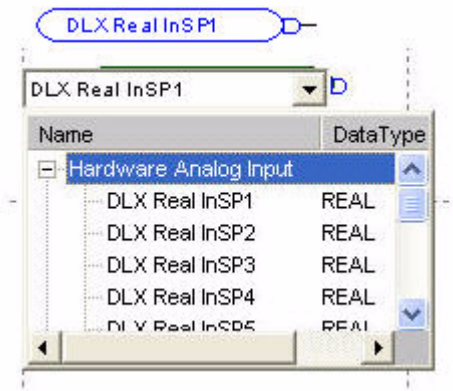
DLX In's and DLX Out's are Datalinks and can not be directly mapped to each other or another Datalink, such as a Datalink in the Port 13 Embedded EtherNet/IP. Although the same method used with PowerFlex 755 v1.xxx firmware can be employed, there is a more efficient method that does not require a DeviceLogix Datalink to be used.

Example 1 – Reading data from the network

A value from the network is input to DLX Real InSP1.

Drive	Datalink	Value
753	Port 0 P895 [Data In A1]	Port 14: DLX Real InSP1
755	Port 13 P1 [DL From Net 01]	

DLX Real InSP1 can now be used as a Hardware Analog Input and used directly with a Function Block (a DeviceLogix Datalink is not required).

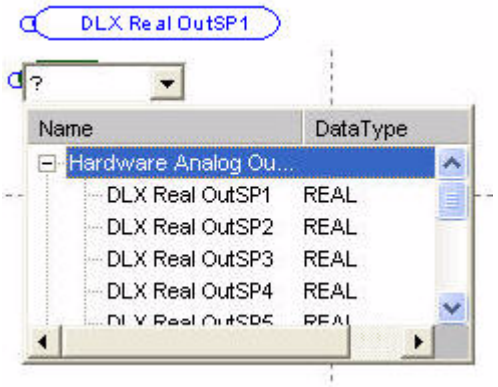


Example 2 – Writing data to the network

The DeviceLogix program controls an Analog Output value which is written to DLX Real OutSP1.

Drive	Datalink	Value
753	Port 0 P905 [Data Out A1]	Port 14: DLX Real OutSP1
755	Port 13 P17 [DL To Net 01]	

DLX Real OutSP1 can now be used as a Hardware Analog Output and used directly with a Function Block (a DeviceLogix Datalink is not required).



Program Examples

Example 1: Selector Switch Operation

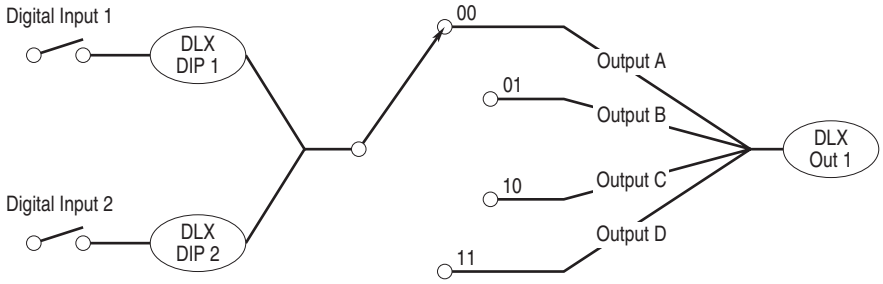
This example demonstrates how a selector switch operation similar to the feature in the PowerFlex 700S can be achieved through the embedded DeviceLogix in the PowerFlex 750-Series drive. A Selector switch is simulated in the drive using a combination of inputs to produce multiple outputs. Digital inputs in the drive are used to output configurable multiple preset speeds (75 Hz, 85Hz, 95Hz, and 105Hz) to P571 [Preset Speed 1]. It is assumed that the 750-Series drive has an I/O module installed in Port 4.

The truth table below represents the inputs and outputs for a 4 position selector switch.

Inputs		Outputs	
Input 1	Input 2	Binary Output	Selector Switch Output
0	0	0	Output A
0	1	1	Output B
1	0	2	Output C
1	1	3	Output D

The Logic Map below offers a high level explanation of how the above outputs are achieved.

Figure 26 - Two Input Four Position Selector Switch Logic Map



Discrete Inputs in the Drive are used for Inputs 1 and Input 2. Output A, B, C, and D are linked to DeviceLogix Scratchpad Registers. This allows further flexibility to modify the values of these outputs.

The resulting output can be linked to a parameter and used in supporting drive applications, such as configuring multiple preset speeds, point to point positioning, etc. In this example, it controls Preset Speed 1.

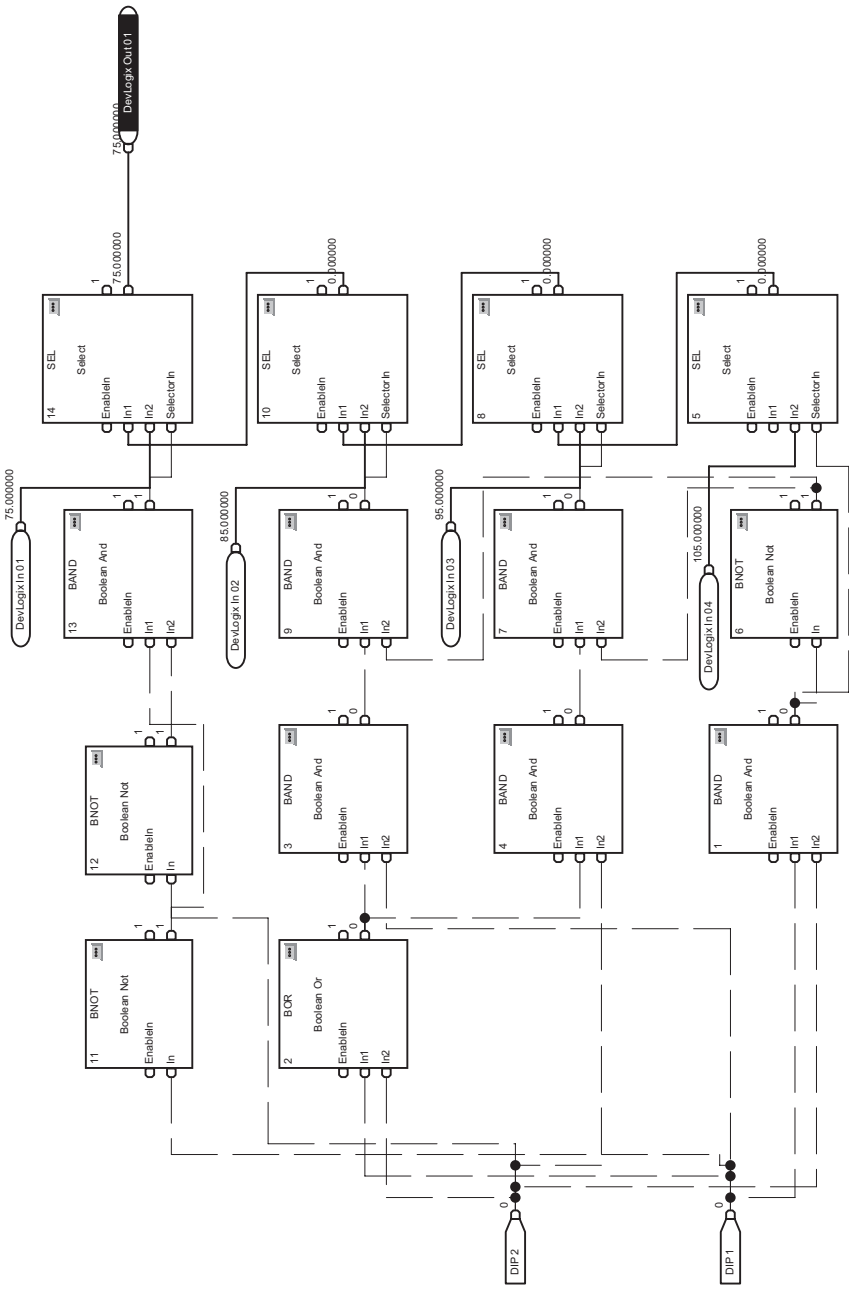
Parameter Configuration

The following parameters are configured for this example:

Port Parameter No.	Parameter	Value	Description
14.1	DLX Out 01	Port 0:Preset Speed 1	
14.33	DLX DIP 1	Port 4: Dig In Status.Input 1	Digital input 1 from Selector Switch
14.34	DLX DIP 2	Port 4: Dig In Status.Input 2	Digital input 2 from Selector Switch
14.17	DLX In 01	Port 14: DLX Real SP1	Output A
14.18	DLX In 02	Port 14: DLX Real SP2	Output B
14.19	DLX In 03	Port 14: DLX Real SP3	Output C
14.20	DLX In 04	Port 14: DLX Real SP4	Output D
14.54	DLX Real SP1	75.00	Output A Preset Speed
14.55	DLX Real SP2	85.00	Output B Preset Speed
14.56	DLX Real SP3	95.00	Output C Preset Speed
14.57	DLX Real SP4	105.00	Output D Preset Speed
0.571	Preset Speed 1	varies	Resulting output from Selector Switch

Functional Block Programming

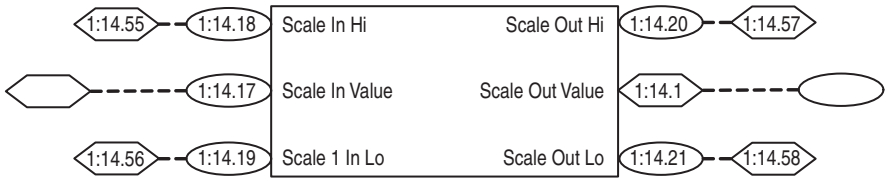
The Selector Switch Operation example consists of 14 blocks that are shown below.



Example 2: Scale Block Operation

This example demonstrates how a scale block operation similar to the feature in the PowerFlex 700VC can be achieved through the embedded DeviceLogix in the PowerFlex 750-Series drive. A Scale Block scales a parameter value and the input of the block is linked to a parameter that is desired to be scaled. The scale block also has both input and output high limits and low limit parameters.

Figure 27 - Scale Block High Level View



Scale In Hi determines the high value for the input to the scale block.

Scale Out Hi determines the corresponding high value for the output of the scale block.

Scale In Low determines the low value for the input to the scale block.

Scale Out Lo determines the corresponding low value for the output of the scale block.

Scale Out Value of the block is then available for user to link to any parameter that accepts links.

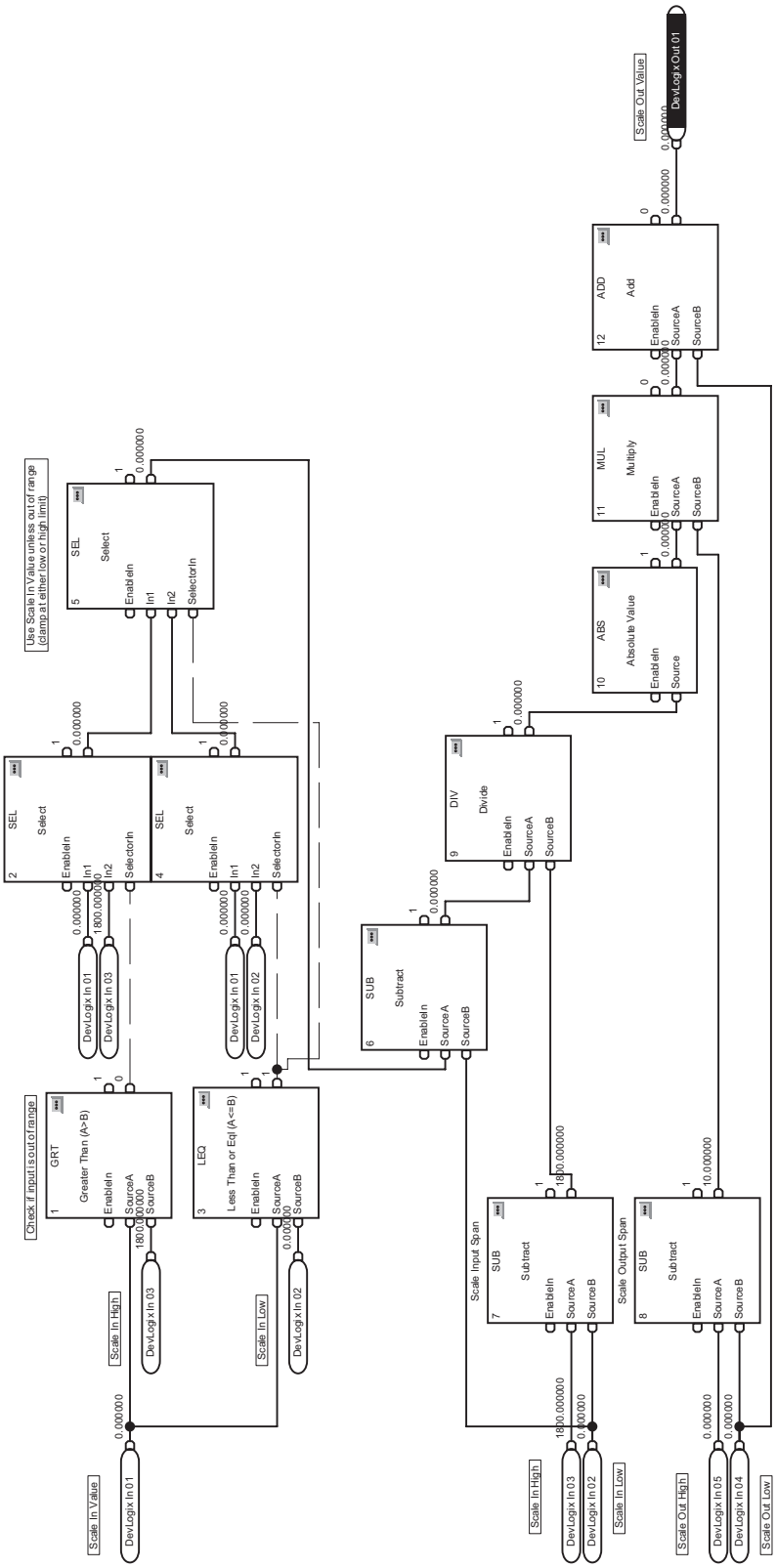
Parameter Configuration

The following DeviceLogix parameters are configured for this example:

Port Parameter No.	Parameter	Value	Description
14.1	DLX Out 01	* Set this to where the Scale Output value should go *	
14.17	DLX In 01	* Set this to your Scale Input value source *	
14.18	DLX In 02	Port 14: DLX Real SP2	Scale In Low
14.19	DLX In 03	Port 14: DLX Real SP3	Scale In High
14.20	DLX In 04	Port 14: DLX Real SP4	Scale Out Low
14.21	DLX In 05	Port 14: DLX Real SP5	Scale Out High
14.55	DLX Real SP2	0.0	Scale In Low value
14.56	DLX Real SP3	1800.00	Scale In High value
14.57	DLX Real SP4	0.000	Scale Out Low value
14.58	DLX Real SP5	10.00	Scale Out High value

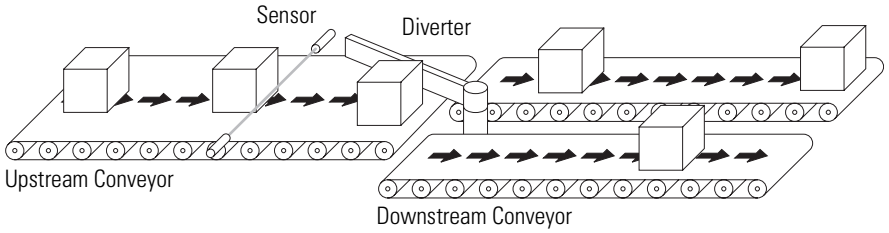
Functional Block Programming

The Scale Block Operation example consists of 12 blocks that are shown below.



Example 3: Diverter Operation

This example demonstrates basic control logic to operate a diverter in a conveyor system. The diverter directs parts from an upstream conveyor to one of two downstream conveyors. It alternately sends 'x' parts down each downstream conveyor.



The application consists of the following discrete I/O:

Type	Name	Description
Inputs	Part Present Sensor	Identifies that a part is present
Outputs	Diverter Actuator	Controls the diverter actuator to direct the flow of parts

Example logic requirements:

- If Part Present Sensor is ON, then increment the parts counter
- If parts counter preset is reached, reset the counter and alternately set or reset the Diverter Actuator

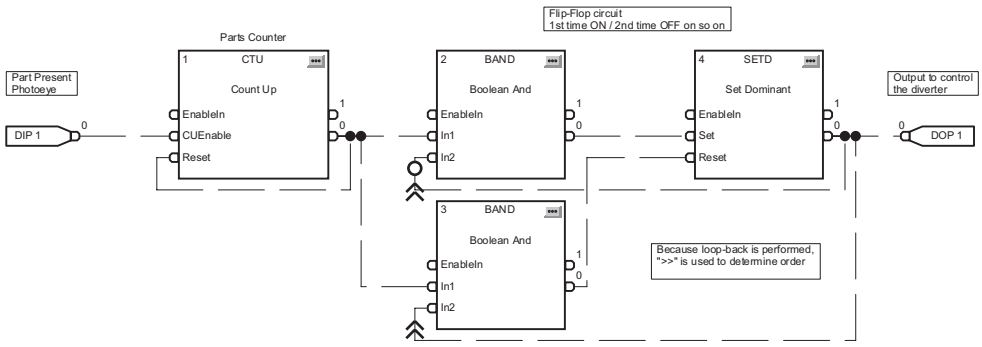
Parameter Configuration

The following parameters are configured for this example:

Port Parameter No.	Parameter	Value	Description
4.20	TO0 Select	Port 14: DLX DigOut Sts2.DLX DOPSts0	Output on I/O module in Port 4
14.33	DLX DIP 1	Port 4: Dig In Status.Input 1	Part Present Sensor input (I/O module in Port 4)
14.51	DLX DigOut Sts2		Diverter Actuator output

Functional Block Programming

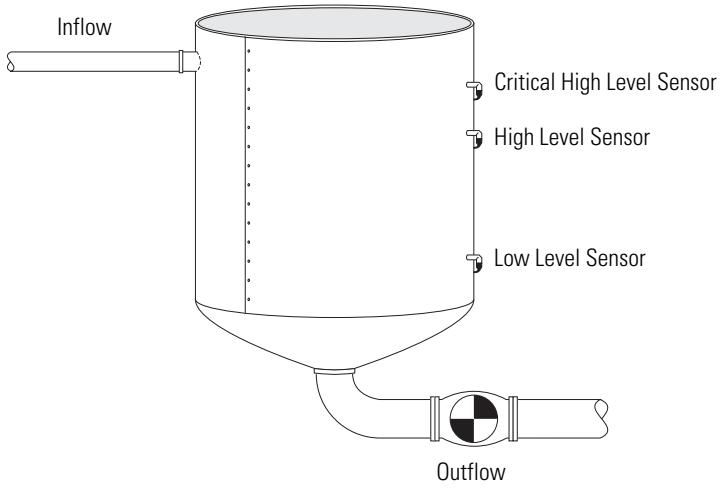
This example consists of 4 blocks that are shown below.



Example 4: Wet Well Operation

This example demonstrates how basic control logic can be used for simple applications. It is assumed that the PowerFlex 755 has an I/O module installed in Port 4.

Figure 28 - Wet Well



The application consists of the following discrete I/O:

Type	Name	Description
Inputs	Fault Reset pushbutton	Used to reset any faults or alarms
	Critical High Level sensor	Indicates a critically high level. It is normally a backup to the High Level sensor and is also used to detect if the High Level sensor is faulty. When ON, the drive will operate at an even higher output frequency in case it is due to a high inflow.
	High Level sensor	Indicates the well is at a high level and it is time to start pumping (normal operation). The drive operates at a 'normal' rate unless the Critical High Level was reached.
	Low Level sensor	When OFF, it is used to indicate that the well is empty (as long as the High and Critical High Level sensors are also OFF). The drive stops operating (end of pumping cycle).
Outputs	Sensor Fault pilot light	Indicates that there is a problem with either the High Level or Low Level sensors
	Too Much Time Alarm pilot light	If the drive operates for more than the normal amount of time it takes to empty the well, there may be increased inflow or perhaps the Low Level sensor is stuck ON. An alarm indication is made and the drive continues to operate.
	Critical High Fault flashing light / alarm horn	Indicates a critically high level that requires immediate attention.

Example logic requirements:

- If Critical High Level or High Level sensor is ON, then start the drive.
  - If Critical High Level sensor is ON, then switch to higher rate (90Hz) for the rest of the pumping cycle. Else run at the normal rate (60Hz)
  - Run until all three level sensors are OFF
  - Pump should run at least 'x' minutes at a minimum. If the Low Level sensor fails, this prevents the High Level sensor from cycling the pump On/Off too quickly.
- Annunciate a Sensor Fault condition
  - The Low Level sensor should never be OFF when either the High Level or Critical High Level sensors are ON
  - The High Level sensor should never be OFF when the Critical High Level sensor is ON
  - The Critical High Level sensor should never be ON when either the High Level or Low Level sensors are OFF
- Annunciate a Critical High Level condition
  - The Critical High Level output should never be ON
- Annunciate if pumping cycle time is longer than normal ('y' minutes)
  - Monitor the amount of time a pump cycle takes by timing how long the drive is operating.
  - If greater than 'y' minutes, energize the Too Much Time Alarm output
- Reset alarms / faults with a Reset pushbutton input

Parameter Configuration

The following parameters are configured for this example.

The following DeviceLogix parameters are configured for this example:

Port Parameter No.	Parameter	Value	Description
0.520	Max Fwd Speed	90.00	
0.545	Speed Ref A Sel	Port 0: Preset Speed 1	
0.571	Preset Speed 1	60.00	Normal pumping rate (60Hz)
0.573	Preset Speed 3	90.00	High speed pumping rate (90Hz)
4.10	RO0 Select	Port 14: DLX DigOut Sts2.DLX DOPSts0	Sensor Fault output
4.20	TO0 Select	Port 14: DLX DigOut Sts2.DLX DOPSts1	Critical High Level Fault output
4.30	TO1 Select	Port 14: DLX DigOut Sts2.DLX DOPSts2	Too Much Time Alarm output
14.33	DLX DIP 1	Port 4: Dig In Status.Input 1	Critical High Level Sensor input
14.34	DLX DIP 2	Port 4: Dig In Status.Input 2	High Level Sensor input
14.35	DLX DIP 3	Port 4: Dig In Status.Input 3	Low Level Sensor input
14.36	DLX DIP 4	Port 4: Dig In Status.Input 4	Alarm / Fault Reset pushbutton input

Functional Block Programming

This example consists of 16 blocks that are shown below.

Figure 29 - Control Circuit

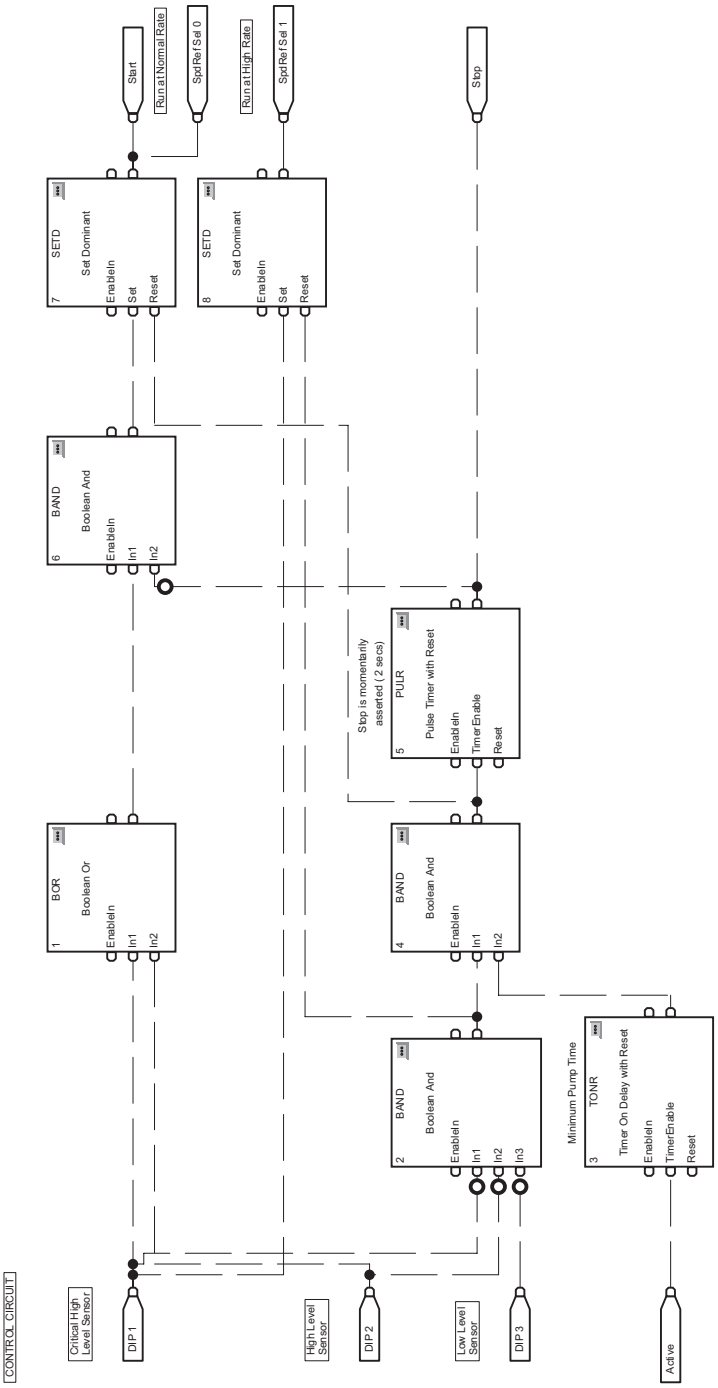
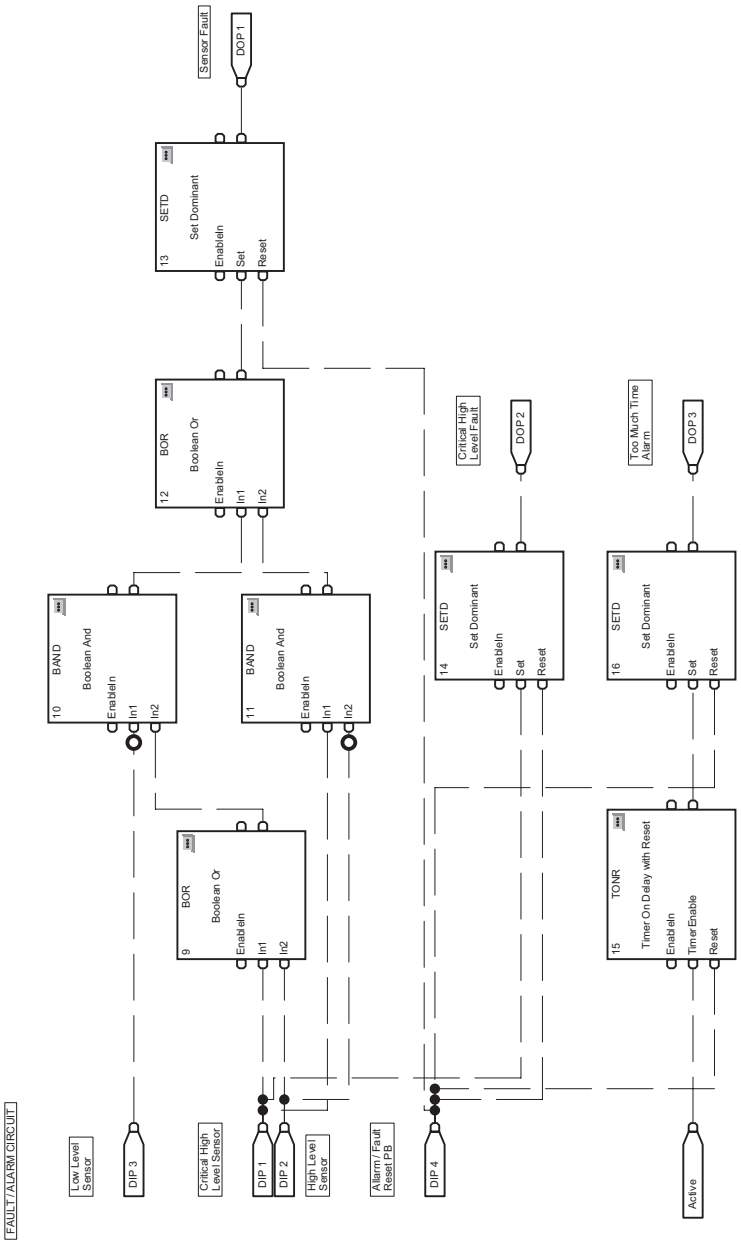


Figure 30 - Fault/Alarm Circuit



Example 5: Utilizing the Real Time Clock

This example demonstrates how to utilize the PowerFlex 750-Series drive Real Time Clock in a DeviceLogix program.

Example logic requirements:

- Run the drive Monday through Friday between 7:45AM and 5:15PM

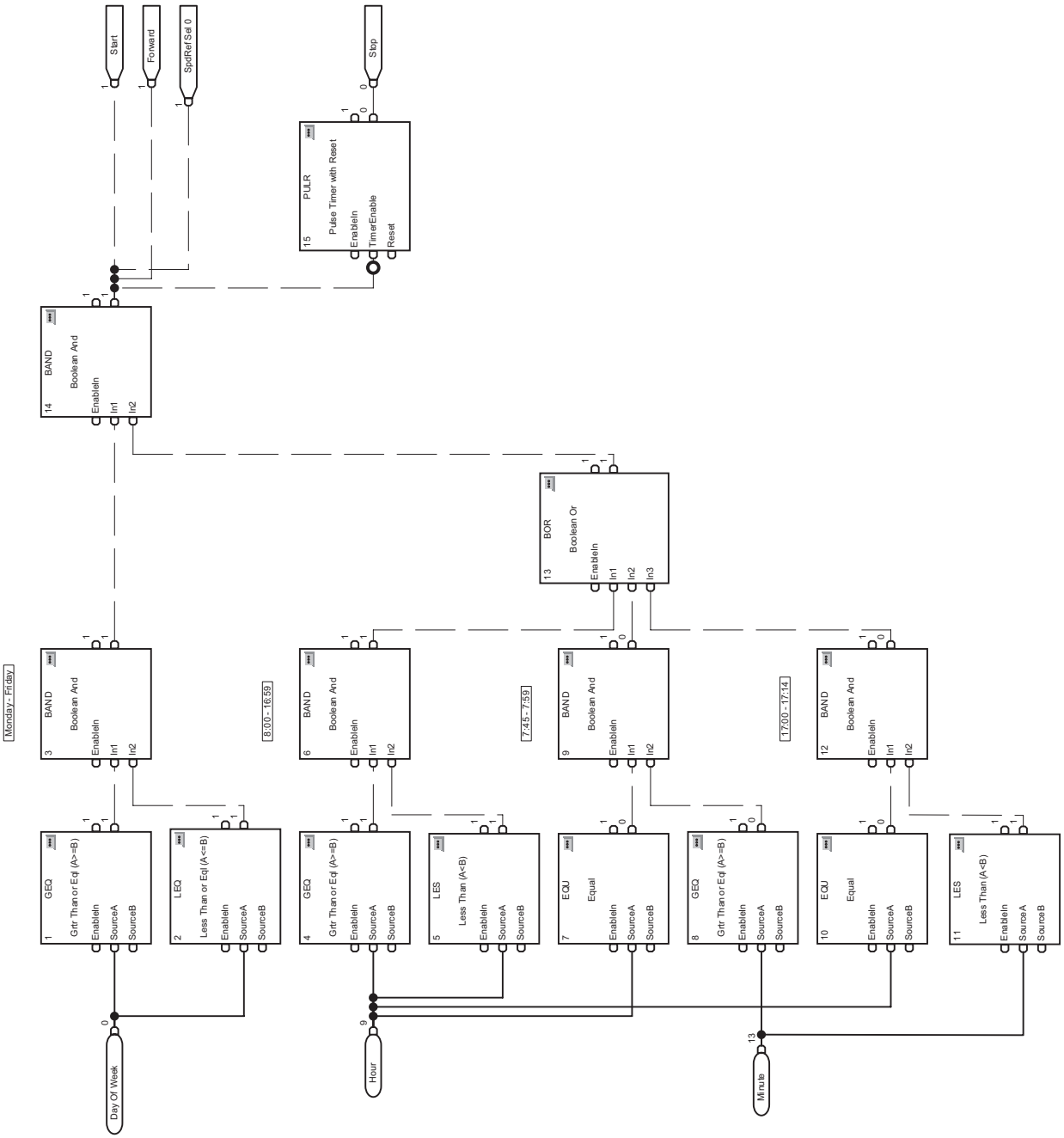
Parameter Configuration

The following parameters are configured for this example:

Port Parameter No.	Parameter	Value	Description
0.545	Speed Ref A Sel	Port 0: Preset Speed 1	
0.571	Preset Speed 1	60.00	Operating speed of drive

Functional Block Programming

This example consists of 15 blocks that are shown below.



Permanent Magnet Motors

efesotomasyon.com

Compatible Allen-Bradley Servo Motors

The following table contains a list of specifications for Allen-Bradley servo motors compatible with PowerFlex 750-Series drives. This list primarily includes 460V rated MP and 1326 Series Allen-Bradley servo motors. This information is provided to help configure PowerFlex 750-Series drive with the appropriate servo motor data. For information regarding compatibility and configuration of any Allen-Bradley servo motors and third party PM motors not listed here, contact Allen-Bradley Drives Technical Support.

Table 14 - Motor Name Plate and Rating Specifications

Model Number	Motor NP Volts (line to line V rms)	Motor NP Amps (A rms)	Motor NP Hertz (Hz)	Motor NP RPM (oper. rpm)	Motor NP Power (kW)	Motor Poles	Current peak (A rms)	System Cont. Stall Torque (N•m)	Motor Max RPM (rpm)
MPL-B4530K	460	7.8	200.7	3010	2.60	8	19.1	8.25	4000
MPL-B4560F	460	8.3	144.7	2170	3.20	8	25.5	14.10	3000
MPL-B520K	460	8.1	208.0	3120	3.50	8	23.3	10.70	4000
MPL-B540K	460	14.5	177.3	2660	5.40	8	42.4	19.40	4000
MPL-B560F	460	14.5	130.7	1960	5.50	8	42.4	26.80	3000
MPL-B580F	460	18.4	132.7	1990	7.10	8	66.5	34.00	3000
MPL-B580J	460	22.6	148.0	2220	7.90	8	66.5	34.00	3800
MPL-B640F	460	22.7	106.0	1590	6.11	8	46.0	36.70	3000
MPL-B660F	460	27.2	81.3	1220	6.15	8	67.9	48.00	3000
MPL-B680D	460	24.0	94.0	1410	9.30	8	66.5	62.80	2000
MPL-B680F	460	33.9	79.3	1190	7.50	8	67.9	60.00	3000
MPL-B860D	460	33.6	96.0	1440	12.50	8	67.5	83.10	2000
MPL-B880C	460	33.6	72.7	1090	12.60	8	69.0	110.00	1500
MPL-B880D	460	40.3	86.7	1300	15.00	8	113.2	110.00	2000
MPL-B960B	460	29.7	62.0	930	12.70	8	63.6	130.00	1200
MPL-B960C	460	38.9	76.0	1140	14.80	8	88.4	124.30	1500
MPL-B960D	460	50.2	76.7	1150	15.00	8	102.5	124.30	2000
MPL-B980B	460	31.8	59.3	890	15.02	8	70.7	162.70	1000
MPL-B980C	460	48.2	67.3	1010	16.80	8	99.0	158.20	1500
MPL-B980D	460	63.6	74.7	1120	18.60	8	141.4	158.20	2000
MPG-B050-031	460	16.3	92.0	920	1.20	12	32.5	12.40	2510
MPG-B110-031	460	12.9	112.0	1120	2.00	12	31.1	17.00	2420
MPG-B110-091	460	10.6	184.0	1840	1.60	12	20.5	8.30	3500
1326AB-B515G	460	9.5	88.7	2660	2.90	4	28.5	10.40	5000
1326AB-B520F	460	8.8	70.3	2110	2.90	4	26.4	13.10	3500
1326AB-B530E	460	9.5	74.3	2230	4.20	4	28.5	18.00	3000
1326AB-B720E	460	17.5	70.0	2100	6.80	4	52.5	30.90	3500
1326AB-B720F	460	27.5	117.0	3510	11.70	4	66.5	31.80	5000
1326AB-B730E	460	22.8	78.3	2350	9.60	4	66.5	39.00	3350
1326AB-B740C	460	20.9	52.3	1570	8.70	4	62.7	53.00	2200
1326AB-B740E	460	32.0	79.7	2390	12.70	4	66.5	50.80	3400
1326AS-B630F	460	7.8	142.7	2140	2.40	8	18.5	10.70	4500
1326AS-B660E	460	11.8	100.7	1510	3.40	8	29.8	21.50	3000
1326AS-B690E	460	19.0	87.3	1310	5.00	8	41.3	36.40	3000
1326AS-B840E	460	21.2	79.3	1190	4.70	8	39.5	37.60	3000
1326AS-B860C	460	17.6	77.3	1160	6.00	8	44.4	49.30	2000
3050R-7	390	66.0	50.0	500	30.00	12	132.0	-	500
11050R-7	390	218.0	50.0	500	110.00	12	436.0	-	500

Notes:

Integrated Motion on EtherNet/IP

IMPORTANT Not all drive functions are accessible when used in an Integrated Motion on EtherNet/IP application.

Introduction

Integrated Motion on EtherNet/IP is a feature with v2 and higher firmware PowerFlex 755 drives. It provides a common user experience as Kinetix 6500 drives when used with Logix controllers (v19 and higher) on EtherNet/IP.

- Same motion profile in RSLogix 5000 provides a common configuration experience. The PowerFlex 755 uses the Motion Properties / Axis Properties and the same motion attributes as the Kinetix 6500.
- Same RSLogix 5000 motion instructions provide a common programming experience. An additional motion instruction, MDS – Motion Drive Start, has also been added to allow a ramped start with "Flying Start" capability (ability to start into a rotating motor).

Users now have two options when integrating PowerFlex 755 drives with Logix controllers:

1. "Standard Drive" using Drive Add-On Profiles (AOPs) – RSLogix 5000 v16 and higher.
2. "Integrated Motion Drive" using Integrated Motion on EtherNet/IP technology – RSLogix 5000 v19 and higher.

When to consider using Integrated Motion on EtherNet/IP with PowerFlex 755 drives:

- Applications having both servos and drives - convenient to be able to configure / program servos and drives the same way.
- Drives applications that could benefit from more powerful (i.e. motion) instructions - servo performance is not needed, but it is advantageous to utilize the RSLogix 5000 motion instruction set to save development time.

Special considerations when using PowerFlex 755 drives in Integrated Motion on EtherNet/IP mode:

- A PowerFlex 755 drive does not have the performance of a Kinetix servo and is not intended to be a replacement.

PowerFlex 755 Update	Time
Course Update Period (network)	3 ms min. (6 ms min. when used with a permanent magnet motor without feedback)
Torque loop	256 us
Velocity loop	1024 us
Position loop	1024 us

- When a PowerFlex 755 is used in Integrated Motion on EtherNet/IP mode, the Logix controller and RSLogix 5000 are the exclusive owners of the drive (same as Kinetix). A HIM or other drive software tools, such as DriveExplorer and DriveTools SP, can not be used to control the drive or change configuration settings. These tools can only be used for monitoring.
- The following peripherals can be installed, see Feedback Configuration Options on page 433 for valid ports and supported combinations:
  - HIM (20-HIM-A6 / -C6S) - monitor only
  - Universal Feedback Encoder Option (20-750-UFB-1)
  - Incremental Encoder Option (20-750-ENC-1)
  - Dual Incremental Encoder Option (20-750-DENC-1)
  - Safe Torque Off Module (20-750-S)
  - Safe Speed Monitor Module (20-750-S1)
  - 24v Aux Control Power Supply (20-750-APS)

  Other peripherals, such as 20-750 I/O modules, are not allowed.
- Not all drive functions are available when used in an Integrated Motion on EtherNet/IP application. See the Parameter / Instance Attribute Mapping tables in this appendix to view which drive parameters correlate to motion attributes. If a parameter is not listed, it is not accessible and its function may not be available. Examples of functions that are not available include:
  - DeviceLogix
  - Pump Jack and Pump Off
  - Torque Prove
  - P Jump and Traverse

ATTENTION: A Kinetix drive will automatically read a permanent magnet motor / encoder's configuration data, whereas it must be manually entered / tuned by the user with the PowerFlex 755. Entering incorrect data could cause unintended motion when a Motion Servo On (MSO) instruction is executed.

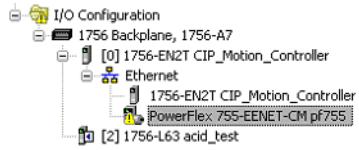
Feedback Configuration Options

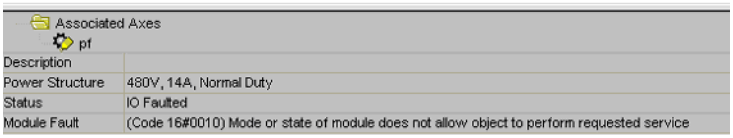
The following feedback module combinations are supported.

Option	Supported Module	Catalog Number	Valid Port(s)
Two Feedback Options	Single Incremental Encoder	20-750-ENC-1	4…8
	Dual Incremental Encoder	20-750-DENC-1	4…8
	Universal Feedback	20-750-UFB-1	4…6
Two Feedback Options and One Safe Torque Off Option	Single Incremental Encoder	20-750-ENC-1	4 and 5
	Dual Incremental Encoder	20-750-DENC-1	4 and 5
	Universal Feedback	20-750-UFB-1	4 and 5
	Safe Torque Off	20-750-S	6
Two Feedback Options and One Safe Speed Monitor Option (1)	Single Incremental Encoder	20-750-ENC-1	4 and 5
	Dual Incremental Encoder	20-750-DENC-1	4 and 5
	Universal Feedback	20-750-UFB-1	4 and 5
	Safe Speed Monitor	20-750-S1	6

(1) The Safe Speed Monitor option module must be used with the 20-750-DENC-1 Dual Incremental Encoder module or the 20-750-UFB-1 Universal Feedback module.

An invalid hardware configuration results in a Module Fault: (Code 16#0010) Mode or state of module does not allow object to perform requested service.





Considerations For Using Position Feedback Devices On The PowerFlex 755 In The Integrated Motion on EtherNet/IP Context

The PowerFlex 755 connects to position feedback devices (encoders) using one or more feedback option modules that are placed in the PowerFlex 755 control pod.

There are currently three supported types of feedback modules: 20-750-ENC-1, 20-750-DENC-1, and 20-750-UFB-1.

IMPORTANT Single and dual incremental feedback options, 20-750-ENC-1 and 20-750-DENC-1, can not use registration inputs. Use the Universal Feedback option 20-750-UFB-1 if registration inputs are needed.

The 20-750-DENC-1 and 20-750-UFB-1 each contain two "hardware feedback channels", which means up to two encoders can be connected to each module. The 20-750-ENC-1 only contains a single hardware feedback channel.

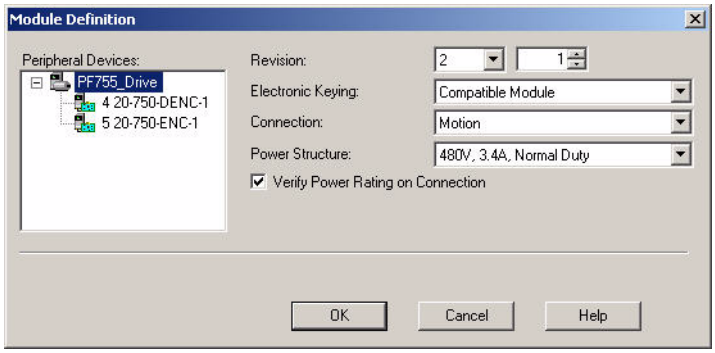
A Integrated Motion on EtherNet/IP Axis can have up to two Integrated Motion on EtherNet/IP feedback devices associated with it. When two devices are in use,

they are called the “Motor Feedback Device” and the “Load Feedback Device”. These two devices are also referred to as “Integrated Motion on EtherNet/IP Feedback 1” and “Integrated Motion on EtherNet/IP Feedback 2” respectively.

Each Integrated Motion on EtherNet/IP Feedback Device has a Integrated Motion on EtherNet/IP Feedback Type associated with it. This describes the type of encoder to be used as that Feedback Device.

When configuring a drive using RSLogix 5000 and Integrated Motion on EtherNet/IP, the “Associated Axes” page of the drive’s “Module Properties” dialog is used to associate each Integrated Motion on EtherNet/IP feedback device with a feedback hardware channel on the drive itself.

Before using the “Associated Axes” page, the RSLogix 5000 user first has to use the “Module Definition” dialog on the “General” tab of the “Module Properties” dialog to define which feedback modules are present in the PowerFlex 755 control pod.



Once the available feedback cards have been defined, the user can enter a PowerFlex 755 hardware feedback channel for each Integrated Motion on EtherNet/IP feedback device. The user is given a drop down list of available hardware feedback channels, with each channel described by the control pod port number of the feedback module and the channel within that port. If a feedback module has two hardware feedback channels, the two channels are called “Channel A” and “Channel B”. If there is only one channel, it is called “Channel A”.

The correct wiring for an encoder in this system depends on three things:

- The type of feedback card
- The type of encoder
- Which hardware feedback channel to which the encoder is to be connected (A or B)

In general, if there is only one way to wire a particular type of encoder to a particular feedback module, then that wiring will work regardless of whether the Integrated Motion on EtherNet/IP configuration associates it with hardware Channel A or hardware Channel B on that feedback module.

If there are two ways to wire a particular encoder to a particular feedback module, then selecting "Channel A" for a feedback module from the "Associated Axes" page will select one set of terminals, and selecting "Channel B" will select a different set of terminals.

Table 15 shows the legal Integrated Motion on EtherNet/IP Feedback types and the correct encoder connection terminals when the feedback module is a 20-750-ENC-1.

Table 15 - Single Incremental Encoder Feedback Type and Connections

Integrated Motion on EtherNet/IP Feedback Type	20-750-ENC-1: Channel A Terminals
Not Specified (0)	N/A
Digital AqB (1)	A (NOT), A, B (NOT), B, Z (NOT), Z

Table 16 shows the legal Integrated Motion on EtherNet/IP Feedback types and the correct encoder connection terminals when the feedback module is a 20-750-DENC-1.

Table 16 - Dual Incremental Encoder Feedback Type and Connections

Integrated Motion on EtherNet/IP Feedback Type	20-750-DENC-1: Channel A Terminals	20-750-DENC-1: Channel B Terminals
Not Specified (0)	N/A	N/A
Digital AqB (1)	Encoder 0: A (NOT), A, B (NOT), B, Z (NOT), Z	Encoder 1: A (NOT), A, B (NOT), B, Z (NOT), Z

The following table shows the legal Integrated Motion on EtherNet/IP Feedback types and the correct encoder connection terminals when the feedback module is a 20-750-UFB-1. It also shows how the two "Device Select" parameters on the 20-750-UFB-1 are configured in each case.

When a 20-750-UFB-1 is used in a Integrated Motion on EtherNet/IP system, the "FB0" parameters are always used for configuration and status of Channel A and the "FB1" parameters are always used for configuration and status of Channel B.

Table 17 shows that, for some Integrated Motion on EtherNet/IP Feedback Types, there are two possible connection schemes, and one scheme will be used if Channel A is selected by the RSLogix 5000 user and the other scheme will be used if Channel B is selected by the RSLogix 5000 user. Conversely, for the other Integrated Motion on EtherNet/IP Feedback Types, there is only one possible connection scheme.

The "Digital AqB" Feedback Type is a special case. If only one of the channels on a particular 20-750-UFB-1 is configured to "Digital AqB", then the A, B, and Z terminals will actually be used, regardless of whether this type is assigned to Channel A or Channel B. On the other hand, if both channels are configured to "Digital AqB", then Channel A will use the A, B, Z terminals, and Channel B will use the terminals that are labeled "Sine" and "Cosine" but in this case are expected to carry normal AqB encoder signals. These two cases are included in the table.

Configuration of both 20-750-UFB-1 channels to use the same terminals is considered a configuration error and will not allow proper operation of the system.

Table 17 - Universal Feedback Feedback Type and Connections

Integrated Motion on EtherNet/IP Feedback Type	Channel A (FB0) Device Sel	Channel B (FB1) Device Sel (if different)	Channel A Terminals	Channel B Terminals
Not Specified (0)	None (0)		N/A	
Digital AqB (1) Note: This row only applies if both channels of the UFB **Are Not** simultaneously configured to Feedback Type = "Digital AqB"	Inc A B Z (12)		-A, A, -B, B, -Z, Z	
Digital AqB (1) Note: This row only applies if both channels of the UFB **Are** configured to Feedback Type = "Digital AqB"	Inc A B Z (12)	Inc SC (13)	-A, A, -B, B, -Z, Z	Sine (-), Sine (+), Cosine (-), Cosine (+) **Note: No Z (marker) input available.**
Sine/Cosine (4)	SinCos Only (11)		Sine (-), Sine (+), Cosine (-), Cosine (+)	
Hiperface (6)	Hiperface SC (2)		Sine (-), Sine (+), Cosine (-), Cosine (+), -Xd, +Xd	
EnDat 2.1 (7)	EnDat SC (1)		Sine (-), Sine (+), Cosine (-), Cosine (+), -Xc, +Xc, -Xd, +Xd	
EnDat 2.2 (8)	EnDat FD ChX (5)	EnDat FD ChY (6)	-Xc, +Xc, -Xd, +Xd	-Yc, +Yc, -Yd, +Yd
SSI (10) (Rotary)	SSI SC (4)		Sine (-), Sine (+), Cosine (-), Cosine (+), -Xc, +Xc, -Xd, +Xd	
SSI (10) (Linear)	LinSSI ChX (18)	LinSSI ChY (19)	-Xc, +Xc, -Xd, +Xd	-Yc, +Yc, -Yd, +Yd
Stahl SSI (129)	LinStahl ChX (16)	LinStahl ChY (17)	-Xc, +Xc, -Xd, +Xd	-Yc, +Yc, -Yd, +Yd

Although the UFB ostensibly supports two feedback channels, there are many combinations of device types that will not work and will result in an error state on the UFB if they are configured.

Not every combination of P6 [Fdbk0 Device Sel] and P36 [Fdbk1 Device Sel] are allowed. The following table shows the allowed and forbidden combinations.

P6 [Fdbk0 Device Sel]

P36 [Fdbk1 Device Sel]	None	EnDat SC	Hiperface SC	BiSS SC	SSI SC	EnDat FD ChX	EnDat FD ChY	BiSS FD ChX	BiSS FD ChY	SSI FD ChX	SSI FD ChY	SinCos only	Incmtl A B Z	Incmtl SC	LinTempo ChX	LinTempo ChY	LinStahl ChX	LinStahl ChY	Lin SSI ChX	Lin SSI ChY	Hall Sensor
None	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	
EnDat SC	❍	●	●	●	●	●	❍	●	❍	●	❍	●	❍	●	●	❍	●	❍	●	❍	
Hiperface SC	❍	●	●	●	●	●	❍	●	❍	●	❍	●	❍	●	●	❍	●	❍	●	❍	
BiSS SC	❍	●	●	●	●	●	❍	●	❍	●	❍	●	❍	●	●	❍	●	❍	●	❍	
SSI SC	❍	●	●	●	●	●	❍	●	❍	●	❍	●	❍	●	●	❍	●	❍	●	❍	
EnDat FD ChX	❍	●	●	●	●	●		●	❍	●	❍	❍	❍	❍	●	❍	●	❍	●	❍	
EnDat FD ChY	❍	❍	❍	❍	❍		●	❍	●	❍	●	❍	❍	❍	❍	●	❍	●	❍	●	
BiSS FD ChX	❍	●	●	●	●	●	❍	●		●	❍	❍	❍	❍	●	❍	●	❍	●	❍	
BiSS FD ChY	❍	❍	❍	❍	❍	❍	●		●	❍	●	❍	❍	❍	❍	●	❍	●	❍	●	
SSI FD ChX	❍	●	●	●	●	●	❍	●	❍	●		❍	❍	❍	●	❍	●	❍	●	❍	
SSI FD ChY	❍	❍	❍	❍	❍	❍	●	❍	●		●	❍	❍	❍	❍	●	❍	●	❍	●	
SinCos only	❍	●	●	●	●	❍	❍	❍	❍	❍	❍	●	❍	●	❍	❍	❍	❍	❍	❍	
Incmtl A B Z	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍	●	❍	❍	❍	❍	❍	❍	❍	●
Incmtl SC	❍	●	●	●	●	❍	❍	❍	❍	❍	❍	●	❍	●	❍	❍	❍	❍	❍	❍	
LinTempo ChX	❍	●	●	●	●	●	❍	●	❍	●	❍	❍	❍	❍	●	●	●	●	●	●	
LinTempo ChY	❍	❍	❍	❍	❍	❍	●	❍	●	❍	●	❍	❍	❍	●	●	●	●	●	●	
LinStahl ChX	❍	●	●	●	●	●	❍	●	❍	●	❍	❍	❍	❍	●	●	●	●	●	●	
LinStahl ChY	❍	❍	❍	❍	❍	❍	●	❍	●	❍	●	❍	❍	❍	●	●	●	●	●	●	
Lin SSI ChX	❍	●	●	●	●	●	❍	●	❍	●	❍	❍	❍	❍	●	●	●	●	●	●	
Lin SSI ChY	❍	❍	❍	❍	❍	❍	●	❍	●	❍	●	❍	❍	❍	●	●	●	●	●	●	
Hall Sensor													●								●

● Forbidden Combinations
❍ Allowed Combinations
Not Implemented

Forbidden selections lead to a Configuration Conflict (Type 2 Alarm): Bit 20 “FB0FB1 Cflct” of P1 [Module Status] is set.

Parameter / Instance Attribute Mapping

The following tables show the relationships between the Integrated Motion on EtherNet/IP attributes and PowerFlex 755 parameters. If a parameter is not listed, it is not accessible and its function may not be available.

Table 18 - PowerFlex 755 Drive Parameter Numeric Order

Drive Parameter	Integrated Motion on EtherNet/IP Instance
P1 [Output Frequency]	Output Frequency
P5 [Torque Cur Fdbk]	Iq Current Feedback
P6 [Flux Cur Fdbk]	Id Current Feedback
P7 [Output Current]	Output Current
P8 [Output Voltage]	Output Voltage
P9 [Output Power]	Output Power
P11 [DC Bus Volts]	DC Bus Voltage
P12 [DC Bus Memory]	DC Bus Voltage - Nominal
P20 [Rated Volts]	Inverter Rated Output Voltage
P21 [Rated Amps]	Inverter Rated Output Current
P22 [Rated kW]	Inverter Rated Output Power
P25 [Motor NP Volts]	Motor Rated Voltage
P26 [Motor NP Amps]	Motor Rated Continuous Current
P27 [Motor NP Hertz]	Induction Motor Rated Frequency
P28 [Motor NP RPM]	Rotary Motor Rated Speed
P30 [Motor NP Power]	Motor Rated Output Power
P31 [Motor Poles]	Rotary Motor Poles
P35 [Motor Ctrl Mode]	Control Method
P35 [Motor Ctrl Mode]	Motor Type
P36 [Maximum Voltage]	Maximum Voltage
P37 [Maximum Freq]	Maximum Frequency
P38 [PWM Frequency]	PWM Frequency
P40 [Mtr Options Cnfg]	Motor Polarity
P43 [Flux Up Enable]	Flux Up Control
P44 [Flux Up Time]	Flux Up Time
P60 [Start Acc Boost]	Start Boost
P61 [Run Boost]	Run Boost
P62 [Break Voltage]	Break Voltage
P63 [Break Frequency]	Break Frequency
P65 [VHz Curve]	Frequency Control Method
P73 [IR Voltage Drop]	Induction Motor Stator Resistance
P74 [Ixo Voltage Drop]	Induction Motor Stator Leakage Reactance
P74 [Ixo Voltage Drop]	Induction Motor Rotor Leakage Reactance
P75 [Flux Current Ref]	Induction Motor Flux Current
P76 [Total Inertia]	Kj
P81 [PM PriEnc Offset]	Commutation Offset
P86 [PM CEMF Voltage]	PM Motor Rotary Voltage Constant
P87 [PM IR Voltage]	PM Motor Resistance
P88 [PM IXq Voltage] P89 [PM IXd Voltage]	PM Motor Inductance
P95 [VCL Cur Reg BW]	Kqp
P126 [Pri Vel FdbkFltr]	Feedback n Velocity Filter Taps
P131 [Active Vel Fdbk]	Velocity Feedback
P155 [DI Enable]	Digital Input Configuration
P220 [Digital In Sts]	Digital Inputs
P305 [Voltage Class]	Bus Voltage Select
P306 [Duty Rating]	Duty Select

Drive Parameter	Integrated Motion on EtherNet/IP Instance
P309 [SpdTrqPsn Mode A]	Control Mode
P309 [SpdTrqPsn Mode A]	SLAT Configuration
P314 [SLAT Err Stpt]	SLAT Set Point
P315 [SLAT Dwell Time]	SLAT Time Delay
P356 [FlyingStart Mode]	Flying Start Enable
P370 [Stop Mode A]	Stopping Mode
P372 [Bus Reg Mode A]	Bus Regulator Action
P375 [Bus Reg Level]	Bus Regulator Reference
P382 [DB Resistor Type]	Shunt Regulator Resistor Type
P383 [DB Ext Ohms]	External Shunt Resistance
P384 [DB Ext Watts]	External Shunt Power
P385 [DB ExtPulseWatts]	External Shunt Pulse Power
P388 [Flux Braking En]	Flux Braking Enable
P394 [DC Brake Level]	DC Injection Brake Current
P395 [DC Brake Time]	DC Injection Brake Time
P412 [Mtr OL Alarm Lvl]	Motor Thermal Overload User Limit
P413 [Mtr OL Factor]	Motor Overload Limit
P418 [Mtr OL Counts]	Motor Capacity
P420 [Drive OL Mode]	Inverter Overload Action
P422 [Current Limit 1]	Motor Rated Peak Current
P422 [Current Limit 1]	Current Vector Limit
P426 [Regen Power Lmt]	Regenerative Power Limit
P436 [Shear Pin1 Level]	Overtorque Limit
P437 [Shear Pin 1 Time]	Overtorque Limit Time
P442 [Load Loss Level]	Undertorque Limit
P443 [Load Loss Time]	Undertorque Limit Time
P450 [Pwr Loss Mode A]	Power Loss Action
P451 [Pwr Loss A Level]	Power Loss Threshold
P452 [Pwr Loss A Time]	Power Loss Time
P461 [UnderVltg Level]	Bus Undervoltage User Limit
P520 [Max Fwd Speed]	Velocity Limit - Positive
P521 [Max Rev Speed]	Velocity Limit - Negative
P524 [Overspeed Limit]	Motor Overspeed User Limit
P526 [Skip Speed 1]	Skip Speed 1
P527 [Skip Speed 2]	Skip Speed 2
P528 [Skip Speed 3]	Skip Speed 3
P529 [Skip Speed Band]	Skip Speed Band
P535 [Accel Time 1]	Ramp Acceleration
P537 [Decel Time 1]	Ramp Deceleration
P540 [S Curve Accel] P541 [S Curve Decel]	Ramp Jerk Control
P546 [Spd Ref A Stpt]	Velocity Feedforward Command
P549 [Spd Ref A Mult]	Kvff
P597 [Final Speed Ref]	Velocity Reference
P601 [Trim Ref A Stpt]	Velocity Trim
P620 [Droop RPM at FLA]	Kdr
P621 [Slip RPM at FLA]	Induction Motor Rated Slip Speed
P635 [Spd Options Ctrl]	Velocity Integrator Control
P639 [SReg FB Fltr BW]	Feedback n Velocity Filter Bandwidth
P641 [Speed Error]	Velocity Error
P643 [SpdReg AntiBckup]	Knff
P644 [Spd Err Fltr BW]	Velocity Low Pass Filter Bandwidth

Drive Parameter	Integrated Motion on EtherNet/IP Instance
P645 [Speed Reg Kp]	Kvp
P647 [Speed Reg Ki]	Kvi
P652 [SReg Trq Preset]	Velocity Integrator Preload
P654 [Spd Reg Int Out]	Velocity Integrator Output
P658 [SReg OutFltrGain]	Torque Lead Lag Filter Gain
P659 [SReg OutFltr BW]	Torque Lead Lag Filter Bandwidth
P660 [SReg Output]	Velocity Loop Output
P670 [Pos Torque Limit]	Torque Limit - Positive
P671 [Neg Torque Limit]	Torque Limit - Negative
P685 [Selected Trq Ref]	Torque Reference
P686 [Torque Step]	Torque Trim
P687 [Notch Fltr Freq]	Torque Notch Filter Frequency
P689 [Filtered Trq Ref]	Torque Reference - Filtered
P690 [Limited Trq Ref]	Torque Reference - Limited
P690 [Limited Torq Ref]	Iq Current Command
P696 [Inertia Acc Gain] P697 [Inertia Dec Gain]	Kaff
P704 [InAdp LdObs Mode]	Load Observer Configuration
P705 [Inertia Adapt BW]	Feedback n Accel Filter Bandwidth
P706 [InertiaAdaptGain]	Kof
P707 [Load Estimate]	Load Observer Torque Estimate
P708 [InertiaTorqueAdd]	Load Observer Acceleration Estimate
P708 [InertiaTrqAdd]	Total Inertia Estimate
P710 [InertAdptFiltBW]	Torque Low Pass Filter Bandwidth
P711 [Load Observer BW]	Kop
P721 [Position Control]	Position Interator Control
P723 [Psn Command]	Position Reference
P756 [Interp Psn Input]	Controller Position Command - Float
P757 [Interp Vel Input]	Controller Velocity Command
P758 [Interp Trq Input]	Controller Torque Command
P759 [Interp Psn Out]	Fine Command Position
P759 [Interp Psn Out]	Position Command
P760 [Interp Vel Out]	Fine Command Velocity
P760 [Interp Vel Out]	Velocity Command
P761 [Interp Trq Out]	Torque Command
P821 [Psn Offset 1]	Position Trim
P830 [PsnNtchFltrFreq]	Position Notch Filter Frequency
P833 [Psn Out FltrGain]	Position Lead Lag Filter Gain
P834 [Psn Out Fltr BW]	Position Lead Lag Filter Bandwidth
P835 [Psn Error]	Position Error
P837 [Psn Load Actual]	Position Intergral Feedback
P838 [Psn Reg Ki]	Kpi
P839 [Psn Reg Kp]	Kpp
P842 [PsnReg IntgrlOut]	Position Integrator Output
P843 [PsnReg Spd Out]	Position Loop Output
P847 [Psn Fdbk]	Position Feedback
P940 [Drive OL Count]	Inverter Capacity (See See Motor Overload on page 444)
P942 [IGBT Temp C]	Inverter Temperature
P944 [Drive Temp C]	Inverter Heatsink Temperature
P1107 [Brk Release Time]	Mechanical Brake Release Delay
P1108 [Brk Set Time]	Mechanical Brake Engage Delay

Table 19 - Integrated Motion on EtherNet/IP Attribute Alphabetical Order

Integrated Motion on EtherNet/IP Instance	Drive Parameter
Break Frequency	P63 [Break Frequency]
Break Voltage	P62 [Break Voltage]
Bus Regulator Action	P372 [Bus Reg Mode A]
Bus Regulator Reference	P375 [Bus Reg Level]
Bus Undervoltage User Limit	P461 [UnderVltg Level]
Bus Voltage Select	P305 [Voltage Class]
Commutation Offset	P81 [PM PriEnc Offset]
Control Method	P35 [Motor Ctrl Mode]
Control Mode	P309 [SpdTrqPsn Mode A]
Controller Position Command - Float	P756 [Interp Psn Input]
Controller Torque Command	P758 [Interp Trq Input]
Controller Velocity Command	P757 [Interp Vel Input]
Current Vector Limit	P422 [Current Limit 1]
DC Bus Voltage	P11 [DC Bus Volts]
DC Bus Voltage - Nominal	P12 [DC Bus Memory]
DC Injection Brake Current	P394 [DC Brake Level]
DC Injection Brake Time	P395 [DC Brake Time]
Digital Input Configuration	P155 [DI Enable]
Digital Inputs	P220 [Digital In Sts]
Duty Select	P306 [Duty Rating]
External Shunt Power	P384 [DB Ext Watts]
External Shunt Pulse Power	P385 [DB ExtPulseWatts]
External Shunt Resistance	P383 [DB Ext Ohms]
Feedback n Accel Filter Bandwidth	P705 [Inertia Adapt BW]
Feedback n Velocity Filter Bandwidth	P639 [SReg FB Fltr BW]
Feedback n Velocity Filter Taps	P126 [Pri Vel FdbkFltr]
Fine Command Position	P759 [Interp Psn Out]
Fine Command Velocity	P760 [Interp Vel Out]
Flux Braking Enable	P388 [Flux Braking En]
Flux Up Control	P43 [Flux Up Enable]
Flux Up Time	P44 [Flux Up Time]
Flying Start Enable	P356 [FlyingStart Mode]
Frequency Control Method	P65 [VHz Curve]
Id Current Feedback	P6 [Flux Cur Fdbk]
Induction Motor Flux Current	P75 [Flux Current Ref]
Induction Motor Rated Frequency	P27 [Motor NP Hertz]
Induction Motor Rated Slip Speed	P621 [Slip RPM at FLA]
Induction Motor Rotor Leakage Reactance	P74 [Ixo Voltage Drop]
Induction Motor Stator Leakage Reactance	P74 [Ixo Voltage Drop]
Induction Motor Stator Resistance	P73 [IR Voltage Drop]
Inverter Capacity (See See Motor Overload on page 444)	P940 [Drive OL Count]
Inverter Heatsink Temperature	P944 [Drive Temp C]
Inverter Overload Action	P420 [Drive OL Mode]
Inverter Rated Output Current	P21 [Rated Amps]
Inverter Rated Output Power	P22 [Rated kW]
Inverter Rated Output Voltage	P20 [Rated Volts]
Inverter Temperature	P942 [IGBT Temp C]
Iq Current Command	P690 [Limited Torq Ref]
Iq Current Feedback	P5 [Torque Cur Fdbk]

Integrated Motion on EtherNet/IP Instance	Drive Parameter
Kaff	P696 [Inertia Acc Gain] P697 [Inertia Dec Gain]
Kdr	P620 [Droop RPM at FLA]
Kj	P76 [Total Inertia]
Knff	P643 [SpdReg AntiBckup]
Kof	P706 [InertiaAdaptGain]
Kop	P711 [Load Observer BW]
Kpi	P838 [Psn Reg Ki]
Kpp	P839 [Psn Reg Kp]
Kqp	P95 [VCL Cur Reg BW]
Kvff	P549 [Spd Ref A Mult]
Kvi	P647 [Speed Reg Ki]
Kvp	P645 [Speed Reg Kp]
Load Observer Acceleration Estimate	P708 [InertiaTorqueAdd]
Load Observer Configuration	P704 [InAdp LdObs Mode]
Load Observer Torque Estimate	P707 [Load Estimate]
Maximum Frequency	P37 [Maximum Freq]
Maximum Voltage	P36 [Maximum Voltage]
Mechanical Brake Engage Delay	P1108 [Brk Set Time]
Mechanical Brake Release Delay	P1107 [Brk Release Time]
Motor Capacity	P418 [Mtr OL Counts]
Motor Overload Limit	P413 [Mtr OL Factor]
Motor Overspeed User Limit	P524 [Overspeed Limit]
Motor Polarity	P40 [Mtr Options Cnfg]
Motor Rated Continuous Current	P26 [Motor NP Amps]
Motor Rated Output Power	P30 [Motor NP Power]
Motor Rated Peak Current	P422 [Current Limit 1]
Motor Rated Voltage	P25 [Motor NP Volts]
Motor Thermal Overload User Limit	P412 [Mtr OL Alarm Lvl]
Motor Type	P35 [Motor Ctrl Mode]
Output Current	P7 [Output Current]
Output Frequency	P1 [Output Frequency]
Output Power	P9 [Output Power]
Output Voltage	P8 [Output Voltage]
Overtorque Limit	P436 [Shear Pin1 Level]
Overtorque Limit Time	P437 [Shear Pin 1 Time]
PM Motor Inductance	P88 [PM IXq Voltage] P89 [PM IXd Voltage]
PM Motor Resistance	P87 [PM IR Voltage]
PM Motor Rotary Voltage Constant	P86 [PM CEMF Voltage]
Position Command	P759 [Interp Psn Out]
Position Error	P835 [Psn Error]
Position Feedback	P847 [Psn Fdbk]
Position Integrator Output	P842 [PsnReg IntgrlOut]
Position Interator Control	P721 [Position Control]
Position Intergral Feedback	P837 [Psn Load Actual]
Position Lead Lag Filter Bandwidth	P834 [Psn Out Fltr BW]
Position Lead Lag Filter Gain	P833 [Psn Out FltrGain]
Position Loop Output	P843 [PsnReg Spd Out]
Position Notch Filter Frequency	P830 [PsnNtchFltrFreq]
Position Reference	P723 [Psn Command]
Position Trim	P821 [Psn Offset 1]

Integrated Motion on EtherNet/IP Instance	Drive Parameter
Power Loss Action	P450 [Pwr Loss Mode A]
Power Loss Threshold	P451 [Pwr Loss A Level]
Power Loss Time	P452 [Pwr Loss A Time]
PWM Frequency	P38 [PWM Frequency]
Ramp Acceleration	P535 [Accel Time 1]
Ramp Deceleration	P537 [Decel Time 1]
Ramp Jerk Control	P540 [S Curve Accel] P541 [S Curve Decel]
Regenerative Power Limit	P426 [Regen Power Lmt]
Rotary Motor Poles	P31 [Motor Poles]
Rotary Motor Rated Speed	P28 [Motor NP RPM]
Run Boost	P61 [Run Boost]
Shunt Regulator Resistor Type	P382 [DB Resistor Type]
Skip Speed 1	P526 [Skip Speed 1]
Skip Speed 2	P527 [Skip Speed 2]
Skip Speed 3	P528 [Skip Speed 3]
Skip Speed Band	P529 [Skip Speed Band]
SLAT Configuration	P309 [SpdTrqPsn Mode A]
SLAT Set Point	P314 [SLAT Err Stpt]
SLAT Time Delay	P315 [SLAT Dwell Time]
Start Boost	P60 [Start Acc Boost]
Stopping Mode	P370 [Stop Mode A]
Torque Command	P761 [Interp Trq Out]
Torque Lead Lag Filter Bandwidth	P659 [SReg OutFltr BW]
Torque Lead Lag Filter Gain	P658 [SReg OutFltrGain]
Torque Limit - Negative	P671 [Neg Torque Limit]
Torque Limit - Positive	P670 [Pos Torque Limit]
Torque Low Pass Filter Bandwidth	P710 [InertAdptFiltBW]
Torque Notch Filter Frequency	P687 [Notch Fltr Freq]
Torque Reference	P685 [Selected Trq Ref]
Torque Reference - Filtered	P689 [Filtered Trq Ref]
Torque Reference - Limited	P690 [Limited Trq Ref]
Torque Trim	P686 [Torque Step]
Total Inertia Estimate	P708 [InertiaTrqAdd]
Undertorque Limit	P442 [Load Loss Level]
Undertorque Limit Time	P443 [Load Loss Time]
Velocity Command	P760 [Interp Vel Out]
Velocity Error	P641 [Speed Error]
Velocity Feedback	P131 [Active Vel Fdbk]
Velocity Feedforward Command	P546 [Spd Ref A Stpt]
Velocity Integrator Control	P635 [Spd Options Ctrl]
Velocity Integrator Output	P654 [Spd Reg Int Out]
Velocity Integrator Preload	P652 [SReg Trq Preset]
Velocity Limit - Negative	P521 [Max Rev Speed]
Velocity Limit - Positive	P520 [Max Fwd Speed]
Velocity Loop Output	P660 [SReg Output]
Velocity Low Pass Filter Bandwidth	P644 [Spd Err Fltr BW]
Velocity Reference	P597 [Final Speed Ref]
Velocity Trim	P601 [Trim Ref A Stpt]

Motor Overload

There is a difference between how an overload condition is handled by Kinetix compared to the PowerFlex755 drive. Kinetix is Motor Capacity whereas PowerFlex 755 is Motor Overload.

The Motion attribute, Inverter Capacity, is a real-time estimate of the continuous rated motor thermal capacity utilized during operation based on the motor thermal model. A value of 100% would indicate that the motor is being used at 100% of rated capacity as determined by the continuous current rating of the motor.

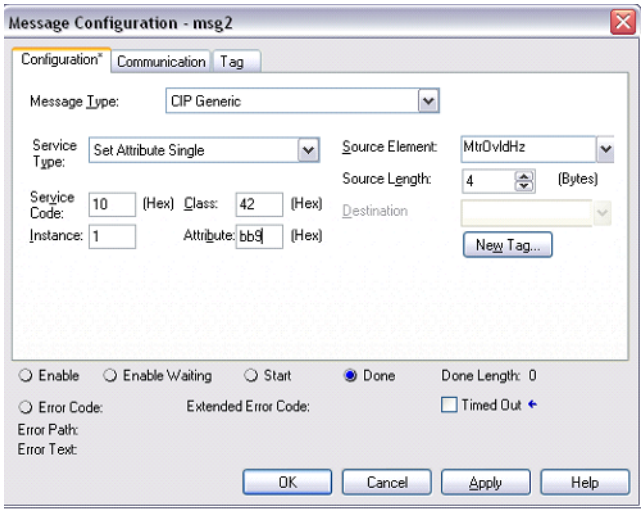
The PowerFlex 755 parameter, P940 [Drive OL Count], indicates power unit overload (I^2T) in percentage. The value remains at 0 until 100% of Rated Current is reached then the Overload measurement begins. When the value reaches 100%, the power unit overload fault occurs.

Vendor Specific Attributes

Attribute	Condition	Write	Data Type	Description	Units	Drive Parameter
3000 SVC Boost Filter	Optional	Set	REAL	The voltage boost filter time constant.	Secs	P64 [SVC Boost Filter]
3001 Motor Overload Hertz	Required	Set	REAL	Selects the output frequency below which the motor operating current is derated (more sensitive) to account for the reduced self-cooling capability of typical motors, operating at slower speeds. For motors with extra low speed cooling capacity (10:1 or blower cooled), reduce this setting to take full advantage of the motor being used. **Important:** If this attribute is not set correctly and the axis sits enabled and idle, the axis will fault with a "Physical Axis Fault, Motor Thermal Overload FL Fault" error.	Hertz	P414 [Mtr OL Hertz]
3002 Converter Ground Current User Limit (Device Specific)	Optional	Set	REAL	When measured converter ground current goes over this limit, the Converter Ground Current UL exception occurs.	% Converter Rated Current	P467 [Ground Warn Lvl]

Vendor Specific Attribute Values

Vendor specific attributes are accessed via a MSG instruction in RSLogix 5000. These values will be the same for all Vendor Specific attribute writes. Only the Attribute number and Source Element will change.



- Service Code - Enter the hex value for the service that is to be performed on the specified object. 10 (hex) for Set Attribute Single.
- Object Type - Enter the hex value for the type or class of object to which the service is to be sent. 42 (hex) for Motion Device Axis Object.
- Object ID - Enter the instance of the object to which the service is to be sent. - always a 1 for drive instance
- Object Attribute - Enter the hex value of the attribute of the object to which the service is to be sent.
- Source Pull-down Menu - Choose a local source tag that contains additional service parameters and/or data that is to be sent with the service.
- Number of Elements - Enter or choose the number of bytes of data from the source tag that will be included with the service request.

Faults

The following table shows the correlation between PowerFlex 755 faults and the respective faults that are returned to the Logix controller and RSLogix 5000 software. The returned fault numbers and text are common with the Kinetix 6500.

Note: A fault code / message displayed on a HIM will not match what is returned to the Logix controller and potentially displayed on an HMI or viewed in RSLogix 5000.

Table 20 - PowerFlex 755 Drive Fault Numeric Order

PowerFlex 755 Drive		Integrated Motion on EtherNet/IP		
Event No.	**Fault Text**	**Event No.**	**Subcode**	**Fault Text**
0	No Entry	0	0	No Faults
2	Auxiliary Input	63	0	External Exception Input
3	Power Loss	37	0	Bus Power Loss
4	UnderVoltage	34	0	Bus Undervoltage User Limit
5	OverVoltage	35	0	Bus Overvoltage Factory Limit
7	Motor Overload	7	0	Motor Thermal Overload Factory Limit
8	Heatsink OvrTemp	11	1	Inverter Overtemperature Factory Limit
9	Trnsistr OvrTemp	11	2	Inverter Overtemperature Factory Limit
12	HW OverCurrent	10	1	Inverter Overcurrent
13	Ground Fault	16	0	Converter Ground Current Factory Limit
14	Ground Warning	17	0	Converter Ground Current User Limit
15	Load Loss	57	0	Undertorque Limit
17	Input Phase Loss	23	0	Converter AC Single Phase Loss
20	TorqPrv Spd Band	18	1	Torque Prove Failure
21	Output PhaseLoss	63	21	Product Specific
24	Decel Inhibit	19	0	Decel Override
25	OverSpeed Limit	4	0	Motor Overspeed User Limit
26	Brake Slipped	18	2	Torque Prove Failure
33	AuRsts Exhausted	63	33	Product Specific
36	SW OverCurrent	10	2	Inverter Overcurrent
38	Phase U to Gnd	24	1	Converter AC Phase Short
39	Phase V to Gnd	24	2	Converter AC Phase Short
40	Phase W to Gnd	24	3	Converter AC Phase Short
41	Phase UV Short	24	4	Converter AC Phase Short
42	Phase VW Short	24	5	Converter AC Phase Short
43	Phase WU Short	24	6	Converter AC Phase Short
44	Phase UNot ToGnd	24	7	Converter AC Phase Short
45	Phase VNot ToGnd	24	8	Converter AC Phase Short
46	Phase WNot ToGnd	24	9	Converter AC Phase Short
48	System Defaulted	63	33	Product Specific
49	Drive Powerup	1	0	Module Reset
55	Ctrl Bd Overtemp	10	0	Control Module Overtemperature Factory Limit
61	Shear Pin 1	56	0	Overtorque Limit
64	Drive OverLoad	13	0	Converter Pre-charge Overload User Limit
71	Port 1 Adapter	63	71	Product Specific
72	Port 2 Adapter	63	72	Product Specific

PowerFlex 755 Drive		Integrated Motion on EtherNet/IP		
Event No.	**Fault Text**	**Event No.**	**Subcode**	**Fault Text**
73	Port 3 Adapter	63	73	Product Specific
74	Port 4 Adapter	63	74	Product Specific
75	Port 5 Adapter	63	75	Product Specific
76	Port 6 Adapter	63	76	Product Specific
77	IR Volts Range	21	1	Motor Test Failure
78	FluxAmpsRef Rang	21	2	Motor Test Failure
79	Excessive Load	21	3	Motor Test Failure
80	AutoTune Aborted	21	4	Motor Test Failure
81	Port 1 DPI Loss	63	81	Product Specific
82	Port 2 DPI Loss	63	82	Product Specific
83	Port 3 DPI Loss	63	83	Product Specific
84	Port 4 DPI Loss	63	84	Product Specific
85	Port 5 DPI Loss	63	85	Product Specific
86	Port 6 DPI Loss	63	86	Product Specific
87	IXo VoltageRange	21	5	Motor Test Failure
91	Pri VelFdbk Loss	45	255	Feedback Data Loss Factory Limit
93	Hw Enable Check	63	93	Product Specific
94	Alt VelFdbk Loss	45	255	Feedback Data Loss Factory Limit
95	Aux VelFdbk Loss	45	255	Feedback Data Loss Factory Limit
96	PositionFdbkLoss	45	255	Feedback Data Loss Factory Limit
100	Parameter Chksum	3	0	Nonvolatile Memory Checksum Fault
104	Pwr Brd Checksum	15	1	Power Board
106	Incompat MCB-PB	15	3	Power Board
107	Replaced MCB-PB	22	1	Hardware Configuration
111	PwrBd Invalid ID	15	2	Power Board
112	PwrBd App MinVer	15	4	Power Board
113	Tracking DataErr	22	2	Hardware Configuration
117	PwrDn Data Chksm	17	16	Option Storage Checksum
124	App ID Changed	23	1	Firmware Change
125	Using Backup App	23	2	Firmware Change
134	Start On PowerUp	63	134	Product Specific
137	Ext Prchrg Err	23	2	Converter Pre-Charge Failure
138	Precharge Open	23	3	Converter Pre-Charge Failure
141	Autn Enc Angle	21	6	Motor Test Failure
142	Autn Spd Rstrct	21	7	Motor Test Failure
143	Autotune CurReg	21	8	Motor Test Failure
144	Autotune Inertia	21	9	Motor Test Failure
145	Autotune Travel	21	10	Motor Test Failure
169	PWM Freq Reduced	16	0	PWM Frequency Reduced
170	CurLimit Reduced	17	0	Current Limit Reduced
177	Profiling Active	63	177	Product Specific
178	Homing Active	63	178	Product Specific
179	Home Not Set	63	179	Product Specific
203	Port 13 Adapter	63	203	Product Specific
204	Port 14 Adapter	63	204	Product Specific
205	DPI TransportErr	63	205	Product Specific
206	RTC Battery Fail	63	206	Product Specific
210	HW En Jumper Out	2	1	GuardConfigurationFault

PowerFlex 755 Drive		Integrated Motion on EtherNet/IP		
Event No.	**Fault Text**	**Event No.**	**Subcode**	**Fault Text**
211	Safety Brd Fault	9	0	GuardStopInputFault
212	Safety JumperOut	2	2	GuardConfigurationFault
213	Safety Jumper In	2	3	GuardConfigurationFault
224	Port 4 Comm Loss	63	224	Product Specific
225	Port 5 Comm Loss	63	225	Product Specific
226	Port 6 Comm Loss	63	226	Product Specific
227	Port 7 Comm Loss	63	227	Product Specific
228	Port 8 Comm Loss	63	228	Product Specific
229	Port 9 Comm Loss	63	229	Product Specific
244	Port 4 Cfg	16	4	Illegal Option Card
245	Port 5 Cfg	16	5	Illegal Option Card
246	Port 6 Cfg	16	6	Illegal Option Card
247	Port 7 Cfg	16	7	Illegal Option Card
248	Port 8 Cfg	16	8	Illegal Option Card
249	Port 9 Cfg	16	9	Illegal Option Card
264	Port 4 Checksum	17	4	Option Storage Checksum
265	Port 5 Checksum	17	5	Option Storage Checksum
266	Port 6 Checksum	17	6	Option Storage Checksum
267	Port 7 Checksum	17	7	Option Storage Checksum
268	Port 8 Checksum	17	8	Option Storage Checksum
269	Port 9 Checksum	17	9	Option Storage Checksum
280	Comm Loss Enet	1	0	Connection failure.
281	Enet Checksum	17	13	Option Storage Checksum
282	DLX Checksum	17	14	Option Storage Checksum
290	Prev Maint Reset	20	1	Preventative Maintenance
291	HSFan Life	20	2	Preventative Maintenance
292	InFan Life	20	3	Preventative Maintenance
293	MtrBrng Life	20	4	Preventative Maintenance
294	MtrBrng Lube	20	5	Preventative Maintenance
295	MachBrng Life	20	6	Preventative Maintenance
296	MachBrng Lube	20	7	Preventative Maintenance
307	Port7InvalidCard	63	307	Product Specific
308	Port8InvalidCard	63	308	Product Specific
315	Excess Psn Err	4	0	Excessive Position Error
318	OutCurShare PhU	63	318	Product Specific
319	OutCurShare PhV	63	319	Product Specific
320	OutCurShare PhW	63	320	Product Specific
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Additional Resources

The following documents contain additional information for implementing Integrated Motion on EtherNet/IP with PowerFlex 755 drives.

CIP Motion Configuration and Startup User Manual
Publication Number: MOTION-UM003

Logix5000 Motion Controllers Instructions Reference Manual
Publication Number: MOTION-RM002

Logix5000 Controllers Design Considerations Reference Manual
Publication Number: 1756-RM094

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