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DOP_W_EN_20100809

*We reserve the right to change the information in this manual without prior notice

DELTA

DOP Series HMI Connection Manual

DELTA ELECTRONICS, INC.

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DOP Series
HMI Connection Manual



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Table of Content

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Allen Bradley 1
Allen Bradley Ethernet IP(Controllogix, Compactlogix) 1
Allen Bradley Ethernet IP(MicroLogix, SLC500) 3
Allen-Bradley MicroLogix 9
Allen-Bradley SLC5 12
Cimon 16
Cimon PLC 16
Copley 18
Copley Servo (Stepnet protocol) 18
Danfoss 20
Danfoss VLT 2800 (FC protocol) 20
Delta 24
Delta Controller ASCII/RTU 24
Delta DVP PLC 31
Delta DVP TCP/IP 34
Delta Solectria Inverter 36
Emerson 39
Emerson EC20 Series PLC 39
Facon 42
Facon FB Series PLC 42

Festo 45
Festo PLC 45
FuFeng 47
FuFeng APC Controller 47
Fuji 49
Fuji Frenic Inverter 49
GE Fanuc 52
GE Fanuc 90 Series SNP PLC 52
Hitachi 57
Hitachi EH series PLC 57
HUST 63
HUST CNC 63
IDEC 65
IDEC Micro Smart PLC 65
Jetter 67
Jetter JC Series PLC 67
Jetter Nano Series PLC 68
Keyence 71
Keyence KV1000 71
Keyence KV/KZ Series 73
Koyo 75
Koyo K-Sequence 75
Koyo SU/DL Series 78

Lenze 80
Lenze LECOM-A/B protocol 80
LG 85
LG Glofa GM6 CNET 85
LG Master K120S/200S 88
LG Master-K CNET 90
LG XGT CNET 93
LIYAN 96
LIYAN LYPLC EX 96
M2i 98
M2i Master 98
M2i Slave 99
Matsushita 100
Matsushita FP PLC 100
Mirle 102
Mirle FAMA SC 102
Mitsubishi 103
Mitsubishi A Series (CPU Port) 103
Mitsubishi A Series/J71UC24 Computer Link 110
Mitsubishi FX3U 113
Mitsubishi FX Series Computer Link 116
Mitsubishi FX Series PLC / Mitsubishi FX2N PLC 119
Mitsubishi J2s Series 124
Mitsubishi Q Series Computer Link 127

Mitsubishi Q Series CPU Port....131
Mitsubishi Q Series Ethernet....134
MKS....139
MKS BY125 Low Cost Synchrocontroller....139
MKS CT150....143
MKS MC700/720 Motion Controller....145
Modbus....149
Modbus 984 RTU / ASCII (Master)....149
Modbus nW RTU / ASCII (Master)....151
Modbus RTU 2W (Master)....152
Modbus RTU / ASCII Hex Address (Master)....154
Modbus RTU / ASCII (Slave)....155
Modbus TCP/IP....158
Modicon....159
Modicon TSX Micro (Uni-Telway)....169
Modicon TSX NEZA (Uni-Telway)....162
Modicon TSX Premium (1- 1 Uni-Telway)....165
Modicon TWIDO....168
Moeller....170
Moeller EasyPLC 800/MFD....170
Moeller PS3/PS4 Series PLC....172
NIKKI....174
NIKKI DENSO NCS-FI/FS Series....174
Omron....177
Omron C Series PLC....177

Omron CJ1/CS1 Series PLC 180
Omron TPM1A PLC.....184
Parker.....185
Parker Compax3 Servo.....185
RKC.....191
RKC Rex B Series.....191
Siemens.....194
Siemens S7 200 194
Siemens S7 300 (Direct MPI) 198
Siemens S7 300 (ISO TCP).....203
Siemens S7 300 (with PC adapter).....208
Siemens S7 300 (without PC adapter).....210
Taian.....215
Taian TP02 PLC.....215
Vigor.....219
Vigor M Series 219
VIPA.....221
VIPA PLC.....221
YOKOGAWA.....222
YOKOGAWA ACE PLC 222

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Allen Bradley Ethernet IP(Controllogix, Compactlogix)

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(Support Allen Bradley ControlLogix, CompactLogix series PLC)

HMI Factory Setting:

Controller IP Address: 192.168.0.1

Controller COM Port: 44818 (Note 4)

Controller Station Number: 0 (Slot Number) (Note 5)

Control Area / Status Area: None / None

Connection

Standard Jumper Cable / Network Cable without jumper (Auto-detected by HMI)

Definition of PLC Read/Write Address

a. Registers

Type	Format File No.(f) Word No.(n)	Read/Write Range	Data Length	Note
SINT Variable	**SINT**f:n	**SINT**0:0 - **SINT**999:65534	Byte	1
INT Variable	**INT**f:n	**INT**0:0 - **INT**999:65535	Word	
DINT Variable	**DINT**f:n	**DINT**0:0 - **DINT**999:65535	Double Word	
BOOL Variable	**BOOL**f:n	**BOOL**0:0 - **BOOL**999:65504	Double Word	2
REAL Variable	**REAL**f:n	**REAL**0:0 - **REAL**999:65535	Double Word	

b. Contacts

Type	Format File No.(f) Word No.(n) Bit No.(b)	Read/Write Range	Note
SINT Variable	**SINT**f:n/b	**SINT**0:0/0 - **SINT**999:65535/7	
INT Variable	**INT**f:n/b	**INT**0:0/0 - **INT**999:65535/15	
DINT Variable	**DINT**f:n/b	**DINT**0:0/0 - **DINT**999:65535/31	
BOOL Variable	**BOOL**f:n	**BOOL**0:0 - **BOOL**999:65535	

NOTE

1) **SINT**f:n : n must be an even number.
2) **BOOL**f:n : n must be the multiple of 32.
3) PLC IP address must be set first on RSLogix 5000 software and downloaded to PLC; otherwise PLC IP address can not be read. For detailed information about the setting methods, please refer to RSLogix 5000 software user manual.
4) Please do not change the COM port setting.
5) In this driver, PLC station number represents PLC slot number.

Allen Bradley Ethernet IP(MicroLogix, SLC500)

(Support Allen Bradley MicroLogix, SLC500 series PLC)

HMI Factory Setting:

Controller IP Address: 192.168.0.1

Controller COM Port: 44818 (Note 2)

Controller Station Number: 1 (Note 3)

Control Area / Status Area: None / None

Connection

Standard Jumper Cable / Network Cable without jumper (Auto-detected by HMI)

Definition of PLC Read/Write Address

a. Registers

Type	Format Word No. (n) Slot No. (s) File No. (f)	Read/Write Range	Data Length	Note
Output file	O:n	O:0 – O:255 (s = 0, f = 0)	Word	
	O:s.n	O:0.0 – O:255.255 (f = 0)		
Input file	I:n	I:0 – I:255 (s = 0, f = 1)	Word	
	I:s.n	I:0.0 – I:255.255 (f = 1)		
Status file	S2:n	S2:0 – S2:255 (f = 2)	Word	
Bit file	B:n	B:0 – B:255 (f = 3)	Word	
	Bf:n	B3:0 – B3:255, B9:0 – B255:255		
Timer flag	T:n	T:0 – T:255 (f = 4)	Word	
	Tf:n	T4:0 – T4:255, T9:0 – T255:255		
Timer Preset Value	T:n.PRE	T:0.PRE – T:255.PRE (f = 4)	Word	
	Tf:n.PRE	T4:0.PRE – T4:255.PRE, T9:0.PRE – T255:255.PRE		
Timer Accumulator Value	T:n.ACC	T:0.ACC – T:255.ACC, (f = 4)	Word	
	Tf:n.ACC	T4:0.ACC – T4:255.ACC, T9:0.ACC – T255:255.ACC		

Type	Format Word No. (n) Slot No. (s) File No. (f)	Read/Write Range	Data Length	Note
Counter flag	C:n	C:0 – C:255, (f = 5)	Word	
	Cf:n	C5:0 – C5:255, C9:0 – C255:255		
Counter Preset Value	C:n.PRE	C:0.PRE – C:255.PRE, (f = 5)	Word	
	Cf:n.PRE	C5:0.PRE – C5:255.PRE, C9:0.PRE – C255:255.PRE		
Counter Accumulator Value	C:n.ACC	C:0.ACC – C:255.ACC, (f = 5)	Word	
	Cf:n.ACC	C5:0.ACC – C5:255.ACC, C9:0.ACC – C255:255.ACC		
Control file	R:n	R:0 – R:255, (f = 6)	Word	
	Rf:n	R6:0 – R6:255, R9:0 – R255:255		
Control Size of Bit Array	R:n.LEN	R:0.LEN – R:255.LEN, (f = 6)	Word	
	Rf:n.LEN	R6:0.LEN – R6:255.LEN, R9:0.LEN – R255:255.LEN		
Control Reserved file	R:n.POS	R:0.POS – R:255.POS, (f = 6)	Word	
	Rf:n.POS	R6:0.POS – R6:255.POS, R9:0.POS – R255:255.POS		
Integer file	N:n	N:0 – N:255, (f = 7)	Word	
	Nf:n	N7:0 – N7:255, N9:0 – N255:255		
Floating Point file	F:n	F:0 – F:255, (f = 8)	Double Word	
	Ff:n	F8:0 – F8:255, F9:0 – F255:255		
String File	STf:n	ST9:0 – ST255:255	41 Words	
Long Word File	Lf:n	L9:0 – L255:255	Double Word	

b. Contacts

Type	Format Word No. (n) Slot No. (s) File No. (f) Bit No. (b)	Read/Write Range	Note
Output	O:n/b	O:0/0 – O:255/15 (s = 0, f = 0)	
	O:s.n/b	O:0.0/0 – O:255.255/15 (f = 0)	

Type	Format Word No. (n) Slot No. (s) File No. (f) Bit No. (b)	Read/Write Range	Note
Input	I:n/b	I:0/0 – I:255/15 (s = 0, f = 1)	
	I:s.n/b	I:0.0/0 – I:255.255/15 (f = 1)	
Status	S2:n/b	S2:0/0 – S2:255/15 (f = 2)	
Bit	B:n/b	B:0/0 – B:255/15, (f = 3)	
	Bf:n/b	B3:0/0 – B3:255/15, B9:0/0 – B255:255/15	
Timer	T:n/b	T:0/0 – T:255/15, (f = 4)	
	Tf:n/b	T4:0/0 – T4:255/15, T9:0/0 – T255:255/15	
	T:n/EN	T:0/EN – T:255/EN, (b = 15) (f = 4)	
	Tf:n/EN	T4:0/EN – T4:255/EN, (b = 15), T9:0/EN – T255:255/EN (b = 15)	
	T:n/TT	T:0/TT – T:255/TT, (b = 14) (f = 4)	
	Tf:n/TT	T4:0/TT – T4:255/TT, (b = 14) T9:0/TT – T255:255/TT (b = 14)	
	T:n/DN	T:0/TT – T:255/TT, (b = 13), (f = 4)	
	Tf:n/DN	T4:0/TT – T4:255/TT, (b = 13) T9:0/TT – T255:255/TT (b = 13)	
Timer Preset Value	T:n.PRE/b	T:0.PRE/0 – T:255.PRE/15, (f = 4)	
	Tf:n.PRE/b	T4:0.PRE/0 – T4:255.PRE/15, T9:0.PRE/0 – T255:255.PRE/15	
Timer Accumulator Value	T:n.ACC/b	T:0.ACC/0 – T:255.ACC/15, (f = 4)	
	Tf:n.ACC/b	T4:0.ACC/0 – T4:255.ACC/15, T9:0.ACC/0 – T255:255.ACC/15	
Counter flag	C:n/b	C:0/0 – C:255/15, (f = 5)	
	Cf:n/b	C5:0/0 – C5:255/15, C9:0/0 – C255:255/15	
	C:n/CU	C:0/CU – C:255/CU, (b = 15) (f = 5)	
	Cf:n/CU	C5:0/CU – C5:255/CU, (b = 15) C9:0/CU – C255:255/CU (b = 15)	
	C:n/CD	C:0/CD – C:255/CD, (b = 14) (f = 5)	
	Cf:n/CD	C5:0/CD – C5:255/CD, (b = 14) C9:0/CD – C255:255/CD (b = 14)	
	C:n/DN	C:0/DN – C:255/DN, (b = 13) (f = 5)	

Type	Format Word No. (n) Slot No. (s) File No. (f) Bit No. (b)	Read/Write Range	Note
Input	I:n/b	I:0/0 – I:255/15 (s = 0, f = 1)	
	I:s.n/b	I:0.0/0 – I:255.255/15 (f = 1)	
Status	S2:n/b	S2:0/0 – S2:255/15 (f = 2)	
Bit	B:n/b	B:0/0 – B:255/15, (f = 3)	
	Bf:n/b	B3:0/0 – B3:255/15, B9:0/0 – B255:255/15	
	Cf:n/DN	C5:0/DN – C5:255/DN, (b = 13) C9:0/DN – C255:255/DN (b = 13)	
	C:n/OV	C:0/OV – C:255/OV, (b = 12) (f = 5)	
	Cf:n/OV	C5:0/OV – C5:255/OV, (b = 12) C9:0/OV – C255:255/OV (b = 12)	
	C:n/UN	C:0/UN – C:255/UN, (b = 11) (f = 5)	
	Cf:n/UN	C5:0/UN – C5:255/UN, (b = 11) C9:0/UN – C255:255/UN (b = 11)	
	C:n/UA	C:0/UA – C:255/UA, (b = 10) (f = 5)	
	Cf:n/UA	C5:0/UA – C5:255/UA, (b = 10) C9:0/UA – C255:255/UA (b = 10)	
Counter	C:n.PRE/b	C:0.PRE/0 – C:255.PRE/15, (f = 5)	
	Cf:n.PRE/b	C5:0.PRE/0 – C5:255.PRE/15, C9:0.PRE/0 – C255:255.PRE/15	
Counter Accumulator Value	C:n.ACC/b	C:0.PRE/0 – C:255.PRE/15, (f = 5)	
	Cf:n.ACC/b	C5:0.PRE/0 – C5:255.PRE/15, C9:0.PRE/0 – C255:255.PRE/15	
Control	R:n/b	R:0/0 – R:255/15, (f = 6)	
	Rf:n/b	R6:0/0 – R6:255/15, R9:0/0 – R255:255/15	
	R:n/EN	R:0/EN – R:255/EN, (b = 15) (f = 6)	
	Rf:n/EN	R6:0/EN – R6:255/EN, (b = 15) R9:0/EN – R255:255/EN (b = 15)	
	R:n/EU	R:0/EU – R:255/EU, (b = 14) (f = 6)	
	Rf:n/EU	R6:0/EU – R6:255/EU, (b = 14) R9:0/EU – R255:255/EU (b = 14)	
	R:n/DN	R:0/DN – R:255/DN, (b = 13) (f = 6)	

Type	Format Word No. (n) Slot No. (s) File No. (f) Bit No. (b)	Read/Write Range	Note
Input	I:n/b	I:0/0 – I:255/15 (s = 0, f = 1)	
	I:s.n/b	I:0.0/0 – I:255.255/15 (f = 1)	
Status	S2:n/b	S2:0/0 – S2:255/15 (f = 2)	
Bit	B:n/b	B:0/0 – B:255/15, (f = 3)	
	Bf:n/b	B3:0/0 – B3:255/15, B9:0/0 – B255:255/15	
	Rf:n/DN	R6:0/DN – R6:255/DN, (b = 13) R9:0/DN – R255:255/DN (b = 13)	
	R:n/EM	R:0/EM – R:255/EM, (b = 12) (f = 6)	
	Rf:n/EM	R6:0/EM – R6:255/EM, (b = 12) R9:0/EM – R255:255/EM (b = 12)	
	R:n/ER	R:0/ER – R:255/ER, (b = 11) (f = 6)	
	Rf:n/ER	R6:0/ER – R6:255/ER, (b = 11) R9:0/ER – R255:255/ER (b = 11)	
	R:n/UL	R:0/UL – R:255/UL, (b = 10) (f = 6)	
	Rf:n/UL	R6:0/UL – R6:255/UL, (b = 10) R9:0/UL – R255:255/UL (b = 10)	
	R:n/IN	R:0/IN – R:255/IN, (b = 9) (f = 6)	
	Rf:n/IN	R6:0/IN – R6:255/IN, (b = 9) R9:0/IN – R255:255/IN (b = 9)	
	R:n/FD	R:0/FD – R:255/FD, (b = 8) (f = 6)	
	Rf:n/FD	R6:0/FD – R6:255/FD, (b = 8) R9:0/FD – R255:255/FD (b = 8)	
Control size of bit array	R:n.LEN/b	R:0.LEN/0 – R:255.LEN/15, (f = 6)	
	Rf:n.LEN/b	R6:0.LEN/0 – R6:255.LEN/15, R9:0.LEN/0 – R255:255.LEN/15	
Control Reserved	R:n.POS/b	R:0.POS/0 – R:255.POS/15, (f = 6)	
	Rf:n.POS/b	R6:0.POS/0 – R6:255.POS/15, R9:0.POS/0 – R255:255.POS/15	
Integer	N:n/b	N:0/0 – N:255/15, (f = 7)	
	Nf:n/b	N7:0/0 – N7:255/15, N9:0/0 – N255:255/15	
Long Word File	Lf:n/b	L9:0/0 – L255:255/31	

NOTE

1) PLC IP address must be set first on RSLogix 5000 software and downloaded to PLC; otherwise PLC IP address can not be read. For detailed information about the setting methods, please refer to RSLogix 5000 software user manual.
2) Please do not change the COM port setting.
3) In this driver, PLC station number has no function.

Allen Bradley MicroLogix

HMI Factory Setting:

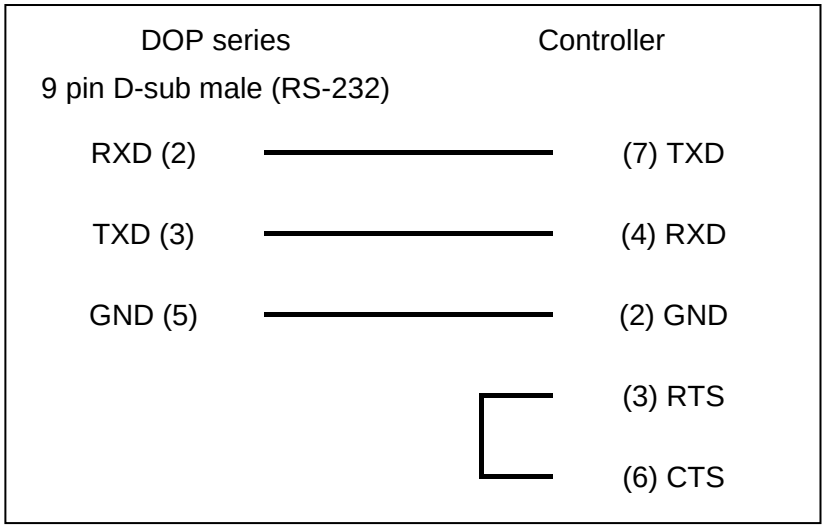
Baud Rate: 192.168.0.1

Controller Station Number: 1

Control Area / Status Area: B3:0/B3:10

Connection

a. RS-232（Applicable to DOP-A/AE/AS, DOP-B series）



Definition of PLC Read/Write Address

a. Registers

Type	Format Word No. (n) File No. (f)	Read/Write Range	Data Length	Note
Output file	**O**:n	**O**:0 – **O**:255 (f = 0)	Word	
Input file	**I**:n	**I**:0 – **I**:255 (f = 1)	Word	
Status file	**S2**:n	**S2**:0 – **S2**:255 (f = 2)	Word	
Bit file	**B3**:n	**B3**:0 – **B3**:255 (f = 3)	Word	
Timer flag	**T4**:n	**T4**:0 – **T4**:255 (f = 4)	Word	
Timer Preset Value	**T4**:n.PRE	**T4**:0.PRE – **T4**:255.PRE (f = 4)	Word	
Timer Accumulator Value	**T4**:n.ACC	**T4**:0.ACC – **T4**:255.ACC (f = 4)	Word	
Counter flag	**C5**:n	**C5**:0 – **C5**:255 (f = 5)	Word	
Counter Preset Value	**C5**:n.PRE	**C5**:0.PRE – **C5**:255.PRE (f = 5)	Word	

Type	Format Word No. (n) File No. (f)	Read/Write Range	Data Length	Note
Counter Accumulator Value	**C5**:n.ACC	**C5**:0.ACC – **C5**:255.ACC (f = 5)	Word	
Control file	**R6**:n	**R6**:0 – **R6**:255 (f = 6)	Word	
Control Size of Bit Array	**R6**:n.LEN	**R6**:0.LEN – **R6**:255.LEN (f = 6)	Word	
Control Reserved file	**R6**:n.POS	**R6**:0.POS – **R6**:255.POS (f = 6)	Word	
Integer file	**N7**:n	**N7**:0 – **N7**:255 (f = 7)	Word	
Floating Point file	**F8**:n	**F8**:0 – **F8**:255 (f = 8)	Double Word	2

b. Contacts

Type	Format Word No. (n) Bit No. (b) File No. (f)	Read/Write Range	Note
Output	**O**:n/b	**O**:0/0 – **O**:255/15 (f = 0)	
Input	**I**:n/b	**I**:0/0 – **I**:255/15 (f = 1)	
Status	**S2**:n/b	**S2**:0/0 – **S2**:255/15 (f = 2)	
Bit	**B3**:n/b	**B3**:0/0 – **B3**:255/15 (f = 3)	
Timer	**T4**:n/b	**T4**:0/0 – **T4**:255/15 (f = 4)	
	T4:n/EN	**T4**:0/EN – **T4**:255/EN (f = 4, b = 15)	
	T4:n/TT	**T4**:0/TT – **T4**:255/TT (f = 4, b = 14)	
	T4:n/DN	**T4**:0/DN – **T4**:255/DN (f = 4, b = 13)	
Timer Preset Value	**T4**:n.PRE/b	**T4**:0.PRE/0 – **T4**:255.PRE/15 (f = 4)	
Timer Accumulator Value	**T4**:n.ACC/b	**T4**:0.ACC/0 – **T4**:255.ACC/15 (f = 4)	
Counter	**C5**:n/b	**C5**:0/0 – **C5**:255/15 (f = 5)	
	C5:n/CU	**C5**:0/CU – **C5**:255/CU (f = 5, b = 15)	
	C5:n/CD	**C5**:0/CD – **C5**:255/CD (f = 5, b = 14)	
	C5:n/DN	**C5**:0/DN – **C5**:255/DN (f = 5, b = 13)	
	C5:n/OV	**C5**:0/OV – **C5**:255/OV (f = 5, b = 12)	
	C5:n/UN	**C5**:0/UN – **C5**:255/UN (f = 5, b = 11)	
	C5:n/UA	**C5**:0/UA – **C5**:255/UA (f = 5, b = 10)	
Counter Preset Value	**C5**:n.PRE/b	**C5**:0.PRE/0 – **C5**:255.PRE/15 (f = 5)	
Counter Accumulator Value	**C5**:n.ACC/b	**C5**:0.ACC/0 – **C5**:255.ACC/15 (f = 5)	
Control	**R6**:n/b	**R6**:0/0 – **R6**:255/15 (f = 6)	
	R6:n/EN	**R6**:0/EN – **R6**:255/EN (f = 6, b = 15)	
	R6:n/EU	**R6**:0/EU – **R6**:255/EU (f = 6, b = 14)	

Type	Format Word No. (n) File No. (f) Bit No. (b)	Read/Write Range	Note
Control	**R6**:n/DN	**R6**:0/DN – **R6**:255/DN (f = 6, b = 13)	
	R6:n/EM	**R6**:0/EM – **R6**:255/EM (f = 6, b = 12)	
	R6:n/ER	**R6**:0/ER – **R6**:255/ER (f = 6, b = 11)	
	R6:n/UL	**R6**:0/UL – **R6**:255/UL (f = 6, b = 10)	
	R6:n/IN	**R6**:0/IN – **R6**:255/IN (f = 6, b = 9)	
	R6:n/FD	**R6**:0/FD – **R6**:255/FD (f = 6, b = 8)	
Control Size of Bit Array	**R6**:n.LEN/b	**R6**:0.LEN/0 – **R6**:255.LEN/15 (f = 6)	
Control Reserved	**R6**:n.POS/b	**R6**:0.POS/0 – **R6**:255.POS/15 (f = 6)	
Integer	**N7**:n/b	**N7**:0/0 – **N7**:255/15 (f = 7)	

NOTE

1) This protocol only supports DF1 protocol mode. Setting can be done on with panel located on the top of PLC. Setting parameter: Advance Set → DCOMM Cfg → Enable → Comms config set to DF1 default
2) This protocol supports BCC or CRC Error Check.
3) This protocol does not support Sring File and Long Word File, this request can be done by protocol SLC5.
4) F8 data is double word, used for Floating point.

Allen-Bradley SLC5

HMI Factory Setting:

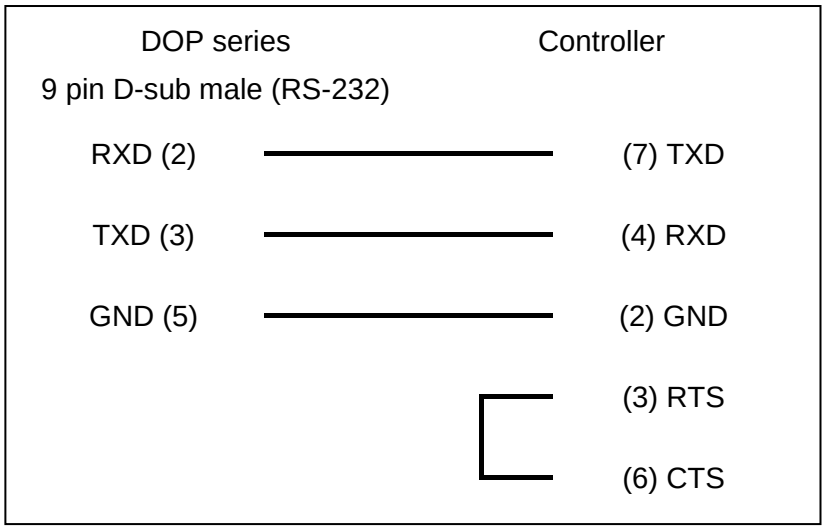
Baud rate: 19200. 8. None. 1

Controller Station Number: 1

Control Area / Status Area: B3:0/B3:10

Connection

a. RS-232（Applicable to DOP-A/AE/AS, DOP-B series）



Definition of PLC Read/Write Address

a. Registers

Type	Format Word No. (n) Slot No. (s) File No. (f)	Read/Write Range	Data Length	Note
Output file	O:n	O:0 – O:255 (s = 0, f = 0)	Word	
	O:s.n	O:0.0 – O:255.255 (f = 0)		
Input file	I:n	I:0 – I:255 (s = 0, f = 1)	Word	
	I:s.n	I:0.0 – I:255.255 (f = 1)		
Status file	S2:n	S2:0 – S2:255 (f = 2)	Word	
Bit file	Bf:n	B3:0 – B3:255, B9:0 – B255:255	Word	
Timer flag	Tf:n	T4:0 – T4:255, T9:0 – T255:255	Word	

Type	Format Word No. (n) Slot No. (s) File No. (f)	Read/Write Range	Data Length	Note
Timer Preset Value	Tf:n.PRE	T4:0.PRE – T4:255.PRE, T9:0.PRE – T255:255.PRE	Word	
Timer Accumulator Value	Tf:n.ACC	T4:0.ACC – T4:255.ACC, T9:0.ACC – T255:255.ACC		
Counter flag	Cf:n	C5:0 – C5:255, C9:0 – C255:255	Word	
Counter Preset Value	Cf:n.PRE	C5:0.PRE – C5:255.PRE, C9:0.PRE – C255:255.PRE		
Counter Accumulator Value	Cf:n.ACC	C5:0.ACC – C5:255.ACC, C9:0.ACC – C255:255.ACC		
Control file	Rf:n	R6:0 – R6:255, R9:0 – R255:255	Word	
Control Size of Bit Array	Rf:n.LEN	R6:0.LEN – R6:255.LEN, R9:0.LEN – R255:255.LEN		
Control Reserved file	Rf:n.POS	R6:0.POS – R6:255.POS, R9:0.POS – R255:255.POS		
Integer file	Nf:n	N7:0 – N7:255, N9:0 – N255:255	Word	
Floating Point file	Ff:n	F8:0 – F8:255, F9:0 – F255:255	Double Word	
String File	STf:n	ST9:0 – ST255:255	41 Words	
Long Word File	Lf:n	L9:0 – L255:255	Double Word	

b. Contacts

Type	Format Word No. (n) Slot No. (s) File No. (f) Bit No. (b)	Read/Write Range	Note
Output	O:n/b	O:0/0 – O:255/15 (s = 0, f = 0)	
	O:s.n/b	O:0.0/0 – O:255.255/15 (f = 0)	
Input	I:n/b	I:0/0 – I:255/15 (s = 0, f = 1)	
	I:s.n/b	I:0.0/0 – I:255.255/15 (f = 1)	
Status	S2:n/b	S2:0/0 – S2:255/15 (f = 2)	
Bit	Bf:n/b	B3:0/0 – B3:255/15, B9:0/0 – B255:255/15	

Type	Format Word No. (n) Slot No. (s) File No. (f) Bit No. (b	Read/Write Range	Note
Timer	Tf:n/TT	T4:0/TT – T4:255/TT, (b = 14) T9:0/TT – T255:255/TT (b = 14)	
	Tf:n/DN	T4:0/TT – T4:255/TT, (b = 13) T9:0/TT – T255:255/TT (b = 13)	
Timer Preset Value	Tf:n.PRE/b	T4:0.PRE/0 – T4:255.PRE/15, T9:0.PRE/0 – T255:255.PRE/15	
Timer Accumulator Value	Tf:n.ACC/b	T4:0.ACC/0 – T4:255.ACC/15, T9:0.ACC/0 – T255:255.ACC/15	
Counter flag	Cf:n/b	C5:0/0 – C5:255/15, C9:0/0 – C255:255/15	
	Cf:n/CU	C5:0/CU – C5:255/CU, (b = 15) C9:0/CU – C255:255/CU (b = 15)	
	Cf:n/CD	C5:0/CD – C5:255/CD, (b = 14) C9:0/CD – C255:255/CD (b = 14)	
	Cf:n/DN	C5:0/DN – C5:255/DN, (b = 13) C9:0/DN – C255:255/DN (b = 13)	
	Cf:n/OV	C5:0/OV – C5:255/OV, (b = 12) C9:0/OV – C255:255/OV (b = 12)	
	Cf:n/UN	C5:0/UN – C5:255/UN, (b = 11) C9:0/UN – C255:255/UN (b = 11)	
	Cf:n/UA	C5:0/UA – C5:255/UA, (b = 10) C9:0/UA – C255:255/UA (b = 10)	
Counter	Cf:n.PRE/b	C5:0.PRE/0 – C5:255.PRE/15, C9:0.PRE/0 – C255:255.PRE/15	
Counter Accumulator Value	Cf:n.ACC/b	C5:0.PRE/0 – C5:255.PRE/15, C9:0.PRE/0 – C255:255.PRE/15	
Control	Rf:n/b	R6:0/0 – R6:255/15, R9:0/0 – R255:255/15	
	Rf:n/EN	R6:0/EN – R6:255/EN, (b = 15) R9:0/EN – R255:255/EN (b = 15)	
	Rf:n/EU	R6:0/EU – R6:255/EU, (b = 14) R9:0/EU – R255:255/EU (b = 14)	
	Rf:n/DN	R6:0/DN – R6:255/DN, (b = 13) R9:0/DN – R255:255/DN (b = 13)	

Type	Format Word No. (n) Slot No. (s) File No. (f) Bit No. (b	Read/Write Range	Note
Control	Rf:n/EM	R6:0/EM – R6:255/EM, (b = 12) R9:0/EM – R255:255/EM (b = 12)	
	Rf:n/ER	R6:0/ER – R6:255/ER, (b = 11) R9:0/ER – R255:255/ER (b = 11)	
	Rf:n/UL	R6:0/UL – R6:255/UL, (b = 10) R9:0/UL – R255:255/UL (b = 10)	
	Rf:n/IN	R6:0/IN – R6:255/IN, (b = 9) R9:0/IN – R255:255/IN (b = 9)	
	Rf:n/FD	R6:0/FD – R6:255/FD, (b = 8) R9:0/FD – R255:255/FD (b = 8)	
Control size of bit array	Rf:n.LEN/b	R6:0.LEN/0 – R6:255.LEN/15, R9:0.LEN/0 – R255:255.LEN/15	
Control Reserved	Rf:n.POS/b	R6:0.POS/0 – R6:255.POS/15, R9:0.POS/0 – R255:255.POS/15	
Integer	Nf:n/b	N7:0/0 – N7:255/15, N9:0/0 – N255:255/15	
Long Word File	Lf:n/b	L9:0/0 – L255:255/31	

NOTE

1) This protocol only supports CRC Error Check.

Cimon PLC

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(This PLC is applicable to BP, XP series of PLC)

HMI Factory Setting:

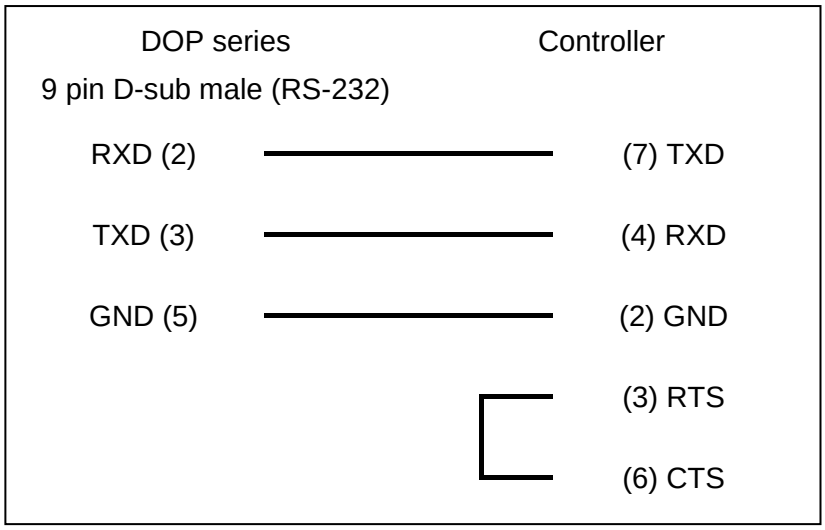
Baud rate: 38400. 8. None. 1

Controller Station Number: 1

Control Area / Status Area: D00000/D00010

Connection

a. RS-232（Applicable to DOP-A/AE/AS, DOP-B series）



Definition of PLC Read/Write Address

a. Registers

Type	Format	Read/Write Range	Data Length	Note
	Word No. (n)			
Input **X**	**X**n	**X**000 – **X**511	Word	
Output **Y**	**Y**n	**Y**000 – **Y**511	Word	
General Purpose Relay **M**	**M**n	**M**000 – **M**999	Word	
General Purpose Relay **L**	**L**n	**L**000 – **L**999	Word	
Latch Relay **K**	**K**n	**K**000 – **K**999	Word	
Flags **F**	**F**n	**F**000 – **F**127	Word	
Timer (Set) **TS**	**TS**n	**TS**0000 – **TS**4095	Word	
Timer (Current) **TC**	**TC**n	**TC**0000 – **TC**4095	Word	

Type	Format	Read/Write Range	Data Length	Note
	Word No. (n)			
Counter (Set) CS	CSn	CS0000 – CS4095	Word	
Counter (Current) CC	CCn	CC0000 – CC4095	Word	
General Purpose Word Data D	Dn	D00000 – D31999	Word	
Step Controller S	Sn	S0 – S99	Byte	1

b. Contacts

Type	Format	Read/Write Range	Note
	Word No. (n) Bit No. (b)		
Input X	Xnb	X0000 – X511F	
Output Y	Ynb	Y0000 – Y511F	
General Purpose Relay M	Mnb	M0000 – M999F	
General Purpose Relay L	Lnb	L0000 – L999F	
Latch Relay K	Knb	K0000 – K999F	
Flags F	Fnb	F0000 – F127F	
Timer Status T	Tb	T0000 – T4095	
Counter Status C	Cb	C0000 – C4095	

NOTE

1) The unit of PLC internal memory is byte and Device S is read in the unit of byte. It is recommended NOT TO USE two consecutive devices S as the read address to prevent occurrence of interference. For example, when choosing two numeric input device, please use S24 and S26, do not use S24 and S25.

Copley Servo (Stepnet protocol)

HMI Factory Setting:

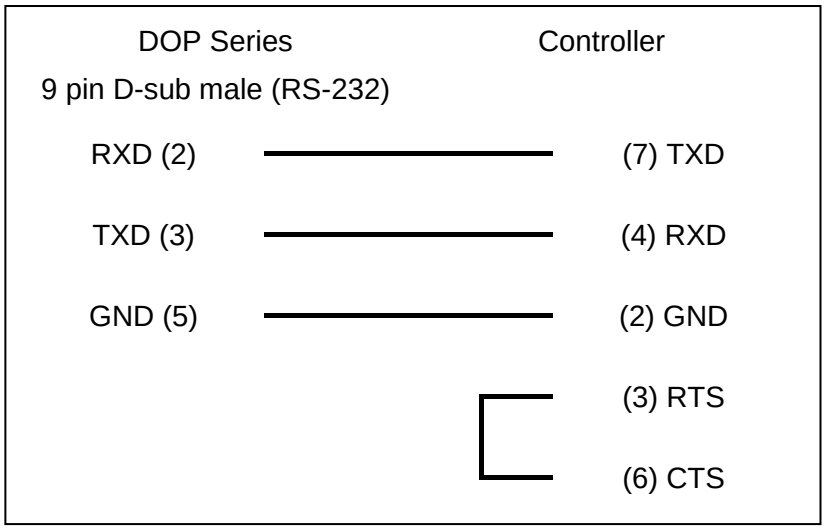
Baud rate: 9600. 8. None. 1

Controller Station Number: 0

Control Area / Status Area: None/None

Connection

a. RS-232（Applicable to DOP-A/AE/AS, DOP-B series）



Definition of PLC Read/Write Address

a. Registers

Type	Format	Read/Write Range	Data Length	Note
	Word No. (n)			
Ram memory **R**	**R**nn	**R**00 – **R**FF	Double Word	Hexadecimal
Flash memory **F**	**F**nn	**F**00 – **F**FF	Double Word	Hexadecimal
Internal Register **IR**	**IR**n	**IR**0 – **IR**31	Word	

b. Contacts

Type	Format	Read/Write Range	Note
	Word No. (n) Bit No. (b)		
BIT_DEVICE_RB	**RB**nn.b	**RB**00.0 – **RB**FF.31	1
BIT_DEVICE_FB	**FB**nn.b	**FB**00.0 – **FB**FF.31	1

Type	Format	Read/Write Range	Note
	Word No. (n) Bit No. (b)		
BIT_DEVICE_T0	**T0**b	**T0**0	2, 5
BIT_DEVICE_T1	**T1**b	**T1**0	2, 5
BIT_DEVICE_T2	**T2**b	**T2**0	2, 5
BIT_DEVICE_RST	**RST**b	**RST**0	3, 5
BIT_DEVICE_CPR	**CPR**nn	**CPR**00 – **CPR**FF	Hexadecimal, 4, 5
BIT_DEVICE_CPF	**CPF**nn	**CPF**00 – **CPF**FF	Hexadecimal, 4, 5

NOTE

1) RB and FB are the bit access of Ram/Flash memory. Therefore, RB0x21.14 indicates bit 14 of Ram memory 0x21.
2) T0, T1 and T2 is virtual device for simulating Trajectory Generator Command. The number of 0, 1 and 2 indicates the subcommand of that command, so only bit 0 is acceptable.
3) RST is for simulating Reset Command, so only bit 0 is acceptable.
4) CPR and CPF are for simulating Copy Command of Ram and Flash individually. The address (n) after CPR and CPF is just the copy address for Ram/Flash memory. For example, CPR12 indicates that the content of Ram memory 0x12 will be copied into Flash memory 0x12 and CPF6A indicates that the content of Flash memory 0x6A will be copied into Ram memory 0x6A.
5) T0, T1, T2, RST, CPR, CPF are all read-only and they can not be used on Reset button.

Danfoss VLT 2800 (FC protocol)

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HMI Factory Setting:

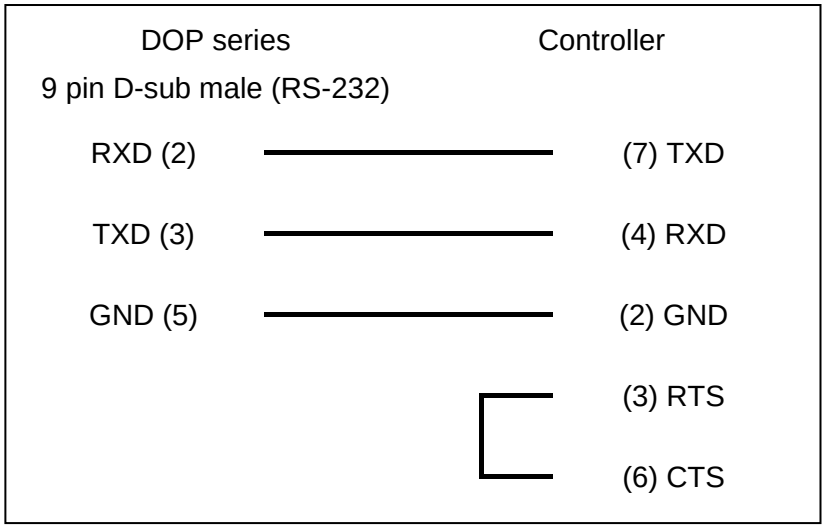
Baud rate: 9600. 8. EVEN. 1(RS-485)

Controller Station Number: 1

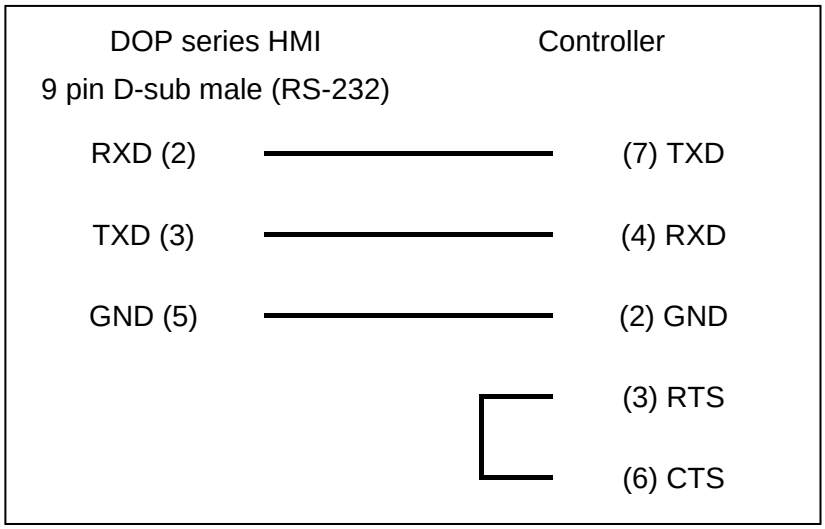
Control Area / Status Area: None/None

Connection

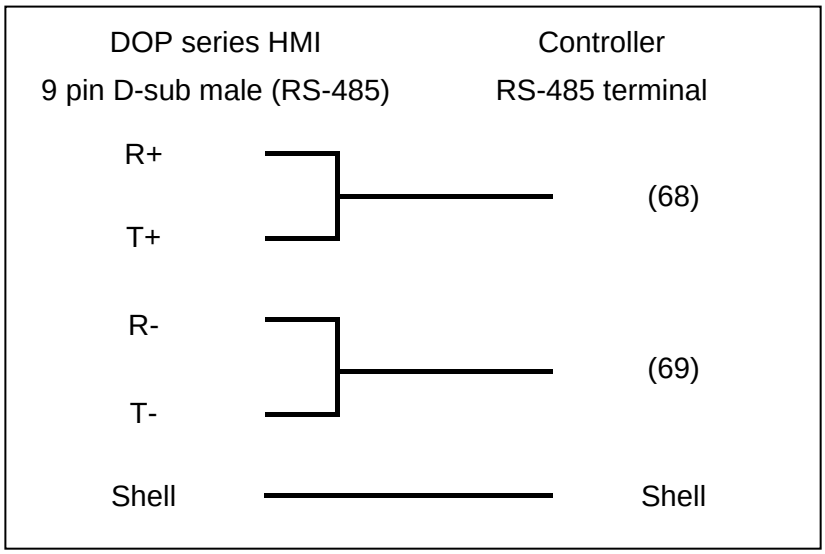
a. RS-232（Applicable to DOP-A/AE/AS, DOP-B series）



b. RS-485（Applicable to DOP-AS57）



c. RS-485（Applicable to DOP-AS35/AS38）



d. RS-485（Applicable to DOP-B）



Definition of PLC Read/Write Address

a. Registers

Type	Format	Read/Write Range	Data Length	Note
	Word No.(n) Index No.(i)			
Parameter	Pn:i	P0:0 - P999:31	Double Word	6、7、8
Control Word	CTRWDn	CTRWD0	Word	9、11
Status Word	STAWDn	STAWD0	Word	10、12

b. Contacts

Type	Format	Read/Write Range	Note
	Word No.(n) Index No.(i) Bits No.(b)		
Parameter	Pn:i.b	P0:0.0 - P999:31.31	

NOTE

1) Delta HMI can be connected to VLT-2800, 5000, 6000, 7000 controller.
2) Each data length format of Danfoss AC drive parameter is not fixed, therefore, “Multiple Duplicate” function is not provided.
3) Maximum supported alarm number is 16. An alarm number over 16 will result and error.
4) Does not support “optimum read/write” characteristic.
5) If the selected element is a string, the minimum data length should be greater than 2.
6) The default setting for no index No. is 0.
7) The default setting of index No. P606 ~ P617 is 1.
8) Please notice that it is necessary to enter index No. on certain parameters of Danfoss controllers. Please pay close attention to the setting range of index number. For example, the index No. setting range of the parameter does not starts with 0, if P615 is from 1 to 20, an index value (ex:P615:1) must be entered otherwise read & write failure would occur. For range detail, please see Dandfoss manual.
9) CTRWD: Write-only. (Can not be used on the read devices that display the value and input value…etc. It is recommended to be used on the setting value/setting constant (button), or marco function.)
10) **STAWD**：Read-Only.
11) Control Word

Bit	Bit = 0	Bit = 1
15	No Function	Reversing
14	Choice of Setup 2 (msb)	
13	Choice of Setup 1 (lsb)	
12	No Function	Relay 04 activated
11	No Function	Relay 01 activated
10	Data Not Vaild	Vaild
9	Ramp 1	Ramp2
8	Jog 1 OFF	ON
7	No Function	Reset
6	Ramp Stop	Start
5	Hold	Ramp Enable
4	Quick-Stop	Ramp
3	Coasting	Enable
2	DC Brake	Ramp
1	Preset reference choice msb	

0	Preset reference choice msb

Control Word is useable only if Bit 10 =1 (Data Vaild).

12) Status Word

Bit	Bit = 0	Bit = 1
15	Timer OK	Above limit
14	Torque OK	Above limit
13	Voltage OK	Above limit
12	Temperature OK	Over-Temp, auto-start pending
11	Not Running	Running
10	Out of Range	Frequence OK
9	Local Control	Bus Control
8	Speed reference	Speed reference
7	No Warning	Warning
6	Reserved	
5	Reserved	
4	Reserved	
3	No Fault	Trip
2	Coasting	Enabled
1	VLT not ready	Ready
0	Control not ready	Ready

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Delta Controller ASCII/RTU

HMI Factory Setting:

Baud rate: 9600, 7, None, 2 (ASCII); 9600, 8, None, 2 (RTU)

Controller Station Number: 1

Control Area / Status Area: None/None

Connection

Delta Servo

a. RS-232（Applicable to DOP-A/AE/AS, DOP-B Series）

DOP series		Controller
9 pin D-sub male (RS-232)		CN3 cable connector (RS-232)
RXD (2)	———	(2) TX
TXD (3)	———	(4) RX
GND (5)	———	(1) GND

b. RS-422（Applicable to DOP-A/AE Series）

DOP series		Controller
9 pin D-sub male (RS-422)		CN3 cable connector (RS-422)
RXD- (1)	———	(6) TX-
RXD+ (2)	———	(5) TX+
TXD+ (3)	———	(3) RX+
TXD- (4)	———	(4) RX-

c. RS-422（Applicable to DOP-AS35/AS38/AS57 Series）

DOP series		Controller
9 pin D-sub male (RS-422)		CN3 cable connector (RS-422)
R-	———	(6) TX-
R+	———	(5) TX+
T+	———	(3) RX+
T-	———	(4) RX-

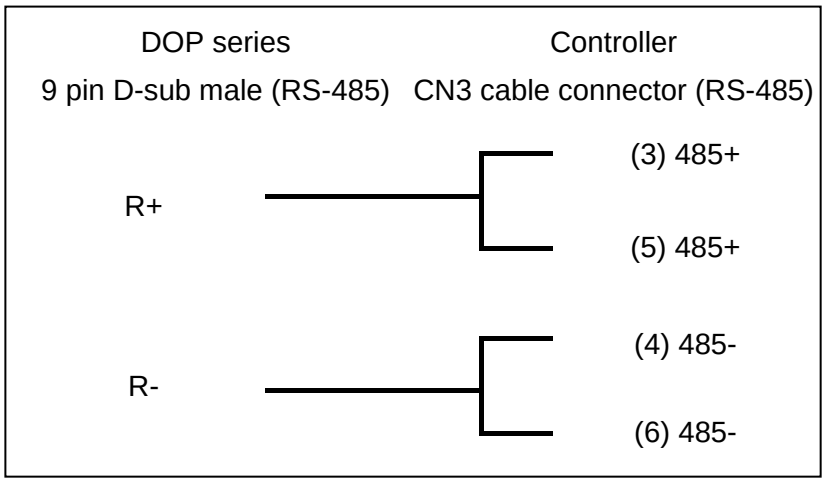
d. RS-422（Applicable to DOP-B Series）

DOP series		Controller
9 pin D-sub male (RS-422)		CN3 cable connector (RS-422)
RXD- (9)	———	(6) TX-
RXD+ (4)	———	(5) TX+
TXD+ (1)	———	(3) RX+
TXD- (6)	———	(4) RX-

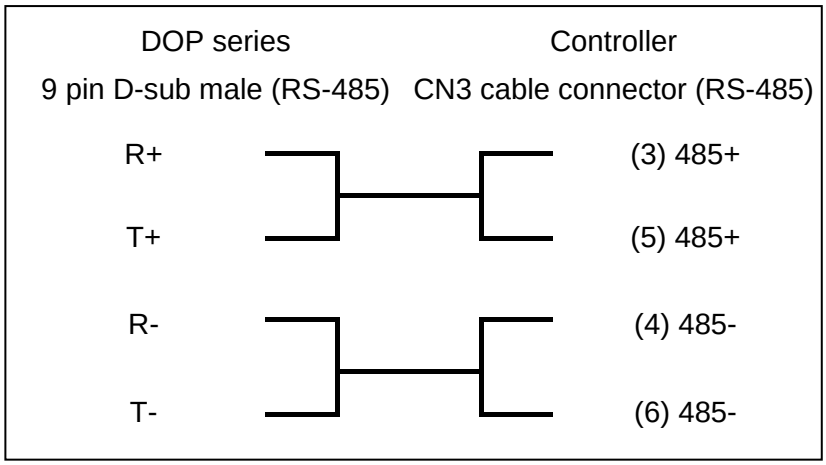
e. RS-485（Applicable to DOP-A/AE Series）

DOP series		Controller
9 pin D-sub male (RS-485)		CN3 cable connector (RS-485)
D+ (2)	———	(3) 485+
D+ (3)	———	(5) 485+
D- (1	———	(4) 485-
D- (4)	———	(6) 485-

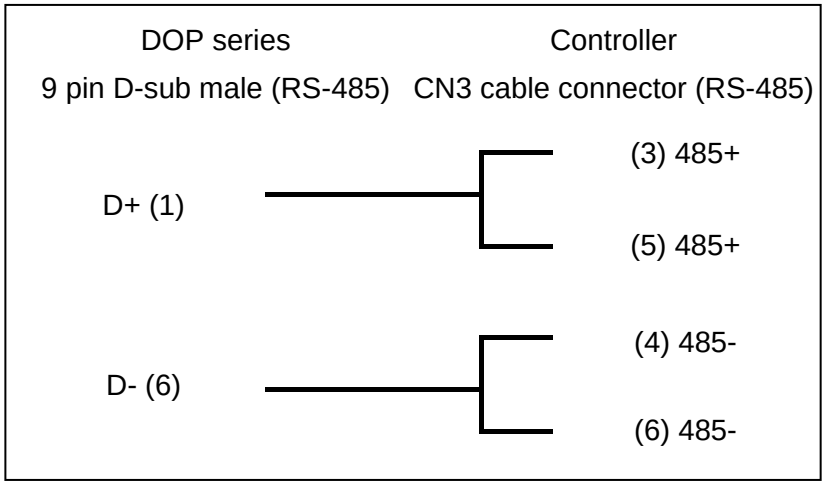
f. RS-485（Applicable to DOP-AS57 Series）



g. RS-485（Applicable to DOP-AS35/AS38 Series）

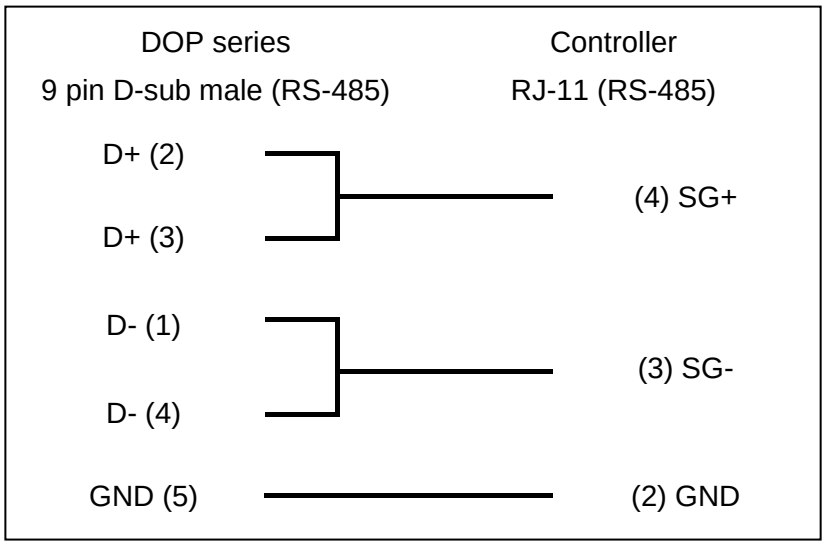


h. RS-485（Applicable to DOP-B Series）

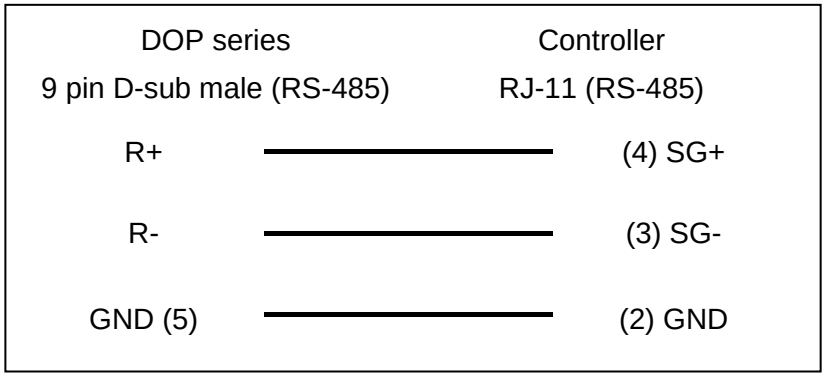


Delta AC Motor Dirve

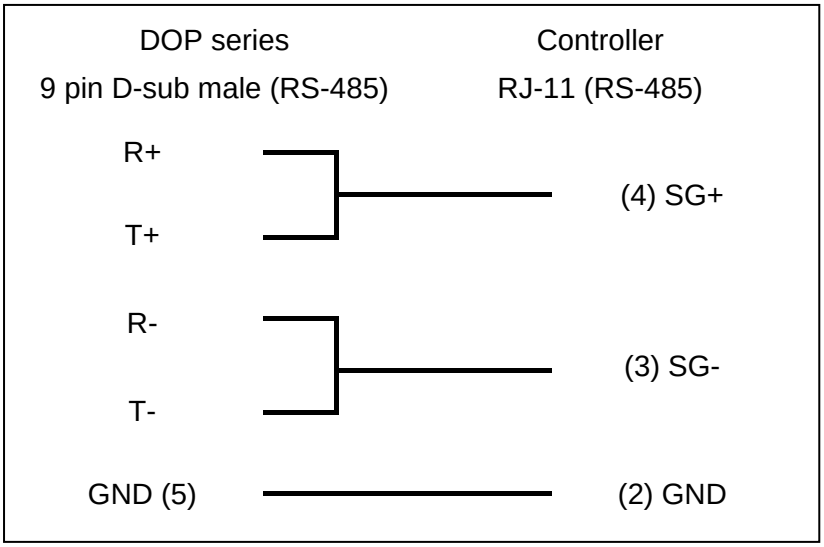
a. RS-485（Applicable to DOP-A/AE Series）



b. RS-485（Applicable to DOP-AS57 Series）



c. RS-485（Applicable to DOP-AS35/AS38 Series）

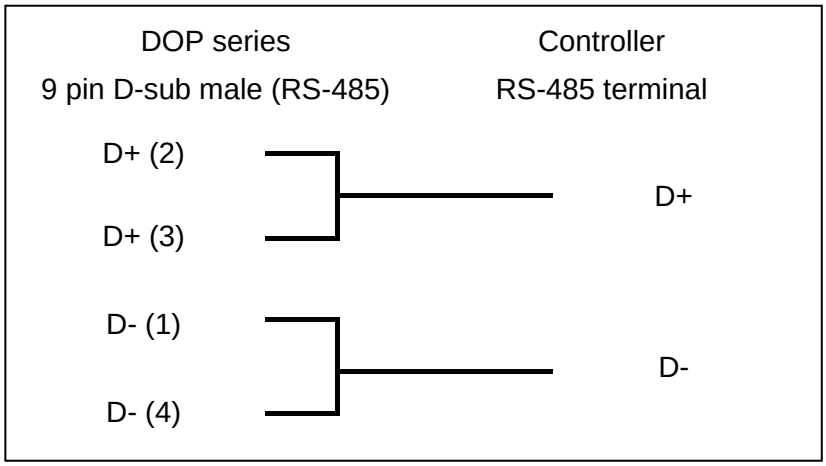


d. RS-485（Applicable to DOP-B Series）

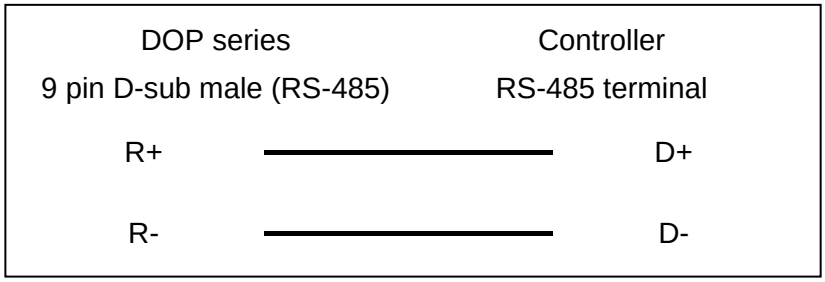


Temperature Controller

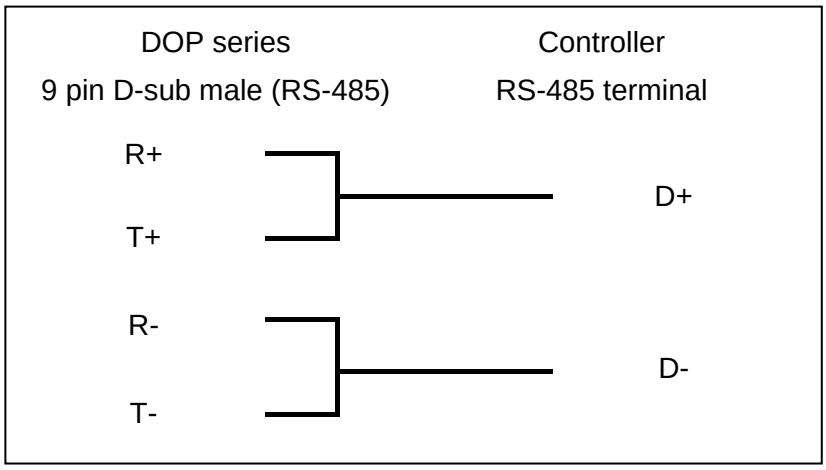
a. RS-485（Applicable to DOP-A/AE Series）



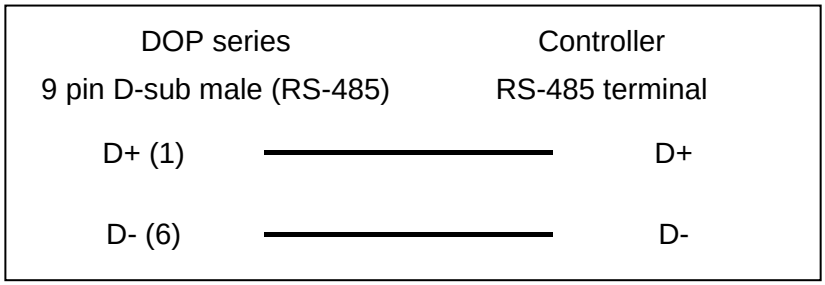
b. RS-485（Applicable to DOP-AS57 Series）



c. RS-485（Applicable to DOP-AS35/AS38 Series）



d. RS-485（Applicable to DOP-B Model）



Definition of PLC Read/Write Address

a. Registers

Type	Format Word No. (n)	Read/Write Range	Data Length	Note
Servo Communication Address	SERVO-n	SERVO-0 – SERVO-0700	Word	Hexadecimal
AC Drive Communication Address	INVERTER-n	INVERTER-0 – INVERTER-2299	Word	Hexadecimal
Temperature Controller Communication Address	TEMP_CTRL-n	TEMP_CTRL-0 – TEMP_CTRL-6000	Word	Hexadecimal
PLC Communication Address X	PLC_Xn	PLC_X0 – PLC_X360	Word	Octal, 1
PLC Communication Address Y	PLC_Yn	PLC_Y0 – PLC_Y360	Word	Octal, 1
PLC Communication Address M	PLC_Mn	PLC_M0 – PLC_M1520, PLC_M1536 – PLC_M4080	Word	1
PLC Communication Address S	PLC_Sn	PLC_S0 – PLC_S1008	Word	1

b. Contacts

Type	Format Word No.(n) Bit No. (b)	Read/Write Range	Note
Servo Communication Address	SERVO-n.b	SERVO-0.0 - SERVO-0700.F	Hexadecimal
AC Drive Communication Address	INVERTER-n.b	INVERTER-0.0 - INVERTER-2299.F	Hexadecimal
Temperature Controller Communication Address	TEMP_CTRL-n.b	TEMP_CTRL-0.0 - TEMP_CTRL-6000.F	Hexadecimal
Servo Digital Input	SERVO_DI-b	SERVO_DI-1 - SERVO_DI-8	2
Servo Digital Output	SERVO_DO-b	SERVO_DO-1 - SERVO_DO-5	2
PLC Communication Address X	PLC_Xb	PLC_X0 - PLC_X377	Octal
PLC Communication Address Y	PLC_Yb	PLC_Y0 - PLC_Y377	Octal
PLC Communication Address M	PLC_Mb	PLC_M0 - PLC_M1535, PLC_M1536 - PLC_M4095	
PLC Communication Address S	PLC_Sb	PLC_S0 - PLC_S1023	
PLC Communication Address T	PLC_Tb	PLC_T0 - PLC_T255	
PLC Communication Address C	PLC_Cb	PLC_C0 - PLC_C255	
Temperature Controller Bit Communication Address	TEMP_CTRLB-b	TEMP_CTRLB-800 - TEMP_CTRLB-8FF	Hexadecimal
Discrete Outputs	RWB-b	RWB-0 - RWB-FFFF	Hexadecimal
Discrete Inputs	RB-b	RB-0 - RB-FFFF	Hexadecimal
Discrete Outputs	Bb	B1 - B10000	
Discrete Inputs	Bb	B10001 - B20000	

NOTE

1) Device address must be the multiple of 16.

2) SERVO_DI-, SERVO_DO- are for Servo only。

3) HMI can be connected to several temperature controllers using RTU transmission mode. However a communication delay time of 5ms or longer is highly recommended.

Delta DVP PLC

efesotomasyon.com

HMI Factory Setting:

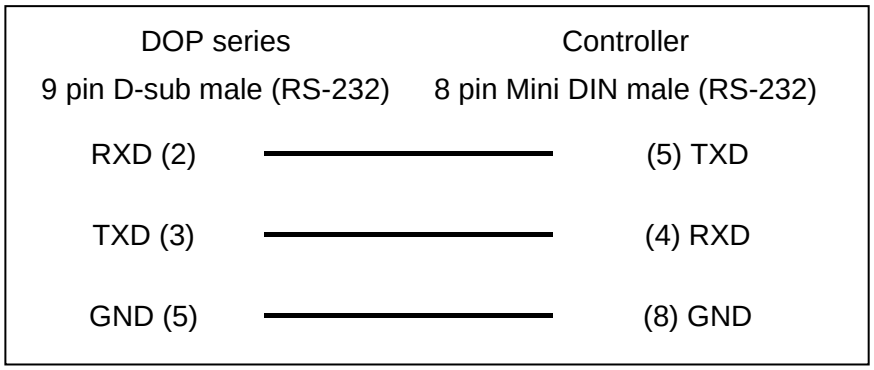
Baud Rate: 9600. 7. Even. 1

Controller Station Number: 1

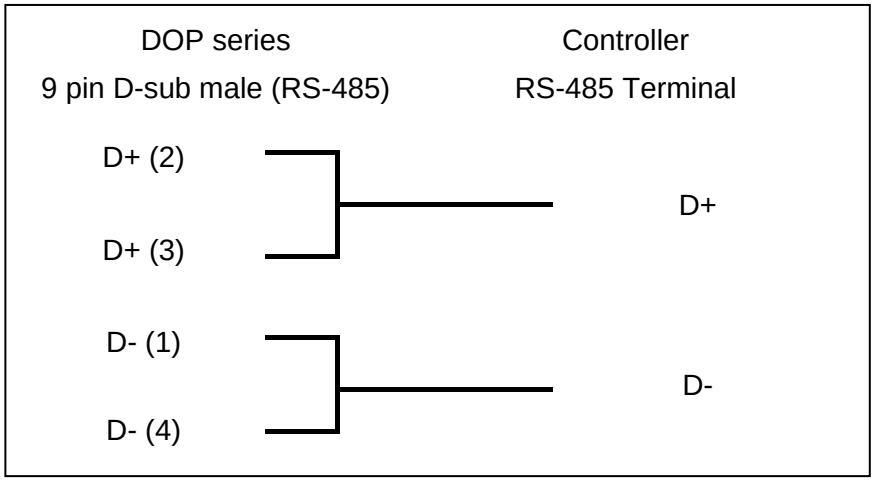
Control Area / Status Area: D0/D10

Connection

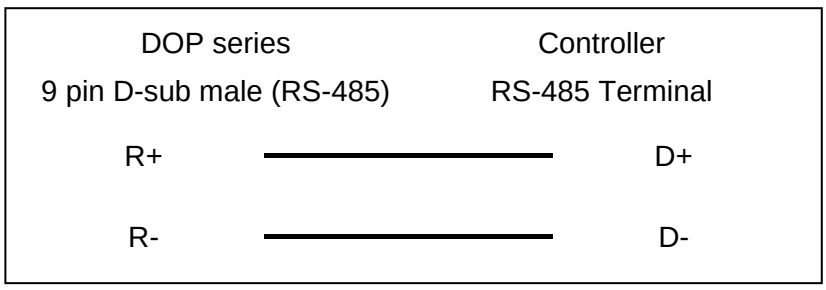
a. RS-232（Applicable to DOP-A/AE/AS, DOP-B series）



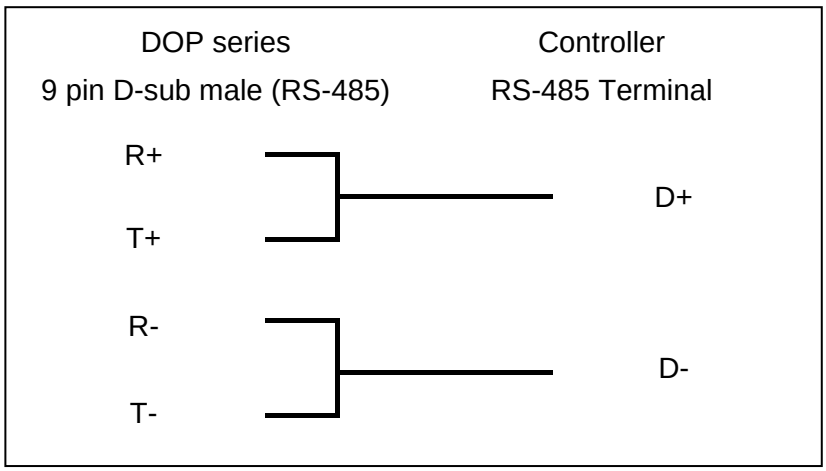
b. RS-485（Applicable to DOP-A/AE series）



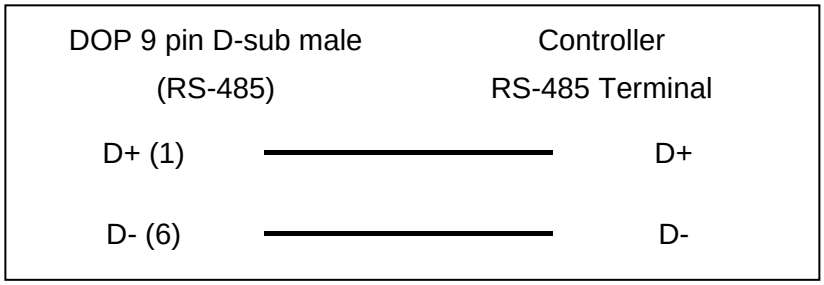
c. RS-485（Applicable to DOP-AS57 series）



d. RS-485（Applicable to DOP-AS35/AS38 series）



e. RS-485（Applicable to DOP-B series）



Definition of PLC Read/Write Address

a. Registers

Type	Format	Read/Write Range	Data Length	Note
	Word No. (n)			
X_Data	Xn	X0 – X360	Word	Octal, 1
Y_Data	Yn	Y0 – Y360	Word	Octal, 1
M_Data	Mn	M0 – M1520, M1536 – M4080	Word	1
S_Data	Sn	S0 – S1008	Word	1
T_Register	Tn	T0 – T255	Word	
C_Register	Cn	C0 – C199	Word	
D_Register	Dn	D0 – D9999	Word	
HC_Register	Cn	C200 – C255	Word	

b. Contacts

Type	Format	Read/Write Range	Note
	Bit No. (b)		
X_Data	Xb	X0 – X377	
Y_Data	Yb	Y0 – Y377	
M_Data	Mb	M0 – M1520, M1536 – M4080	
S_Data	Sb	S0 – S1023	
T_Coil	Tb	T0 – T255	
C_Coil	Cb	C0 – C255	



1) Device ddress must be the multiple of 16.

Delta DVP TCP/IP

efesotomasyon.com

HMI Factory Setting:

Controller IP Address: 192.168.0.1

Controller COM Port: 502

Controller Station Number: 1

Control Area / Status Area: D0/D10

Connection

Standard Jumper Cable / Network Cable without jumper (Auto-detected by HMI)

Definition of PLC Read/Write Address

a. Registers

Type	Format	Read/Write Range	Data Length	Note
	Word No. (n)			
X_Data	Xn	X0 – X360	Word	Octal, 1
Y_Data	Yn	Y0 – Y360	Word	Octal, 1
M_Data	Mn	M0 – M1520, M1536 – M4080	Word	1
S_Data	Sn	S0 – S1008	Word	1
T_Register	Tn	T0 – T255	Word	
C_Register	Cn	C0 – C199	Word	
D_Register	Dn	D0 – D9999	Word	
HC_Register	Cn	C200 – C255	Word	

b. Contacts

Type	Format	Read/Write Range	Note
	Bit No. (b)		
X_Data	Xb	X0 – X377	
Y_Data	Yb	Y0 – Y377	
M_Data	Mb	M0 – M1520, M1536 – M4080	
S_Data	Sb	S0 – S1023	

Type	Format	Read/Write Range	Note
	Bit No. (b)		
T_Coil	Tb	T0 – T255	
C_Coil	Cb	C0 – C255	

NOTE

1) Device address must be a multiple of 16

Delta Solectria Inverter

HMI Factory Setting:

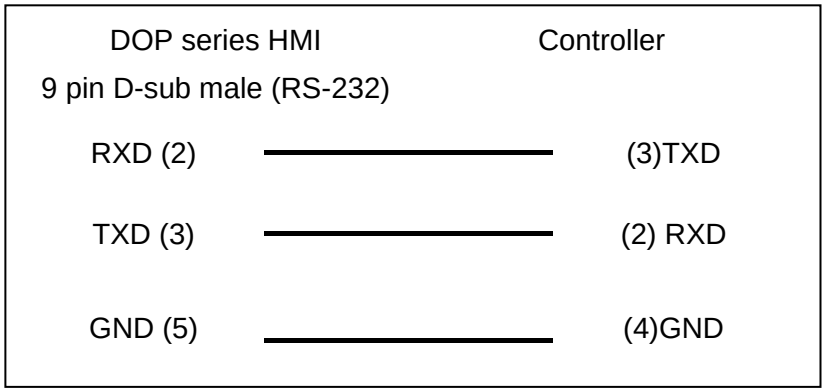
Baud Rate: 19200. 8. None. 1

Controller Station Number: 1

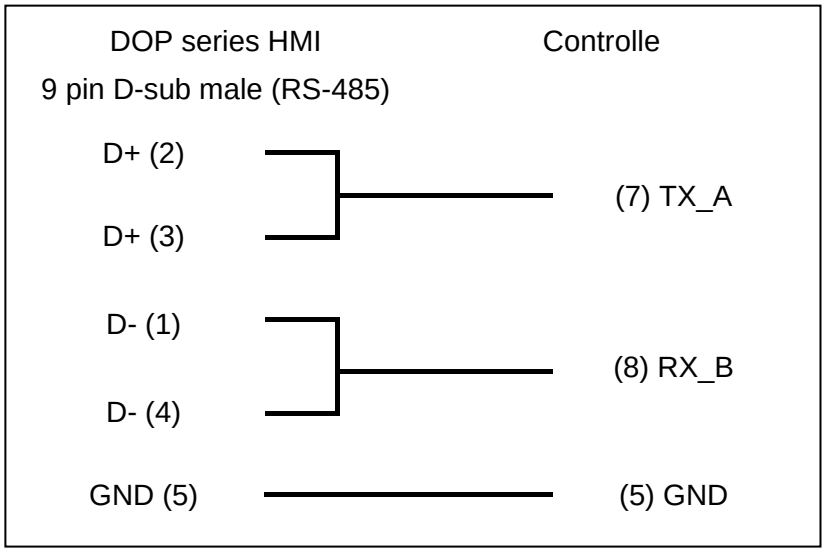
Control Area / Status Area: None/ None

Connection

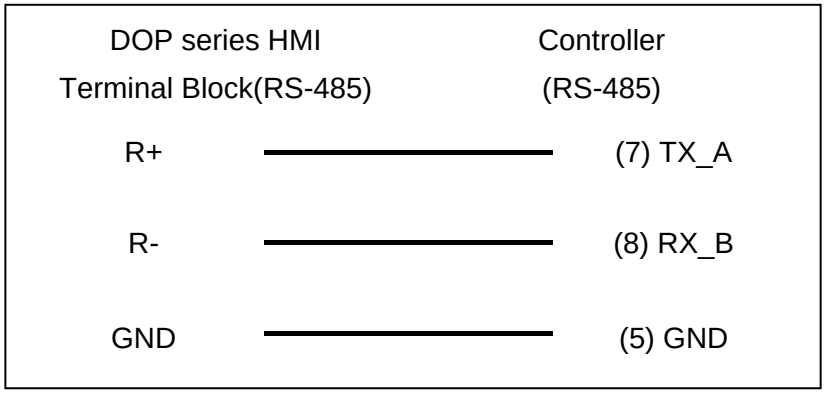
a. RS-232 (Applicable to DOP-A/AE/AS, DOP-B series)



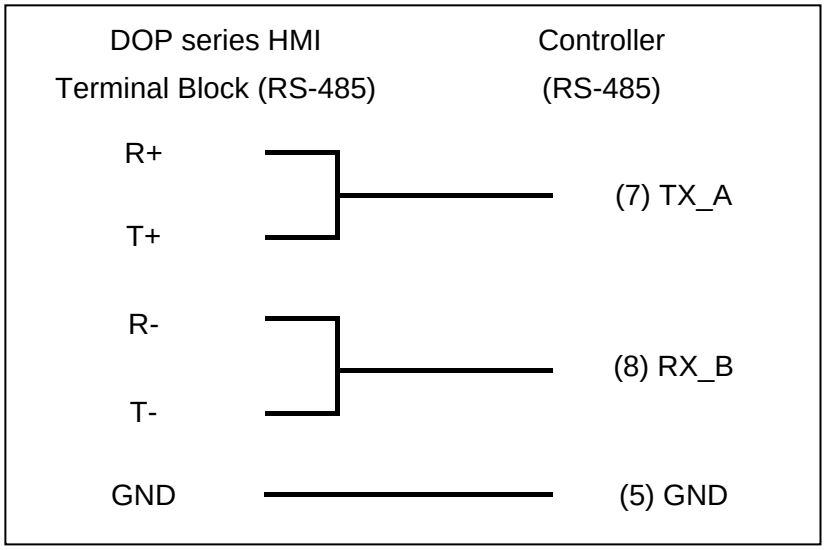
b. RS-485 (Applicable DOP-A/AE series)



c. RS-485 (Applicable DOP-AS57 series)



d. RS-485 (vDOP-AS35/AS38 series)



e. RS-485 (Applicable DOP-B series)



Definition of PLC Read/Write Address

a. Registers

Type	Format	Read/Write Range	Data Length	Note
	command(n) sub-command(m)			
Command Group	**CMDB**n:m	**CMDB**1:1 - **CMDB**255:127	Byte	
Command Group	**CMDW**n:m	**CMDW**1:1 - **CMDW**255:127	Word	
Command Group	**CMDD**n:m	**CMDD**1:1 - **CMDD**255:127	Double Word	

b. Contacts

Type	Format	Read/Write Range	Note
	Command(n) Sub-Command(m) Bit No.(b)		
Command Group	**CMDB**n:m/b	**CMDB**1:1/0 - **CMDB**255:127/7	
Reset Group Data	**RST**b	**RST**1 - **RST**255	

NOTE

1) Device address indicates the function code provided by controller, "n" represent command and "m" represent sub-command. The suffix of CMD represent the data length (B/W/D = Byte/Word/Double word). Please refer to Delta PLC user manual for the function code and select the corresponding data length. For example, to access function 12:01 select CMDB; and to access function 22:03 select CMDD.
2) The address of CMDB indicates certain bit of the function code when the data length for read/write is byte. RST is the sub command of Reset. The address of RST indicates the reset function code. For example, RST23 represents the function code 23, i.e. 128 (reset statistic) function.
3) Sub-command 0 usually supports the access to all data in the command group, but in this case it does not support the access since the required data length is not fixed. For the same reason, command 0 is not supported as well.
4) Since every function is independent, it does not support read "optimized" function.
5) Data length should set according to the function code since the require setting differ among each function. If CMDB or CMDW is selected, data length setting should be Word; if CMDD is selected, data length setting should be Double Word. For example, data length setting for CMDW12:05 must be Word otherwise error may occur.

Emerson EC20 Series PLC

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HMI Factory Setting:

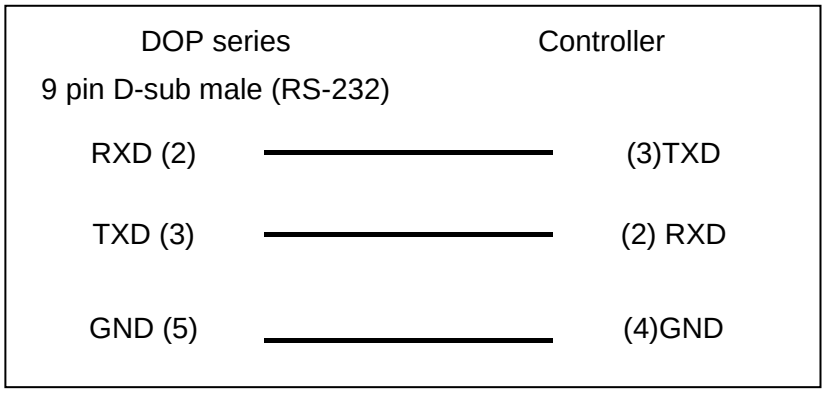
Baud rate: 19200, 8, Even, 1

Controller Station Number: 1

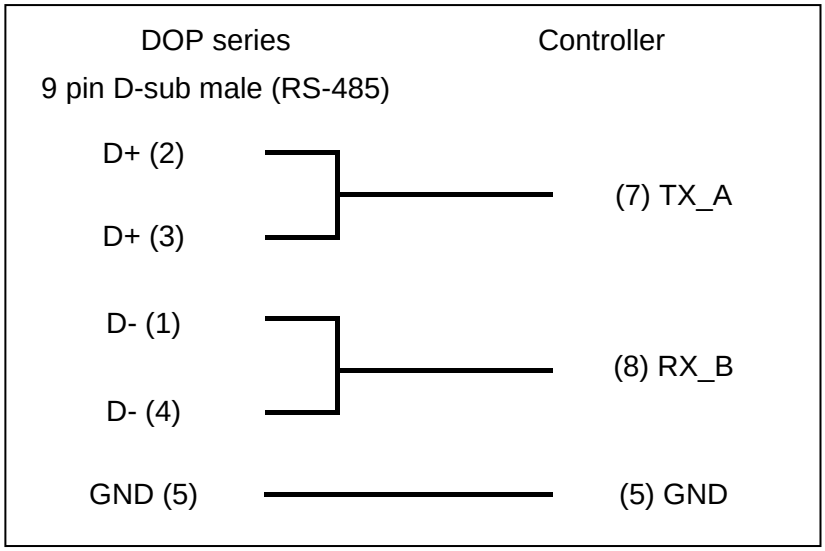
Control Area / Status Area: D0/D10

Connection

a. RS-232 (Applicable to DOP-A/AE/AS, DOP-B series)



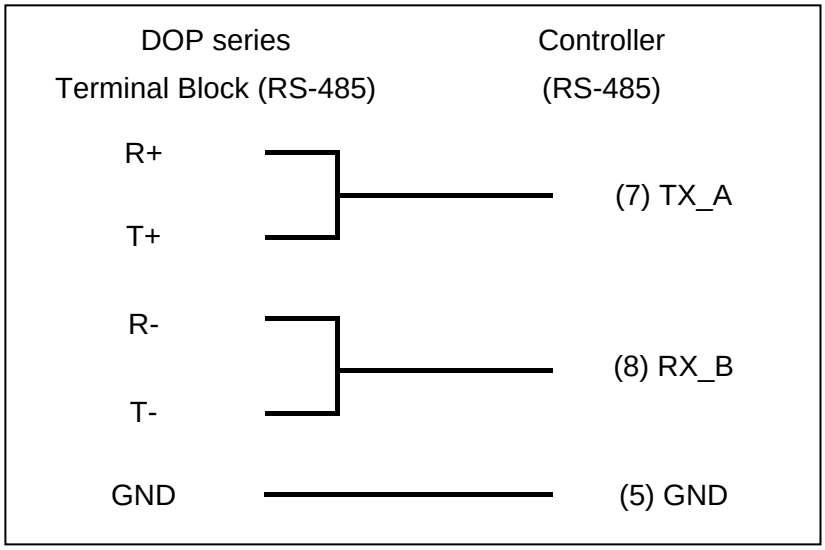
b. RS-485 (Applicable to DOP-A/AE series)



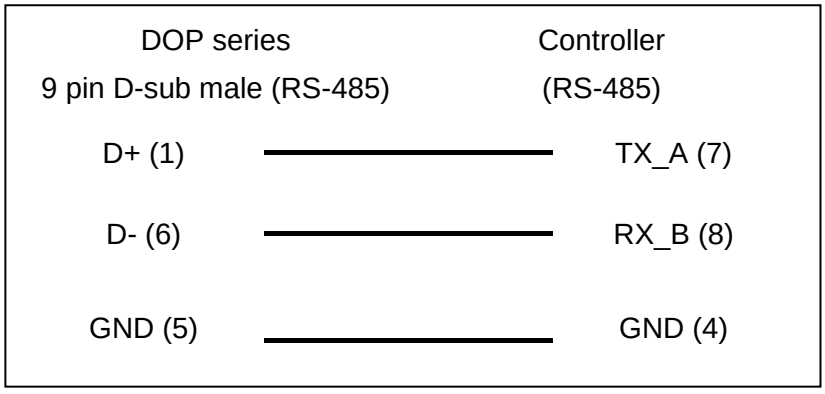
c. RS-485 (Applicable to DOP-AS57 series)



d. RS-485 (Applicable to DOP-AS35/AS38 series)



e. RS-485 (Applicable to DOP-B series)



Definition of PLC Read/Write Address

a. Registers

Type	Format	Read/Write Range	Data Length	Note
	Word No. (n)			
Data Word **D**	**D**n	**D**0 – **D**7999	Word	
Special Data Word **SD**	**SD**n	**SD**0 – **SD**255	Word	3
Data Word **Z**	**Z**n	**Z**0 – **Z**15	Word	
Timer **T**	**T**n	**T**0 – **T**255	Word	
Counter **C**	**C**n	**C**0 – **C**199	Word	
Double word Counter **CDW**	**CDW**n	**CDW**200 – **CDW**255	Double Word	
Double word Data Word **DDW**	**DDW**n	**DDW**0 – **DDW**7998	Double Word	

b. Contacts

Type	Format	Read/Write Range	Note
	Bit No. (b)		
External Output Relay **Y**	**Y**b	**Y**0 – **Y**377	Octal
External Input Relay **X**	**X**b	**X**0 – **X**377	Octal
Internal Relay **M**	**M**b	**M**0 – **M**1999	
Special Internal Relay **SM**	**SM**b	**SM**0 – **SM**255	3
Status Relay **S**	**S**b	**S**0 – **S**991	
Timer **T**	**T**b	**T**0 – **T**255	
Counter **C**	**C**b	**C**0 – **C**255	

NOTE

1) Emerson EC20 series PLC has two communication ports, COM0 and COM1. They are provided for the communication protocol for connecting to PC, Modbus communication protocol and user-defined protocol. The default setting is COM0 to be enabled only, so the user needs to set the communication mode as Modbus RTU via PC software before using it.
2) COM1 supports RS-232 and RS-485.
3) Please note that not all of the addresses can be written when reading SM and SD device. We recommend the user not to set all of the addresses as write address except when setting parameters.

Facon FB Series PLC

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HMI Factory Setting:

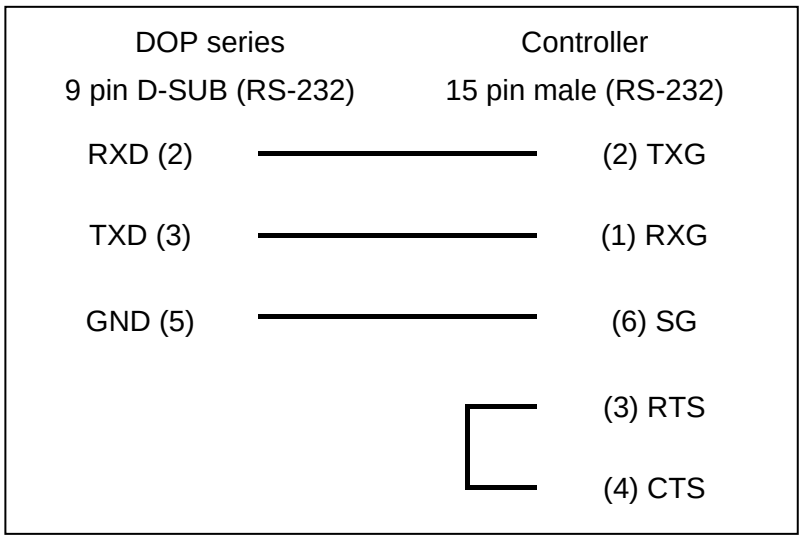
Baud rate: 9600, 7, Even, 1

Controller Station Number: 1

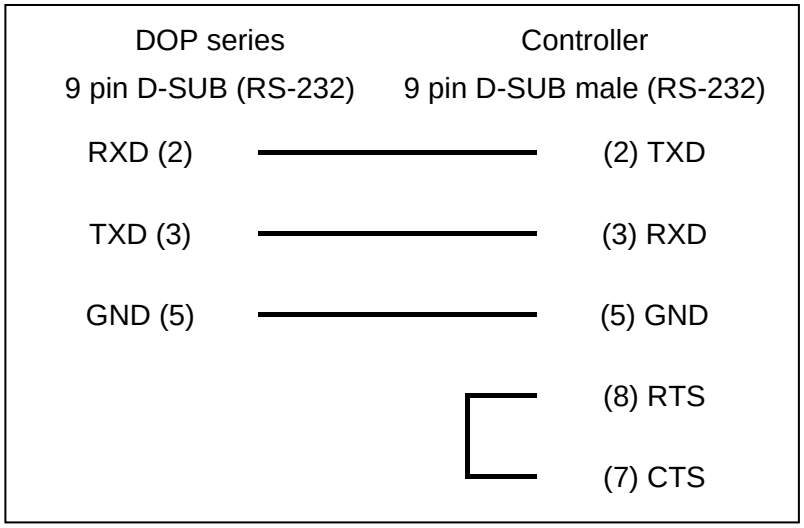
Control Area / Status Area: R0/R10

Connection

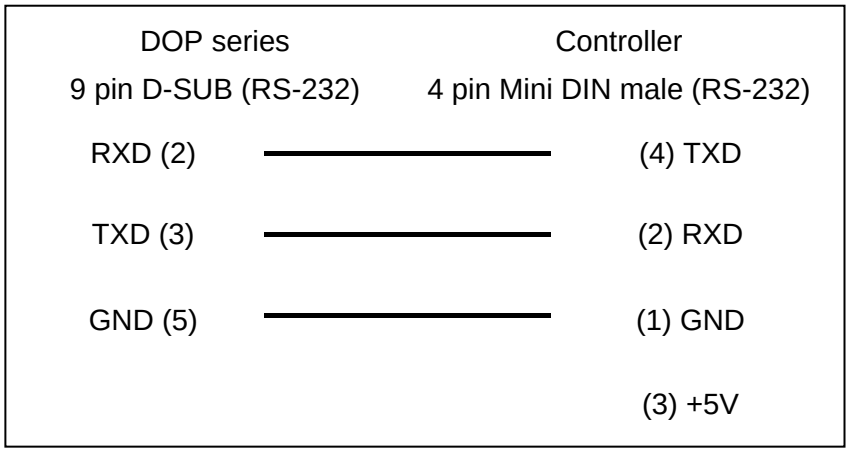
a. RS-232（Applicable to DOP-A/AE/AS, DOP-B series）



b. RS-232（Applicable to DOP-A/AE/AS, DOP-B series) CB(Communication Board)/CM(Communication Module), FBs Series Port 1）



c. RS-232: FBs Series Port 0,（Applicable to DOP-A/AE/AS, DOP-B series）



Definition of PLC Read/Write Address

a. Registers

Type	Format	Read/Write Range	Data Length	Note
	Word No. (n)			
Input Relay	WXn	WX0 – WX9992	Byte	1
Output Relay	WYn	WY0 – WY9992	Byte	1
Internal Relay	WMn	WM0 – WM9992	Byte	1
Step Relay	WSn	WS0 – WS9992	Byte	1
Data Register	Rn	R0 – R65534	Word	
Data Register	Dn	D0 – D65534	Word	
Timer Present Value	RTn	RT0 – RT9999	Word	
Counter Present Value	RCn	RC0 – RC9999	Word	
Data Register	DRCn	DRC200 – DRC255	Double Word	

b. Contacts

Type	Format	Read/Write Range	Note
	Bit No. (b)		
Input Relay	Xb	X0 – X9999	
Output Relay	Yb	Y0 – Y9999	
Internal Relay	Mb	M0 – M9999	
Step Relay	Sb	S0 – S9999	
Timer Flag	Tb	T0 – T9999	
Counter Flag	Cb	C0 – C9999	

NOTE

1) Device address must be a multiple of 8.

Festo PLC

efesotomasyon.com

HMI Factory Setting:

Baud rate: 9600, 8, None, 1

Controller Station Number: 0 (no PLC station number in protocol)

Control Area / Status Area: R0/R10

Connection

PLC Communication Port: COM port

It needs to use the dedicated cable for FESTO controllers → Cable for transferring TTL to RS-232 and it is 6 pin RJ-12 connector at PLC side.

Definition of PLC Read/Write Address

a. Registers

Type	Format	Read/Write Range	Data Length	Note
	Word No. (n)			
WORD_DEVICE_IW	IWn	IW0 - IW255	Word	
WORD_DEVICE_OW	OWn	OW0 - OW255	Word	
WORD_DEVICE_FW	FWn	FW0 - FW9999	Word	
WORD_DEVICE_TW	TWn	TW0 - TW255	Word	
WORD_DEVICE_CW	CWn	CW0 - CW255	Word	
WORD_DEVICE_R	Rn	R0 - R255	Word	
WORD_DEVICE_TP	TPn	TP0 - TP255	Word	
WORD_DEVICE_CP	CPn	CP0 - CP255	Word	

b. Contacts

Type	Format	Read/Write Range	Note
	Word No. (n) Bit No. (b)		
BIT_DEVICE_I	In.b	I0.0 - I255.15	
BIT_DEVICE_O	On.b	O0.0 - O255.15	
BIT_DEVICE_F	Fn.b	F0.0 - F9999.15	
BIT_DEVICE_T	Tb	T0 - T255	
BIT_DEVICE_C	Cb	C0 - C255	
BIT_DEVICE_TON	TONb	TON0 - TON255	

BIT_DEVICE_TOFF	TOFFb	TOFF0 – TOFF255	



1) Connectable PLC: FEC-FC Model

FuFeng APC Controller

efesotomasyon.com

HMI Factory Setting:

Baud rate: 115200, 8, None, 1

Controller Station Number: 0

Control Area / Status Area: D0/D10

Connection

a. RS-232（Applicable to DOP-A/AE/AS, DOP-B series）



Definition of PLC Read/Write Address

a. Registers

Type	Format	Read/Write Range	Data Length	Note
	Word No. (n)			
Timer Setting Value	TSn	TS0 – TS127	Word	
Timer Present Value	TNn	TN0 – TN127	Word	0H1
Counter Setting Value	CSn	CS0 – CS127	Word	
Counter Present Value	CNn	CN0 – CN127	Word	1H1
Data Memory	Dn	D0 – D999	Word	
Temperature Controller-Temperature Setting	KSn	KS0 – KS15	Word	
Temperature Controller-Present Value	KNn	KN0 – KN15	Word	2H1
Temperature Controller-Low-current Setting	CLn	CL0 – CL15	Word	
Temperature Controller-High Temperature Alarm	Hn	H0 – H15	Word	

Type	Format	Read/Write Range	Data Length	Note
	Word No. (n)			
Temperature Controller- Low Temperature Alarm	Ln	L0 – L15	Word	
Temperature Controller – Present Value of Current	In	I0 – I15	Word	3H1
Temperature Controller- Cycle Setting	Rn	R0 – R15	Word	

b. Contacts

Type	Format	Read/Write Range	Note
	Bit No. (b)		
Node R	Rb	R0 – R255	
Node X	Xb	X0 – X239	
Node Y	Yb	Y0 – Y159	
Node S	Sb	S0 – S239	
Node K	Kb	K0 – K127	
Node T	Tb	T0 – K127	
Node C	Cb	C0 – C127	

NOTE

1) This type of device is read only.

Fuji Frenic Inverter

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HMI Factory Setting:

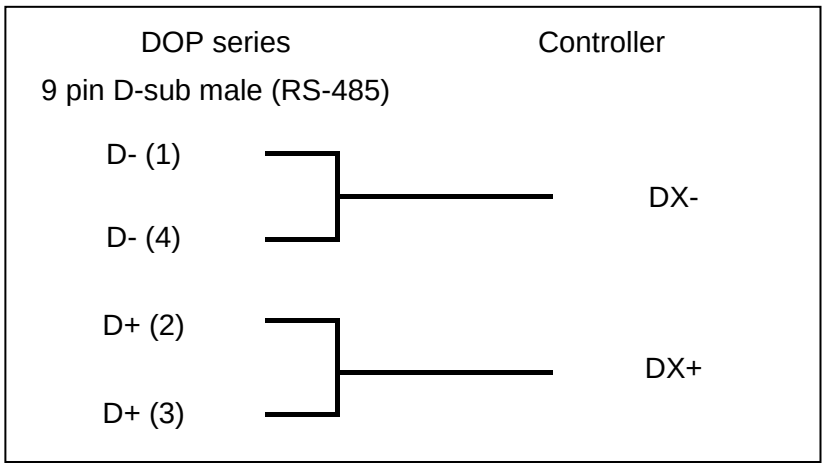
Baud rate: 9600, 8, None, 2

Controller Station Number: 1(Note1)

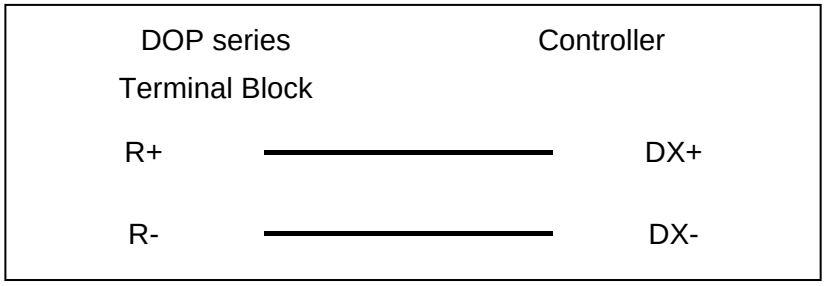
Control Area / Status Area: None/None

Connection

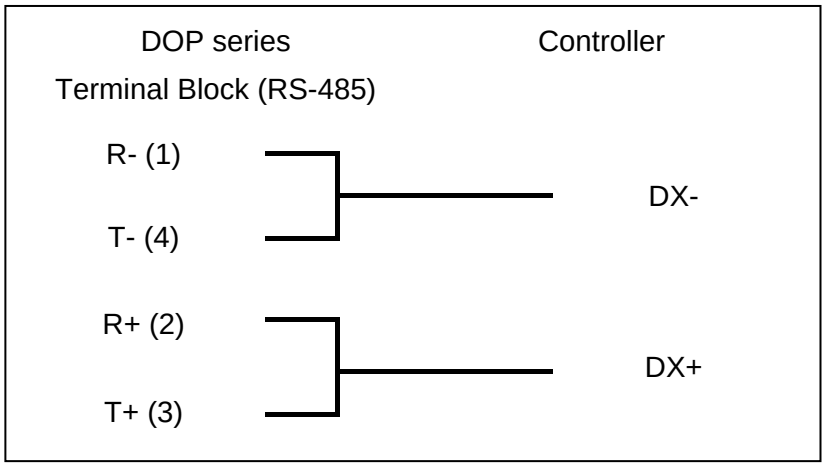
a. RS-485（Applicable to DOP-A/AE series）



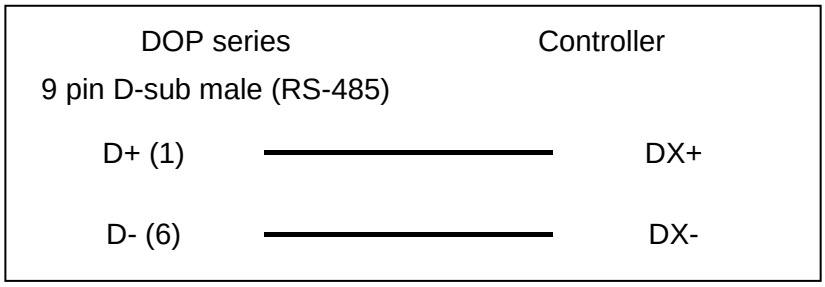
b. RS-485（Applicable to DOP-AS57series）



c. RS-485（Applicable to DOP-AS35/AS38 series）



d. RS-485（Applicable to DOP-B series）



Definition of PLC Read/Write Address

a. Registers

Type	Format	Read/Write Range	Data Length	Note
	Word No. (n)			
Fundamental functions	Fn	F0 – F42	Word	
Extension terminal functions	En	E1 – E47	Word	
Control functions of frequency	Cn	C1 – C33	Word	
motor Parameters	Pn	P1 – P9	Word	
High speed frequency	Hn	H3 – H39	Word	
Alternative motor parameters	An	A1 – A18	Word	
Optional functions	On	O1 – O29	Word	
Setting data function	Sn	S1 – S12	Word	
Monitoring data functions	Mn	M1 – M48	Word	

b. Contacts

Type	Format Word No. (n) Bit No. (b)	Read/Write Range	Note
Fundamental functions	Fn.b	F0.0 – F42.15	
Extension terminal functions	En.b	E1.0 – E47.15	
Control functions of frequency	Cn.b	C1.0 – C33.15	
motor Parameters	Pn.b	P1.0 – P9.15	
High speed frequency	Hn.b	H3.0 – H39.15	
Alternative motor parameters	An.b	A1.0 – A18.15	
Optional functions	On.b	O1.0 – O29.15	
Setting data function	Sn.b	S1.0 – S12.15	
Monitoring data functions	Mn.b	M1.0 – M48.15	

NOTE

1) Controller Station Number range from 1 to 31, and Number 99 is for radio broadcast.
2) Not all address is applicable to radio broadcast. Please refer to Fuji Frenic Inverter manual for details on radio broadcast address.
3) Not all address can be read and write. Please refer to Fuji Frenic Inverter manual for details on read/ write characteristics.

GE Fanuc 90 Series SNP PLC

HMI Factory Setting:

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Baud rate: 19200, 8, Odd, 1

Controller Station Number: 0 (no PLC station number in protocol, therefore, only 1(HMI) to 1 (PLC) communication is allowed.)

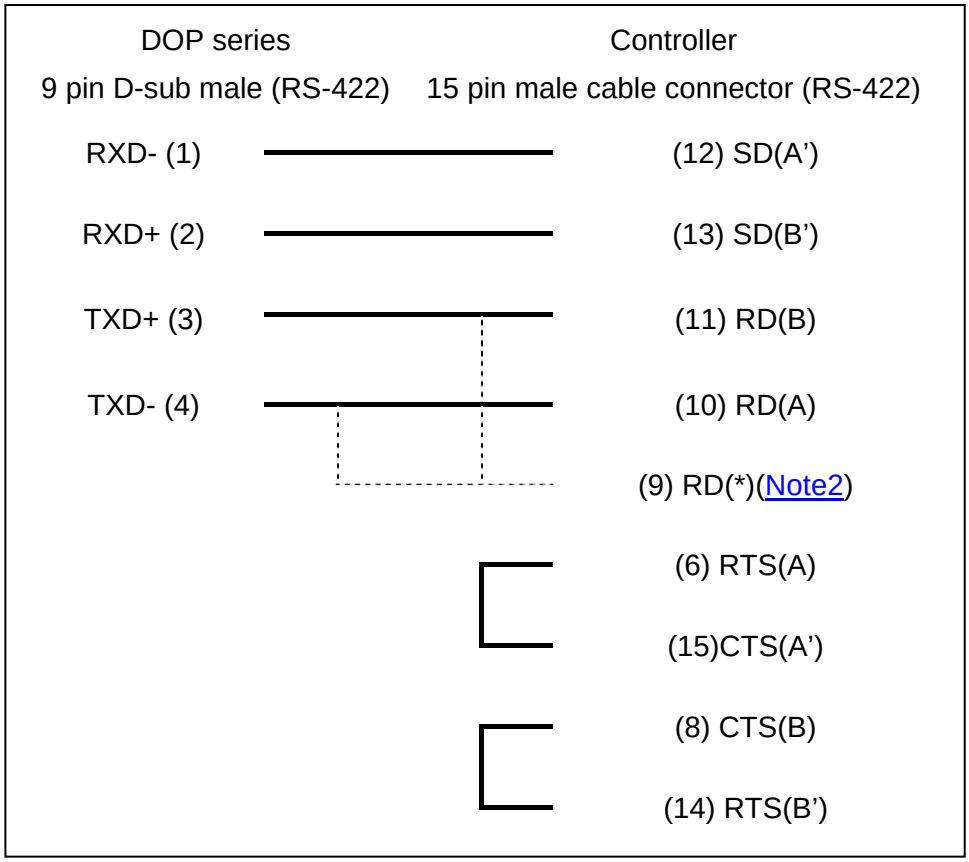
Control Area / Status Area: %R1 / %R10

Connection

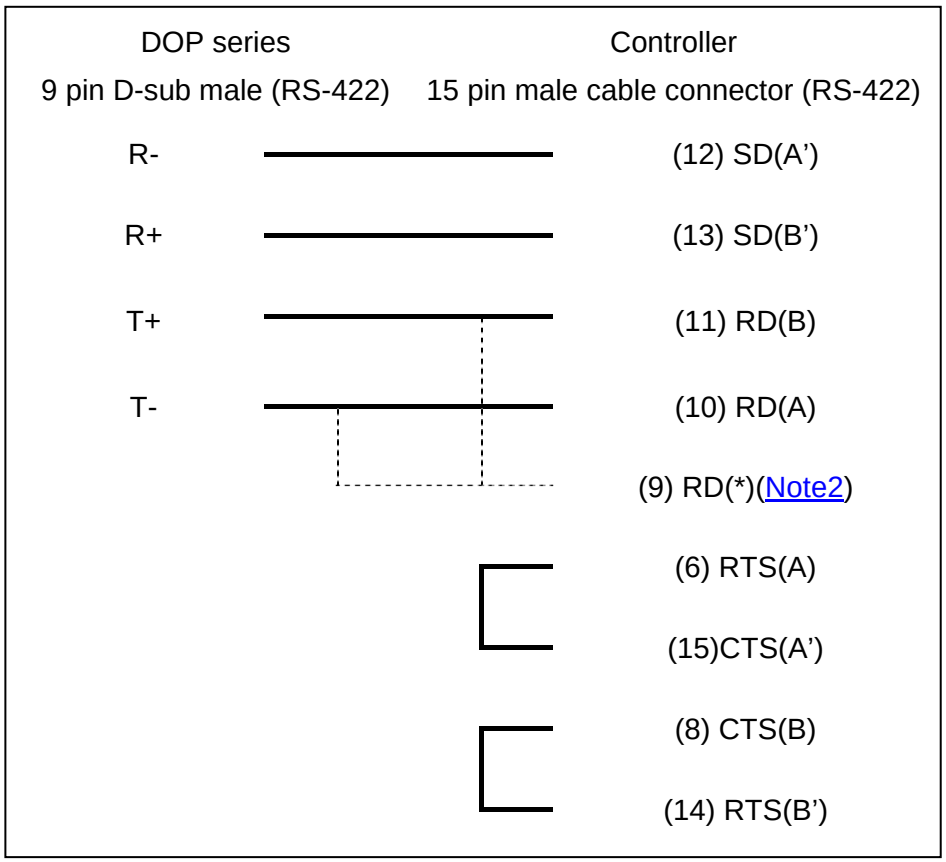
a. RS-232（Applicable to DOP-A/AE/AS, DOP-B series）

DOP series 9 pin D-sub male (RS-232)		Controller RJ-45 (RS-232)
RXD (2)	———	(4) TXD
TXD (3)	———	(3) RXD
GND (5)	———	(8) GND

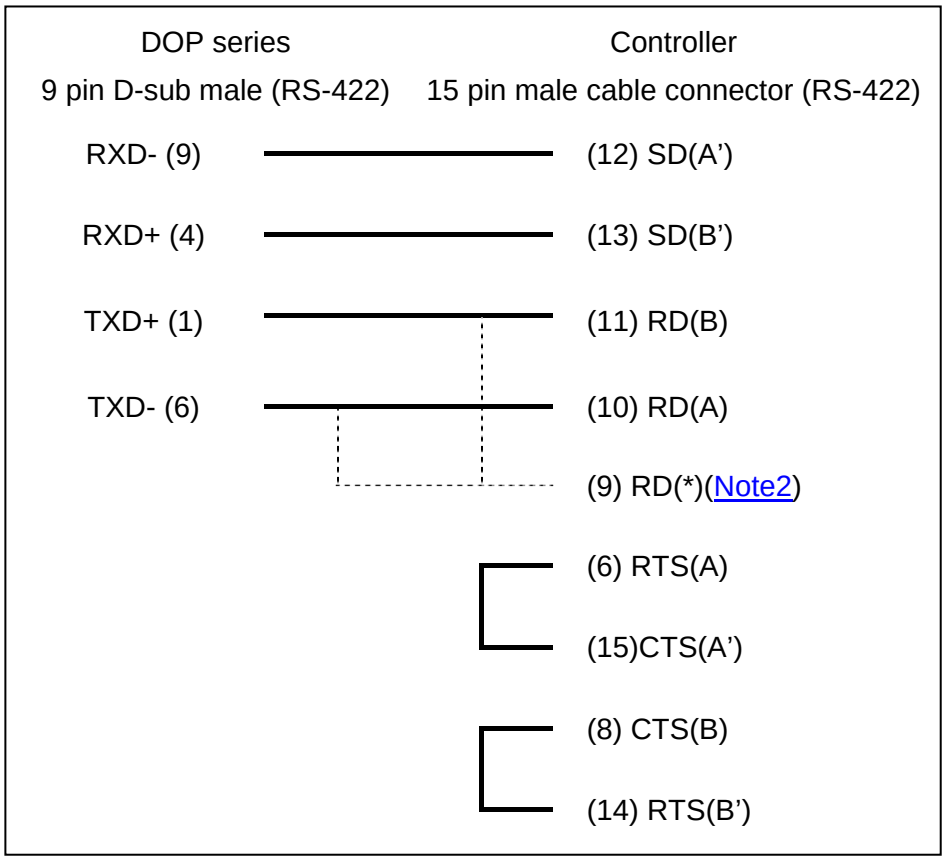
b. RS-422（Applicable to DOP-A/AE series）



c. RS-422（Applicable to DOP-AS35/AS38/AS57 series）



d. RS-422（Applicable to DOP-B series）



Definition of PLC Read/Write Address

a. Registers

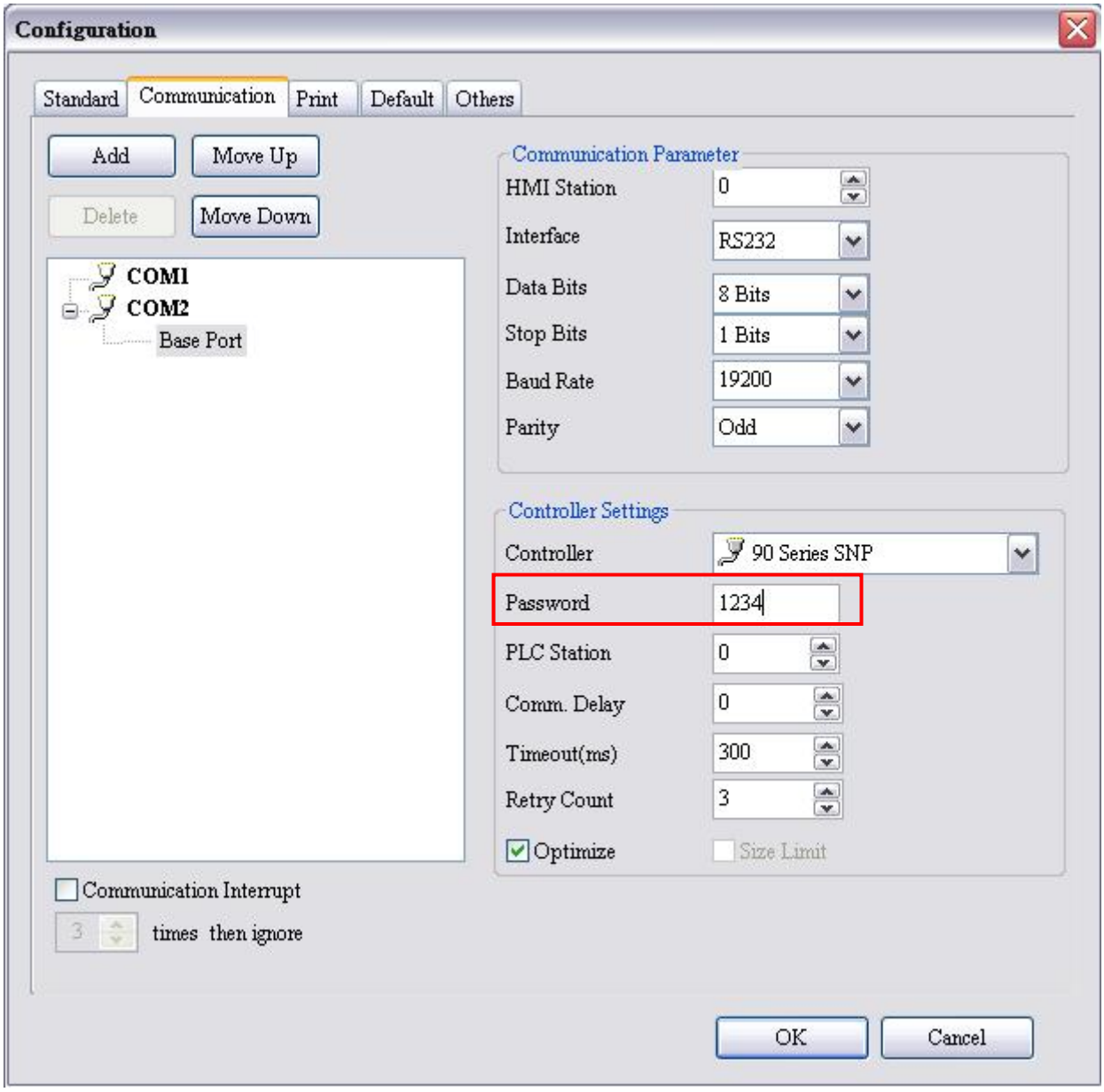
Type	Format	Read/Write Range	Data Length	Note
	Word No. (n)			
Discrete Inputs	%In	%I1 – %I12288	Word	3
Discrete Outputs	%Qn	%Q1 – %Q12288	Word	3
Discrete Temporaries	%Tn	%T1 – %T256	Word	3
Discrete Internals	%Mn	%M1 – %M12288	Word	3
%SA Discretes	%SAn	%SA1 – %SA128	Word	3
%SB Discretes	%SBn	%SB1 – %SB128	Word	3
%SC Discretes	%SCn	%SC1 – %SC128	Word	3
%S Discretes	%S-n	%S-1 – %S-128	Word	3
Genius Global Data	%Gn	%G1 – %G7680	Word	3
Registers	%Rn	%R1 – %R16384	Word	
Analog Inputs	%AIn	%AI1 – %AI8192	Word	
Analog Outputs	%AQn	%AQ1 – %AQ8192	Word	

b. Contacts

Type	Format	Read/Write Range	Note
	Bit No. (b)		
Discrete Inputs	%Ib	%I1 – %I12288	
Discrete Outputs	%Qb	%Q1 – %Q12288	
Discrete Temporaries	%Tb	%T1 – %T256	
Discrete Internals	%Mb	%M1 – %M12288	
%SA Discretes	%SAb	%SA1 – %SA128	
%SB Discretes	%SBb	%SB1 – %SB128	
%SC Discretes	%SCb	%SC1 – %SC128	
%S Discretes	%S-b	%S-1 – %S-128	
Genius Global Data	%Gb	%G1 – %G7680	



1) If PLC has the “Password Detection” function, please enter 4 digits password under “password” in communication.



2) If PLC Series is 90-70 PLC IC697CPU731 and IC697CPU771 then (9) RD(*) must connect with (11) RD(B). For other series RD(*) must connect with (10) RD(A.

3) The device address must be a multiple of 16 + 1.

Hitachi EH Series PLC

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(Supports Communication Mode: Procedure 1, Procedure 2)

HMI Factory Setting:

Baud rate: 19200, 7, Even, 1 (RS-232)

Controller Station Number: 0

Control Area / Status Area: W0 / W10

Connection

a. RS-232（Applicable to DOP-A/AE/AS, DOP-B series）

DOP series		Controller
9 pin D-sub male (RS-232)		RJ-45 cable connector (RS-232)
RXD (2)	———	(2) SD1
TXD (3)	———	(5) RD1
GND (5)	———	(1) SG1
RTS (7)	———	(7) DR1
CTS (8)	———	(8) RS1

b. RS-422（Applicable to DOP-A/AE series）

DOP series		Controller
9 pin D-sub male (RS-422)		RJ-45 cable connector (RS-422)
RXD- (1)	———	(5) TXN
RXD+ (2)	———	(4) TX
TXD+ (3)	———	(6) RX
TXD- (4)	———	(7) RXN
GND (5)	———	(1) SG1

c. RS-422（Applicable to DOP-AS35/AS38/AS57 series）

DOP series Terminal Block (RS-422)		Controller RJ-45 cable connector (RS-422)
R-	———	(5) TXN
R+	———	(4) TX
T+	———	(6) RX
T-	———	(7) RXN
GND	———	(1) SG1

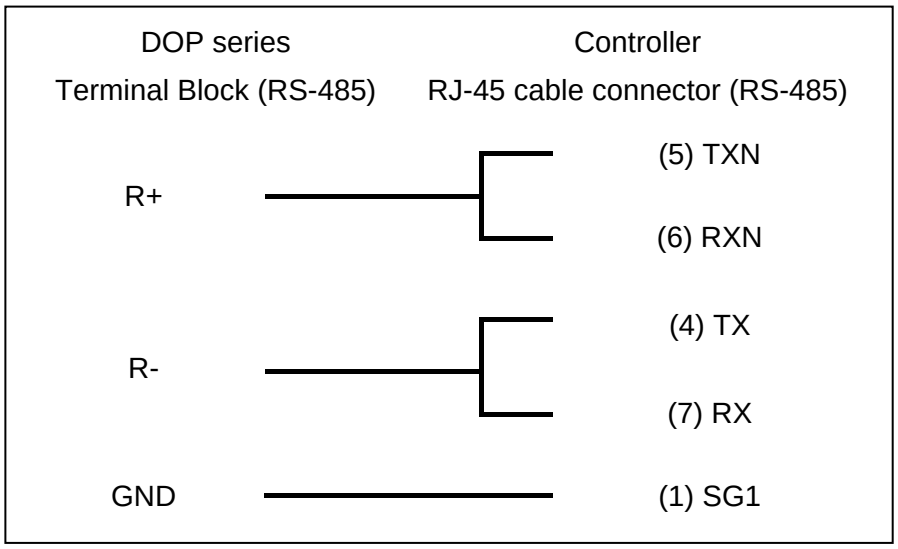
d. RS-422（Applicable to DOP-B series）

DOP series Terminal Block (RS-422)		Controller RJ-45 cable connector (RS-422)
RXD- (9)	———	(5) TXN
RXD+ (4)	———	(4) TX
TXD+ (1)	———	(6) RX
TXD- (6)	———	(7) RXN
GND (5)	———	(1) SG1

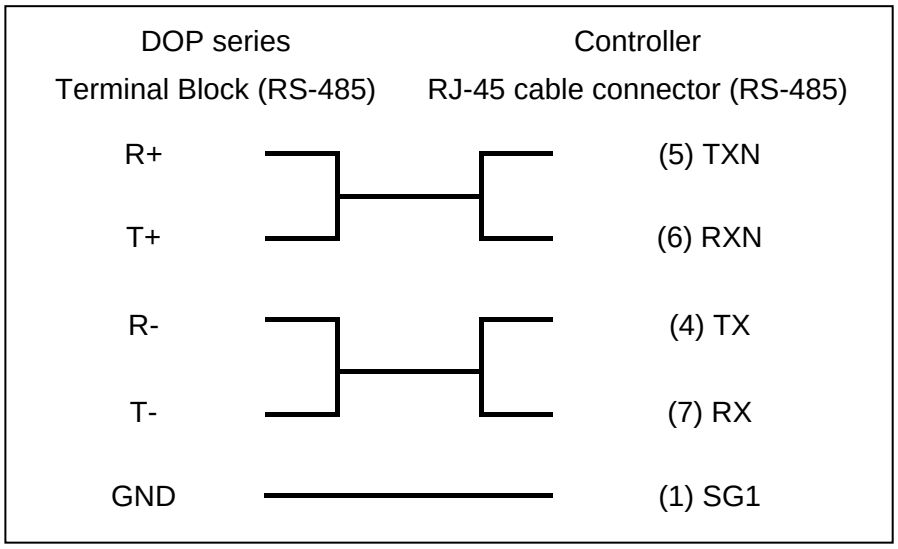
e. RS-485（Applicable to DOP-A/AE series）

DOP series 9 pin D-sub male (RS-485)		Controller RJ-45 cable connector (RS-485)
D+ (2)	⎤	(5) TXN
D+ (3)	⎦	(6) RXN
D- (1)	⎤	(4) TX
D- (4)	⎦	(7) RX
GND (5)	———	(1) SG1

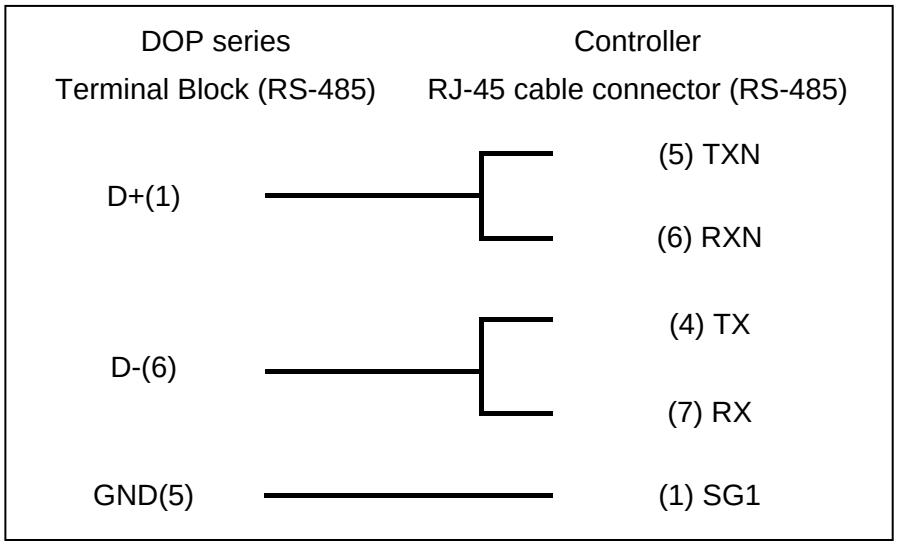
f. RS-485（Applicable to DOP-AS57 series）



g. RS-485（Applicable to DOP-AS35/AS38 series）



h. RS-485（Applicable to DOP-B series）



Definition of PLC Read/Write Address

a. Registers

Type	Format Rank No.(r) Unit No.(u) Slot No.(s) Word No.(n)	Read/Write Range	Data Length	Note
External Input	WXrusn	WX0000 – WXA744	Word	3, 5
External Output	WYrusn	WY0000 – WYA744	Word	3, 5
Internal Output	WRn	WR0 – WRC3FF	Word	
Special Internal Output	WRn	WRF000 – WRF1FF	Word	
Shared Internal Output	WMn	WM0 – WM3FF	Word	
CPU Link Area 1	WLn	WL0 – WL3FF	Word	4
CPU Link Area 2	WLn	WL1000 – WL13FF	Word	4
Timer/Counter	TCn	TC0 – TC511	Word	

b. Contacts

Type	Format Rank No.(r) Unit No.(u) Slot No.(s) Word No.(n) Bit No.(b)	Read/Write Range	Note
External Input	Xrusb	X0000 – X44495	3, 5
External Output	Yrusb	Y0000 – Y44495	3, 5
Internal Output	Rb	R0 – R7FF	
Shared Internal Output	Mnb	M00 – M3FFF	
CPU Link Area 1	Lnb	L00 – L3FFF	4
CPU Link Area 2	Lnb	L10000 – L13FFF	4
On Delay Timer	TDb	TD0 – TD255	
Single-shot Timer	SSb	SS0 – SS255	
Up Counter	CUb	CU0 – CU511	
Up-down Counter up input	CTUb	CTU0 – CTU511	
Up-down Counter down input	CTDb	CTD0 – CTD511	
Up-down Counter down output	CTb	CT0 – CT511	

Type	Format Rank No.(r) Unit No.(u) Slot No.(s) Word No.(n) Bit No.(b)	Read/Write Range	Note
Progress Value Clear	**CL**b	**CL**0 – **CL**511	
Rising Edge Detection	**DIF**b	**DIF**0 – **DIF**511	
Falling Edge Detection	**DFN**b	**DFN**0 – **DFN**511	

NOTE

1) In Hitachi EH series PLC, the user can select procedure 1 and procedure 2 via DIP switch and Special Internal Input (WR). Please refer to Hitachi EH PLC manual for more detail.
2) In Hitachi EH-150 series，only EH-CPU***A/448/516/548 can use procedure 2.
3) EH PLC's External I/O (**WX, WY, X, Y**) data must be set up first before HMI can read and write the address. Please refer to Hitachi EH PLC for more detail.
4) This type of register is only supported by EH-150 series.
5) External I/O (**X, Y, WX, WY**)address rule：
   - Symbol：
     Rank No.：r，only supported by EH-150 series
     Unit No.：u
     Slot No：s
     Word No.：n
     Bit No.：b
   - Address Sample:
     WX103 represents unit 1, word 3 of slot 0
     X103 represents bit 3 of slot 1
     X113 represents bit 13 of slot 1
     Y2004 represents unit 2, bit 4 of slot 0
     Y2104 represents unit 2, bit 4 of slot 1
6) EH-150Setting ：
   - DIP5 should be set to ON.
   - If DIP5 is set to ON, PLC will determine the proper procedure (1 or 2) by the value of WRf037. When setting the address, the highest bit of write value must be 1 and then

PLC can write the value into other seven bits. The data will not lost even when the power of PLC is cut off. Therefore,

i. Write the value 0x8000 into the address. After restart PLC, the address value will become 0x0000 and perform communication by procedure 1.

ii. Write the value 0xC000 into the address. After restart PLC, the address value will become 0x4000 and perform communication by procedure 2.

- Use DIP3 and DIP4 to set the communication speed of port 1.
  i. When DIP3 is ON and DIP4 is OFF, the communication speed is 19200bps.
- Use DIP6, PHL to set the communication speed of port 2.
  i. When DIP6 is ON and PHL is OFF, the communication speed is 19200bps.
  ii. The EH-150 PLC is a "Base Unit" which has a built-in CPU module. This unit allows easy connection of extension module, such as "External I/O".

7) MicroEH

- DIP5 is used to set communication speed.
  i) When SW1 is ON, the communication speed is 19200bps. Please refer to Hitachi EH PLC manual for more detail.
- MicroEH PLC will determine the proper procedure (1 or 2) by the value of WRf01a. Different than EH-150, when setting the address, the highest bit of write value does not need to be 1. But the data will lost even the power of PLC is cut off. However, if set the value of R7f6 to 1, the data of WRf01a will be saved into Flash memory.
  i) 0x0000 for procedure 1.
  ii) 0x8000 for procedure 2.
  iii) If the PLC uses procedure 2 and saves the data into Flash memory, it cannot connect to the peripheral devices and programs (Ladder Editor) that only support procedure 1.
  iv) Standard External I/O built in MicroEH PLC are listed as below:
    - Digital Type
      - slot 0: X48
      - slot 1: Y32
      - slot 2: empty16
    - Analog Type
      - slot 3: X4W
      - slot 4: Y4W

HUST CNC

HMI Factory Setting:

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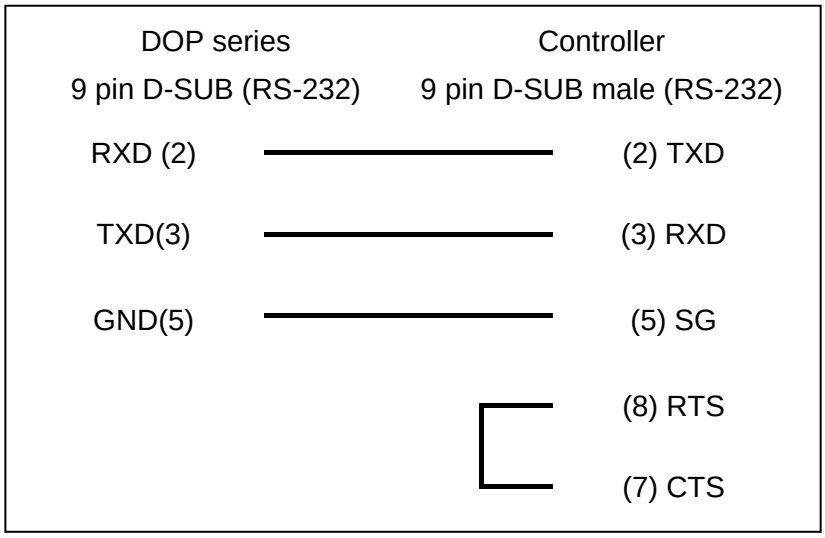
Baud rate: 9600, 7 ,Even, 2

Controller Station Number: 1

Control Area / Status Area: W0 / W10

Connection

a. RS-232（Applicable to DOP-A/AE/AS, DOP-B series）



Definition of PLC Read/Write Address

a. Registers

Type	Format	Read/Write Range	Data Length	Note
	Word No. (n)			
Word Register	Wn	W0 – W13500	Word	
Double Word Register	Dn	D0 – D13500	Double Word	

b. Contacts

Type	Format	Read/Write Range	Note
	Word No. (n) Bits No. (b)		
BIT_DEVICE_B	Bn.b	B0.0 – B13500.31	
BIT_DEVICE_I	Ib	I0 – I255	8 DW
BIT_DEVICE_O	Ob	O0 – O255	8 DW
BIT_DEVICE_C	Cb	C0 – C255	8 DW

Type	Format Word No. (n) Bits No. (b)	Read/Write Range	Note
BIT_DEVICE_S	Sb	S0 – S255	8 DW
BIT_DEVICE_A	Ab	A0 – A1023	32 DW

IDEC Micro Smart PLC

HMI Factory Setting:

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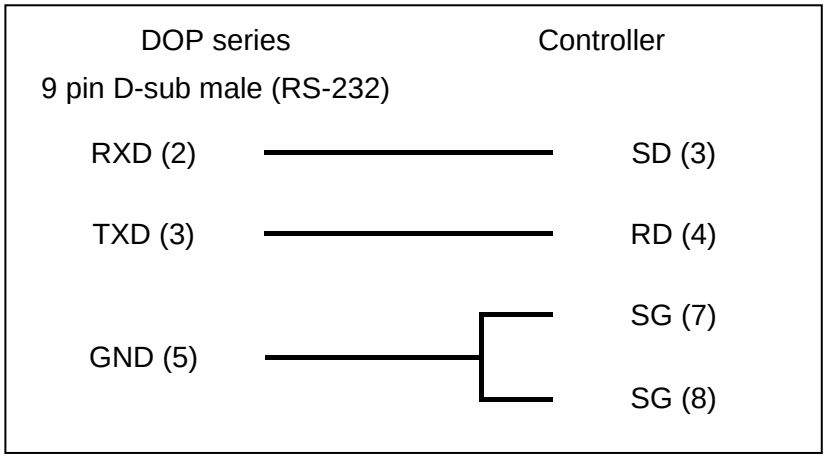
Baud rate: 9600. 7. Even. 1

Controller Station Number: 0 (0~31, 255)

Control Area / Status Area: D0/D10

Connection

a. RS-232（Applicable to DOP-A/AE/AS, DOP-B series）



Definition of PLC Read/Write Address

a. Registers

Type	Format	Read/Write Range	Data Length	Note
	Word No. (n)			
input	Xn	X0 – X290	Word	
output	Yn	Y0 – Y290	Word	
internal relay (ordinary)	Mn	M0 – M1260	Word	
internal relay (special)	Mn	M8000 – M8140	Word	
shift register	Rn	R0 – R112	Word	Octal
Timer(Preset value)	TPn	TP0 – TP99	Word	
Timer(Current value)	TCn	TC0 – TC99	Word	
Counter(Preset value)	CPn	CP0 – CP99	Word	
Counter(Current value)	CCn	CC0 – CC99	Word	
Data register	Dn	D0 – D1299	Word	
Data register	Dn	D2000 – D7999	Word	
Data register (special)	Dn	D8000 – D8199	Word	

Type	Format	Read/Write Range	Data Length	Note
	Word No. (n)			
Calendar/clock	Wn	W0 – W6	Word	

b. Contacts

Type	Format	Read/Write Range	Note
	Word No. (n) Bit No. (b)		
input	Xnnb	X000 – X307	1
output	Ynnb	Y000 – Y307	1
internal relay (ordinary)	Mnnnb	M0000 – M1277	1
internal relay (special)	Mnnnb	M8000 – M8157	1
shift register	Rb	R0 – R127	
Timer Status	TSb	TS0 – TS99	2
Counter Status	CSb	CS0 – CS99	2

NOTE

1) n represents decimal, b represent octal.

2) This type of device is for read only.

3) It supports MicroSmart / ONC (OpenNet Controller) / MICRO3 / MICRO3C.

4) TSn / CSn can only be used on MicroSmart / ONC (OpenNet Controller).

Jetter JC Series PLC

HMI Factory Setting:

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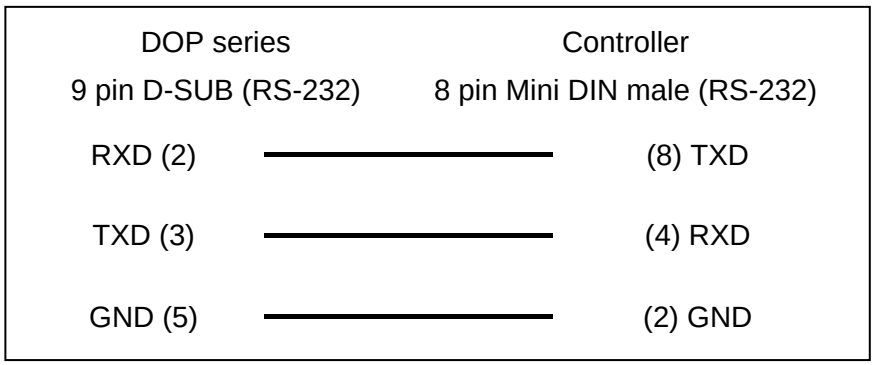
Baud rate: 9600. 8. Even. (RS232)

Controller Station Number: 0 (no PLC station number in protocol, one on one connection)

Control Area / Status Area: WR0/WR10

Connection

a. RS-232 (Applicable to DOP-A/AE/AS, DOP-B series)



Definition of PLC Read/Write Address

a. Registers

Type	Format	Read/Write Range	Data Length	Note
	Word No. (n)			
16 Bits Register	WRn	WR0 – WR32767	16 Bits	
32 Bits Register	Rn	R0 – R32767	24 Bits	

b. Contacts

Type	Format	Read/Write Range	Note
	Word No. (n) Bit No. (b)		
Input Relay	Inbb	I101 – I3216	
Output Relay	Onbb	O101 – O3216	
Flag Relay	Fb	F0 – F32767	

Jetter Nano Series PLC

HMI Factory Setting:

Baud rate: 9600. 8. Even. 1(RS-232)

Controller Station Number: 0 (no PLC station number in protocol, one HMI to one PLC connection)

Control Area / Status Area: WR0/WR10

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Connection

a. RS-232（Applicable to DOP-A/AE/AS, DOP-B series）

DOP series 9 pin D-SUB (RS-232)		Controller 9 pin D-SUB male (RS-232)
RXD (2)	———	(2) TXD
TXD (3)	———	(3) RXD
GND (5)	———	(7) GND

Definition of PLC Read/Write Address

a. Registers

Type	Format Word No. (n)	Read/Write Range	Data Length	Note
16 Bits Register	WRn	WR0 – WR32767	16 Bits	5
32 Bits Register	Rn	R0 – R32767	24 Bits	3, 6, 7

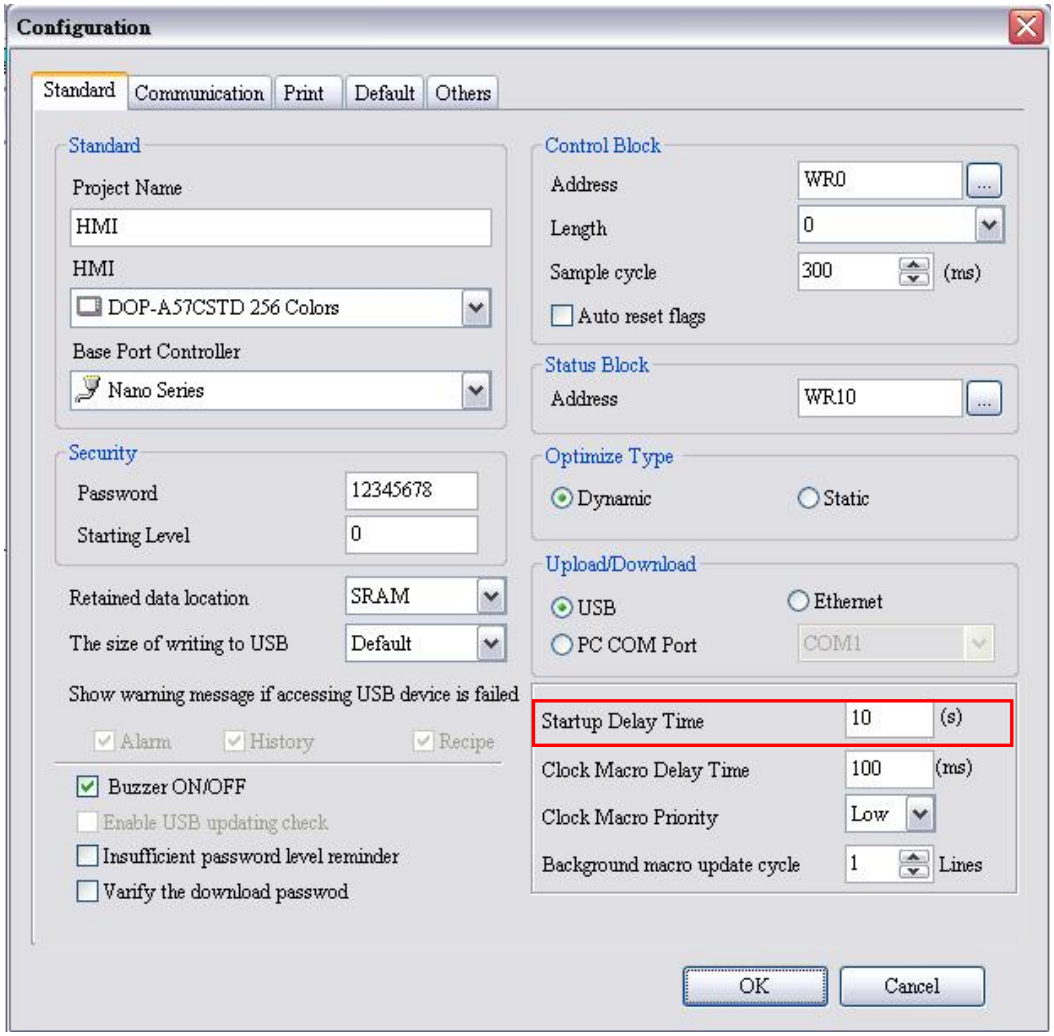
b. Contacts

Type	Format Word No. (n) Bit No. (b)	Read/Write Range	Note
Input Relay	Inbb	I101 – I3208	
Output Relay	Onbb	O101 – O3208	
Flag Relay	Fb	F0 – F32767	

NOTE

1) In general, every register occupies a maximum 24 Bits. However, some registers occupies only 8 Bits.

2) Jetter Nano Series PLC requires longer time at initial start, therefore it is recommended to set startup delay time greater than 10 (s).



3) When the register R is used for Double Word device, please set the format as signed format. (The default format in Screen Editor is signed format.)

4) Please be aware the pin definition for RS232 in this PLC series is different than the standard RS232, do not mistake.

5) **WR** only occupies Bit0~Bit15 of every register.

6) **R** occupies 24 Bits of every register and Bit24~Bit31 set to 0 by default setting.

格式化: 項目符號及編號

7) Decimal notation range from -8388608 to +8388607； hexadecimal notation range from 0x000000 to 0xFFFFFF.

8) The difference between WRn and Rn register:

1. When using devices that the data length is in Word, only Bit 0 ~ 15 are valid for both of WRn and Rn registers.
2. When using devices that the data length is in Double Word, if the read/write address format is set to WRn, the Bit 0 ~ 15 of WRn register is the low word of a read/write value, the Bit 0 ~ 15 of WRn+1 register is the high word of a read/write value. If the read/write address format is set to Rn, only Bit 0 ~ 23 are valid for Rn registers. **(Notice: As the Jetter controller is a 24-bit format controller, the valid setting range is 24 Bits** (16777215)**. If setting exceeds this range, HMI will stop read/write operation and show "…..Value is Incorrect" on the screen.**
3. When using devices that the data length is in m Words, if the read/write address format is set to WRn, the Bit 0 ~ 15 of WRn register is the lowest word of a read/write value and the Bit 0 ~ 15 of WRn+m-1 register is the highest word of a read/write value. If the read/write address format is set to Rn, the Bit 0 ~ 23 of Rn register is the lowest word of a read/write value and the Bit 0 ~ 23 of Rn+1 register is the highest word of a read/write value. Each register is regards as a "Double Word". The value of Bit24 ~ Bit31 is 0.

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Keyence KV1000

HMI Factory Setting:

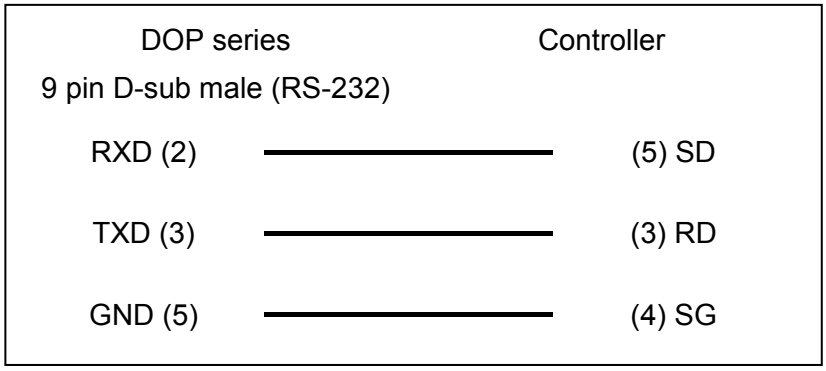
Baud rate: 9600. 8. Even. (RS232)

Controller Station Number: 0 (no PLC station number in protocol, one on one connection)

Control Area / Status Area: DM0/DM10

Connection

a. RS-232（Applicable to DOP-A/AE/AS, DOP-B series）



Definition of PLC Read/Write Address

a. Registers

Type	Format	Read/Write Range	Data Length	Note
	Word No. (n)			
Data Memory	DMn	DM0 – DM65535	Word	
Control Memory	CMn	CM0 – CM11999	Word	
Temporary Data Memory	TMn	TM0 – TM511	Word	
Extended Data Memory	EMn	EM0 – EM65535	Word	
Extended Data Memory	FMn	FM0 – FM32767	Word	
Address Register	Zn	Z1 – Z12	Word	
Digital Trimmer	ATn	AT0 – AT7	Word	
High-speed Counter	CTHn	CTH0 – CTH1	Double Word	
CTC Preset Value	PCTCn	PCTC0 – PCTC3	Double Word	
Timer Preset Value	PTn	PT0 – PT3999	Double Word	
Counter Preset Value	PCn	PC0 – PC3999	Double	

Type	Format	Read/Write Range	Data Length	Note
	Word No. (n)			
			Word	
High-speed Counter Comparator	CTCn	CTC0 – CTC3	Double Word	
Timer	Tn	T0 – T3999	Double Word	
Counter	Cn	C0 – C3999	Double Word	

b. Contacts

Type	Format	Read/Write Range	Note
	Word No. (n) Bit No. (b)		
Control Relay	CRnbb	CR000 – CR3915	
Internal Memory Relay	MRnbb	MR000 – MR99915	
Latch	LRnbb	LR000 – LR99915	
Relay	Rnbb	R000 – R59915	
High-speed Counter comparator	CTCb	CTC0 – CTC3	
Timer Contact	Tb	T0 – T3999	
Counter Contact	Cb	C0 – C3999	

Keyence KV/KZ Series

HMI Factory Setting:

Baud rate: 9600, 8, Even, 1 (RS-232)

Controller Station Number: 0 (no PLC station number in protocol, one on one connection)

Control Area / Status Area: DM-0 / DM-10

Connection

a. RS-232（Applicable to DOP-A、DOP-B series）

KV Series (Note1)



KZ Series (Note1)



Definition of PLC Read/Write Address

a. Registers

Type	Format	Read/Write Range	Data Length	Note
	Word No. (n)			
Timer	T-n	T-0 - T-199	Word	
Counter	C-n	C-0 - C-199	Word	
High-speed counter	CTH-n	CTH-0 - CTH-1	Word	
High-speed counter	CTC-n	CTC-0 - CTC-3	Word	

Type	Format	Read/Write Range	Data Length	Note
	Word No. (n)			
comparator				
Data memory	DM-n	DM-0 - DM-1999	Word	
Temporary data memory	TM-n	TM-0 - TM-31	Word	
Timer preset value	PT-n	PT-0 - PT-199	Word	
Counter preset value	PC-n	PC-0 - PC-199	Word	
CTC preset value	PCTC-n	PCTC-0 - PCTC-3	Word	

b. Contacts

Type	Format	Read/Write Range	Note
	Word No. (n) Bit No. (b)		
Relay	R-nbb	R-000 - R-6915	
Timer	T-b	T-0 - T-199	1
Counter	C-b	C-0 - C-199	1
High-speed counter comparator	CTC-b	CTC-0 - CTC-3	

NOTE

1) Please be aware the pin definition of SD, RD is reversed in KZ-80T and KV series.

This protocol regards PLC protocol in KV series, when communicates with KZ series PLC, the following divergence will occur.

1. Readable Timer address is not continuous. For example:

T-0 ~ T-9 can be read

T10 cannot be read

T11 ~ T20 can be read

T21 ~ T50 cannot be read …etc.

2. Counter cannot be read. For example:

Registers: C-, CTH-, CTC-,PC-, PCTC- all cannot be read.

Contacts: C-, CTC- cannot be read as well.

Koyo K-Sequence

HMI Factory Setting:

Baud rate: 9600. 8. Odd. 1(RS-232)

Controller Station Number: 1

Control Area / Status Area: R1400/R1420

Connection

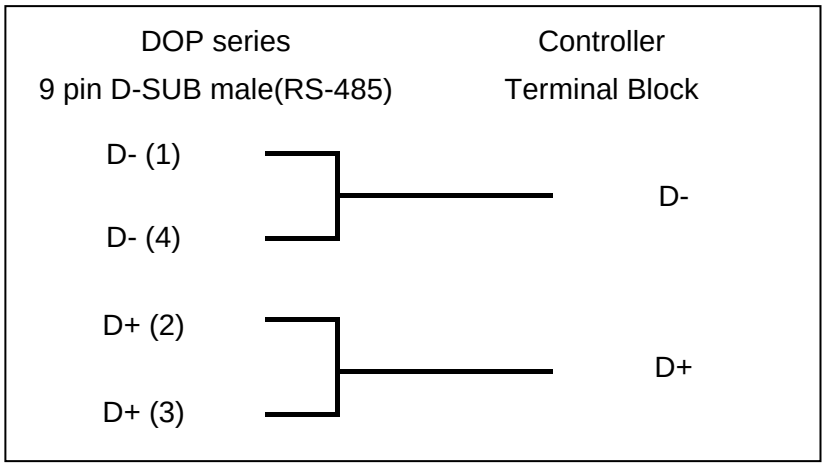
a. RS-232（Applicable to DOP-A/AE/AS, DOP-B series）Port 0 communication line

DOP series 9 pin D-SUB (RS-232)		Controller RJ-11 (RS-232)
RXD (2)	———	(4) TXD
TXD (3)	———	(3) RXD
GND (5)	———	(1) GND
		(6) GND(Note3)

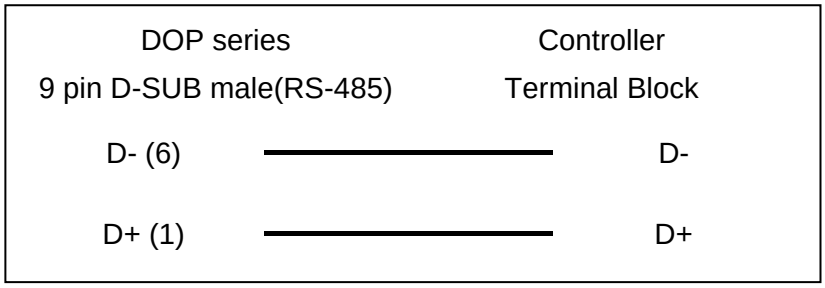
b. RS-232（Applicable to DOP-A/AE/AS, DOP-series）

DOP series 9 pin D-SUB (RS-232)		Controller RJ-11 (RS-232)
RXD (2)	———	(3) TXD
TXD (3)	———	(2) RXD
GND (5)	———	(5) SG

c. RS-485（Applicable to DOP-A/AE series）Port1 communication line



d. RS-485（Applicable to DOP-B series）Port1 communication line



Definition of PLC Read/Write Address

a. Registers

Type	Format	Read/Write Range	Data Length	Note
	Word No. (n)			
Input Status	Xn	X0 – X1760	Word	Octal, 2
Output Status	Yn	Y0 – Y1760	Word	Octal, 2
Link Relays	GXn	GX0 – GX3760	Word	Octal, 2
Relays	GQn	GQ0 – GQ3760	Word	Octal, 2
Relays	Mn	M0 – M3760	Word	Octal, 2
Stage	Sn	S0 – S1760	Word	Octal, 2
Timer Status	Tn	T0 – T360	Word	Octal, 2
Control Relays	Cn	C0 – C360	Word	Octal, 2
Special Relay 1	SPn	SP0 – SP760	Word	Octal, 2
Register	Rn	R0 – R41237	Word	Octal
Register	Pn	P0 – P37777	Word	Octal

b. Contacts

Type	Format	Read/Write Range	Note
	Bit No. (b)		
Input Status	Xb	X0 – X1777	Octal
Output Status	Yb	Y0 – Y1777	Octal
Link Relays	GXb	GX0 – GX3777	Octal
Relays	GQb	GQ0 – GQ3777	Octal
Control Relays	Mb	M0 – M3777	Octal
Stage	Sb	S0 – S1777	Octal
Timer Status	Tb	T0 – T377	Octal
Counter Status	Cb	C0 – C377	Octal
Special Relay 1	SPb	SP0 – SP777	Octal

NOTE

1) When read & write action exceed valid address range, HMI will show an error message "….Error 6….. Command Can Not be Executed…."

2) Device address must be the multiple of 16.

3) If using SM-24R series PLC, pin6 must be grounded (GND).

4) The correspondence relationship of address between CCM2 communication protocol and the register of K-Sequence communication protocol.

CCM2	K sequence	SN32DRA
V	R	R
X	X	I
Y	Y	Q
C	M	M
S	S	S
T	T	T
CT	C	C
SP	SP	SP

Koyo SU/DL Series

HMI Factory Setting:

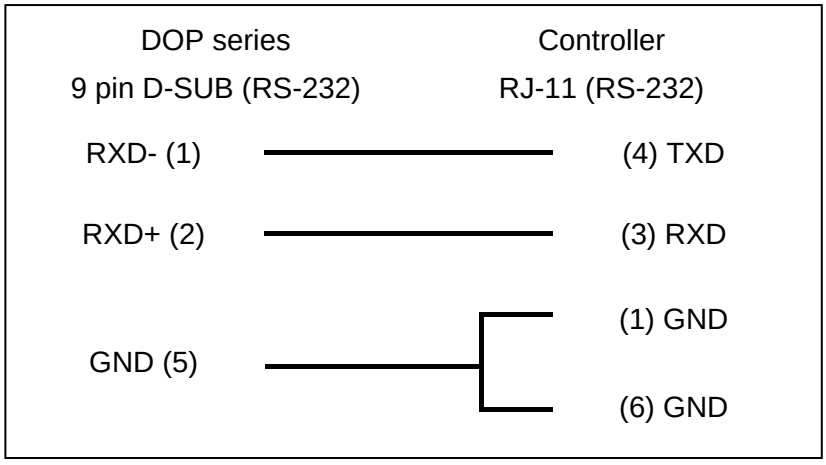
Baud rate: 9600. 8. Odd. 1(RS-232)

Controller Station Number: 1

Control Area / Status Area: V1400/V1420

Connection

a. RS-232（Applicable to DOP-A/AE/AS, DOP-B series）



Definition of PLC Read/Write Address

a. Registers

Type	Format	Read/Write Range	Data Length	Note
	Word No. (n)			
Timer Accumulated	Vn	V0 – V177	Word	Octal
Counter Accumulated	Vn	V1000 – V1177	Word	Octal
V Memory	Vn	V1400 – V7777	Word	Octal
Linker Relays	Vn	V40000 – V40037	Word	Octal
Input Status	Vn	V40400 – V40423	Word	Octal
Output Status	Vn	V40500 – V40523	Word	Octal
Control Relays	Vn	V40600 – V40635	Word	Octal
Stage	Vn	V41000 – V41027	Word	Octal
Timer Status	Vn	V41100 – V41107	Word	Octal
Counter Status	Vn	V41140 – V41147	Word	Octal
Spec. Relay 1	Vn	V41200 – V41205	Word	Octal

Type	Format	Read/Write Range	Data Length	Note
	Word No. (n)			
Spec. Relay 2	Vn	V41216 – V41230	Word	Octal

b. Contacts

Type	Format	Read/Write Range	Note
	Bit No. (b)		
Linker Relays	GXb	GX0 – GX777	Octal
Input Status	Xb	X0 – X477	Octal
Output Status	Yb	Y0 – Y477	Octal
Control Relays	Cb	C0 – C737	Octal
Stage	Sb	S0 – S577	Octal
Timer Status	Tb	T0 – T177	Octal
Counter Status	CTb	CT0 – CT177	Octal
Spec. Relay 1	SPb	SP0 – SP137	Octal
Spec. Relay 2	SPb	SP320 – SP617	Octal

Lenze LECOM-A/B protocol

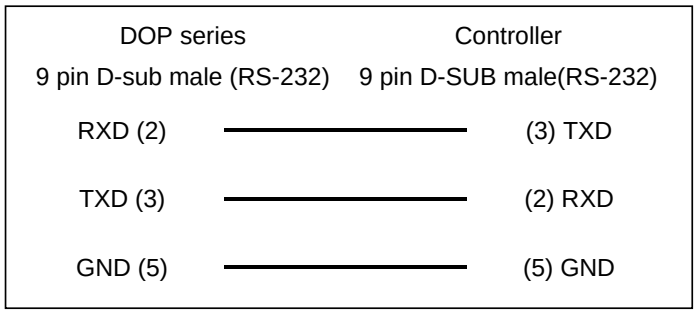
（Supports 82XX frequency inverters and 93XX servo inverters）

HMI Factory Setting:

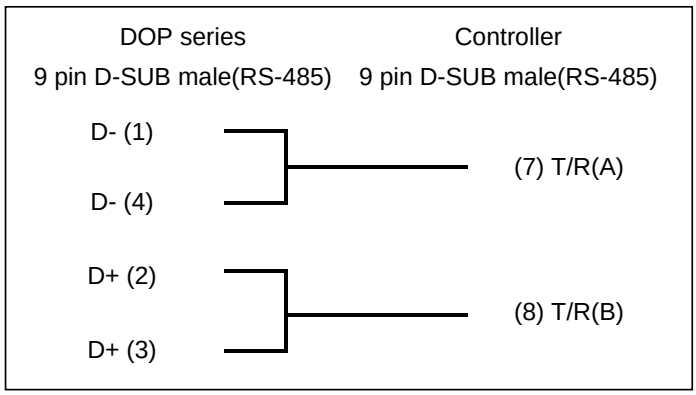
Baud rate: 9600, 7, Even, 1
Controller Station Number: 1 (1~99)(Note5)
Control Area / Status Area: None/None

Connection

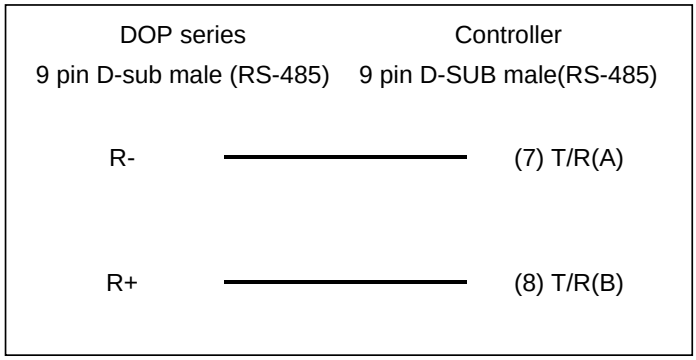
a. RS-232（Applicable to DOP-A/AE/AS, DOP-B Series）(Note1)



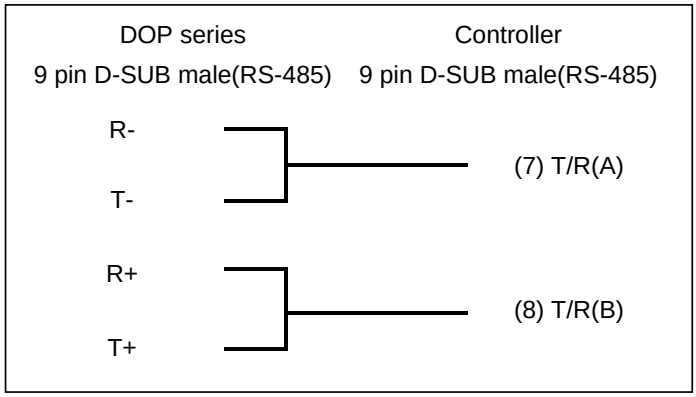
b. RS-485（Applicable to DOP-A/AE Series）



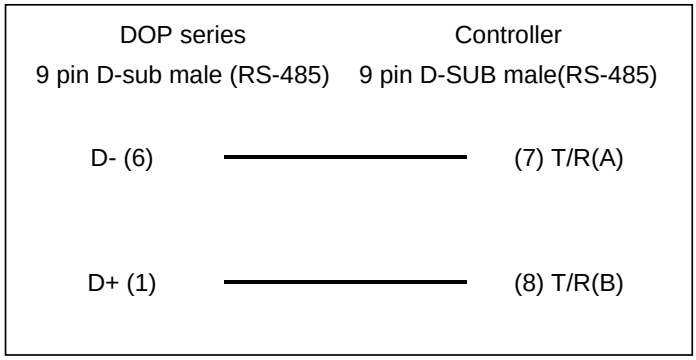
c. RS-485（Applicable to DOP-AS57 Series）



d. RS-485（Applicable to DOP-AS35/AS38 Series）



e. RS-485（Applicable to DOP-B Series）



Definition of PLC Read/Write Address

a. Registers

Type	Format Word No.(n) Format(m) Subcode(y)	Read/Write Range	Data Length	Note
Parameter w/o subcode	CWn	CW1 – CW10000	Word	
	CWn.m	CW1.0 – CW10000.23	Word	2, 4
Parameter with subcode	CWn/y	CW1/1 – CW10000/255	Word	
	CWn/y.m	CW1/1.0 – CW10000/255.23	Word	2, 4
Parameter w/o subcode	CDn	CD1 – CD10000	Double Word	
	CDn.m	CD1.0 – CD10000.23		2, 4
Parameter with subcode	CDn/y	CD1/1 – CD10000/255	Double Word	
	CDn/y.m	CD1/1.0 – CD10000/255.23		2, 4

b. Contacts

Type	Format Word No.(n) Subcode(y) Bit No.(b)	Read/Write Range	Note
Parameter w/o subcode	CBn.b	CB1.0 – CB10000.31	3, 4
Parameter with subcode	CBn/y.b	CB1/1.0 – CB10000/255.31	3, 4

NOTE

1) If communication is using RS232, please NOT to use general RS232 pin-cable. For more information of pin definition, please refers to cable connections (Connector Pinouts) in in Lenze LECOM A/B Protocol controller.

2) m represent HMI communication data forma. Different set of value represents different data format as following?:

m = 0 ~10	• unsigned, ASCII decimal format (VD). m represents decimal place, For example: m=0 → no decimal place m=1 → one decimal place (tenth) m=2 → two decimal place (hundredth)

m = 11 ~20	• signed, ASCII decimal format (VD). m represents decimal place, For example: m=11 → one decimal place (tenth) m=12 → two decimal place (hundredth)

m = 21	• signed, ASCII decimal format (VD). without decimal place
m = 22	• ASCII hexadecimal format (VH). 2 numbers. when using this format, the write value will be limited within the range of 0~0xFF (low byte). For example: when entering 0x1234 during communication, the actual write value is 0x34, not 0x1234.
m >= 23	• ASCII hexadecimal format (VH). (4 or 8 numbers.)
No m setting	Same as above

3) Only VH type parameter supports bit read & write function.

4) Data format of LenzeLECOM-A/B protocol is categorized:

1. VS (String format)
2. VO (Octet string format data blocks)
3. VH (ASCII hexadecimal format)(1, 2, 4 bytes)
4. VD (ASCII decimal format)(positive number, negative number, decimal number.)

格式化: 項目符號及編號

Different communication format is not compatible, therefore, it is needed to ensure the HMI communication data format is correct, or an error may occur. For more detail, please refers to Lenze user manual.

1. The settings of ASCII hexadecimal format (VH) and ASCII decimal format (VD) must be correct. If the write value is incorrect the HMI will show "….Write …. Command Can Not be Executed" or "Can not be write".

2. The decimal place of ASCII decimal format (VD) should be set correctly, or the write value will be incorrect.

3. ASCII hexadecimal format (VH), 2 numbers (m = 22). The value is limited to 2 numbers. Using this format the write value will be limited within the range of 0 ~ 0xFF (low byte) automatically.

4. Length of data varies upon different communication address. Use register CW to read/write the address with data length as Word format. Use register CD to

read/write the address with data length as Double Word format. Please refer to Lenze user manual for more detail on communication address.

Contacts: only can read/write the data of ASCII hexadecimal format (VH). Read the following information:

格式化: 項目符號及編號

1. Do not write the inexistent Bit address, or HMI will show "….Write …. Command Can Not be Executed" on the screen. For example: CW470/1. The valid value of CW470/1 is within the range of 0 ~ 0xFF. Therefore, Bit 8 ~31 is not existed. Although HMI will show the value of Bit 8 ~31 is 0, the user can not write or set the value.

5) The valid station number is from 0 to 99 and also supports broadcast function, setting detail as following:

Controller Station Number	Broadcast Station Range
0	1 – 99
10	11 – 19
20	21 – 29
30	31 – 39
40	41 – 49
50	51 – 59
60	61 – 69
70	71 – 79
80	81 – 89
90	91 – 99

LG Glofa GM6 CNET

HMI Factory Setting:

Baud rate: 19200, 8, None, 1 (RS-232)

Controller Station Number: 1

Control Area / Status Area: %MW0 / %MW10

Connection

a. Applicable to RS-232（DOP-A/AE/AS, DOP-B Series）

via CPU Port

DOP Series 9 pin D-SUB (RS-232)		Controller 9 pin D-SUB male (RS-232)
RXD (2)	———	(7) TXD
TXD (3)	———	(4) RXD
GND (5)	———	(5) GND

b. Applicable to RS-422(DOP-A/AE Series)

via G6L-CUEC CNET Communication Module (0H Note1)

DOP Series 9 pin D-SUB male (RS-422)		Controller (RS-422)
RXD+ (2)	———	SDA
RXD- (1)	———	SDB
TXD- (4)	———	RDB
TXD+ (3)	———	RDA
GND (5)	———	SG

c. Applicable to RS-422(DOP-AS35/AS38/AS57 Series)

via G6L-CUEC CNET Communication Module (1H Note1)

DOP Series Terminal Block (RS-422)		Controller (RS-422)
R+	———	SDA
R-	———	SDB
T-	———	RDB
T+	———	RDA
GND	———	SG

d. Applicable to RS-422(DOP-B Series)

via G6L-CUEC CNET Communication Module (2H Note1)

DOP Series 9 pin D-SUB male (RS-422)		Controller (RS-422)
RXD+ (4)	———	SDA
RXD- (9)	———	SDB
TXD- (6)	———	RDB
TXD+ (1)	———	RDA
GND (5)	———	SG

Definition of PLC Read/Write Address

a. Registers

Type	Format Word No.(n) Slot No.(s) Base No.(b)	Read/Write Range	Data Length	Note
Input Image	IWb.s.n	IW0.0.0 - IW1.7.3	Word	

Type	Format Word No.(n) Slot No.(s) Base No.(b)	Read/Write Range	Data Length	Note
Input Image	IDb.s.n	ID0.0.0 – ID1.7.1	Double Word	
Output Image	QWb.s.n	QW0.0.0 – QW1.7.3	Word	
Output Image	QDb.s.n	QD0.0.0 – QD1.7.1	Double Word	
Internal Memory	MWn	MW0 – MW4095	Word	
Internal Memory	MDn	MD0 – MD2047	Double Word	

b. Contacts

Type	Format Bit No.(n) Slot No.(s) Base No.(b)	Read/Write Range	Note
Input Image	IXb.s.n	IX0.0.0 – IX1.7.63	
Output Image	QXb.s.n	QX0.0.0 – QX1.7.63	
Internal Memory	MXn	MX0 – MX65535	

NOTE

1) HMI default setting is predefined for CPU Port. If the user want to connect to CNET communication module, the baud rate should be changed to 38400, 8, None, 1. (RS-422 / RS-485).

LG Master K120S/200S

HMI Factory Setting:

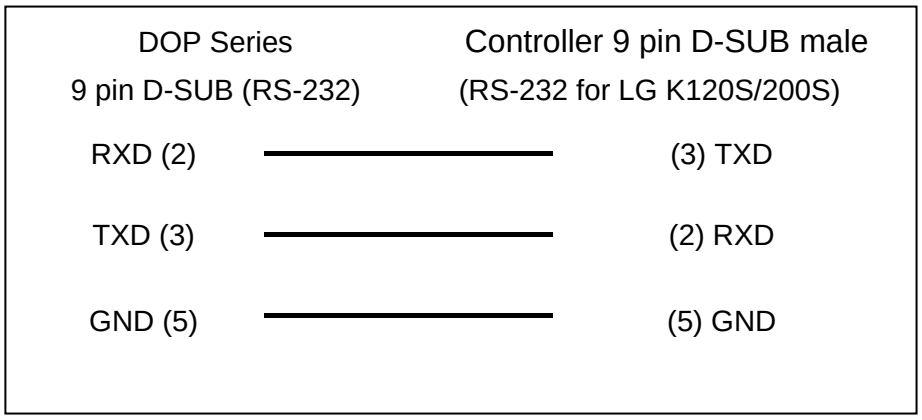
Baud rate: 38400, 8, None, 1 (RS-232)

Controller Station Number: 0 (no PLC station number in protocol, therefore, only 1(HMI) to 1 (PLC) communication is allowed.)

Control Area / Status Area: DW0/DW10

Connection

a. RS-232（Applicable to DOP-A/AE/AS, DOP-B series）



Definition of PLC Read/Write Address

a. Registers

Type	Format	Read/Write Range	Data Length	Note
	Word No. (n)			
WORD_DEVICE_PW	PWn	PW0 - PW15	Word	
WORD_DEVICE_MW	MWn	MW0 - MW191	Word	
WORD_DEVICE_KW	KWn	KW0 - KW31	Word	
WORD_DEVICE_LW	LWn	LW0 - LW63	Word	
WORD_DEVICE_FW	FWn	FW0 - FW63	Word	
WORD_DEVICE_TW	TWn	TW0 - TW255	Word	
WORD_DEVICE_CW	CWn	CW0 - CW255	Word	
WORD_DEVICE_DW	DWn	DW0 - DW9999	Word	

b. Contacts

Type	Format	Read/Write Range	Note
	Word No. (n) Bit No. (b)		
BIT_DEVICE_P	Pnb	P00 – P15F	
BIT_DEVICE_M	Mnb	M00 – M191F	
BIT_DEVICE_K	Knb	K00 – K31F	
BIT_DEVICE_L	Lnb	L00 – L63F	
BIT_DEVICE_F	Fnb	F00 – F63F	
BIT_DEVICE_T	Tb	T0 – T255	
BIT_DEVICE_C	Cb	C0 – C255	

NOTE

1) If connecting to Pin 4 (RXD), Pin 7 (TXD) and Pin5 (SG), it indicates that CNet protocol is used (Please refer to the section "LG Master-K CNET". 120S/200S protocol and CNet protocol cannot be used simultaneously. The users only can select either 120S/200S protocol or CNet protocol.

LG Master-K CNET

HMI Factory Setting (Note1):

Baud rate: 38400, 8, None, 1 (RS-422)

Controller Station Number: 0

Control Area / Status Area: DW0/DW10

Connection

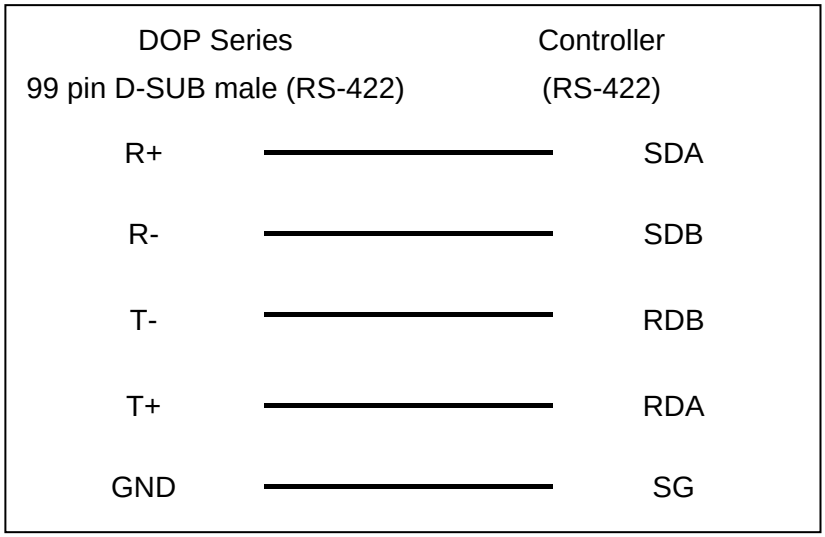
a. RS-232（Applicable to DOP-A/AE/AS, DOP-B Series）LG 120S PLC (Master K)

DOP Series 9 pin D-SUB (RS-232)		Controller 9 pin D-SUB male (RS-232)
RXD (2)	———	(7) TXD
TXD (3)	———	(4) RXD
GND (5)	———	(5) GND

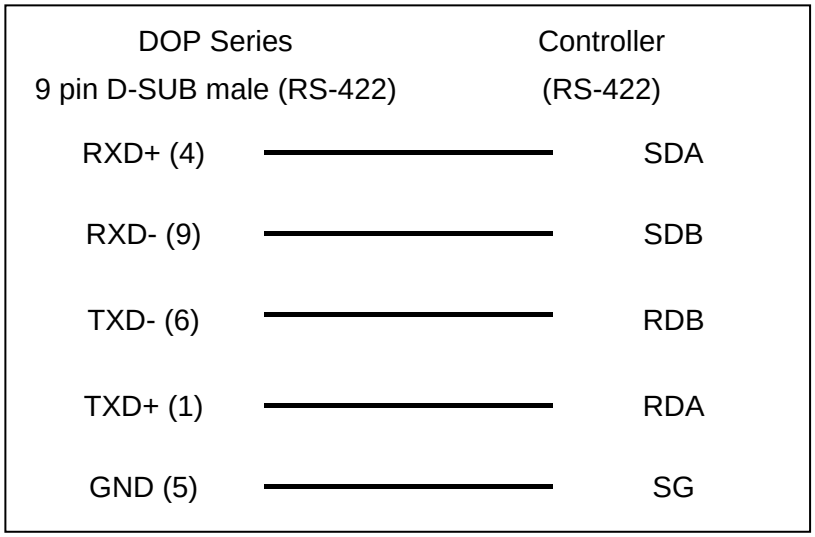
b. RS-422（Applicable to DOP-A/AE Series）via G6L-CUEC CNET Communication Module

DOP Series 99 pin D-SUB male (RS-422)		Controller (RS-422)
RXD+ (2)	———	SDA
RXD- (1)	———	SDB
TXD- (4)	———	RDB
TXD+ (3)	———	RDA
GND (5)	———	SG

c. RS-422（Applicable to DOP-AS35/AS38/AS57 Series）via G6L-CUEC CNET Communication Module



d. RS-422（Applicable to DOP-B Series）via G6L-CUEC CNET Communication Module



Definition of PLC Read/Write Address

a. Registers

Type	Format	Read/Write Range	Data Length	Note
	Word No. (n)			
I/O Relay	PWn	PW0 - PW31	Word	
Auxiliary Relay	MWn	MW0 - MW191	Word	
Keep Relay	KWn	KW0 - KW31	Word	
Link Relay	LWn	LW0 - LW63	Word	
Special Relay	FWn	FW0 - FW63	Word	Read

Type	Format	Read/Write Range	Data Length	Note
	Word No. (n)			
				Only
Timer Elapsed Value	TWn	TW0 – TW255	Word	
Counter Elapsed Value	CWn	CW0 – CW255	Word	
Data Register	DWn	DW0 – DW9999	Word	

b. Contacts

Type	Format	Read/Write Range	Note
	Word No. (n) Bit No. (b)		
I/O Relay	PXnb	PX00 – PX31F	
Auxiliary Relay	MXnb	MX00 – MX191F	
Keep Relay	KXnb	KX00 – KX31F	
Link Relay	LXnb	LX00 – LX63F	
Special Relay	FXnb	FX00 – FX63F	
Timer Contact Relay	TXb	TX0 – TX255	
Counter Contact Relay	CXb	CX0 – CX255	

NOTE

1) HMI default setting is predefined for G6L-CUEC CNET communication module.

LG XGT CNET

(Supports LG CNET communication module XG-CH2A)

HMI Factory Setting:

Baud rate: 9600, 8, None, 1

Controller Station Number: 0

Control Area / Status Area: DW0 / DW10

Connection

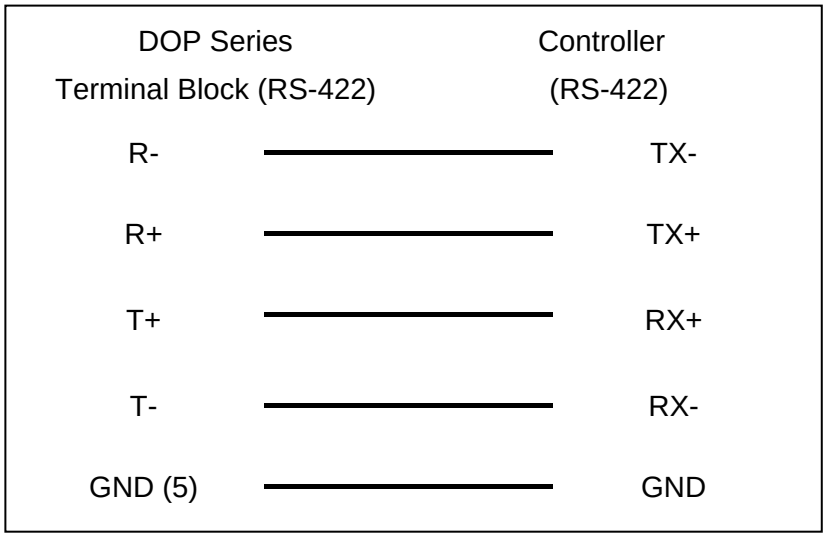
a. RS-232（Applicable to DOP-A/AE/AS, DOP-B Series）XGL-CH2A CNET Communication Module (Channel 1)

DOP Series 9 pin D-sub male (RS-232)		Controller 9 pin D-SUB male (RS-232)
RXD (2)	———	(3) TXD
TXD (3)	———	(2) RXD
GND (5)	———	(5) GND

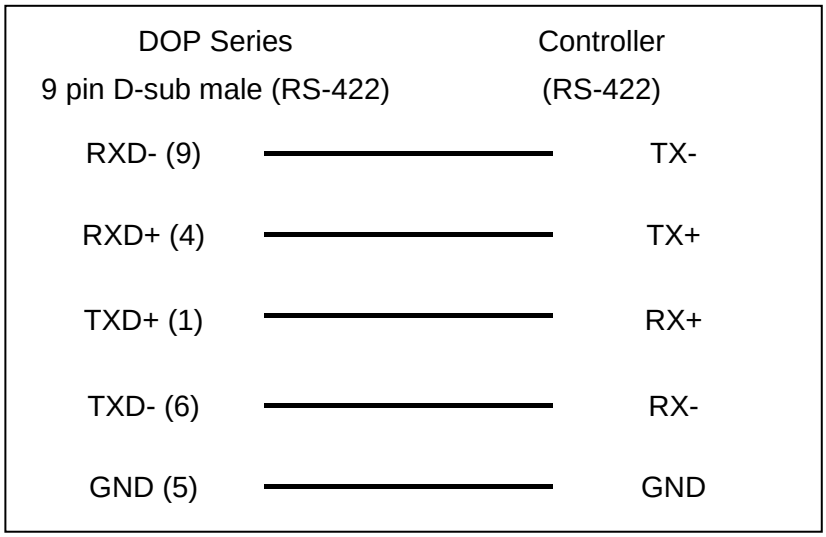
b. RS-422（Applicable to DOP-A/AE Series）XGL-CH2A CNET Communication Module (Channel 2)

DOP Series 9 pin D-sub male (RS-422)		Controller (RS-422)
RXD- (1)	———	TX-
RXD+ (2)	———	TX+
TXD+ (3)	———	RX+
TXD- (4)	———	RX-
GND (5)	———	GND

c. RS-422（Applicable to DOP-AS35/AS38/AS57 Series）XGL-CH2A CNET Communication Module (Channel 2)



d. RS-422（Applicable to DOP-A/AE Series）XGL-CH2A CNET Communication Module (Channel 2)



Definition of PLC Read/Write Address

a. Registers

Type	Format	Read/Write Range	Data Length	Note
	Word No. (n)			
I/O Relay	PWn	PW0 - PW2047	Word	
Auxiliary Relay	MWn	MW0 - MW2047	Word	
Keep Relay	KWn	KW0 - KW2047	Word	
Link Relay	LWn	LW0 - LW11263	Word	

Type	Format	Read/Write Range	Data Length	Note
	Word No. (n)			
Special Relay	FWn	FW0 – FW2047	Word	Read only
Timer Elapsed Value	TWn	TW0 – TW2047	Word	
Counter Elapsed Value	CWn	CW0 – CW2047	Word	
Data Register	DWn	DW0 – DW32767	Word	

b. Contacts

Type	Format	Read/Write Range	Note
	Word No.(n) Bit No.(b)		
I/O Relay	PXnb	PX0.0 – PX2047.F	
Auxiliary Relay	MXnb	MX0.0 – MX2047.F	
Keep Relay	KXnb	KX0.0 – KX2047.F	
Link Relay	LXnb	LX0.0 – LX11263.F	
Special Relay	FXnb	FX0.0 – FX2047.F	
Timer Contact Relay	TXb	TX0 – TX2047	
Counter Contact Relay	CXb	CX0 – CX2047	
Data Relay	DXn.b	DX0.0 – DX32767.F	

LIYAN LYPLC EX

HMI Factory Setting

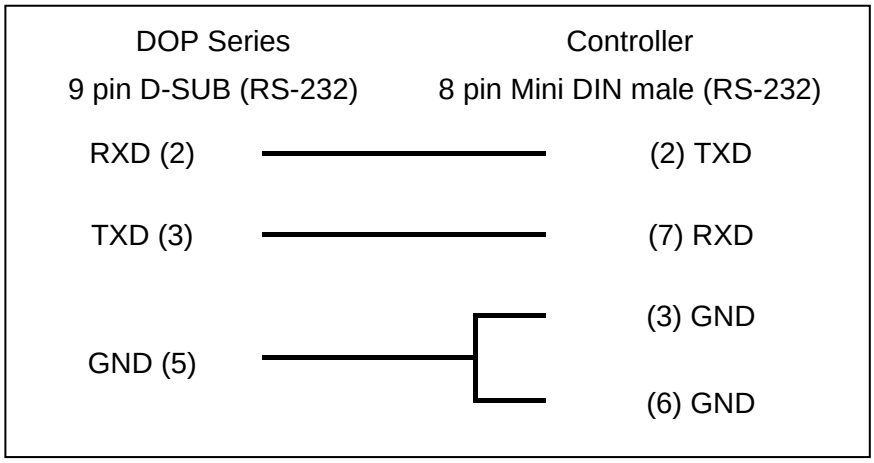
Baud rate: 9600, 7, Even, 1

Controller Station Number: 0

Control Area / Status Area: D0 / D10

Connection

a. Applicable to RS-232（DOP-A/AE/AS, DOP-B Series）



Definition of PLC Read/Write Address

a. Registers

Type	Format	Read/Write Range	Data Length	Note
	Word No. (n)			
Auxiliary Relay	Mn	M0 – M3064	Byte	1
Special Auxiliary Relay	Mn	M8000 – M8248	Byte	1
Status Relay	Sn	S0 – S992	Byte	1
Input Relay	Xn	X0 – X360	Byte	Octal,1
Output Relay	Yn	Y0 – Y360	Byte	Octal,1
Timer PV	Tn	T0 – T255	Word	
16-bit Counter PV	Cn	C0 – C199	Word	
32-bit Counter PV	Cn	C200 – C255	Double Word	
Data Register	Dn	D0 – D7999	Word	
Special Data Register	Dn	D8000 – D8255	Word	

b. Contacts

Type	Format	Read/Write Range	Note
	Bit No. (b)		
Auxiliary Relay	Mb	M0 – M3071	
Special Auxiliary Relay	Mb	M8000 – M8255	
Status Relay	Sb	S0 – S999	
Input Relay	Xb	X0 – X377	Octal
Output Relay	Yb	Y0 – Y377	Octal
Timer Flag	Tb	T0 – T255	
Counter Flag	Cb	C0 – C255	



1) Device address must be the multiple of 8.

M2i Master

HMI Factory Setting

Baud rate: 38400, 8, None, 1

Controller Station Number: 1

Control Area / Status Area: SB0 / SB10

Definition of PLC Read/Write Address

a. Registers

Type	Format	Read/Write Range	Data Length	Note
	Word No. (n)			
Word Address	SBn	SB0000 – SBFFFF	Word	Hexadecimal

b. Contacts

Type	Format	Read/Write Range	Note
	Word No. (n) Bit No. (b)		
Bit Address	SBn.b	SB0000.0 – SBFFFF.F	Hexadecimal

M2i Slave

HMI Factory Setting:

Baud rate: 38400, 8, None, 1

Controller Station Number: 1 (no PLC station number in protocol, therefore, only 1(HMI) to 1 (PLC) communication is allowed.)

Control Area / Status Area: SB0 / SB10

Connection

DOP pin definition, please refers to "Pin Definition of Serial Communication" for more detail.

Definition of PLC Read/Write Address

a. Registers

Type	Format	Read/Write Range	Data Length	Note
	Word No. (n)			
Word Address	SBn	SB0000 – SBFFFF	Word	Hexadecimal

b. Contacts

Type	Format	Read/Write Range	Note
	Word No. (n) Bit No. (b)		
Bit Address	SBn.b	SB0000.0 – SBFFFF.F	Hexadecimal

NOTE

1) HMI station number is Slave station number. (default setting is 0)

2) The relation between M2i communication address and HMI internal registers.

Modbus address		Data definition in HMI
SB0000 ~ SB7FFF	→	$0 ~ $32767
SB8000 ~ SB83FF	→	$M0 ~ $M1023
SB8400	→	RCPNO
SB8500 ~ SBFFFF	→	RCP0 ~ RCP31487

Matsushita FP PLC

HMI Factory Setting:

Baud rate: 9600, 8, Odd, 1

Controller Station Number: 238(Note1)

Control Area / Status Area: DT0 / DT10

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Connection

a. RS-232 for FP0（Applicable to DOP-A/AE/AS, DOP-B Series）

DOP Series 9 pin D-SUB (RS-232)		Controller 5 pin Mini DIN male(RS-232 for FP0)
RXD (2)	———	(2) TXD
TXD (3)	———	(3) RXD
GND (5)	———	(1) SG

b. RS-232 for FP1（Applicable to DOP-A/AE/AS, DOP-B Series）

DOP Series 9 pin D-SUB (RS-232)		Controller 9 pin D-SUB male(RS-232 for FP1)
RXD- (2)	———	(2) TXD
RXD+ (3)	———	(3) RXD
TXD+ (5)	———	(7) GND
	⌐	(4) RTS
	⌙	(5) CTS

Definition of PLC Read/Write Address

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a. Registers

Type	Format	Read/Write Range	Data Length	Note
	Word No. (n)			
Internal Relay Special Internal Relay	WRn	WR0 – WR886, WR900 – WR910	Word	
Link Relay	WLn	WL0 – WL639	Word	
External Input Relay	WXn	WX0 – WX511	Word	
External Output Relay	WYn	WY0 – WY511	Word	
Timer/Counter P.V.	EVn	EV0 – EV3071	Word	
Timer/Counter S.V.	SVn	SV0 – SV3071	Word	
Data Register	DTn	DT0 – DT32764	Word	
Link Data Register	LDn	LD0 – LD8447	Word	
File Register	FLn	FL0 – FL32764	Word	
Speical Data Register	DT9_n	DT9_0 – DT9_511	Word	2

b. Contacts

Type	Format	Read/Write Range	Note
	Word No. (n) Bit No. (b)		
Internal Relay	Rnb	Rn00 – Rn886F	
Special Internal Relay	Rnb	Rn9000 – Rn910F	
Link Relay	Lnb	Ln00 – Ln639F	
External Input Relay	Xnb	Xn00 – Xn511F	
External Output Relay	Ynb	Yn00 – Yn511F	
Timer Flag Contact	Tb	T0 – T3071	
Counter Flag Contact	Cb	C0 – C3071	

NOTE

1) PLC default setting is 238, it supports the external device connections of all station number. To change the setting, PLC supports station number range from 0 to 99. For more detail on PLC station number, please refer to PLC user manual.
2) Special data register(DT9_n) is applicable to FP0 T32C, FP2, FP2SH, FP10SH modules.

The actual transmitted address of DT9_n is DT 90000 + n.

For example, the actual transmitted address of DT9_0 is DT90001, the actual transmitted address of DT9_1 is DT90001, the actual transmitted address of DT9_2 is DT90002 and so on.

Mirle FAMA SC

HMI Factory Setting:

Baud rate: 9600, 7, Even, 1

Controller Station Number: 0

Control Area / Status Area: 40100 / 40200

Connection

a. RS-232（Applicable to DOP-A/AE/AS, DOP-B Series）

DOP Series		Controller
9 pin D-SUB (RS-232)		9 pin D-SUB male (RS-232)
RXD (2)	———	(3) TXD
TXD (3)	———	(2) RXD
GND (5)	———	(5) SG

Definition of PLC Read/Write Address

a. Registers

Type	Format	Read/Write Range	Data Length	Note
	Word No. (n)			
Output Registers	Wn	W40001 – W50000	Word	
Input Registers	Wn	W30001 – W40000	Word	Read Only

b. Contacts

Type	Format	Read/Write Range	Note
	Bit No. (b)		
Discrete Outputs	Bb	B1 – B10000	
Discrete Inputs	Bb	B10001 – B20000	Read Only

Mitsubishi A Series (CPU Port)

(Supporting A2A, A2AS, A2USH, A1SH, A3N, A2ASH(CPU-S1) Series)

HMI Factory Setting:

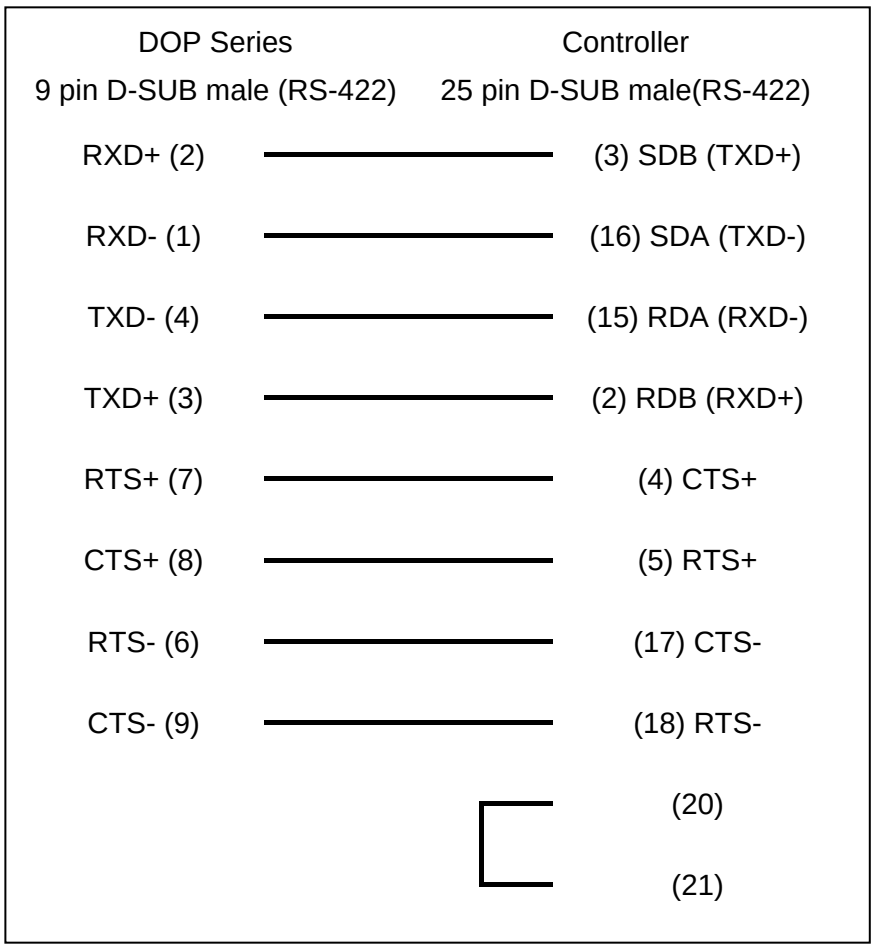
Baud rate: 9600, 8, ODD, 1

Controller Station Number: 0 (no PLC station number in protocol, therefore, only 1(HMI) to 1 (PLC) communication is allowed.)

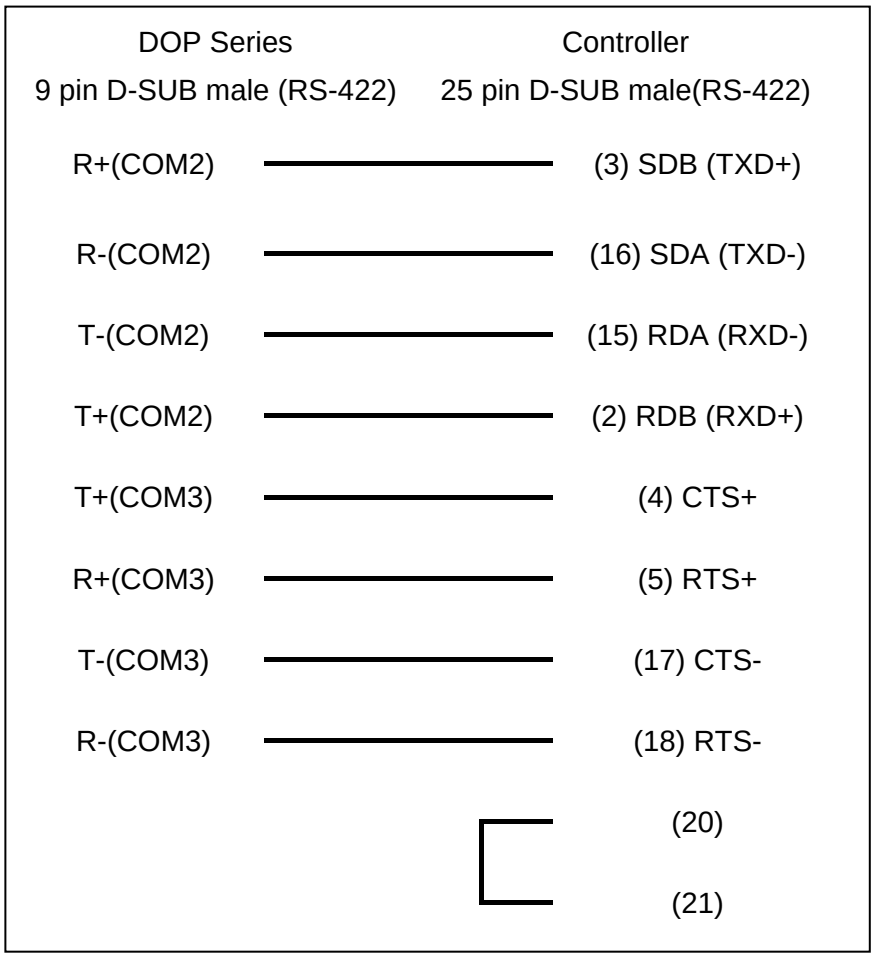
Control Area / Status Area: D0/D10

Connection

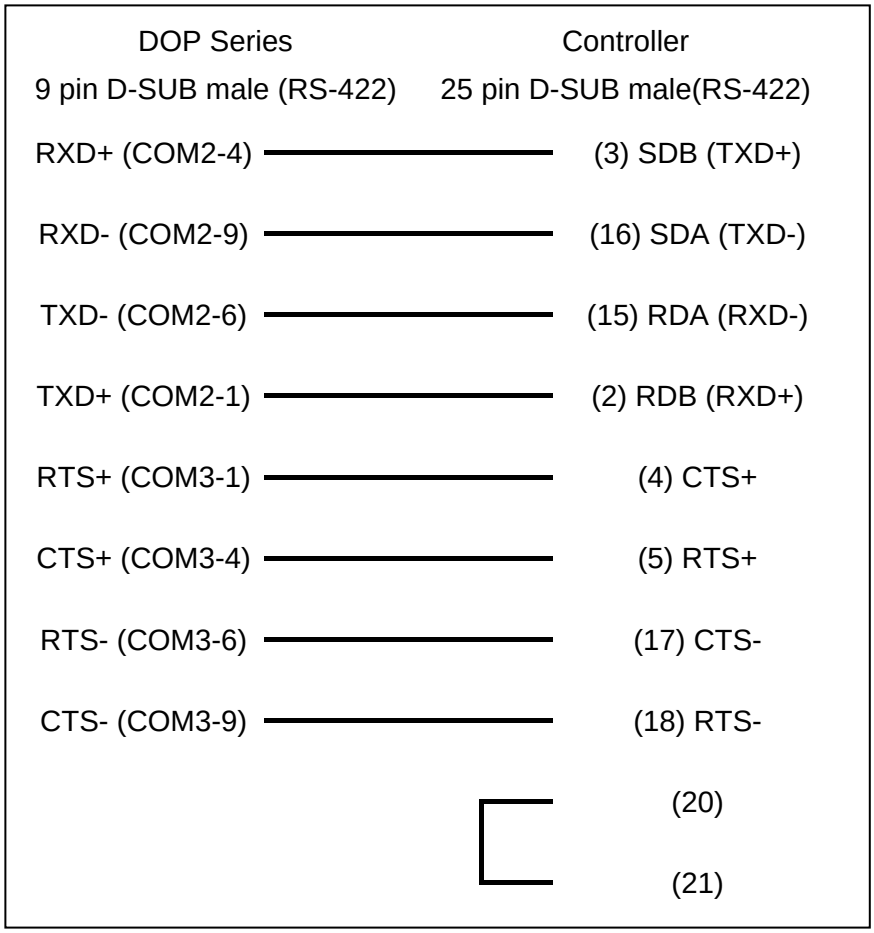
a. RS-422（Applicable to DOP-A/AE Series）



b. RS-422（Applicable to DOP-AS57 Series）



c. RS-422（Applicable to DOP-B Series）



Definition of PLC Read/Write Address

a. Registers

Type	Format	Read/Write Range	Data Length	Note
	Word No. (n)			
Input	Xn	X0 – X7FF	Word	Hexadecimal, 1, 4
Output	Yn	Y0 – Y7FF	Word	Hexadecimal, 1
Link Relay	Bn	B0 – BFFF	Word	Hexadecimal, 1
Internal Relay	Mn	M0 – M8191	Word	1
Special Internal Relay	SMn	SM9000 – SM9255	Word	2
Latch Relay	Ln	L0 – L8191	Word	1
Annunciator	Fn	F0 – F2047	Word	1
Timer Value	TNn	TN0 – TN2047	Word	

Type	Format	Read/Write Range	Data Length	Note
	Word No. (n)			
Counter Value	CNn	CN0 – CN1023	Word	
Data Register	Dn	D0 – D8191	Word	
Special Data Register	SDn	SD9000 – SD9255	Word	
File Register	Rn	R0 – R8191	Word	
Link Register	Wn	W0 – WFFF	Word	Hexadecimal
Input Card Register	PXn	PX0 – PX7FF	Word	Hexadecimal, 1, 4

b. Contacts

Type	Format	Read/Write Range	Note
	Bit No. (b)		
Input	Xb	X0 – X7FF	Hexadecimal, 4
Output	Yb	Y0 – Y7FF	Hexadecimal
Link Relay	Bb	B0 – BFFF	Hexadecimal
Internal Relay	Mb	M0 – M8191	
Special Internal Relay	SMb	SM9000 – SM9255	
Latch Relay	Lb	L0 – L2047	
Annunciator	Fb	F0 – F2047	
Timer Contact	TSb	TS0 – TS2047	
Timer Coil	TCb	TC0 – TC2047	
Counter Contact	CSb	CS0 – CS1023	
Counter Coil	CCb	CC0 – CC1023	
Input Card Register	PXb	PX0 – PX7FF	Hexadecimal, 4

NOTE

1) Device address must be the multiple of 16.
2) Device address must be 9000 plus the multiple of 16.
3) If the PLC station number is set as 0 and a read/write register error occurs on HMI, please reset the PLC station number to 255.
4) If a read/ write register X error occurs on HMI, please use register PX.
5) R address would vary upon the FILE REGISTER of PLC setting.

For Example：A2USH

1K：3800-4000H

2K：3000-4000H

3K：2800-4000H

4K：2000-4000H

5K~8K：…

FILE REGISTER：PLC must be on or Read/Write will be incorrect..

6) How to set File Register (R) for Mitsubishi A serial PLC:

1. Startup MELSOFT series GX Developer.
2. Open “Project Data List” windows. (“View” Option)
3. Double click Parameter \ PLC Parameter, and open “Setting” window.
4. Set Memory Capacity \ File Register (0 ~8).
5. Press “End” button on the bottom and complete the setting.
6. Execute OnLine\Write to PLC.
7. Enable the “Parameter \ PLC/Network” and “File register \ Main” option (check the check box next to “Parameter \ PLC/Network” and “File register \ Main”).
8. Press “Execute” button.
9. Complete

Mitsubishi A Series/J71UC24 Computer Link

HMI Factory Setting:

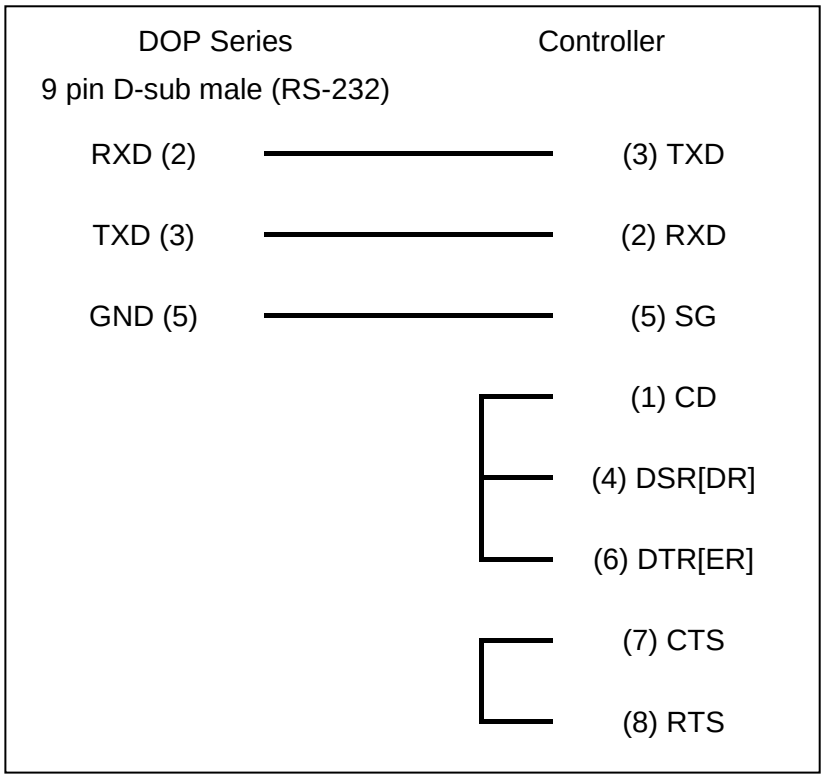
Baud rate: 9600, 8, ODD, 1

Controller Station Number: 0 （Note1）

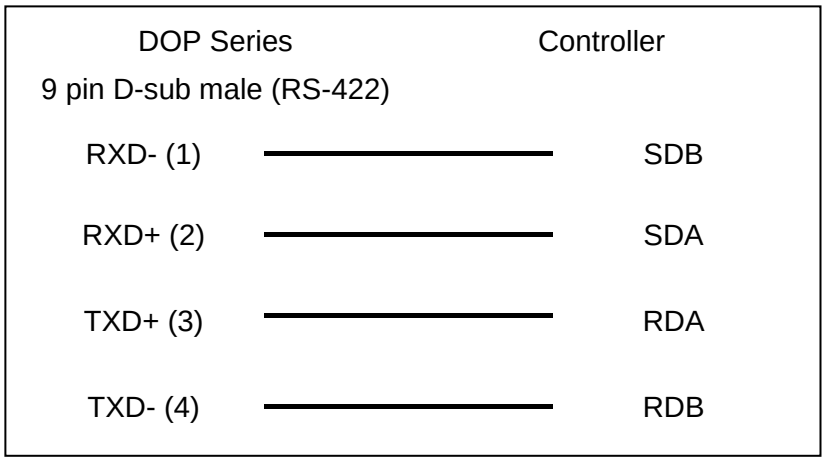
Control Area / Status Area: D0/D10

Connection

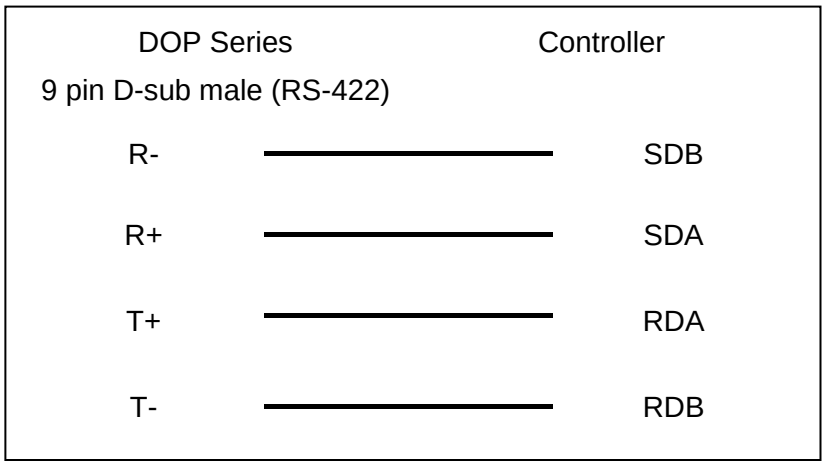
a. RS-232（Applicable to DOP-A/AE/AS, DOP-B Series）



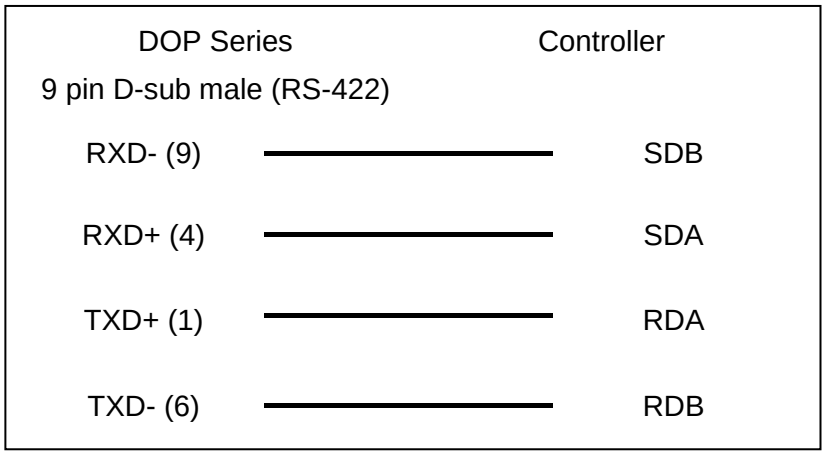
b. RS-422（Applicable to DOP-A/AE Series）



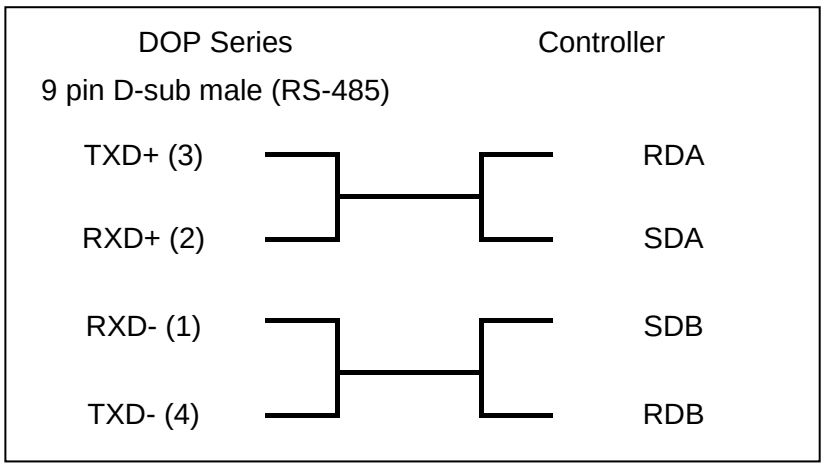
c. RS-422（Applicable to DOP-AS35/AS38/AS57 Series）



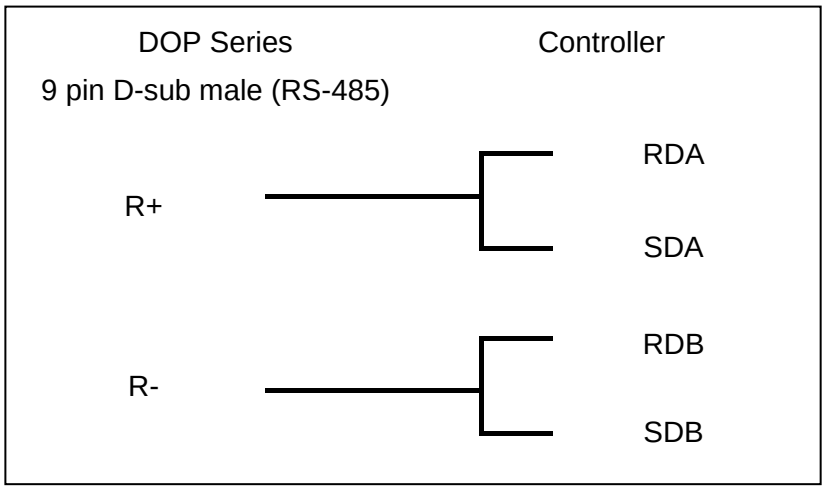
d. RS-422（Applicable to DOP-B Series）



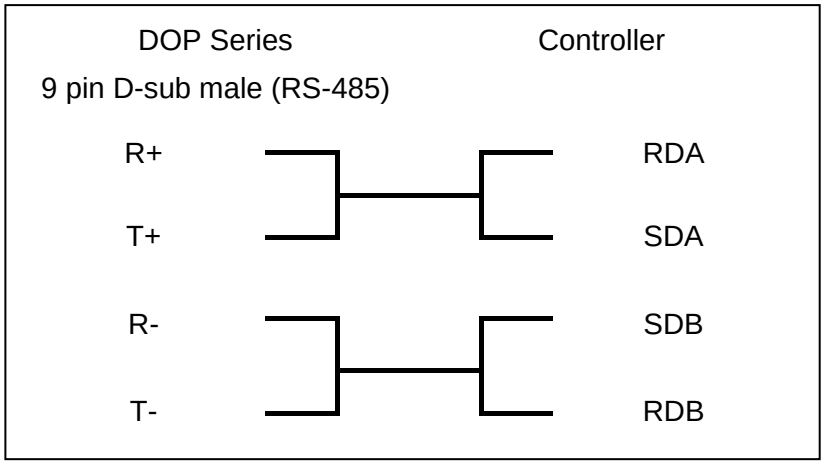
e. RS-485（Applicable to DOP-A/AE Series）



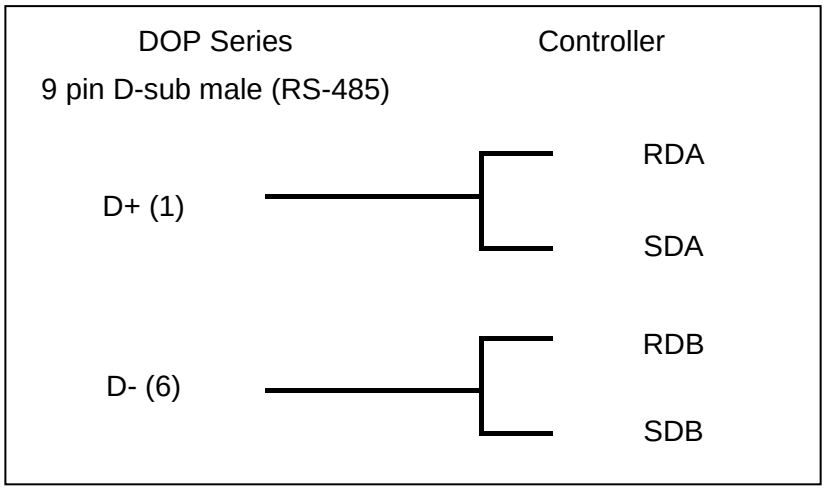
f. RS-485（Applicable to DOP-AS57 Series）



g. RS-485（Applicable to DOP-AS35/AS38 Series）



h. RS-485（Applicable to DOP-B Series）



Definition of PLC Read/Write Address

a. Registers

Type	Format	Read/Write Range	Data Length	Note
	Word No. (n)			
Input	Xn	X0 – X7FF	Word	3
Output	Yn	Y0 – X7FF	Word	3
Link Relay	Bn	B0 – BFFF	Word	3
Internal Relay	Mn	M0 – M8176	Word	3
Special Internal Relay	SMn	SM9000 – SM9240	Word	4
Latch Relay	Ln	L0 – L2032	Word	3
Annunciator	Fn	F0 – F2032	Word	3
Timer Value	TNn	TN0 – TN999	Word	
Counter Value	CNn	CN0 – CN999	Word	
Data Register	Dn	D0 – D8191	Word	
Special Data Register	SDn	SD9000 – SD9255	Word	
File Register	Rn	R0 – R8191	Word	
Link Register	Wn	W0 – WFFF	Word	

b. Contacts

Type	Format	Read/Write Range	Note
	Bit No. (b)		
Input	Xb	X0 – X7FF	
Output	Yb	Y0 – Y7FF	
Link Relay	Bb	B0 – BFFF	
Internal Relay	Mb	M0 – M8191	
Special Internal Relay	SMb	SM9000 – SM9255	
Latch Relay	Lb	L0 – L2047	
Annunciator	Fb	F0 – F2047	
Timer Contact	TSb	TS0 – TS999	
Timer Coil	TCb	TC0 – TC999	
Counter Contact	CSb	CS0 – CS999	
Counter Coil	CCb	CC0 – CC999	

NOTE

1) a. The mode switch setting of AJ71UC24-R2 communication is 4 (Form 4)，Station number can only be 0.

b. The mode switch setting of AJ71UC24-R4 communication is 8 (Form 4)，station number can be determined by switch setting X1/X10。

After PLC communication mode switch is set, please re-activate the PLC.
The protocol is CheckSum and PLC Mode is Form 4. For switch setting of other communication parameter, please refers to Mitsubishi user manual.

2) Parameter is set by the programming software GX Developer, please refers to PLC user manual for set up instruction.

3) Device address should be the multiple of 16.

4) Device address should be the multiple of 16 plus 9000.

5) When certain Output Relay (**Y**) and Special Data Relay (**SM**) are set as 1, PLC will stop function. Please RESET the PLC for re-activation.

6) Though the default setting is in short communication address, this protocol supports both Short/ Long communication address. If only certain type of address is suitable to your device, address format can be changed in special parameter under the setting menu.

Mitsubishi FX3U

HMI Factory Setting:

Baud rate: 9600, 7, Even, 1

Controller Station Number: 0 (no PLC station number in protocol, therefore, only 1(HMI) to 1 (PLC) communication is allowed.)

Control Area / Status Area: D0 / D10

Connection

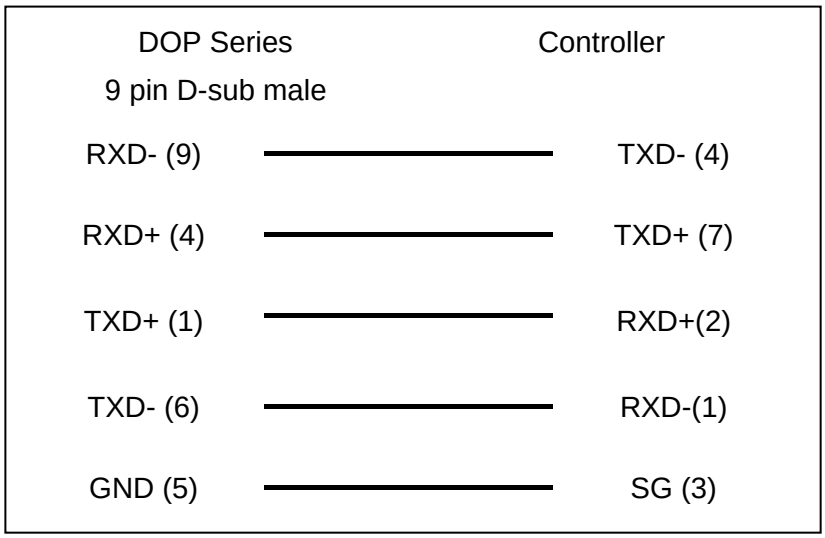
a. RS-422（Applicable to DOP-A/AE Series）

DOP Series 9 pin D-sub male		Controller
RXD- (1)	———	TXD- (4)
RXD+ (2)	———	TXD+ (7)
TXD+ (3)	———	RXD+(2)
TXD- (4)	———	RXD-(1)
GND (5)	———	SG (3)

b. RS-422（Applicable to DOP-AS35/AS38/AS57 Series）

DOP Series 9 pin D-sub male		Controller
R-	———	TXD- (4)
R+	———	TXD+ (7)
T+	———	RXD+(2)
T-	———	RXD-(1)
GND (5)	———	SG (3)

c. RS-422（Applicable to DOP-B Series）



Definition of PLC Read/Write Address

a. Registers

Type	Format	Read/Write Range	Data Length	Note
	Word No. (n)			
Auxiliary Relay	Mn	M0 – M7664	Word	1
Special Auxiliary Relay	Mn	M8000 – M8496	Word	1
Status Relay	Sn	S0 – S4080	Word	1
Input Relay	In	I0 – I360	Word	Octal, 1
Output Relay	On	O0 – O360	Word	Octal, 1
Timer PV	Tn	T0 – T255	Word	
16-bit Counter PV	Cn	C0 – C199	Word	
32-bit Counter PV	Cn	C200 – C255	Double Word	
Data Register	Dn	D0 – D7999	Word	
Special Data Register	Dn	D8000 – D8511	Word	
Extension Register	Rn	R0 – R32767	Word	

b. Contacts

Type	Format	Read/Write Range	Note
	Bit No. (b)		
Auxiliary Relay	Mb	M0 – M7679	
Special Auxiliary Relay	Mb	M8000 – M8511	
Status Relay	Sb	S0 – S4095	
Input Relay	Ib	I0 – I377	Octal

Output Relay	**O**b	**O**0 – **O**377	Octal
Timer Flag	**T**b	**T**0 – **T**255	
Counter Flag	**C**b	**C**0 – **C**255	

NOTE

1) The device address must be the multiple of 16.

Mitsubishi FX Series Computer Link

HMI Factory Setting:

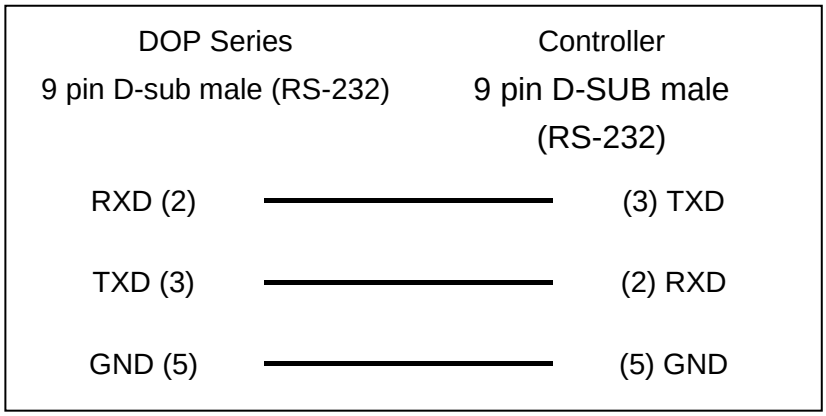
Baud rate: 9600, 7, Even, 1

Controller Station Number: 1

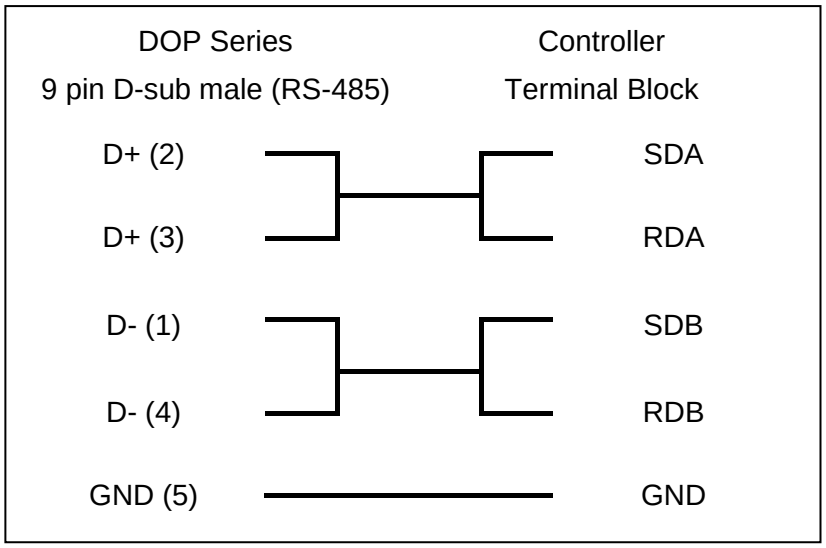
Control Area / Status Area: D0 / D10

Connection

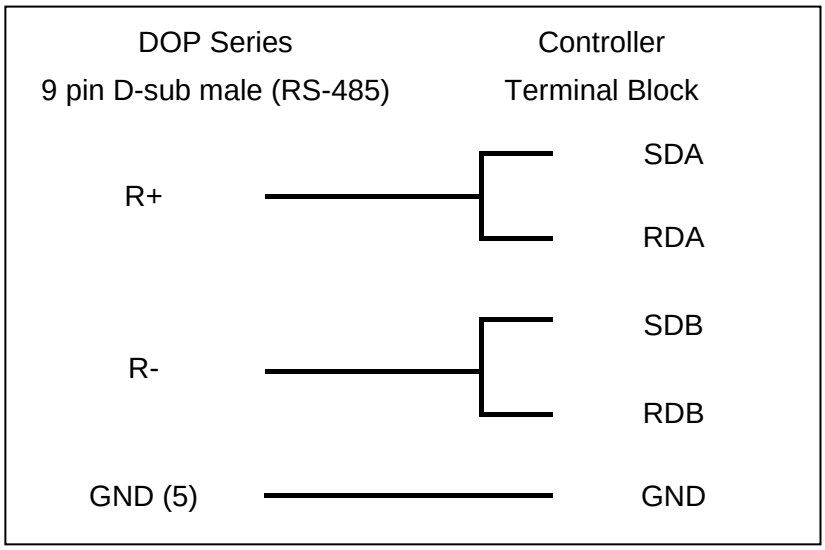
a. RS-232（Applicable to DOP-A/AE/AS, DOP-B Series）



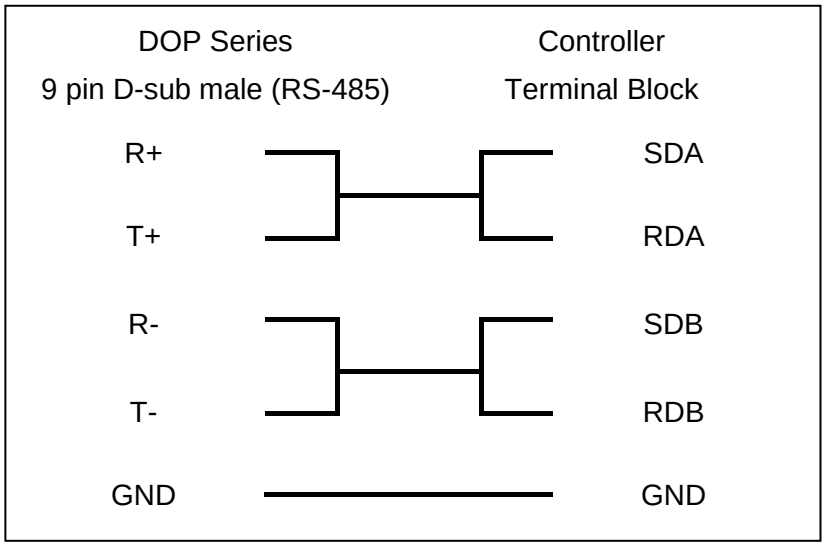
b. RS-485（Applicable to DOP-A/AE Series）



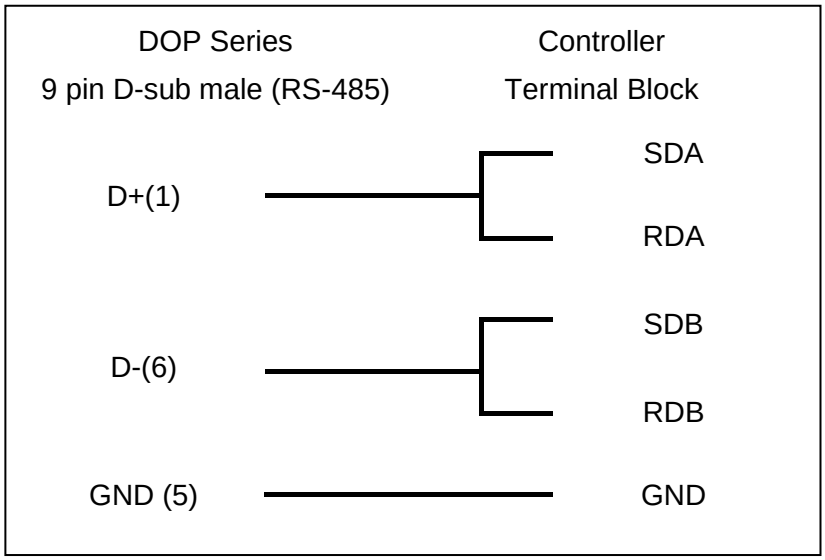
c. RS-485（Applicable to DOP-AS57 Series）



d. RS-485（Applicable to DOP-AS35/AS38 Series）



e. RS-485（Applicable to DOP-B Series）



Definition of PLC Read/Write Address

a. Registers

Type	Format	Read/Write Range	Data Length	Note
	Word No.(n)			
Auxiliary Relay	Mn	M0 – M7679	Word	2
Special Auxiliary Relay	Mn	M8000 – M8511	Word	2
Status Relay	Sn	S0 – S4095	Word	2
Input Relay	Xn	X0 – X377	Word	Octal, 2
Output Relay	Yn	Y0 – Y377	Word	Octal, 2
Timer PV	Tn	T0 – T255	Word	
16-Bits Counter PV	Cn	C0 – C199	Word	
32-Bits Counter PV	Cn	C200 – C255	Double Word	
Data Register	Dn	D0 – D7999	Word	
Special Data Register	Dn	D8000 – D8511	Word	

b. Contacts

Type	Format	Read/Write Range	Note
	Bit No.(n)		
Auxiliary Relay	Mb	M0 – M7679	
Special Auxiliary Relay	Mb	M8000 – M8511	
Status Relay	Sb	S0 – S4095	
Input Relay	Xb	X0 – X377	Octal
Output Relay	Yb	Y0 – Y377	Octal
Timer Flag	Tb	T0 – T255	
Counter Flag	Cb	C0 – C255	

NOTE

1) This communication protocol supports FX Series 485-BD/ 232-BD communication module.

2) The device address must be the multiple of 16.

Mitsubishi FX Series PLC(Note 1) / Mitsubishi FX2N PLC(Note 2)

HMI Factory Setting:

Baud rate: 9600, 7, Even, 1

Controller Station Number: 0 (no PLC station number in protocol, therefore, only 1(HMI) to 1 (PLC) communication is allowed.)

Control Area / Status Area: D0 / D10

Connection

a. RS-422（Applicable to DOP-A/AE Series）

DOP Series		Controller
9 pin D-SUB male (RS-422)		8 pin Mini DIN male (RS-422)
RXD+ (2)	———	(7) TXD+
RXD- (1)	———	(4) TXD-
TXD+ (3)	———	(2) RXD+
TXD- (4)	———	(1) RXD-
GND (5)	———	(3) SG

b. RS-422（Applicable to DOP-AS35/AS38/AS57 Series）

DOP Series		Controller
9 pin D-SUB male (RS-422)		8 pin Mini DIN male (RS-422)
R+	———	(7) TXD+
R-	———	(4) TXD-
T+	———	(2) RXD+
T-	———	(1) RXD-
GND	———	(3) SG

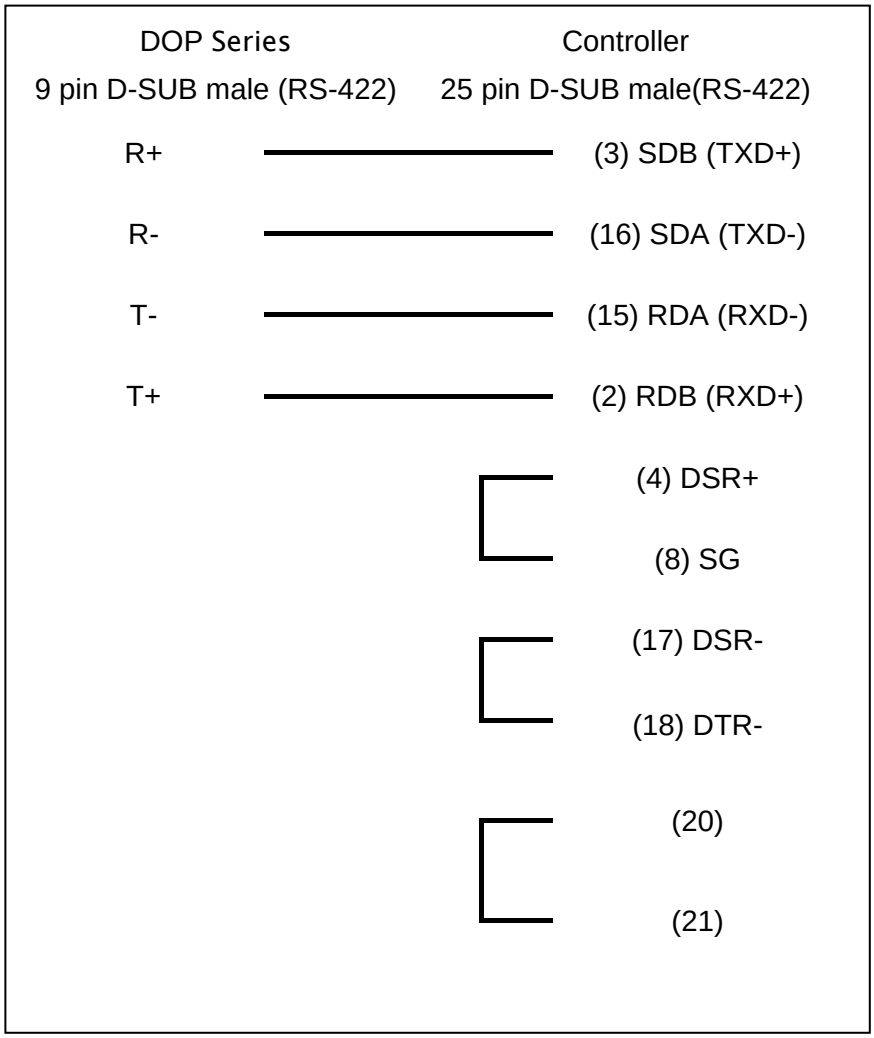
c. S-422（Applicable to DOP-B Series）

DOP Series 9 pin D-SUB male (RS-422)		Controller 8 pin Mini DIN male (RS-422)
RXD+ (4)	———	(7) TXD+
RXD- (9)	———	(4) TXD-
TXD+ (1)	———	(2) RXD+
TXD- (6)	———	(1) RXD-
GND (5)	———	(3) SG

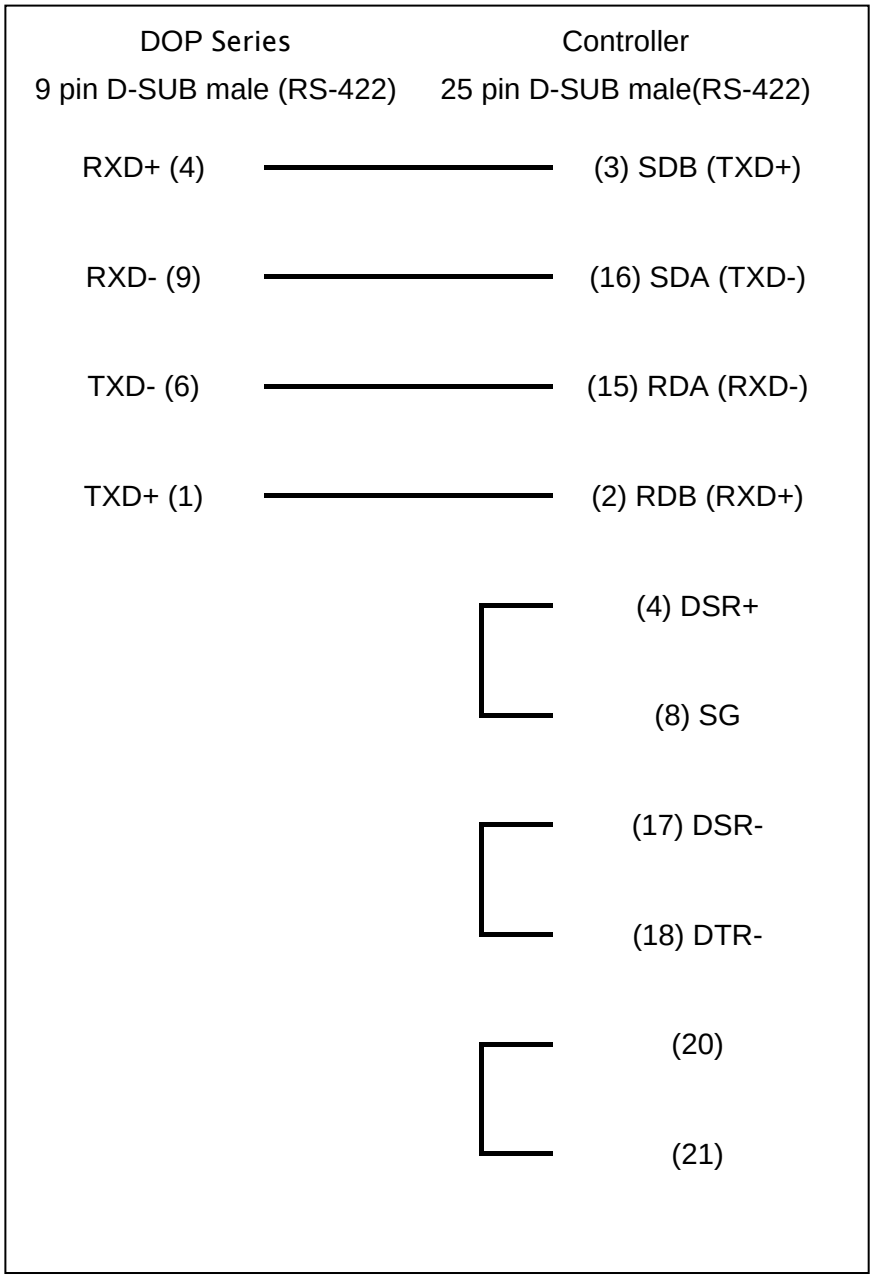
d. RS-422（Applicable to DOP-A/AE Series）

DOP Series 9 pin D-SUB male (RS-422)		Controller 25 pin D-SUB male(RS-422)
RXD+ (2)	———	(3) SDB (TXD+)
RXD- (1)	———	(16) SDA (TXD-)
TXD- (4)	———	(15) RDA (RXD-)
TXD+ (3)	———	(2) RDB (RXD+)
	⌐	(4) DSR+
	⌙	(8) SG
	⌐	(17) DSR-
	⌙	(18) DTR-
	⌐	(20)
	⌙	(21)

e. RS-422（Applicable to DOP-AS57 Series）



f. RS-422（Applicable to DOP-B Series）



Definition of PLC Read/Write Address

a. Registers

Type	Format	Read/Write Range	Data Length	Note
	Word No. (n)			
Auxiliary Relay	Mn	M0 – M3064	Byte	3
Special Auxiliary Relay	Mn	M8000 – M8248	Byte	3
Status Relay	Sn	S0 – S992	Byte	3
Input Relay	Xn	X0 – X360	Byte	Octal, 3
Output Relay	Yn	Y0 – Y360	Byte	Octal, 3
Timer PV	Tn	T0 – T255	Word	
16-位元 Counter PV	Cn	C0 – C199	Word	
32-位元 Counter PV	Cn	C200 – C255	Double Word	
Data Register	Dn	D0 – D7999	Word	
Special Data Register	Dn	D8000 – D8255	Word	

b. Contacts

Type	Format	Read/Write Range	Note
	Bit No. (b)		
Auxiliary Relay	Mb	M0 – M3071	
Special Auxiliary Relay	Mb	M8000 – M8255	
Status Relay	Sb	S0 – S999	
Input Relay	Xb	X0 – X377	Octal
Output Relay	Yb	Y0 – Y377	Octal
Timer Flag	Tb	T0 – T255	
Counter Flag	Cb	C0 – C255	

NOTE

1) If connecting to Mitsubishi FX series PLC, the user can only use FX series communication protocol.
2) If connecting to Mitsubishi FX1N/FX2N series PLC, the user can only use FX2N communication protocol.
3) The device address must be the multiple of 8.

Mitsubishi J2s Series

HMI Factory Setting:

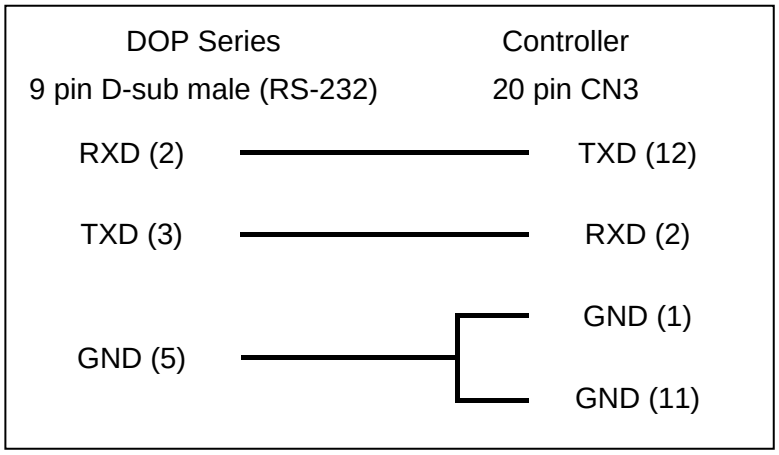
Baud rate: 9600, 8, Even, 1 (RS-232)

Controller Station Number: 0

Control Area / Status Area: None/None

Connection

a. RS-232（Applicable to DOP-A/AE/AS, DOP-B Series）



Definition of PLC Read/Write Address

a. Registers

Type	Format	Read/Write Range	Data Length	Note
	Word No. (n)			
Parameter list (cmd: 05/84)	Pn	P0 - P84	Double Word	
Status display (cmd: 01,8n/NA)	Sn	S0 - SE	Double Word	Hexadecimal Read only, 1
Alarm Number in history (cmd: 33,1n/NA)	ANn	AN0 - AN5	Word	Read only, 1
Alarm Occurrence time in history (cmd: 33,2n/NA)	AOn	AO0 - AO5	Double Word	Read only, 1
Current alarm number (AC) (cmd: 02/NA)	ACn	AC0	Word	Read only, 1

Type	Format Word No. (n)	Read/Write Range	Data Length	Note
Status display at alarm occurrence (**AS**) (cmd: 35,8/NA)	**AS**n	**AS**0	Double Word	Read only, 1
External **I**nput pin status (**EI**) (cmd: 12,40/92,00)	**EI**n	**EI**0	Double Word	
External **O**utput pin status (**EO**) (cmd: 12,C0/92,A0)	**EO**n	**EO**0	Double Word	
OPeration mode selection (**OP**) (cmd: NA/8B,00)	**OP**n	**OP**0	Word	Read only, 1
Speed for test operation (**TSPD**) (cmd: NA/A0,10)	**TSPD**n	**TSPD**0	Word	Read only, 1
Acceleration/deceleration for test operation (**TACC**) (cmd: NA/A0,11)	**TACC**n	**TACC**0	Double Word	Read only, 1
Distance for test operation (**TDIS**) (cmd: NA/A0,13)	**TDIS**n	**TDIS**0	Double Word	Read only, 1

b. Contacts

Type	Format Bit No. (b)	Read/Write Range	Note
Status display clear (**SRST**) (cmd: NA/81,00)	**SRST**b	**SRST**0	Read only, 1
Alarm history clear (**ACLR**) (cmd: NA/82,20)	**ACLR**b	**ACLR**0	Read only, 1
Alarm reset (**ARST**) (cmd: NA/82,00)	**ARST**b	**ARST**0	Read only, 1
Turn off the external input signals (DI) (**OFDI**) (cmd: NA/90,00)	**OFDI**b	**OFDI**0	Read only, 1

Type	Format Bit No. (b)	Read/Write Range	Note
Changes the external output signals (DO) (**CHDO**) (cmd: NA/90,03)	**CHDO**b	**CHDO**0	Read only, 1
Enable the disabled external input signals (**ENDI**) (cmd: NA/90,10)	**ENDI**b	**ENDI**0	Read only, 1
Enable the disabled external output signals (**ENDO**) (cmd: NA/90,13)	**ENDO**b	**ENDO**0	Read only, 1
Clear the time constant of acceleration in test operation mode (**TCLR**) (cmd: NA/A0,12)	**TCLR**b	**TCLR**0	Read only, 1
Temporary stop of position mode in test operation (**TSTP**) (cmd: NA/A0,15)	**TSTP**b	**TSTP**0	Read only, 1

NOTE

1) Read / Write Limit

This communication protocol uses devices to simulate the operation of Servo, so there is a limit for the device to read and write the command. In the column of register type and contact type, the string of characters after "cmd:" indicates the corresponding Servo command that the device will read and write.

1. 「**P**arameter List (cmd: 05/84)」, the command input 05 is to read and 84 is to write. This register allows both read and write
2. 「**S**tatus display (cmd: 01,8n/NA), the command input 01,8n is to read and NA means this register does not support write command. This register allows read only.
3. 「**OP**eration mode selection (cmd: NA/8B,00)」, the command input 8B,00 is to write and NA means this register does not support read command. This register allows write only.

Mitsubishi Q Series Computer Link

HMI Factory Setting:

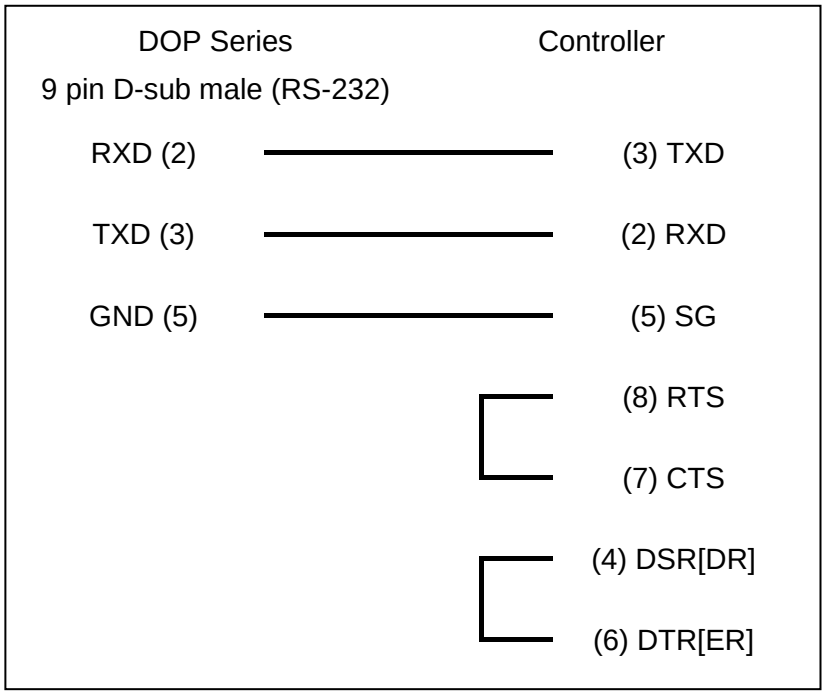
Baud rate: 19200, 8, None, 1

Controller Station Number: 0

Control Area / Status Area: D0 / D10

Connection

a. RS-232（Applicable to DOP-A/AE/AS, DOP-B Series）



b. RS-422（Applicable to DOP-A/AE Series）

DOP Series		Controller
9 pin D-sub male (RS-422)		
RXD- (1)	———	SDB (2)
RXD+ (2)	———	SDA (1)
TXD+ (3)	———	RDA (3)
TXD- (4)	———	RDB (4)
GND (5)	———	SG (5)

c. RS-422（Applicable to DOP-AS35/AS38/AS57 Series）

DOP Series		Controller
9 pin D-sub male (RS-422)		
R-	———	SDB (2)
R+	———	SDA (1)
T+	———	RDA (3)
T-	———	RDB (4)
GND	———	SG (5)

d. RS-422（Applicable to DOP-B Series）

DOP Series		Controller
9 pin D-sub male (RS-422)		
RXD- (9)	———	SDB (2)
RXD+ (4)	———	SDA (1)
TXD+ (1)	———	RDA (3)
TXD- (6)	———	RDB (4)
GND (5)	———	SG (5)

Definition of PLC Read/Write Address

a. Registers

Type	Format	Read/Write Range	Data Length	Note
	Word No. (n)			
Input	Xn	X0 – X1FF0	Word	Hexadecimal, 2
Output	Yn	Y0 – Y1FF0	Word	Hexadecimal, 2
Internal Relay	Mn	M0 – M8176	Word	2
Special Internal Relay	Mn	M9000 – M9240	Word	3
Link Relay	Bn	B0 – B1FF0	Word	Hexadecimal, 2
Annunciator	Fn	F0 – F2032	Word	2
Timer Value	TNn	TN0 – TN2047	Word	
Counter Value	CNn	CN0 – CN2047	Word	
Data Register	Dn	D0 – D8191	Word	
Special Data Register	Dn	D9000 – D9255	Word	
Link Register	Wn	W0 – W1FFF	Word	Hexadecimal

b. Contacts

Type	Format	Read/Write Range	Note
	Bit No. (b)		
Input	Xb	X0 – X1FFF	Hexadecimal
Output	Yb	Y0 – Y1FFF	Hexadecimal
Internal Relay	Mb	M0 – M8191	
Special Internal Relay	Mb	M9000 – M9255	
Link Relay	Bb	B0 – B1FFF	Hexadecimal
Annunciator	Fb	F0 – F2047	
Timer Contact	TSb	TS0 – TS2047	
Timer Coil	TCb	TC0 – TC2047	
Counter Contact	CSb	CS0 – CS2047	
Counter Coil	CCb	CC0 – CC2047	

NOTE

1) Before using this communication protocol, the user needs to set communication module via GX Developer programming tools. For more detailed information regarding the setting method, please refers to Mitsubishi PLC User Manual.

2) The device address must be the multiple of 16.

3) The device address must be the multiple of 16+9000.

Mitsubishi Q series CPU Port

HMI Factory Setting:

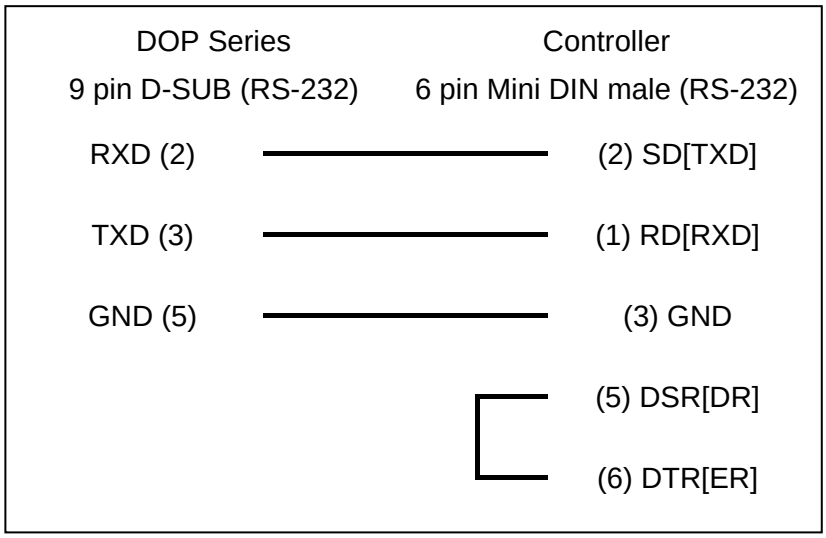
Baud rate: 19200, 8, Odd, 1

Controller Station Number: 0 (no PLC station number in protocol, therefore, only 1(HMI) to 1 (PLC) communication is allowed.)

Control Area / Status Area: D0 / D10

Connection

a. RS-232（Applicable to DOP-A/AE/AS, DOP-B Series）



Definition of PLC Read/Write Address

a. Registers

Type	Format	Read/Write Range	Data Length	Note
	Word No. (n)			
Input	X-n	X-0 – X-1FFF	Word	Hexadecimal, 2
Output	Y-n	Y-0 – Y-1FFF	Word	Hexadecimal, 2
Direct input	DX-n	DX-0 – DX-1FFF	Word	Hexadecimal, 2
Direct output	DY-n	DY-0 – DY-15	Word	2
Latch Relay	L-n	L-0 – L-8191	Word	2

Type	Format	Read/Write Range	Data Length	Note
	Word No. (n)			
Annunciator	F-n	F-0 - F-2047	Word	2
Edge Relay	V-n	V-0 - V-2047	Word	2
Step Relay	S-n	S-0 - S-8191	Word	2
Link Relay	B-n	B-0 - B-1FFF	Word	Hexadecimal, 2
Special Link Relay	SB-n	SB-0 - SB-7FF	Word	Hexadecimal, 2
Internal Relay	M-n	M-0 - M-8191	Word	2
Special Internal Relay	SM-n	SM-0 - SM-2047	Word	2
Timer Value	TN-n	TN-0 - TN-2047	Word	
Retentive timer Value	SN-n	SN-0 - SN-2047	Word	
Counter Value	CN-n	CN-0 - CN-1023	Word	
Data Register	D-n	D-0 - D-12287	Word	
Special Data Register	SD-n	SD-0 - SD-2047	Word	
Index Register	Z-n	Z-0 - Z-15	Word	
File Register	R-n	R-0 - R-32767	Word	
File Register	ZR-n	ZR-0 -ZR-32767	Word	
Link Register	W-n	W-0 - W-1FFF	Word	Hexadecimal
Special Link Register	SW-n	SW-0 - SW-7FF	Word	Hexadecimal

b. Contacts

Type	Format	Read/Write Range	Note
	Bit No. (b)		
Input	X-b	X-0 - X-1FFF	Hexadecimal
Output	Y-b	Y-0 - Y-1FFF	Hexadecimal
Direct input	DX-b	DX-0 - DX-1FFF	Hexadecimal
Direct output	DY-b	DY-0 - DY-15	
Latch Relay	L-b	L-0 - L-8191	
Annunciator	F-b	F-0 - F-2047	
Edge Relay	V-b	V-0 - V-2047	
Step Relay	S-b	S-0 - S-8191	
Link Relay	B-b	B-0 - B-1FFF	Hexadecimal
Special Link Relay	SB-b	SB-0 - SB-7FF	Hexadecimal
Internal Relay	M-b	M-0 - M-8191	
Special Internal Relay	SM-b	SM-0 - SM-2047	
Timer Contact	TS-b	TS-0 - TS-2047	

Timer Coil	TC-b	TC-0 – TC-2047	
Retentive timer Contact	SS-b	SS-0 – SS-2047	
Retentive timer Coil	SC-b	SC-0 – SC-2047	
Counter Contact	CS-b	CS-0 – CS-1023	
Counter Coil	CC-b	CC-0 – CC-1023	

NOTE

1) If the baud rate is incorrect, HMI will set PLC baud rate as HMI baud rate automatically.
2) The device address must be the multiple of 16.
3) This protocol supports Mitsubishi Q00 and Q00J series.

Mitsubishi Q Series Ethernet

（Supports QJ71E71 / QJ71E71-B2 / QJ71E71-B5 / QJ71E71-100 Series Module）

HMI Factory Setting:

Baud rate: 192.168.0.1

Controller Station Number: 1025

Control Area / Status Area: D0 / D10

Connection

Standard jumper Cable/ Network Cable without jumper (Auto-detected by HMI)

Definition of PLC Read/Write Address

a. Registers

Type	Format	Read/Write Range	Data Length	Note
	Word No. (n)			
Input	Xn	X0 - X1FF0	Word	Hexadecimal, 2
Output	Yn	Y0 - Y1FF0	Word	Hexadecimal, 2
Internal Relay	Mn	M0 - M8176	Word	2
Special Internal Relay	Mn	M9000 - M9240	Word	3
Link Relay	Bn	B0 - B1FF0	Word	Hexadecimal, 2
Annunciator	Fn	F0 - F2032	Word	2
Timer Value	TNn	TN0 - TN2047	Word	
Counter Value	CNn	CN0 - CN2047	Word	
Data Register	Dn	D0 - D8191	Word	
Special Data Register	Dn	D9000 - D9255	Word	
Link Register	Wn	W0 - W1FFF	Word	Hexadecimal

b. Contacts

Type	Format	Read/Write Range	Note
	Bit No. (b)		
Input	Xb	X0 - X1FFF	Hexadecimal

Type	Format	Read/Write Range	Note
	Bit No. (b)		
Output	Yb	Y0 – Y1FFF	Hexadecimal
Internal Relay	Mb	M0 – M8191	
Special Internal Relay	Mb	M9000 – M9255	
Link Relay	Bb	B0 – B1FFF	Hexadecimal
Annunciator	Fb	F0 – F2047	
Timer Contact	TSb	TS0 – TS2047	
Timer Coil	TCb	TC0 – TC2047	
Counter Contact	CSb	CS0 – CS2047	
Counter Coil	CCb	CC0 – CC2047	

NOTE

1) Before using this communication protocol, the user needs to set communication module via GX Developer programming tools. For more detailed information regarding the setting method, please refers to Mitsubishi PLC User Manual.

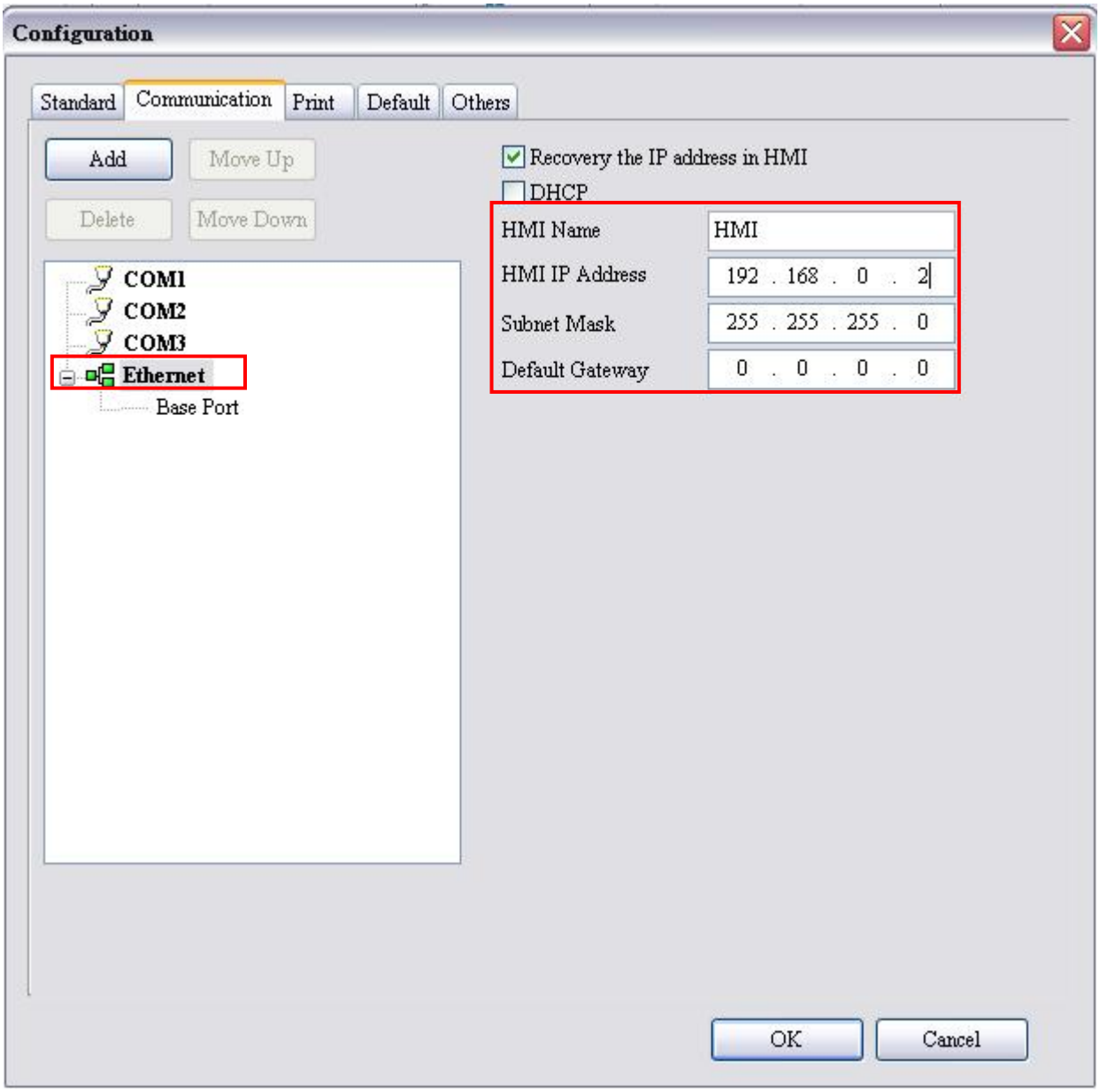
2) The device address must be the multiple of 16.

3) The device address must be the multiple of 16 plus 9000.

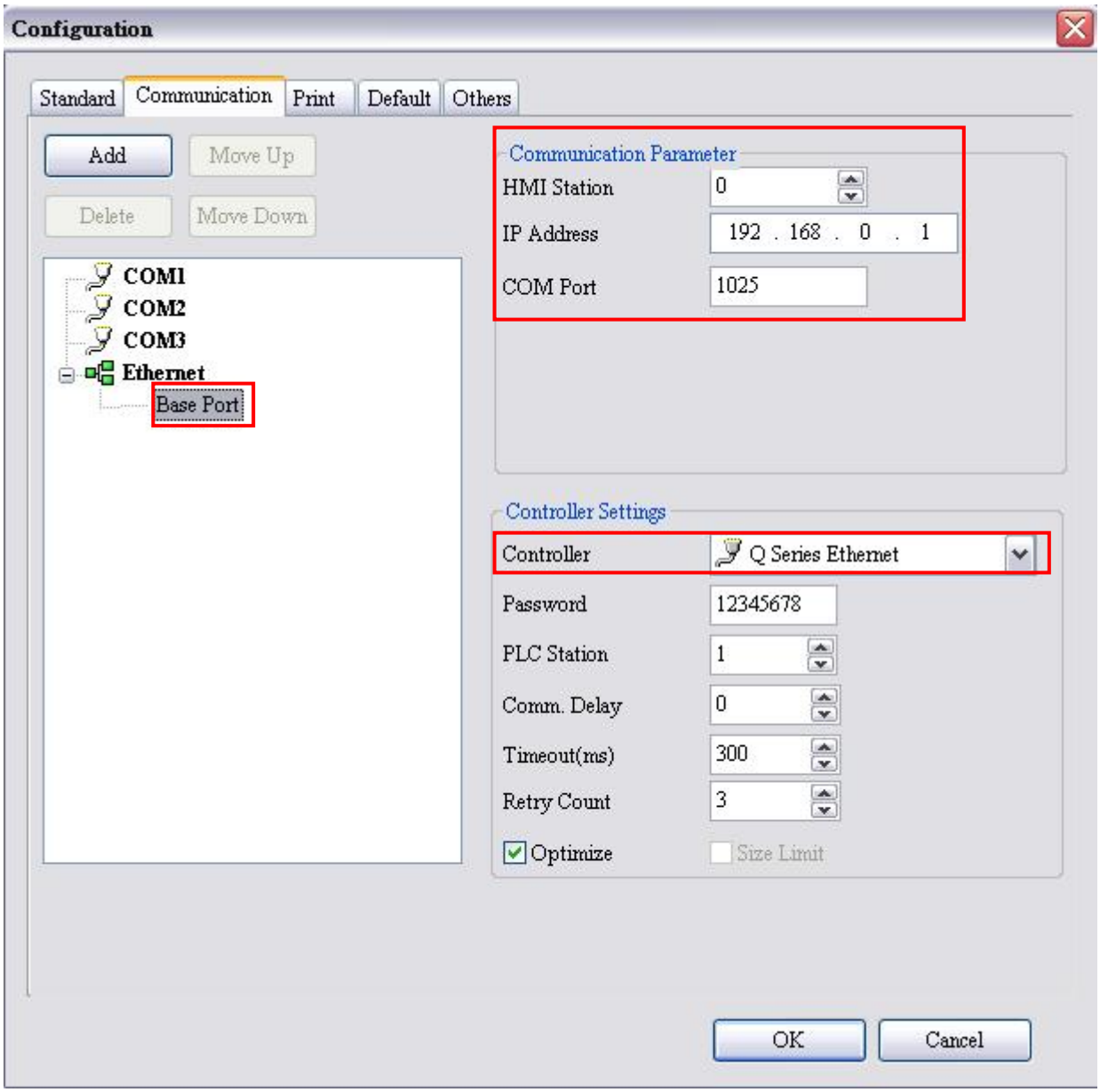
Settings

Screen Editor：

1. HMI Configuration Setting



2. PLC Configuration Setting



GX Developer (V8.35M)：

1. Network Parameter MNET/10H Ethernet Settings

Item	Setting
Network Type	Ethernet
Starting I/O No.	0000
Network No.	1
Group No.	1
Station No.	1
Mode	On-line

2. Operation Settings

Item	Setting
Communication Data Code	Binary code
Initial Timing	Always wait for OPEN
IP Address	192.168.0.1
Send Frame Setting	Ethernet (V2.0)
Enable Write at RUN time	Enable
TCP Living Confirmation Setting	Use the KeepAlive

3. Open Settings

Item	Setting
Protocol	TCP
Open Method	Unpassive
Fixed buffer	Send
Fixed buffer communication procedure	Procedure exist
Existence confirmation	No confirm
Host Station Port No.	0401(HEX)

4) For more detailed information regarding the setting method, please refers to Mitsubishi PLC User Manual.

MKS BY125 Low Cost Synchrocontroller

HMI Factory Setting:

Baud rate: 9600, 7, Even, 1

Controller Station Number: 11(Note1)

Control Area / Status Area: None/None

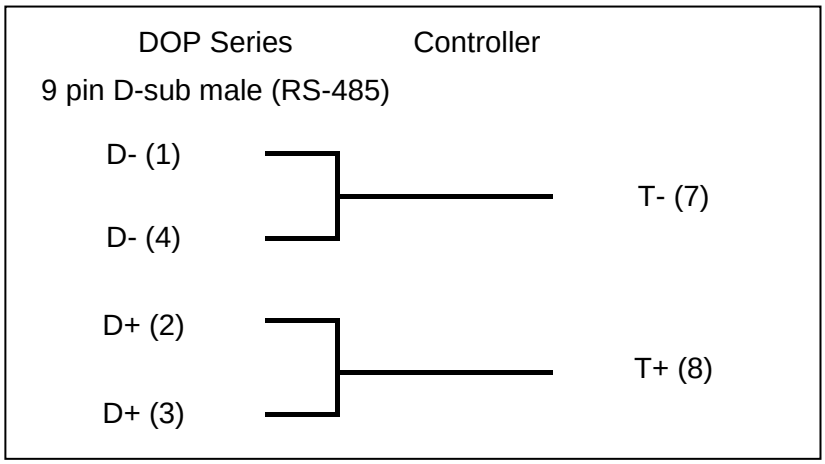
Connection

efesotomasyon.com

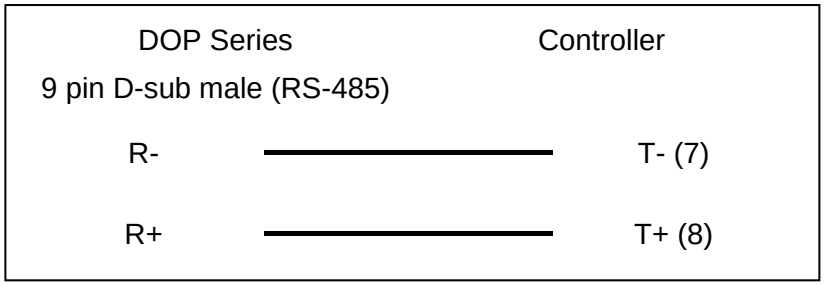
a. RS-232 (Applicable to DOP-A/AE/AS, DOP-B Series) (Note2)



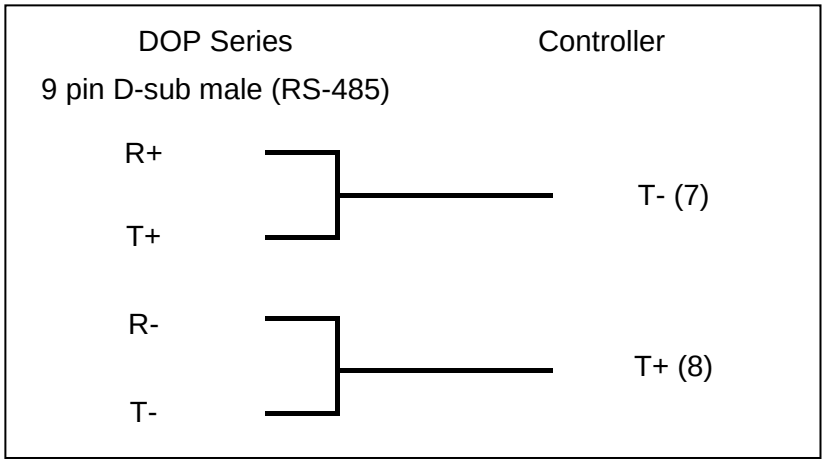
b. RS-485 (Applicable to DOP-A/AE Series)



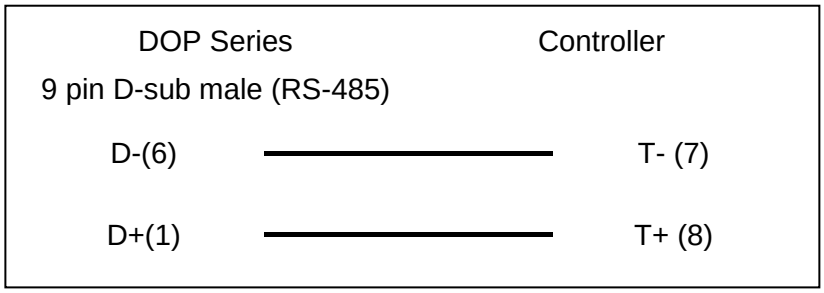
c. RS-485 (Applicable to DOP-AS57 Series)



d. RS-485 (Applicable to DOP-AS35/AS38 Series)



e. RS-485 (Applicable to DOP-B Series)



Definition of PLC Read/Write Address

a. Registers

Type	Format	Read/Write Range	Data Length	Note
	Word No.(n)			
Data In Register / Setup Register	Cn	C0 – C17, C40 – C41, C45 – C48, C50, C90 – C92	Double Word	3
Synchronizing	SYN_ERRn	SYN_ERR0	Double	

Type	Format Word No.(n)	Read/Write Range	Data Length	Note
(Differential Counter)			Word	
Integration register	IRn	IR0	Double Word	
Actual Master speed	MAS_SPDn	MAS_SPD0	Double Word	

b. Contacts

Type	Format Bit No.(n)	Read/Write Range	Note
Reset	RSTb	RST0	
Jog Trim+	JOGTRIM_INCb	JOGTRIM_INC0	
Jog Trim-	JOGTRIM_DECb	JOGTRIM_DEC0	
Activate Data	ACT_DATAb	ACT_DATA0	4
Store EEPROM	STR_EEPROMb	STR_EEPROM0	
Index Slave	IND_SLAb	IND_SLA0	
Index Master	IND_MASb	IND_MAS0	

NOTE

1) The valid station number is in the range of 11 to 99. The station number 20、30、40、50、60、70、80、90 are broadcast station number.

   00 for all broadcast

   10 for broadcast range from 11 to 19

   20 for broadcast range from 21 to 29

   … and so on

   The broadcast function is not yet available, therefore do not use broadcast station number.

2) Please be aware RS-232 can only be connected to pin2, pin3 and pin5. Pin 9 is for +5V. DO NOT use pin 9 or serious damage may occur.

3) The effective addresses of Cn are not consecutive (5 blocks: C0~17, C40~41, C45~C48, C50, C90~C92). When setting the addresses, do not exceed the block range. For example, when using a Numeric Entry or Character Entry element, if the address is C15, the data length can only be 6 Words(for C15, C16, C17). A data length exceed 6 words would occupy other address setting except C0 ~ C17, in this case, an error may occur.

4) The received value of the device will not change even when all register address is written in. The user needs to press ACT_DATA0 again for value be updated.

MKS CT150

HMI Factory Setting:

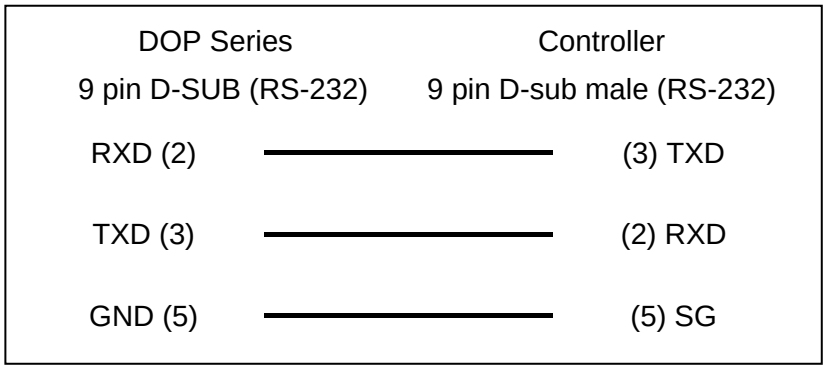
Baud rate: 9600, 7, Even, 1 (RS-232)

Controller Station Number: 11

Control Area / Status Area: None / None

Connection

a. RS-232（Applicable to DOP-A/AE/AS, DOP-B Series）



Definition of PLC Read/Write Address

a. Registers

Type	Format	Read/Write Range	Data Length	Note
	Word No.(n)			
Data In Register	Cn	C0 – C25		
Setup Register	Cn	C40 – C43；C45 – C50；C90 – C97		
Error Count	Err_CNT	0		
LV Value	LV_VAL	0		
Printmark Error	PRTMARK_ERR	0		
Batch Counter	BAT_CNT	0		
Waste Counter	WASTE_CNT	0		
Line Speed	LINE_SPD	0		
Actual Cutting Length	ACT_CUT_LEN	0		

b. Contacts

Type	Format	Read/Write Range	Note
	Bit No.(n)		
Reset	RST	0	
Jog Trim+	JOGTRIM_INC	0	
Jog Trim-	JOGTRIM_DEC	0	
Read PI	READ_PI	0	
Activate Data	ACT_DATA	0	
Store Eeprom	STR_EEPROM	0	
Start/Stop	START_STOP	0	
Reset Mark Counter	RSTMARK_CNT	0	

MKS MC700/720 Motion Controller

HMI Factory Setting:

Baud rate: 9600, 7, Even, 1

Controller Station Number: 11(Note1)

Control Area / Status Area: None / None

Connection

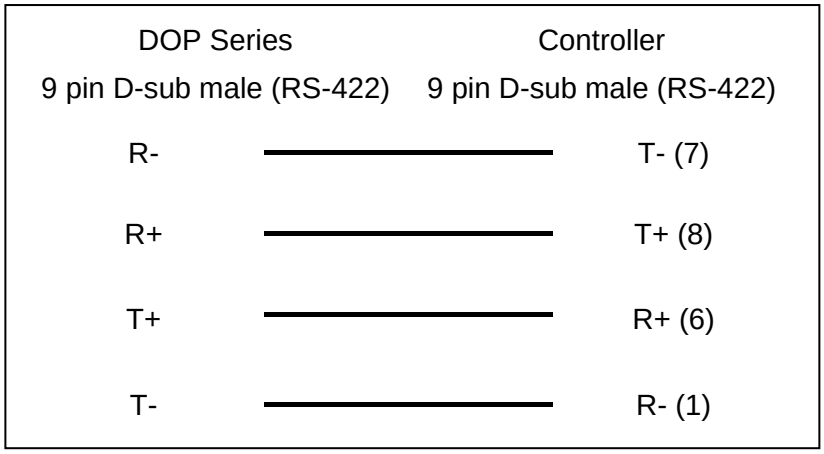
a. RS-232（Applicable to DOP-A/AE/AS, DOP-B Series）(Note2)

DOP Series		Controller
9 pin D-sub male (RS-232)		
RXD (2)	———	TXD(3)
TXD (3)	———	RXD(2)
GND (5)	———	GND(5)

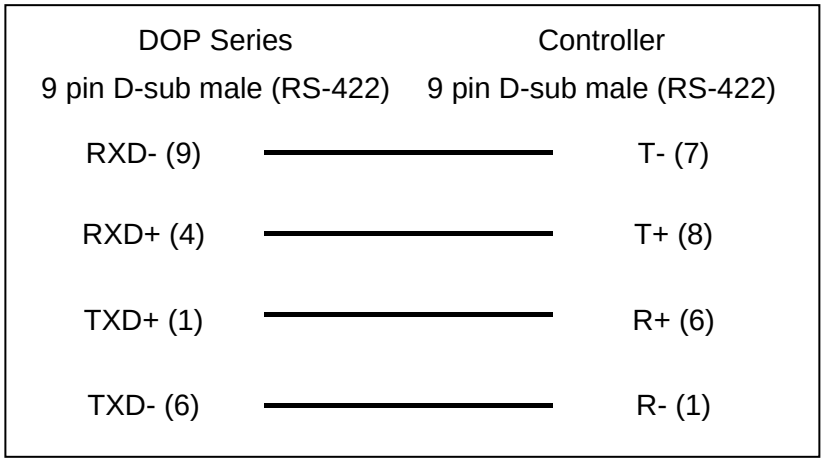
b. RS-422（Applicable to DOP-A/AE Series）

DOP Series		Controller
9 pin D-sub male (RS-422)		9 pin D-sub male (RS-422)
RXD- (1)	———	T- (7)
RXD+ (2)	———	T+ (8)
TXD+ (3)	———	R+ (6)
TXD- (4)	———	R- (1)

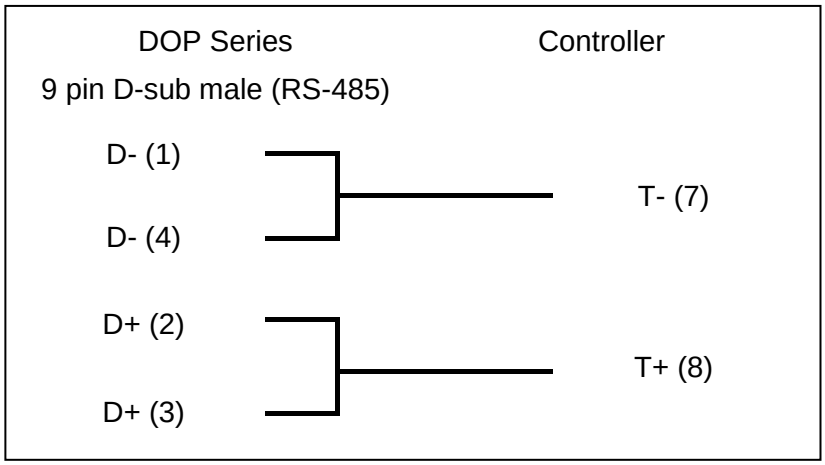
c. RS-422（Applicable to DOP-AS35/AS38/AS57 Series）



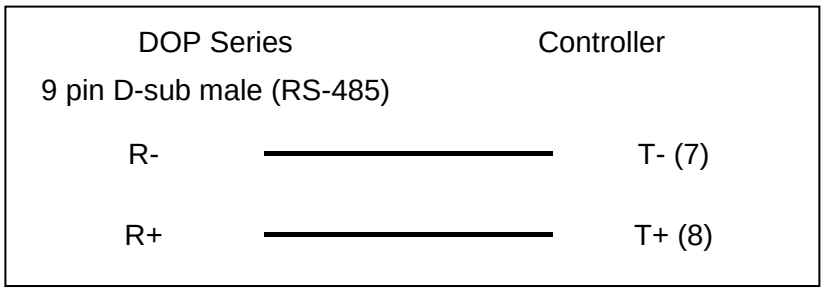
d. RS-422（Applicable to DOP-B Series）



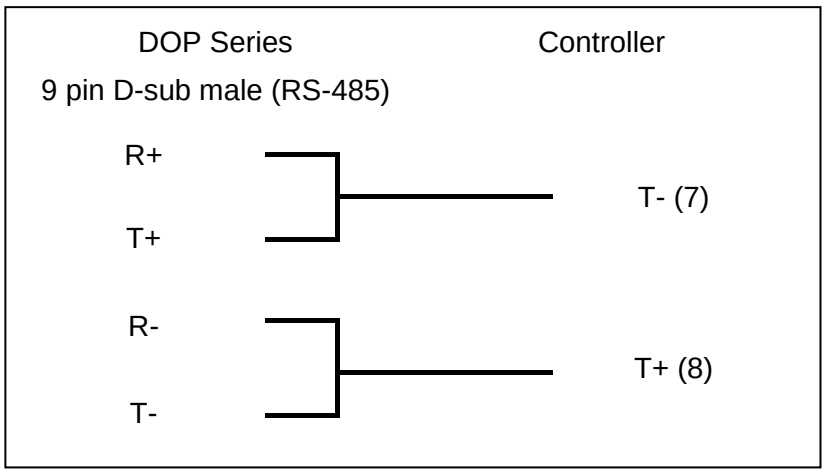
e. RS-485（Applicable to DOP-A/AE Series）



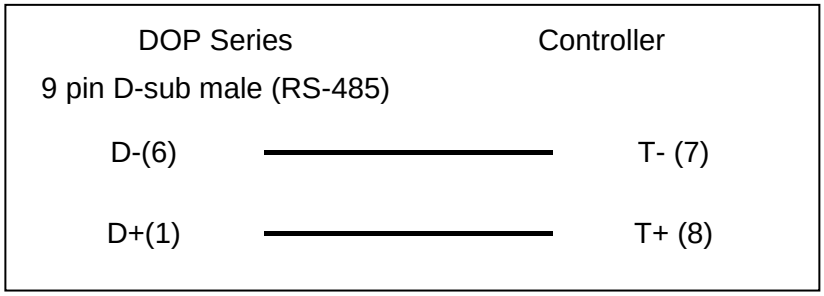
f. RS-485（Applicable to DOP-AS57 Series）



g. RS-485（Applicable to DOP-AS35/AS38 Series）



h. RS-485（Applicable to DOP-B Series）



Definition of PLC Read/Write Address

a. Registers

Type	Format	Read/Write Range	Data Length	Note
	Word No.(n)			
General Parameters	GPn	GP0 – GP31	Double Word	
Parameter Block for Slave 1	PB1_n	PB1_0 – PB1_31	Double Word	
Parameter Block for Slave 2	PB2_n	PB2_0 – PB2_31	Double Word	

Type	Format	Read/Write Range	Data Length	Note
	Word No.(n)			
Parameter Block for Slave 3	**PB3_**n	**PB3_**0 – **PB3_**31	Double Word	
Parameter Block for Slave 4	**PB4_**n	**PB4_**0 – **PB4_**31	Double Word	
Process Data	**PROD**n	**PROD**0 – **PROD**31	Double Word	
Communication Settings	**CSET**n	**CSET**0 – **CSET**31	Double Word	
Setup Settings	**STUP**n	**STUP**0 – **STUP**31	Double Word	
Status of Commands and Outputs	**S_CO**n	**S_CO**0 – **S_CO**4	Double Word	

b. Contacts

Type	Format	Read/Write Range	Note
	Word No.(n) Bit No.(b)		
Commands	**CMD**b	**CMD**0 – **CMD**31	
Outputs	**OUT**b	**OUT**0 – **OUT**31	
Status of Commands and Outputs	**S_CO**n.b	**S_CO**0.0 – **S_CO**4.31	

NOTE

1) The valid station number is in the range of 11 to 99. The station number 20、30、40、50、60、70、80、90 are broadcast station number.

   00 for all broadcast

   10 for broadcast range from 11 to 19

   20 for broadcast range from 21 to 29

   … and so on

   The broadcast function is not yet available, therefore do not use broadcast station number.

2) Please be aware RS-232 can only be connected to pin2, pin3 and pin5. Pin 9 is for +5V. DO NOT use pin 9 or serious damage may occur.

Modbus 984 RTU / ASCII (Master)

HMI Factory Setting:

Baud rate: 9600, 7, Even, 1 (ASCII); 9600, 8, Even, 1 (RTU)

Controller Station Number: 0

Control Area / Status Area: W40100 / W40200

Connection

Please refer to "Pin Definition of Serial Communication" for more detail.

Definition of PLC Read/Write Address

a. Registers

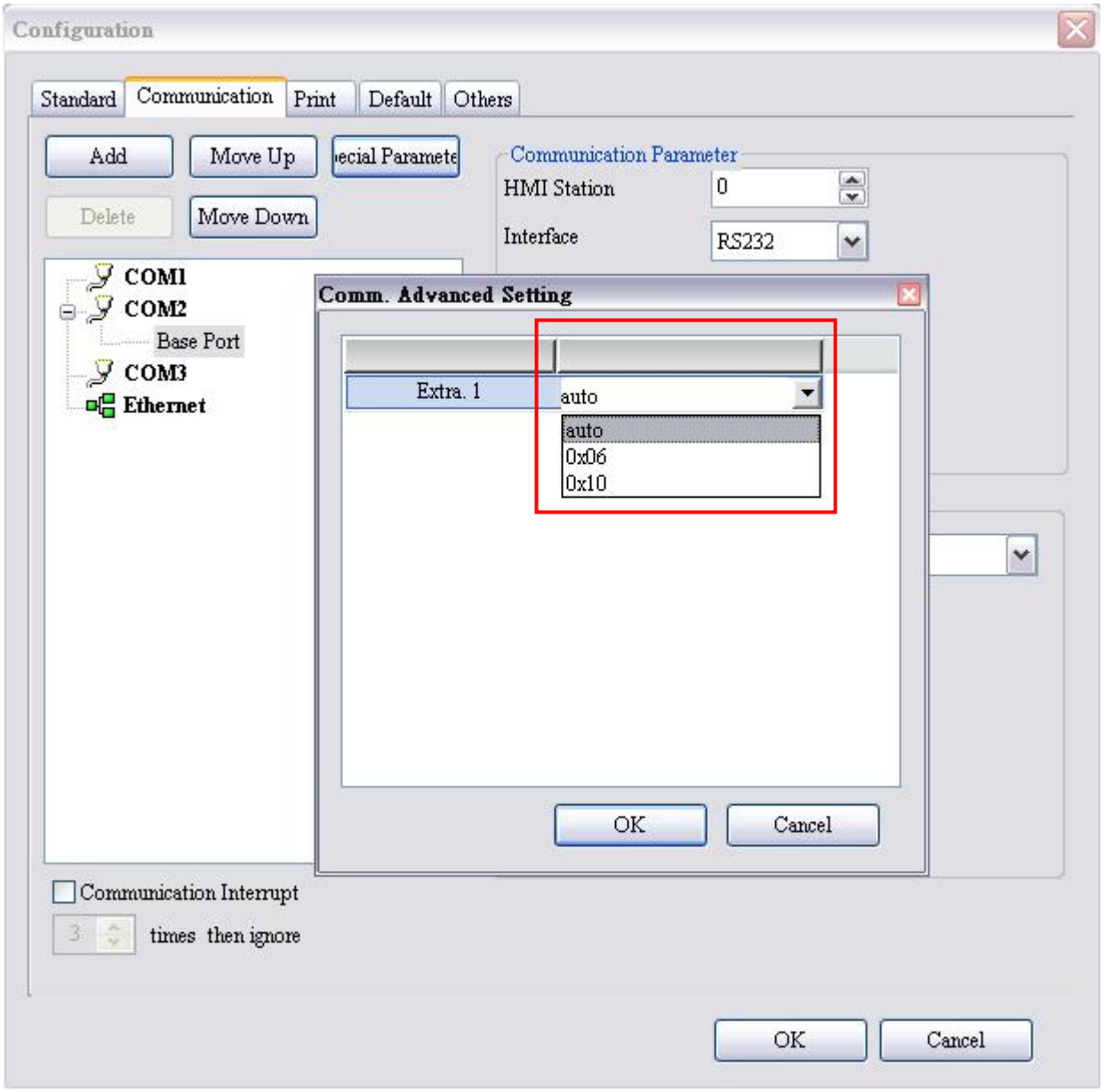
Type	Format	Read/Write Range	Data Length	Note
	Word No. (n)			
Output Registers	Wn	W40001 – W50000	Word	
Input Registers	Wn	W30001 – W40000	Word	Read only

b. Contacts

Type	Format	Read/Write Range	Note
	Bit No. (b)		
Discrete Outputs	Bb	B1 – B10000	
Discrete Inputs	Bb	B10001 – B20000	Read only

NOTE

1.) If the controller requests certain Modbus input during the connection, it can be done through special parameter setting. When the default value is set to Auto, HMI will automatically react to a single inputted command(0x06) or a multiple inputted command (0x10) according to the data length. l


Configuration
Standard
Communication
Print
Default
Others
Add
Move Up
ecial Paramete
Delete
Move Down
Communication Parameter
HMI Station
0
Interface
RS232
COM1
COM2
Base Port
COM3
Ethernet
Comm. Advanced Setting
Extra. 1
auto
auto
0x06
0x10
OK
Cancel
Communication Interrupt
3
times then ignore
OK
Cancel

Modbus nW RTU / ASCII (Master)

HMI Factory Setting:

Baud rate: 9600, 7, Even, 1.(ASCII); 9600, 8, Even, 1.(RTU)

Controller Station Number: 1(Note1)

Control Area / Status Area: W40100 / W40200

Connection

Please refer to "Pin Definition of Serial Communication" for more detail.

Definition of PLC Read/Write Address

a. Registers

Type	Format	Read/Write Range	Data Length	Note
	Word No. (n)			
Output Registers	Wn	W40001 – W50000	Word	
Input Registers	Wn	W30001 – W40000	Word	

b. Contacts

Type	Format	Read/Write Range	Note
	Bit No. (b)		
Discrete Outputs	Bb	B1 – B10000	
Discrete Inputs	Bb	B10001 – B20000	

NOTE

1) This communication protocol does not support station 0 (the broadcast function).

2) To attain optimize reading, please ensure the "Optimize" option is selected in communication setting. Do not select "Data Length Limit" if "Optimize" option is not selected,

Modbus RTU 2W (Master)

HMI Factory Setting:

Baud rate: 9600, 7, Even, 1 (ASCII); 9600, 8, Even, 1 (RTU)

Controller Station Number: 0 (no PLC station number in protocol, therefore, only 1(HMI) to 1 (PLC) communication is allowed.)

Control Area / Status Area: W40100 / W40200

Connection

Please refer to "Pin Definition of Serial Communication" for more detail.

Definition of PLC Read/Write Address

a. Registers

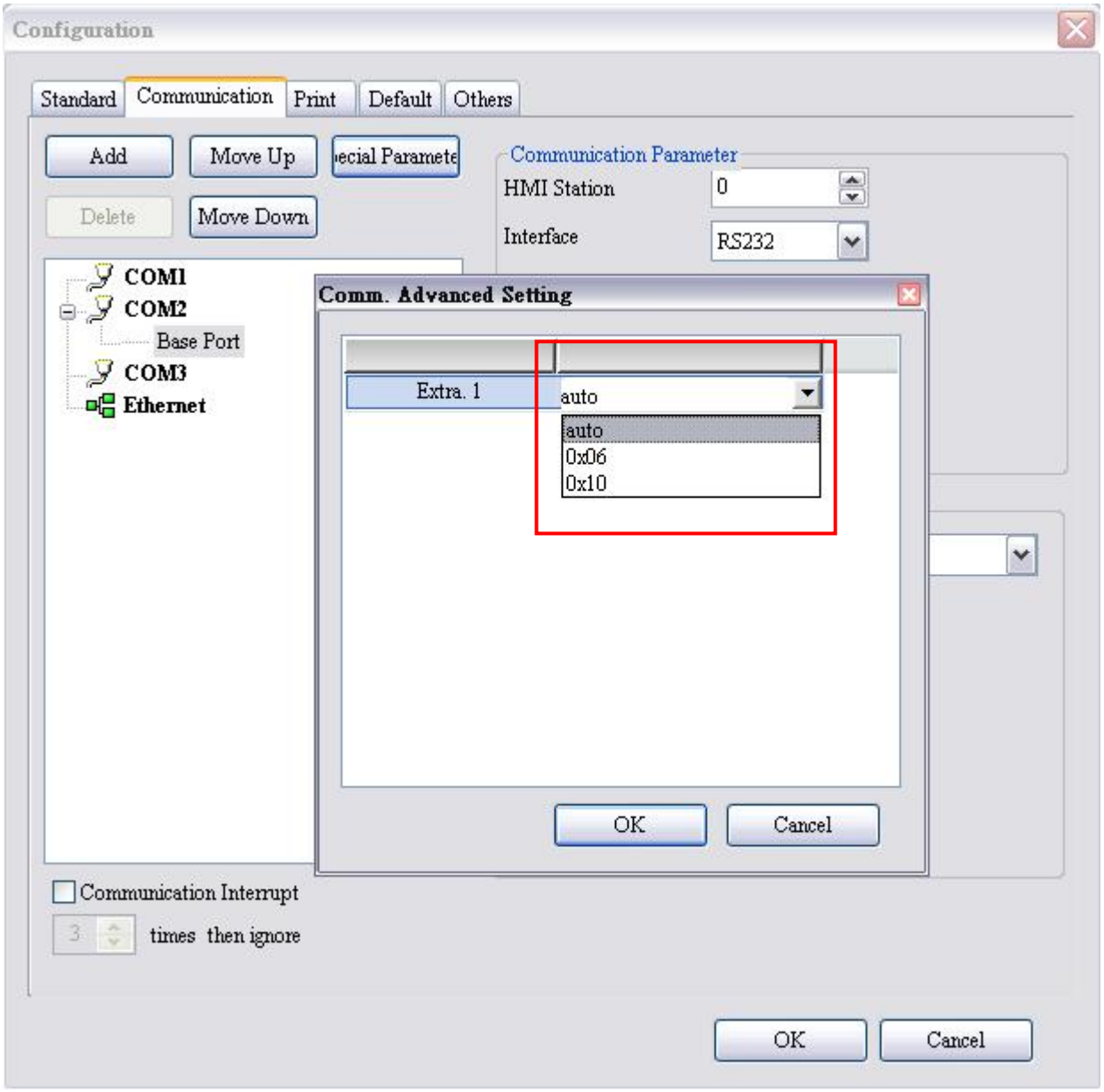
Type	Format	Read/Write Range	Data Length	Note
	Word No. (n)			
Output Registers	Wn	W40001 – W50000	Word	
Input Registers	Wn	W30001 – W40000	Word	Read only

b. Contacts

Type	Format	Read/Write Range	Note
	Bit No. (b)		
Discrete Outputs	Bb	B1 – B10000	
Discrete Inputs	Bb	B10001 – B20000	Read only

NOTE

1) If the controller requests certain Modbus input during the connection, it can be done through special parameter setting. When the default value is set to Auto, HMI will automatically react to a single inputted command(0x06) or a multiple inputted command (0x10) according to the data length.


Configuration
Standard
Communication
Print
Default
Others
Add
Move Up
ecial Paramete
Delete
Move Down
Communication Parameter
HMI Station
0
Interface
RS232
COM1
COM2
Base Port
COM3
Ethernet
Comm. Advanced Setting
Extra. 1
auto
auto
0x06
0x10
OK
Cancel
Communication Interrupt
3
times then ignore
OK
Cancel

Modbus RTU / ASCII Hex Address (Master)

HMI Factory Setting:

Baud rate: 9600, 7, Even, 1 (ASCII); 9600, 8, Even, 1 (RTU)

Controller Station Number: 1

Control Area / Status Area: RW-0 / RW-10

Definition of PLC Read/Write Address

a. Registers

Type	Format	Read/Write Range	Data Length	Note
	Word No. (n)			
Output Registers	**RW**-n	**RW**-0 - **RW**-FFFF	Word	
Input Registers	**R**-n	**R**-0 - **R**-FFFF	Word	Read only

b. Contacts

Type	Format	Read/Write Range	Note
	Bit No. (b)		
Discrete Outputs	**RWB**-b	**RWB**-0 - **RWB**-FFFF	
Discrete Inputs	**RB**-b	**RB**-0 - **RB**-FFFF	Read only

NOTE

1) The communication protocol and communication address are in hexadecimal.

Modbus RTU / ASCII (Slave)

HMI Factory Setting:

Baud rate: 9600, 7, Even, 1 (ASCII); 9600, 8, Even, 1 (RTU)

Controller Station Number: 1（No function）

Control Area / Status Area: W40100 / W40200

Connection

Please refer to “Pin Definition of Serial Communication” for more detail.

Definition of PLC Read/Write Address

a. Registers

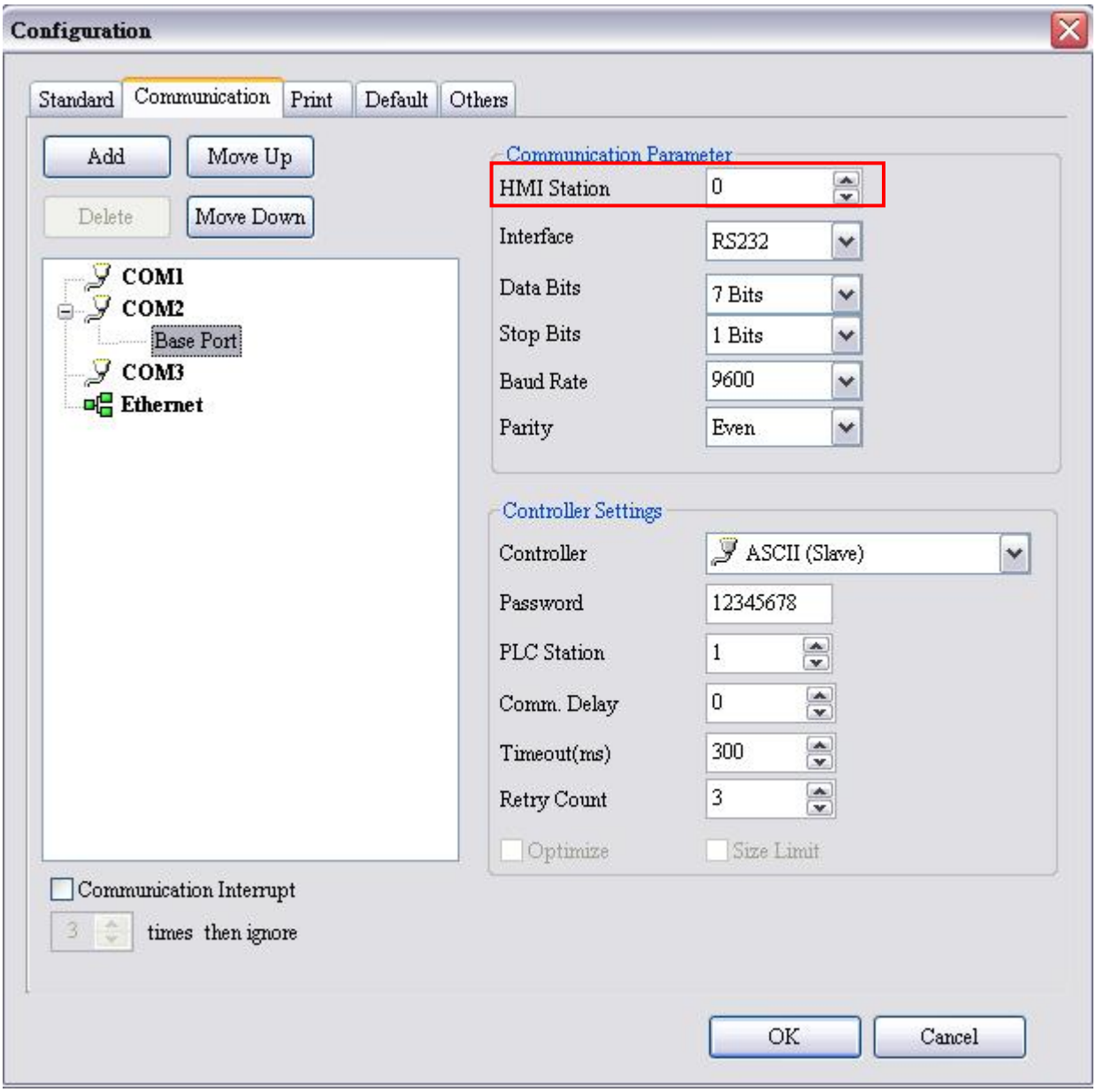
Type	Format	Read/Write Range	Data Length	Note
	Word No. (n)			
Output Registers	Wn	W40001 – W50000	Word	2

b. Contacts

Type	Format	Read/Write Range	Note
	Bit No. (b)		
Discrete Outputs	Bb	B1 – B2048	2

NOTE

1) When using this communication protocol, HMI station number is the Slave station number (default setting is 0).



2) Relationship between Modbus address HMI register:

Modbus Address		Data Definition in HMI	
W40001 – W41024	→	$0 – $1023	Internal register
W42001 – W43024	→	$M0 – $M1023	Non-volatile internal register
W44001	→	RCPNO	Receipt number register
W45001 ...	→	RCP0 – RCPn	Receipt register
B00001 – B01024	→	$2000.0 – $2063.15	Internal register (Bit)
B01025 – B02048	→	$M200.0 – $M263.15	Non-volatile internal register (Bit)

For example, to read HMI internal memory $0, the Modbus address is W40001 and HMI will save W40001; to read non-volatile internal register $M200.1, then the Modbus address is B01026 and so on.

Modbus TCP/IP

HMI Factory Setting:

Controller IP Address: 192.168.0.1

Baud rate: 192.168.0.1

Controller Station Number: 1

Control Area / Status Area: RW-0 / RW-10

Connection

Standard Jumper Cable / Network Cable without jumper (Auto-detected by HMI)

Definition of PLC Read/Write Address

a. Registers

Type	Format	Read/Write Range	Data Length	Note
	Word No. (n)			
Output Registers	**RW**-n	**RW**-0 - **RW**-FFFF	Word	
Input Registers	**R**-n	**R**-0 - **R**-FFFF	Word	Read only

b. Contacts

Type	Format	Read/Write Range	Note
	Word No. (n) Bit No. (b)		
Discrete Outputs	**RWB**-b	**RWB**-0 - **RWB**-FFFF	
Discrete Inputs	**RB**-b	**RB**-0 - **RB**-FFFF	Read only

Modicon TSX Micro (Uni-Telway)

HMI Factory Setting:

Baud rate: 9600, 8, Odd, 1

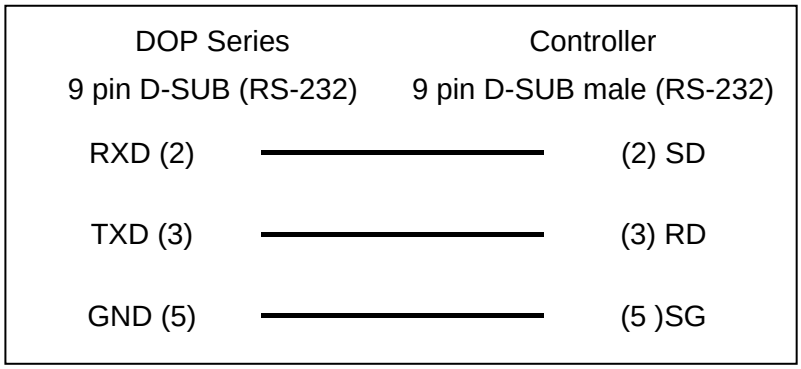
Controller Station Number: 2(Note2)

Control Area / Status Area: %MW0 / %MW10

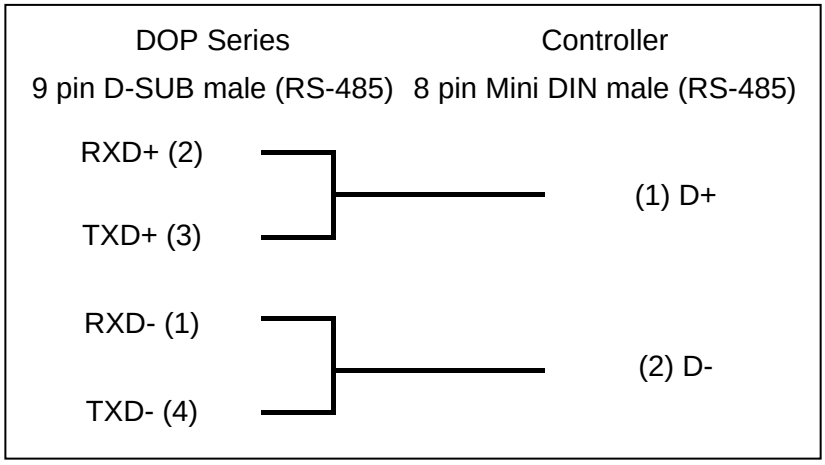
Connection

a. RS-232（Applicable to DOP-A/AE/AS, DOP-B Series）

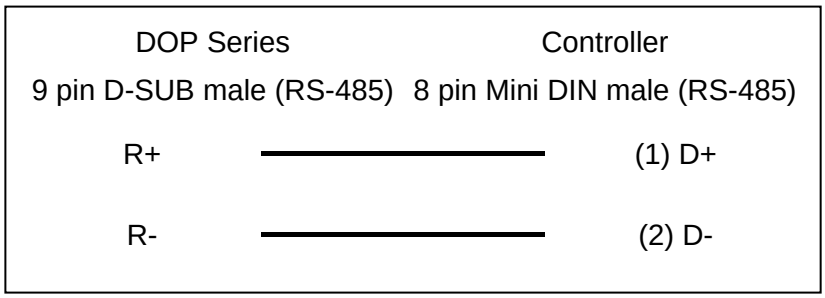
It requires specific TSX PCX1031 cable of Modicon Uni-Telway for wiring.



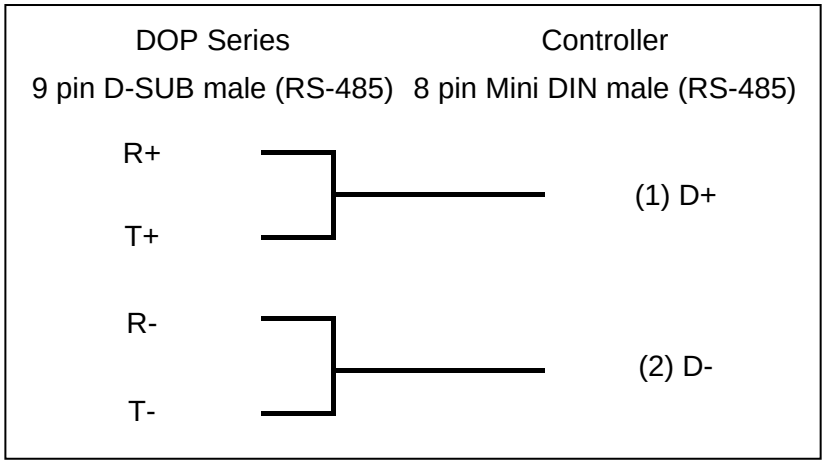
b. RS-485（Applicable to DOP-A/AE Series）



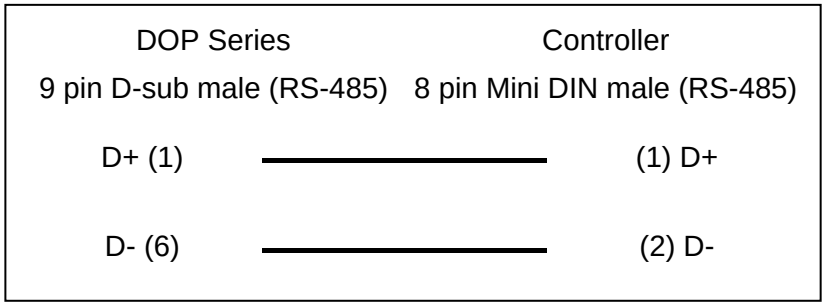
c. RS-485（Applicable to DOP-AS57 Series）



d. RS-485（Applicable to DOP-AS35/AS38 Series）



e. RS-485（Applicable to DOP-B Series）



Definition of PLC Read/Write Address

a. Registers

Type	Format	Read/Write Range	Data Length	Note
	Word No. (n)			
WORD_DEVICE_ Internal	%MWn	%MW0 – %MW65534	Word	6
WORD_DEVICE_ System	%SWn	%SW0 – %SW127	Word	
WORD_DEVICE_ Input	%KWn	%KW0 – %KW65534	Word	Read only

b. Contacts

Type	Format	Read/Write Range	Note
	Word No. (n) Bit No. (b)		
BIT_DEVICE_ Internal	%Mn:b	%M0:0 – %M65534:15	4, 6
BIT_DEVICE_ System	%Sb	%S0 – %S127	
BIT_DEVICE_ Internal1	%Mb	%M0 – %M65534	5

NOTE

1) HMI Station needs to be in range of 1 – 8。
2) PLC station number can be the same as HMI station number, but it can not be 0.
3) Internal memory of PLC and other relative parameters must be set up first or only %S will function, others will not be able to communicate.
4) %Mn:b is the Bit address that corresponds to WORD_DEVICE_ Internal (%MWn).
5) %Mb is the internal Relay address of PLC。
6) The read/write range of WORD_DEVICE_ Internal / BIT_DEVICE_ Internal depends on the used memory space of PLC.

Modicon TSX NEZA (Uni-Telway)

HMI Factory Setting:

Baud rate: 9600, 8, Odd, 1

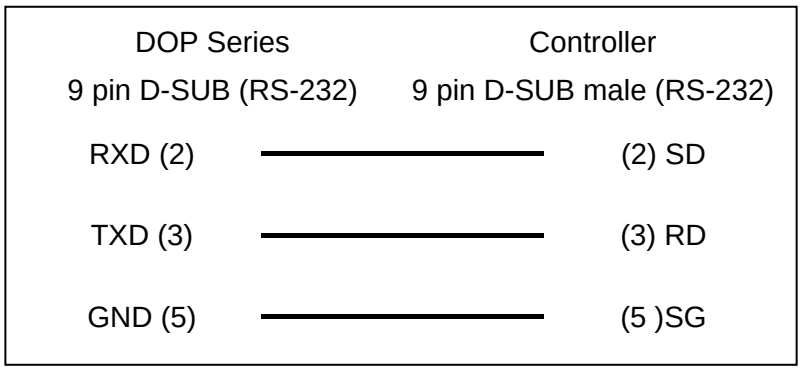
Controller Station Number: 2

Control Area / Status Area: %MW0 / %MW10

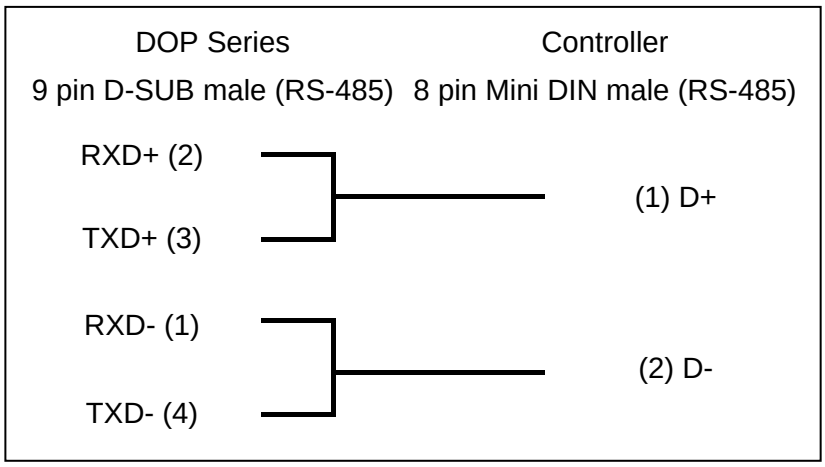
Connection

a. RS-232（Applicable to DOP-A/AE/AS, DOP-B Series）

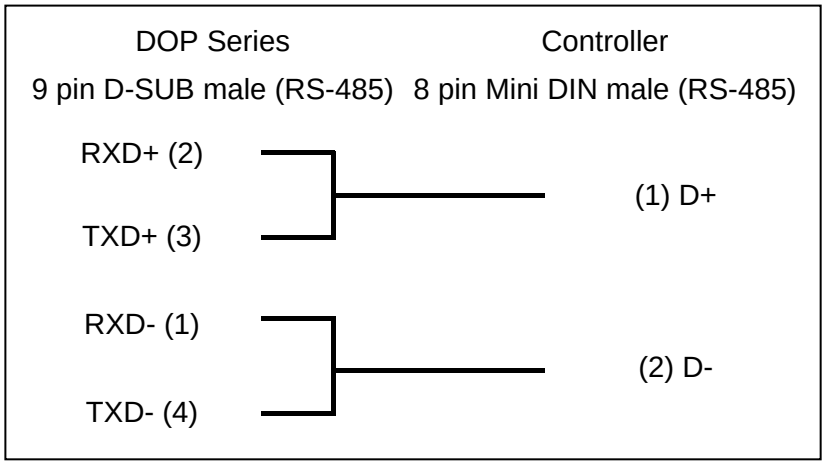
It requires specific TSX PCX1031 cable of Modicon Uni-Telway for wiring.



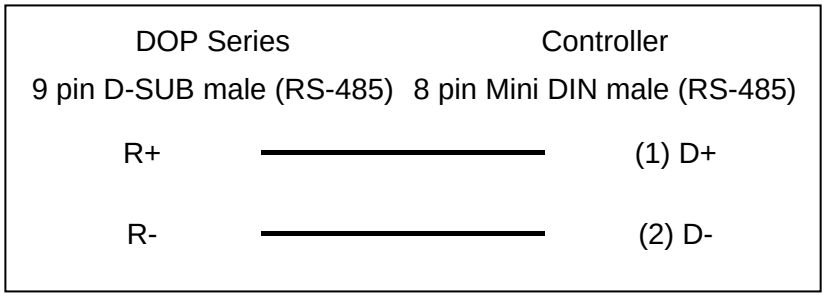
b. RS-232（Applicable to DOP-A/AE/AS, DOP-B Series）



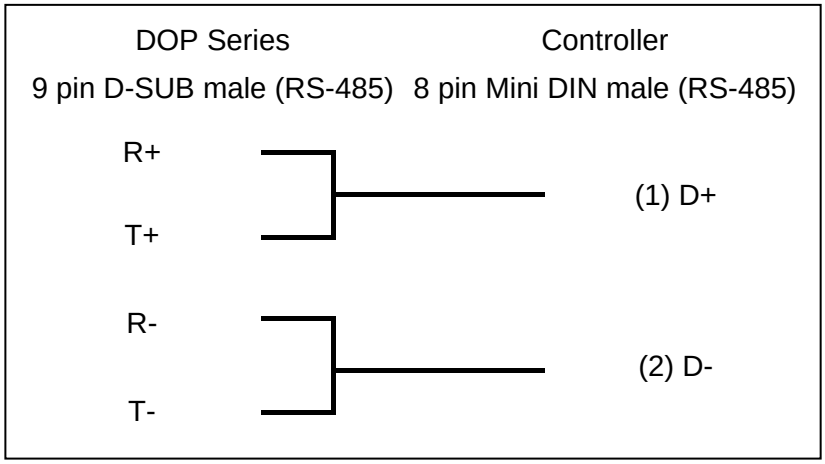
c. RS-485（Applicable to DOP-A/AE Series）



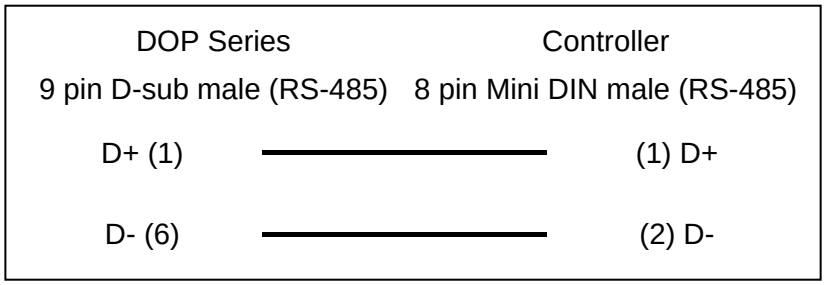
d. RS-485（Applicable to DOP-AS57 Series）



e. RS-485（Applicable to DOP-AS35/AS38 Series）



f. RS-485（Applicable to DOP-B Series）



Definition of PLC Read/Write Address

a. Registers

Type	Format	Read/Write Range	Data Length	Note
	Word No. (n)			
WORD_DEVICE_ Internal	%MWn	%MW0 – %MW65534	Word	6
WORD_DEVICE_ System	%SWn	%SW0 – %SW127	Word	
WORD_DEVICE_ Input	%KWn	%KW0 – %KW65534	Word	Read only

b. Contacts

Type	Format	Read/Write Range	Note
	Word No. (n) Bit No. (b)		
BIT_DEVICE_ Internal	%Mn:b	%M0:0 – %M65534:15	4, 6
BIT_DEVICE_ System	%Sb	%S0 – %S127	
BIT_DEVICE_ Internal1	%Mb	%M0 – %M65534	5

NOTE

1) HMI Station needs to be in range of 1 – 8。
2) PLC station number can be the same as HMI station number.
3) Internal memory of PLC and other relative parameters must be set up first or only %S will function, others will not be able to communicate.
4) %Mn:b is the Bit address that corresponds to WORD_DEVICE_ Internal (%MWn).
5) %Mb is the internal Relay address of PLC。
6) The read/write range of WORD_DEVICE_ Internal / BIT_DEVICE_ Internal depends on the used memory space of PLC.

Modicon TSX Premium (1- 1 Uni-Telway)

HMI Factory Setting:

Baud rate: 9600, 8, Odd, 1

Controller Station Number: 1(no PLC station number in protocol, therefore, only 1(HMI) to 1 (PLC) communication is allowed.)

Control Area / Status Area: %MW0 / %MW10

Connection

a. RS-232（Applicable to DOP-A/AE/AS, DOP-B Series）

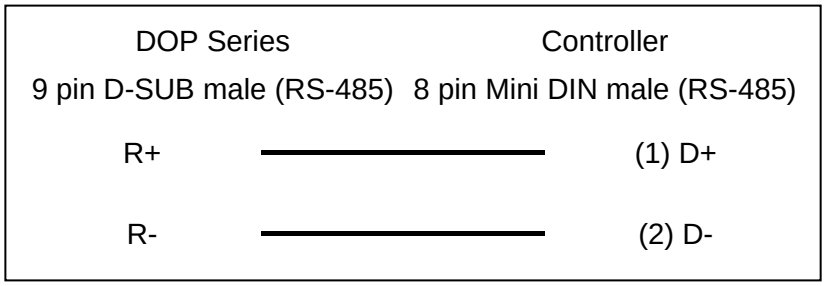
It requires specific TSX PCX1031 cable of Modicon Uni-Telway for wiring.

DOP Series 9 pin D-SUB (RS-232)		Controller 9 pin D-SUB male (RS-232)
RXD (2)	———	(2) SD
TXD (3)	———	(3) RD
GND (5)	———	(5)SG

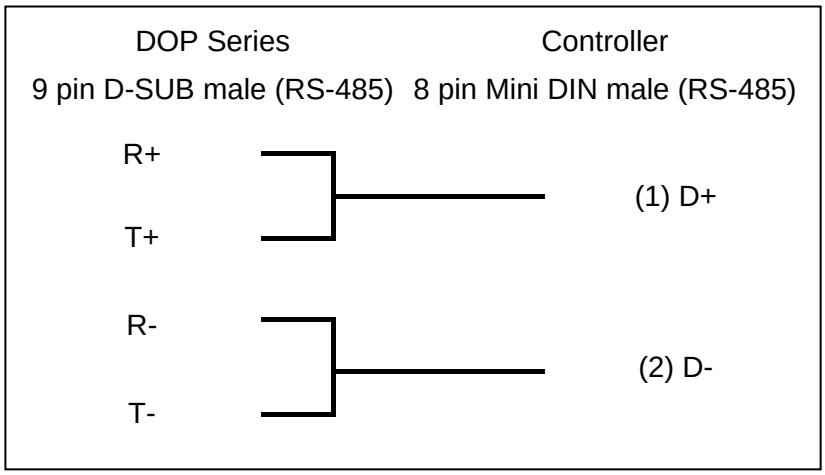
b. S-485（Applicable to DOP-A/AE Series）

DOP Series 9 pin D-SUB male (RS-485)		Controller 8 pin Mini DIN male (RS-485)
RXD+ (2) TXD+ (3)	———	(1) D+
RXD- (1) TXD- (4)	———	(2) D-

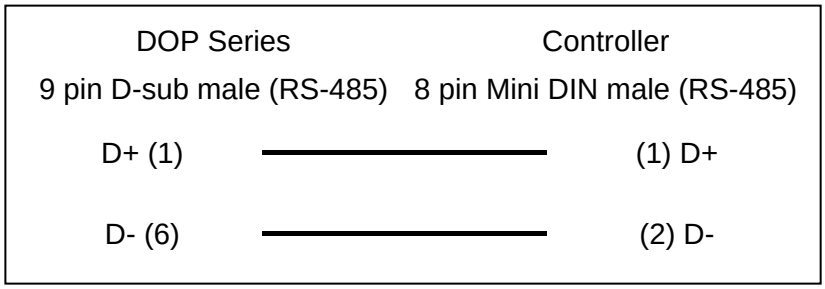
c. RS-485（Applicable to DOP-AS57 Series）



d. RS-485（Applicable to DOP-AS35/AS38 Series）



e. RS-485（Applicable to DOP-B Series）



Definition of PLC Read/Write Address

a. Registers

Type	Format	Read/Write Range	Data Length	Note
	Word No. (n)			
WORD_DEVICE_ Internal	%MWn	%MW0 – %MW65534	Word	4
WORD_DEVICE_ System	%SWn	%SW0 – %SW127	Word	
WORD_DEVICE_ Input	%KWn	%KW0 – %KW65534	Word	Read only

b. Contacts

Type	Format	Read/Write Range	Note
	Word No. (n) Bit No. (b)		
BIT_DEVICE_ Internal	%Mn:b	%M0:0 – %M65534:15	2, 4
BIT_DEVICE_ System	%Sb	%S0 – %S127	
BIT_DEVICE_ Internal1	%Mb	%M0 – %M65534	3

NOTE

1) HMI Station needs to be in range of 1 – 8。
2) PLC station number can be the same as HMI station number.
3) Internal memory of PLC and other relative parameters must be set up first or only %S will function, others will not be able to communicate.
4) %Mn:b is the Bit address that corresponds to WORD_DEVICE_ Internal (%MWn).
5) %Mb is the internal Relay address of PLC。
6) The read/write range of WORD_DEVICE_ Internal / BIT_DEVICE_ Internal depends on the used memory space of PLC.

Modicon TWIDO

HMI Factory Setting:

Baud rate: 9600, 8, Even, 1

Controller Station Number: 1

Control Area / Status Area: W40100 / W40200

Connection

a. RS-232（Applicable to DOP-A/AE/AS, DOP-B Series）

It requires specific TSX PCX1031 cable of Modicon Uni-Telway for wiring.

DOP Series 9 pin D-SUB (RS-232)		Controller 9 pin D-SUB male (RS-232)
RXD (2)	———	(2) SD
TXD (3)	———	(3) RD
GND (5)	———	(5)SG

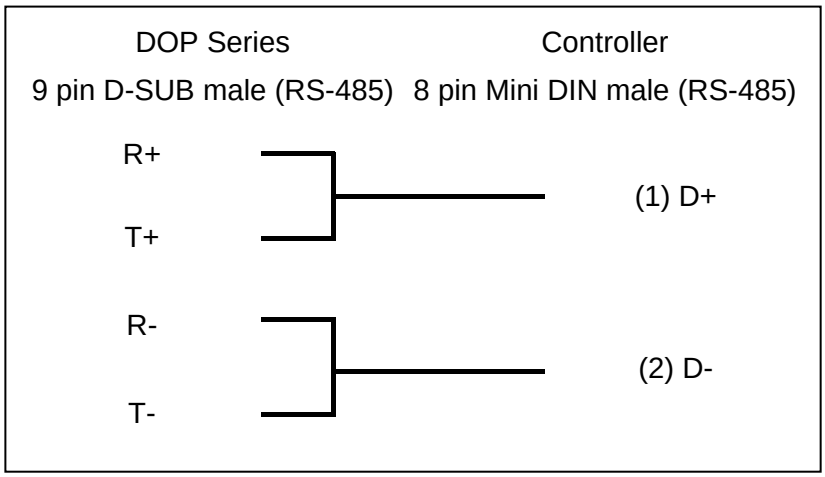
b. RS-485（Applicable to DOP-A/AE Series）

DOP Series 9 pin D-SUB male (RS-485)		Controller 8 pin Mini DIN male (RS-485)
RXD+ (2)	———	(1) D+
TXD+ (3)		
RXD- (1)	———	(2) D-
TXD- (4)		

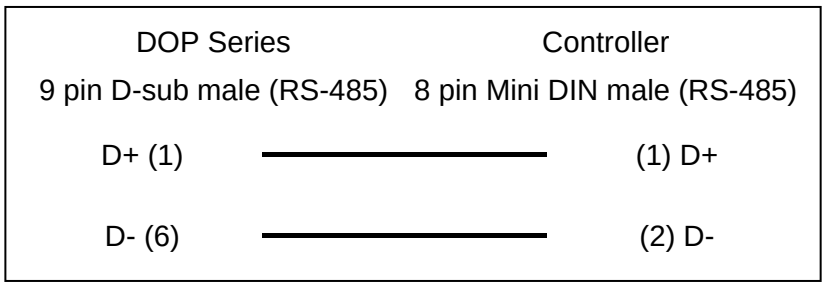
c. RS-485（Applicable to DOP-AS57 Series）

DOP Series 9 pin D-SUB male (RS-485)		Controller 8 pin Mini DIN male (RS-485)
R+	———	(1) D+
R-	———	(2) D-

d. RS-485（Applicable to DOP-AS35/AS38 Series）



e. RS-485（Applicable to DOP-B Series）



Definition of PLC Read/Write Address

a. Registers

Type	Format	Read/Write Range	Data Length	Note
	Word No. (n)			
Output Registers	Wn	W40001 – W50000	Word	
Input Registers	Wn	W30001 – W40000	Word	Read only

b. Contacts

Type	Format	Read/Write Range	Note
	Bit No. (b)		
Discrete Outputs	Bb	B1 – B10000	
Discrete Inputs	Bb	B10001 – B20000	Read only

NOTE

1) Before communication starts, the communication mode of PLC should be switched to Modbus Slave by using PL7 programming software..

Moeller EasyPLC 800/MFD

HMI Factory Setting:

Baud rate: 19200, 8, None, 1

Controller Station Number: 0

Control Area / Status Area: None/None

Connection

a. RS-232 (via PC-CAB-1)（DOP-A/AE/AS, DOP-B Series）

DOP Series 9 pin D-sub male		Controller PC-CAB-1 D-sub female
RXD (2)	———	TXD (2)
TXD (3)	———	RXD (3)
GND (5)	———	GND (5)
DC 12V	———	(7) (Note1)
DC 0V	———	(4) (Note1)

Definition of PLC Read/Write Address

a. Registers

Type	Format Word No. (n)	Read/Write Range	Data Length	Note
I Inputs	**I**n	**I**1	Word	
Q Outputs	**Q**n	**Q**1	Word	
R Inputs	**R**n	**R**1	Word	
S Outputs	**S**n	**S**1	Word	
P Buttons	**P**n	**P**1	Word	
Marker **MW**	**MW**n	**MW**1 - **MW**96	Word	
Marker **MD**	**MD**n	**MD**1 - **MD**96	Double Word	2
Diagnostics Bits **ID**	**ID**n	**ID**1	Word	

b. Contacts

Type	Format	Read/Write Range	Note
	Word No. (n) Bit No. (b)		
I Inputs	**I**b	**I**1 – **I**16	
Q Outputs	**Q**b	**Q**1 – **Q**8	
R Inputs	**R**b	**R**1 – **R**16	
S Outputs	**S**b	**S**1 – **S**8	
P Buttons	**P**b	**P**1 – **P**4	
M Marker Bits	**M**b	**M**1 – **M**96	
Diagnostics Bits **ID**	**ID**b	**ID**1 – **ID**16	

NOTE

1) The communication port of Moeller EasyPLC requires additional 10~12V for communication. Please conduct positive voltage to pin 7 and negative voltage to pin 4, the voltage range of two pins should be in 10~12 V.

2) When using Moeller EasyPLC, the data length must be greater than 2 words or an encoding error may occur.

Moeller PS3/PS4 Series PLC

HMI Factory Setting:

Baud rate: 9600, 8, None, 1 (RS-232)

Controller Station Number: 2

Control Area / Status Area: MW0/MW10

Connection

a. RS-232（Applicable to DOP-A/AE/AS, DOP-B Series）



Definition of PLC Read/Write Address

a. Registers

Type	Format	Read/Write Range	Data Length	Note
	Word No. (n)			
Marker MW	MWn	MW0 - MW32766	Byte	2
Diagnostic Status	DSWn	DSW0	Byte	
Process Status	PSWn	PSW0	Byte	
Diagnostic Counter	DCn	DC0 - DC15	Word	

b. Contacts

Type	Format	Read/Write Range	Note
	Word No. (n) Bit No. (b)		
Marker M	Mn.b	MW0.0 - MW32766.7	2
Diagnostic Status	DSn.b	DS0.0 - DS1.7	
Process Status	PSn.b	PS0.0 - PS1.7	

NOTE

1) The read/write range of register Marker (Device MW) of PS4 Series must be set via PC programming software or PLC program before connecting to HMI; otherwise, the communication error may occur. The setting range of Marker (Device MW) of PS3 Series is fixed between 0 to 2172 except 126, the address MW126 cannot be used

2) Marker MW register is an even address, but Marker M is not.

NIKKI DENSO NCS-FI/FS Series

HMI Factory Setting:

Baud rate: 9600, 8, Odd, 2

Controller Station Number: 1 (Valid 0 ~ 99)

Control Area / Status Area: None/None

Connection

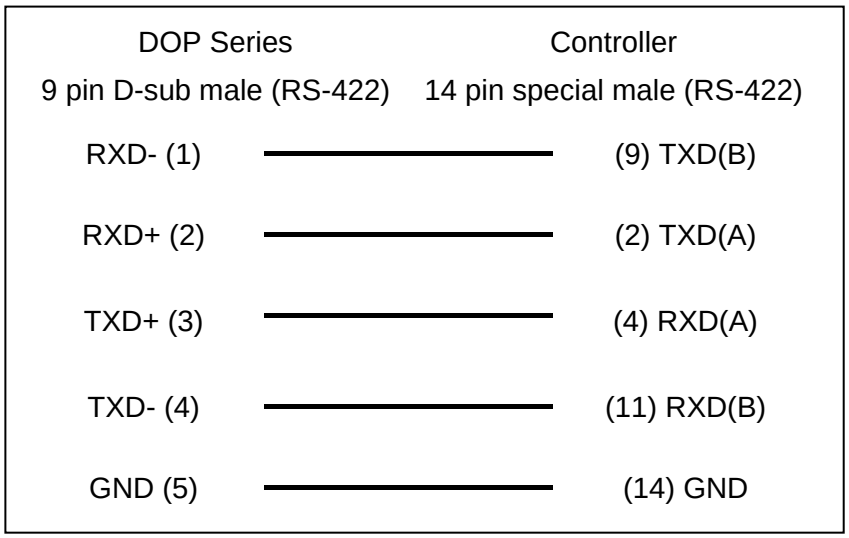
a. RS-422（Applicable to DOP-A/AE Series）

DOP Series		Controller
9 pin D-sub male (RS-422)		14 pin special male (RS-422)
RXD- (1)	———	(9) TXD(B)
RXD+ (2)	———	(2) TXD(A)
TXD+ (3)	———	(4) RXD(A)
TXD- (4)	———	(11) RXD(B)
GND (5)	———	(14) GND

b. RS-422（Applicable to DOP-AS35/AS38/AS57 Series）

DOP Series		Controller
9 pin D-sub male (RS-422)		14 pin special male (RS-422)
R-	———	(9) TXD(B)
R+	———	(2) TXD(A)
T+	———	(4) RXD(A)
T-	———	(11) RXD(B)
GND	———	(14) GND

c. RS-422（Applicable to DOP-B Series）



Definition of PLC Read/Write Address

a. Registers

Type	Format	Read/Write Range	Data Length	Note
	Word No. (n)			
WORD_DEVICE_ RRegister	**RW**-n	**RW**-0 – **RW**-3999	Word	
WORD_DEVICE_ RRegister	**RW**-n	**RW**-8000 – **RW**-9999	Word	
WORD_DEVICE_ DStatus	**XW**-n	**XW**-0 – **XW**-8	Word	
WORD_DEVICE_ DStatus	**DW**-n	**DW**-0 – **DW**-129	Word	Read only
WORD_DEVICE_ RRegister	**RD**-n	**RD**-0 – **RD**-3999	Double Word	
WORD_DEVICE_ RRegister	**RD**-n	**RD**-8000 – **RD**-9999	Double Word	
WORD_DEVICE_ DStatus	**DD**-n	**DD**-0 – **DD**-129	Double Word	Read only

b. Contacts

Type	Format	Read/Write Range	Note
	Word No. (n) Bit No. (b)		
BIT_DEVICE_ RRegister	**RB**-nb	**RB**-00 – **RB**-3999F	
BIT_DEVICE_ RRegister	**RB**-nb	**RB**-80000 – **RB**-9999F	
BIT_DEVICE_ BitControl	**XB**-nb	**XB**-00 – **XB**-8F	

NOTE

1) The valid controller station number is in the range of 0~99, an input greater than this range would only count for the last two digits.

Omron C Series PLC

（This driver can support OMRON C/CPM series PLC simultaneously）

HMI Factory Setting:

Baud rate: 9600, 7, Even, 2

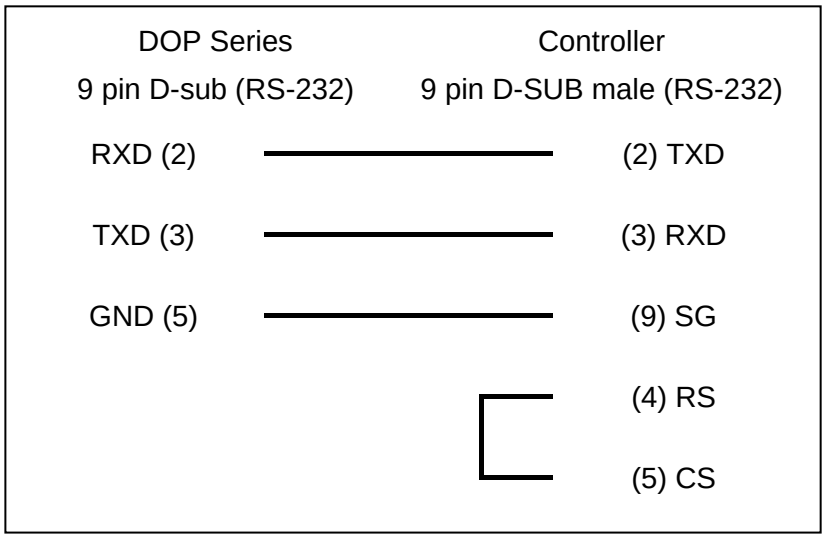
Controller Station Number: 0

Control Area / Status Area: DW0/DW10

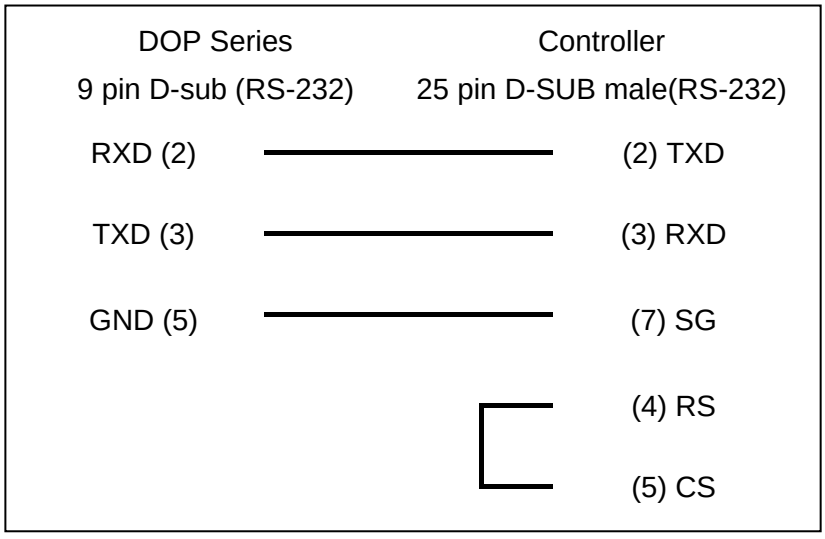
Connection

a. RS-232（Applicable to DOP-A/AE/AS, DOP-B Series）

1:1 Host Link via RS-232C converter



b. RS-232（Applicable to DOP-A/AE/AS, DOP-B Series）



c. RS-422（Applicable to DOP-A/AE Series）

DOP Series 9 pin D-SUB male (RS-422)		Controller 9 pin D-SUB male (RS-422)
RXD- (1)	———	(9) TXD-
RXD+ (2)	———	(5) TXD+
TXD+ (3)	———	(1) RXD+
TXD- (4)	———	(6) RXD-

d. RS-422（Applicable to DOP-AS35/AS38/AS57 Series）

DOP Series 9 pin D-SUB male (RS-422)		Controller 9 pin D-SUB male (RS-422)
R-	———	(9) TXD-
R+	———	(5) TXD+
T+	———	(1) RXD+
T-	———	(6) RXD-

e. RS-422（Applicable to DOP-B Series）

DOP Series 9 pin D-SUB male (RS-422)		Controller 9 pin D-SUB male (RS-422)
RXD- (9)	———	(9) TXD-
RXD+ (4)	———	(5) TXD+
TXD+ (1)	———	(1) RXD+
TXD- (6)	———	(6) RXD-

Definition of PLC Read/Write Address

a. Registers

Type	Format	Read/Write Range	Data Length	Note
	Word No. (n)			
IR area	IRn	IR0 – IR511	Word	
HR area	HRn	HR0 – HR99	Word	
AR area	ARn	AR0 – AR27	Word	
LR area	LRn	LR0 – LR63	Word	
TC area	TCn	TC0 – TC511	Word	
DM area	DMn	DM0 – DM6655	Word	

b. Contacts

Type	Format	Read/Write Range	Note
	Word No. (n) Bit No. (b)		
IR area	IRnbb	IR000 – IR51115	
HR area	HRnbb	HR000 – HR9915	
AR area	ARnbb	AR000 – AR2715	
LR area	LRnbb	LR000 – LR6315	
TC area	TCb	TC0 – TC511	

Omron CJ1/CS1 Series PLC

Supporting OMRON CS/CJ/CP1/CQM/CV/CVM Series of PLC）

HMI Factory Setting:

Baud rate: 9600, 7, Even, 2 (RS-232)

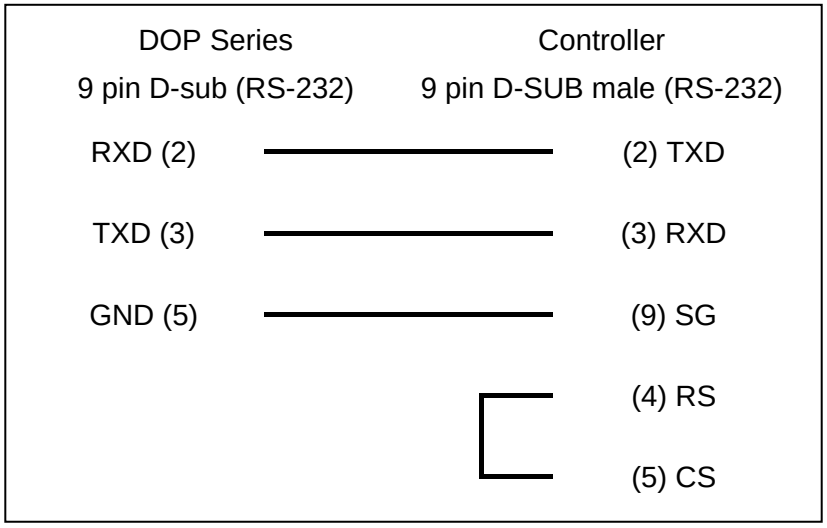
Controller Station Number: 0

Control Area / Status Area: D0 / D10

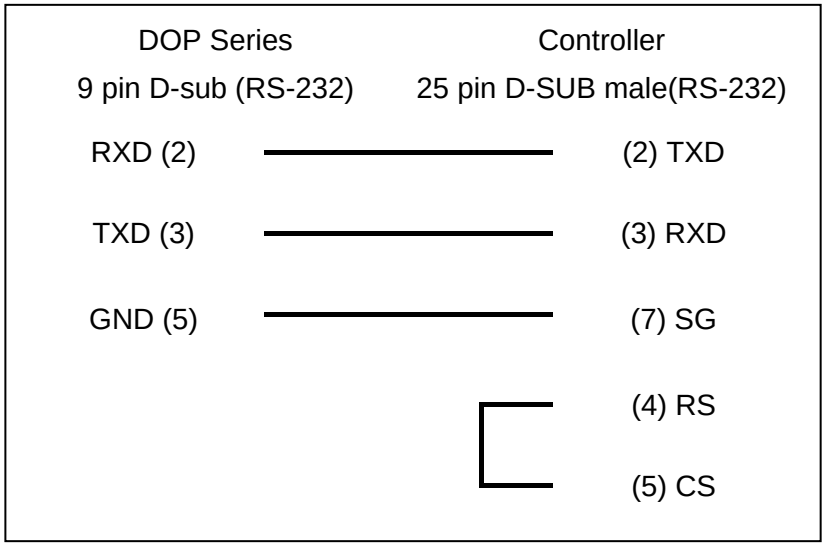
Connection

a. RS-232（Applicable to DOP-A/AE/AS, DOP-B Series）

CJIM CPU module (RS-232)



b. RS-232（Applicable to DOP-A/AE/AS, DOP-B Series）



c. RS-422（Applicable to DOP-A/AE Series）

DOP Series		Controller
9 pin D-SUB male (RS-422)		9 pin D-SUB male (RS-422)
RXD- (1)	———	(9) TXD-
RXD+ (2)	———	(5) TXD+
TXD+ (3)	———	(1) RXD+
TXD- (4)	———	(6) RXD-

d. RS-422（Applicable to DOP-AS35/AS38/AS57 Series）

DOP Series		Controller
9 pin D-SUB male (RS-422)		9 pin D-SUB male (RS-422)
R-	———	(9) TXD-
R+	———	(5) TXD+
T+	———	(1) RXD+
T-	———	(6) RXD-

e. RS-422（Applicable to DOP-B Series）

DOP Series		Controller
9 pin D-SUB male (RS-422)		9 pin D-SUB male (RS-422)
RXD- (9)	———	(9) TXD-
RXD+ (4)	———	(5) TXD+
TXD+ (1)	———	(1) RXD+
TXD- (6)	———	(6) RXD-

Definition of PLC Read/Write Address

a. Registers

Type	Format Bank No.(m) Word No.(n)	Read/Write Range	Data Length	Note
CIO area	CIOn	CIO0 – CIO9999	Word	
Hold area	Hn	H0 – H999	Word	
Auxiliary area	An	A0 – A999	Word	1
DM area	Dn	D0 – D65535	Word	
EM area	Em.n	E0.0 – E12.65535	Word	
Timer PVs	Tn	T0 – T9999	Word	
Counter PVs	Cn	C0 – C9999	Word	
Work area	Wn	W0 – W999	Word	
EM Current Bank area	EMn	EM0 – EM65535	Word	
Index Register	IRn	IR0 – IR99	Double Word	
DR area	DRn	DR0 – DR99	Word	
TK area	TKn	TK0 – TK1022	Byte	Read only, 3

b. Contacts

Type	Format Bank No.(m) Word No.(n) Bit No.(b)	Read/Write Range	Note
CIO area	CIOBnbb	CIOB000 – CIOB999915	
Hold area	HBnbb	HB000 – HB99915	
Auxiliary area	ABnbb	AB000 – AB99915	2
DM area	DBnbb	DB000 – DB6553515	
EM area	EBm.nbb	EB0.000 – EB12.6553515	
Timer area	TBb	TB0 – TB9999	Read only
Counter area	CBb	CB0 – CB9999	Read only
Work area	WBnbb	WB000 – WB99915	
EM Current Bank area	EMBnbb	EMB000 – EMB6553515	
Index Register	IRBnbb	IRB000 – IRB9931	

Type	Format Bank No.(m) Word No.(n) Bit No.(b)	Read/Write Range	Note
DR area	**DRB**nbb	**DRB**000 – **DRB**9915	
TK area	**TKB**nbb	**TKB**000 – **TKB**1022.15	Read only, 3

NOTE

1) **A**0 – **A**447 are read only.

2) **AB**000 – **AB**44715 are read only.

3) The address of register TK must be an even number.

Omron TPM1A PLC

(The same as Omron C Series PLC.）

Parker Compax3 Servo

HMI Factory Setting:

Baud rate: 115200, 8, None, 1

Controller Station Number: 0(Note1)

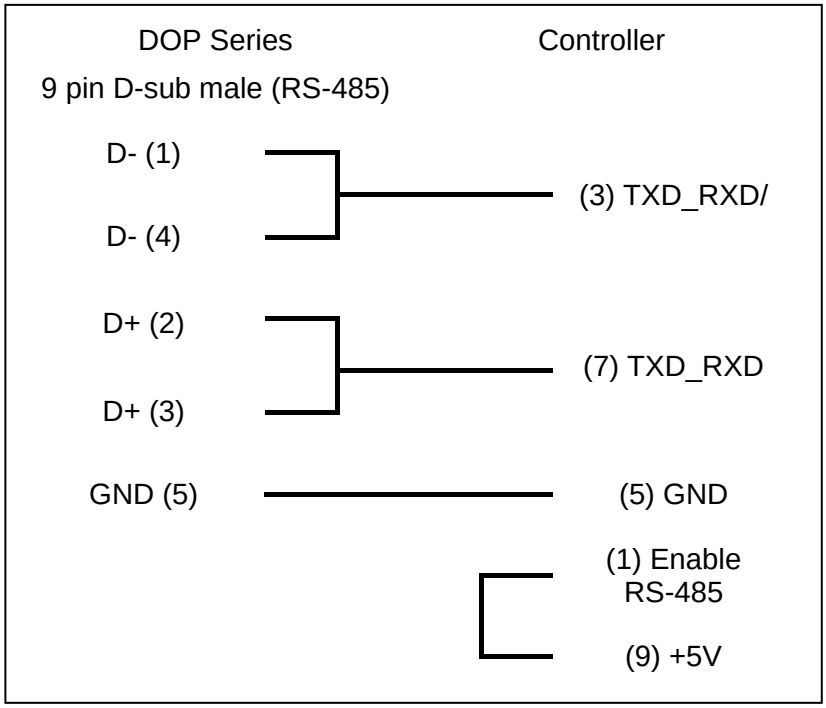
Control Area / Status Area: None/None

Connection

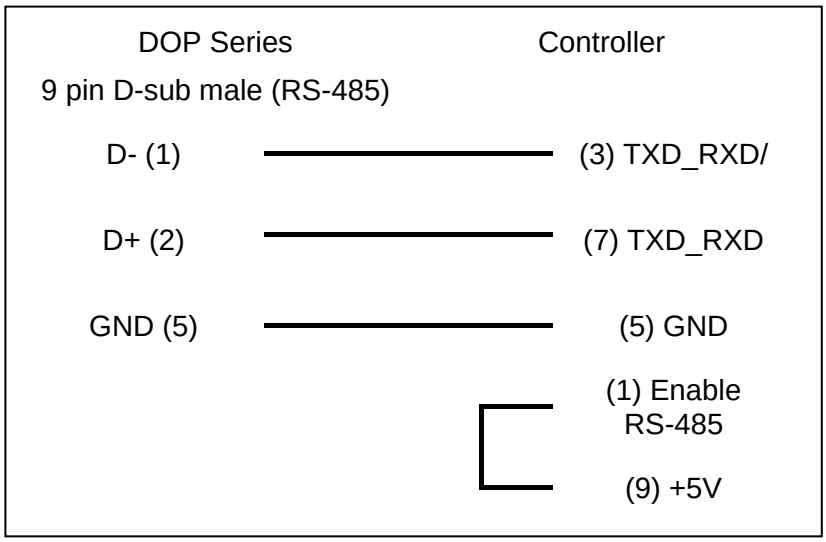
a. RS-232（Applicable to DOP-A/AE/AS, DOP-B Series）



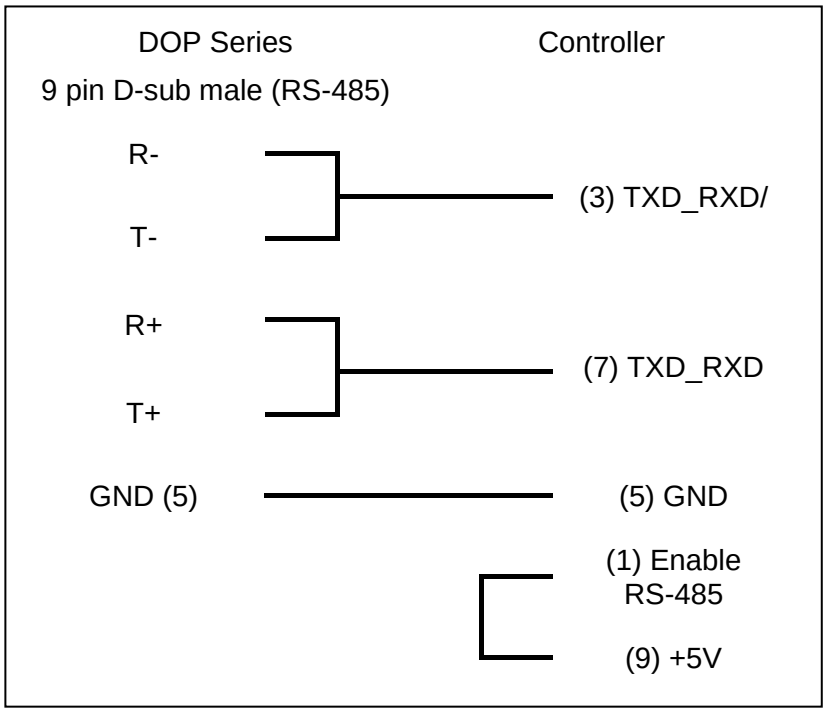
b. RS-485 (2-wire)（Applicable to DOP-A/AE Series）



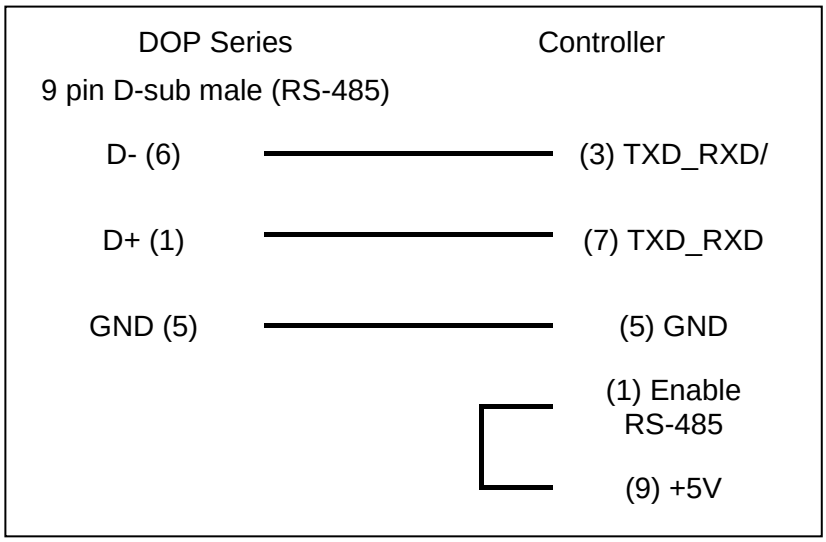
c. RS-485 (2-wire)（Applicable to DOP-AS57 Series）



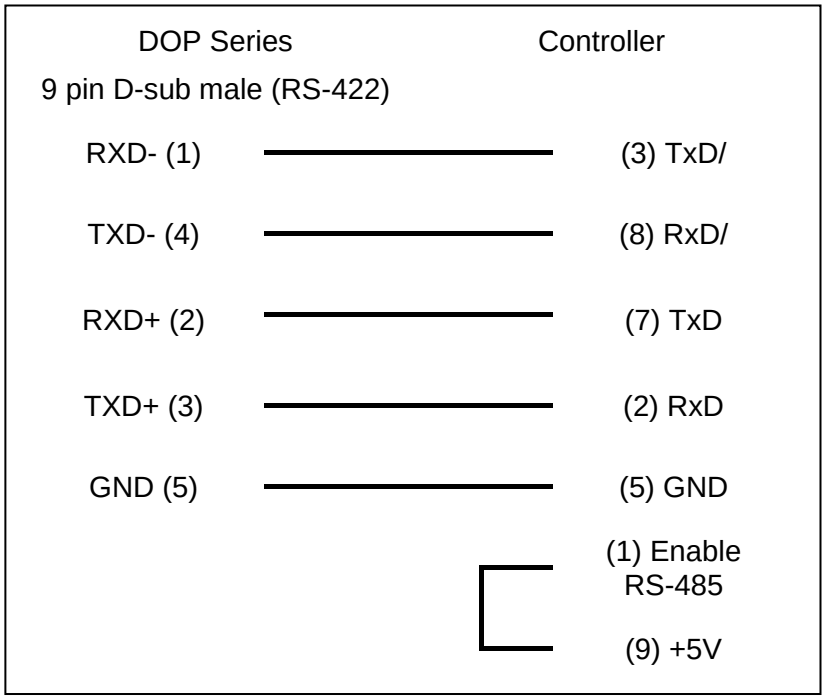
d. RS-485 (2-wire)（Applicable to DOP-AS35/AS38 Series）



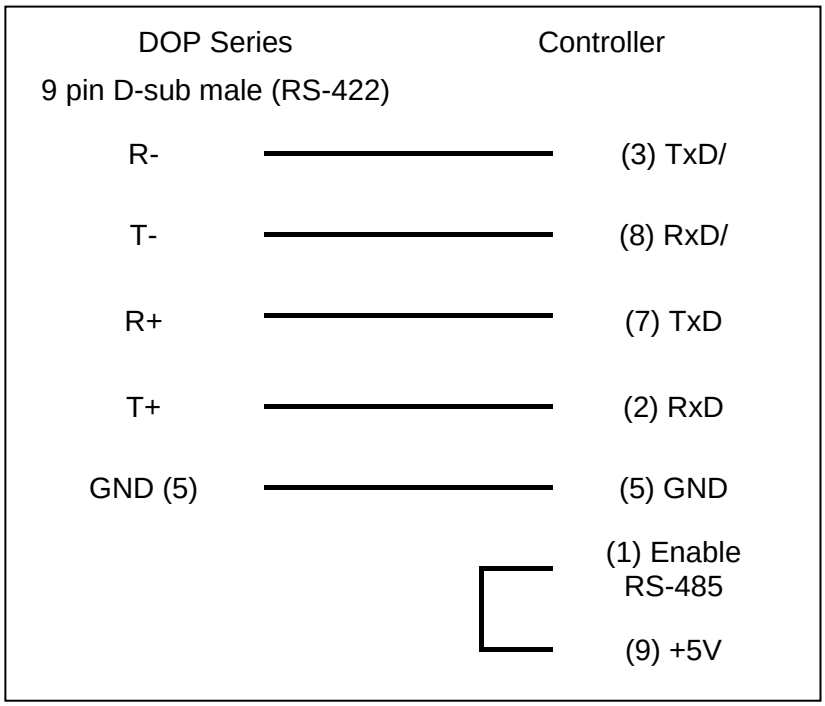
e. RS-485 (2-wire)（Applicable to DOP-B Series）



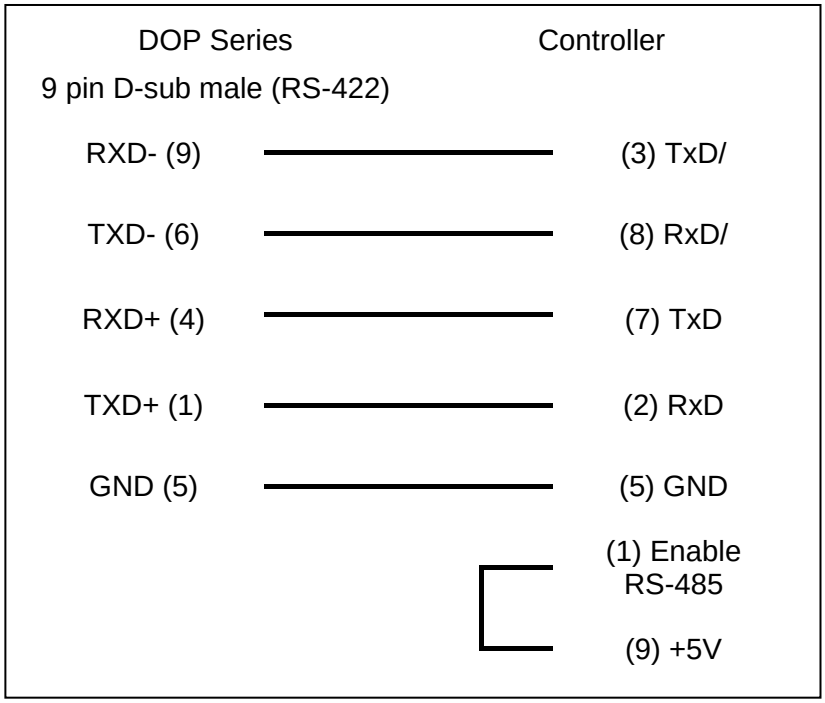
f. RS-422 (4-wire)（Applicable to DOP-A/AE Series）



g. RS-422 (4-wire)（Applicable to DOP-AS35/AS38/AS57 Series）



h. RS-422 (4-wire)（Applicable to DOP-B Series）



Definition of PLC Read/Write Address

a. Registers

Type	Format Index No.(n) Sub-Index No.(m)	Read/Write Range	Data Length	Note
Object	**OBJW**n.m	**OBJW**0.1 - **OBJW**65535.32	Word	
Object	**OBJD**n.m	**OBJD**0.1 - **OBJD**65535.32	Double word	3
Object	**OBJR**n.m	**OBJR**0.1 - **OBJR**65535.32	Floating point	3

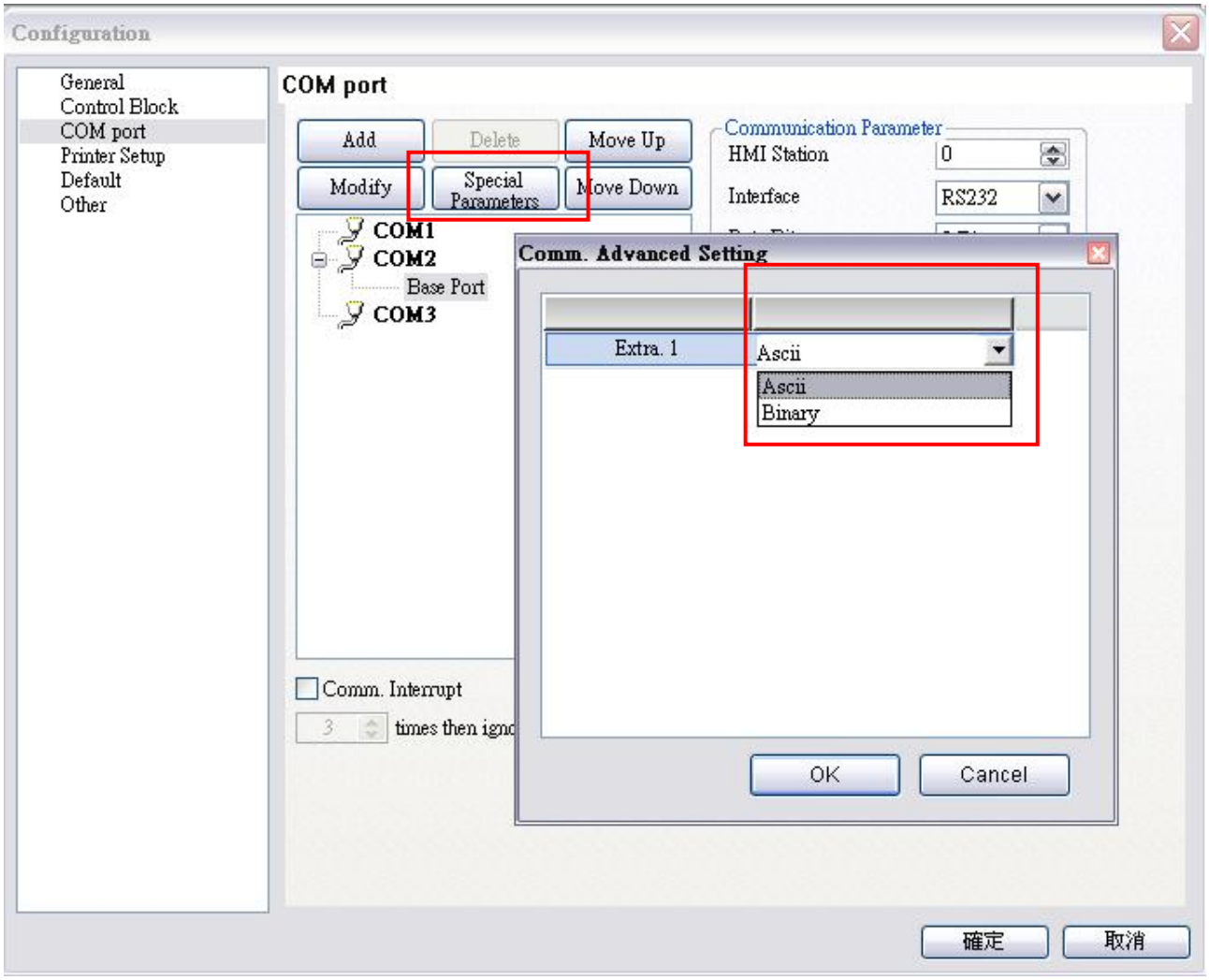
b. Contacts

Type	Format Index No.(n) Sub-Index No.(m) Bit No.(b)	Read/Write Range	Note
Object	**OBJWB**n.m/b	**OBJWB**0.1/0 - **OBJWB**65535.32/15	
Object	**OBJDB**n.m/b	**OBJDB**0.1/0 - **OBJDB**65535.32/31	

NOTE

1) The connection established by RS-232 does not require station number setting. But, if the connection is established by RS-485, station number must be set in a range of 0 ~99.

2) This program supports both ASCII/BINARY RECORD mode, but the default setting is ASCII mode. Change can be made in “Screen Editor” →“Special Parameters”→ “Extra”.



3) This protocol support access to the parameter of Compax3 and above only and is defined as OBJ. The data in different address are not the same type, therefore the character follows “OBJ” is to represent each type of data. OBJW is for 16bits date; OBJD is for 32 bits data, the data length must be Double Word format and numeric unit can not be Floating point; OBJR is for 32 bits data, data length must be Double Word type and numeric unit must be Floating point.

4) Pay special attention to the parameter characteristics, “read only” or “read/write”. Please refer to Parker Compax 3 user manual for more detail.

RKC Rex B Series

HMI Factory Setting:

Baud rate: 9600, 7, Even, 2 (RS-422)

Controller Station Number: 0

Control Area / Status Area: None/None

Connection

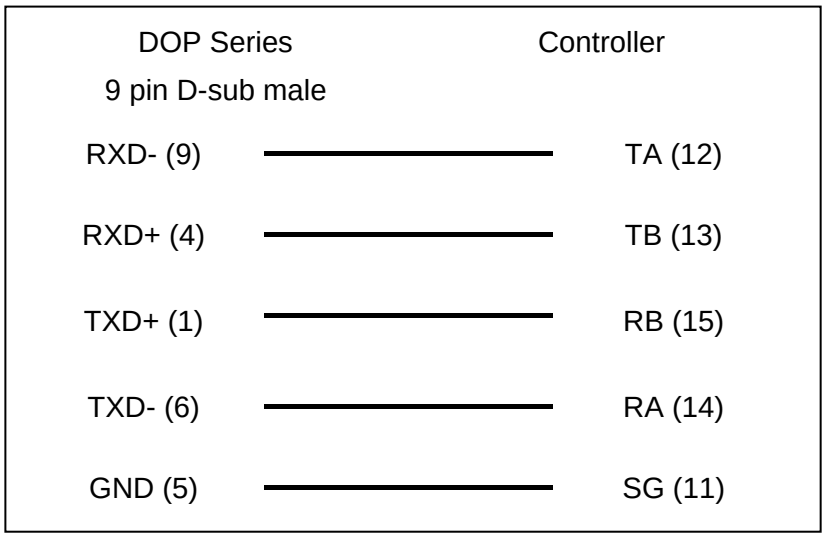
a. RS-422（Applicable to DOP-A/AE Series）

DOP Series 9 pin D-sub male		Controller
RXD- (1)	———	TA (12)
RXD+ (2)	———	TB (13)
TXD+ (3)	———	RB (15)
TXD- (4)	———	RA (14)
GND (5)	———	SG (11)

b. RS-422（Applicable to DOP-AS35/AS38/AS57 Series）

DOP Series 9 pin D-sub male		Controller
R-	———	TA (12)
R+	———	TB (13)
T+	———	RB (15)
T-	———	RA (14)
GND	———	SG (11)

c. RS-422（Applicable to DOP-B Series）



Definition of PLC Read/Write Address

a. Registers

Type	Format	Read/Write Range	Data Length	Note
	Channel No.(n)			
Temperature measured-value (PV)	**M1**:n	**M1**:1 - **M1**:8	Word	Read only, 1
Control output status (Heating-side)	**O1**:n	**O1**:1 - **O1**:8	Word	Read only, 1
Control output status (Cooling-side)	**O2**:n	**O2**:1 - **O2**:8	Word	Read only, 1
Heater break alarm status	**AC**:n	**AC**:1 - **AC**:8	Byte	Read only
Current transformer input value	**M2**:n	**M2**:1 - **M2**:8	Word	Read only, 1
Error code	**ER**:n	**ER**:1	Word	Read only
Communication Error code	**EC**:n	**EC**:1	Word	Read only
PID/AT identification	**G1**:n	**G1**:1 - **G1**:8	Byte	
Temperature set-value (SV)	**S1**:n	**S1**:1 - **S1**:8	Word	1
Proportional band (Heating-side)	**P1**:n	**P1**:1 - **P1**:8	Word	1
Proportional band (Cooling-side)	**P2**:n	**P2**:1 - **P2**:8	Word	1
Integral time	**I1**:n	**I1**:1 - **I1**:8	Word	
Derivative time	**D1**:n	**D1**:1 - **D1**:8	Word	
Anti-reset windup	**W1**:n	**W1**:1 - **W1**:8	Word	

Type	Format	Read/Write Range	Data Length	Note
	Channel No.(n)			
Deadband	V1:n	V1:1 – V1:8	Word	1
Alarm 1 setting	A1:n	A1:1 – A1:8	Word	1
Alarm 2 setting	A2:n	A2:1 – A2:8	Word	1
Channel used/unused	EI:n	EI:1 – EI:8	Byte	
Proportional cycle (Heating-side)	T0:n	T0:1 – T0:8	Word	
Proportional cycle (Cooling-side)	T1:n	T1:1 – T1:8	Word	
PV bias	PB:n	PB:1 – PB:8	Word	1
Heater break alarm setting	A3:n	A3:1 – A3:8	Word	1
Memory area execution NO. setting	ZA:n	ZA:1	Byte	
Control response parameter	CA:n	CA:1 – CA:8	Byte	
Output Monitoring time	TU:n	TU:1	Word	
Event function selection	XK:n	XK:1	Byte	

b. Contacts

Type	Format	Read/Write Range	Note
	Channel No.(b)		
Alarm 1 status	AA:b	AA:1 – AA:8	Read only
Alarm 2 status	AB:b	AB:1 – AB:8	Read only
Burnout status	B1:b	B1:1 – B1:8	Read only
Control run/stop	X1:b	X1:1	
Alarm interlock release	AR:b	AR:1	Read only
Event input status	L1:b	L1:1	Read only

NOTE

1) The input value and display value of RKC Rex B Series must in one decimal place. Please refer to RKC user manual to ensure if the temperature controller supports one decimal place.

Siemens S7 200

HMI Factory Setting:

Baud rate: 9600, 7, Even, 1

Controller Station Number: 2

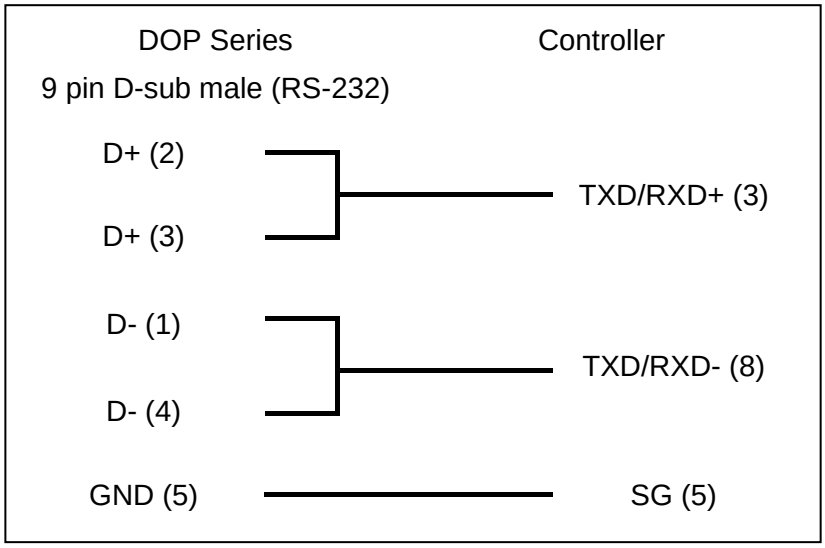
Control Area / Status Area: VW0/VW10

Connection

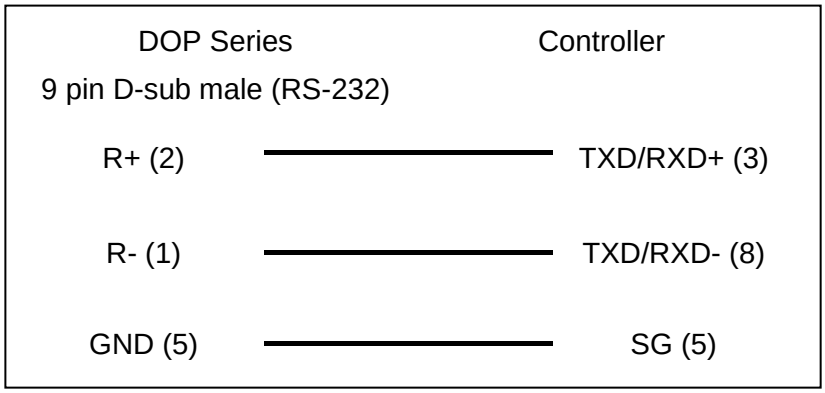
a. RS-232 (via PPI Multi-Master Cable)（Applicable to DOP-A/AE/AS, DOP-B Series）



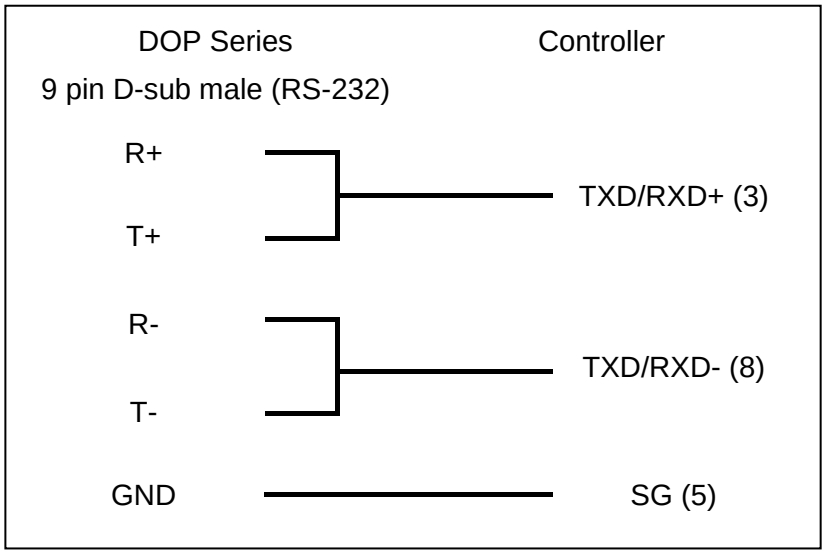
b. RS-485 (via PLC Program Port)（Applicable to DOP-A/AE Series）



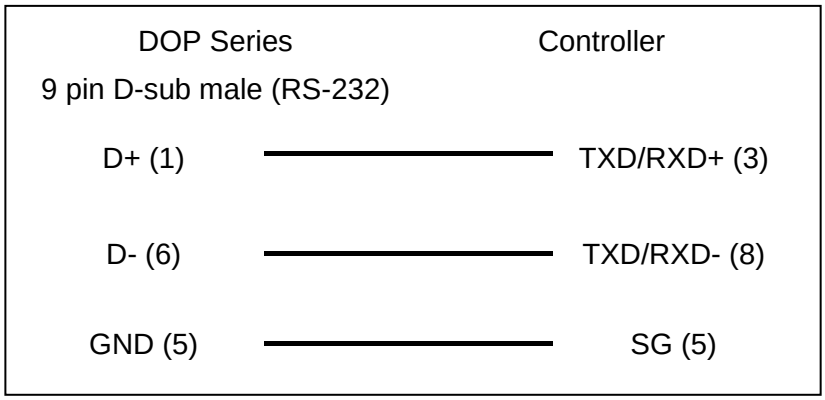
c. RS-485 (via PLC Program Port)（Applicable to DOP-AS57 Series）



d. RS-485 (via PLC Program Port)（Applicable to DOP-AS35/AS38 Series）



e. RS-485 (via PLC Program Port)（Applicable to DOP-B Series）



Definition of PLC Read/Write Address

a. Registers

Type	Format	Read/Write Range	Data Length	Note
	Word No. (n)			
Timer	Tn	T0 – T255	Word	
Analog input word	AIWn	AIW0 – AIW30	Word	
Counter	Cn	C0 – C255	Word	
Analog output word	AQWn	AQW0 – AQW30	Word	
Input Image	IWn	IW0 – IW14	Word	
Input Image	IDn	ID0 – ID12	Double Word	
Output Image	QWn	QW0 – QW14	Word	
Output Image	QDn	QD0 – QD12	Double Word	
Special Bits	SMWn	SMW0 – SMW199	Word	
Special Bits	SMDn	SMD0 – SMD197	Double Word	
Internal Bits	MWn	MW0 – MW98	Word	
Internal Bits	MDn	MD0 – MD96	Double Word	
Data Area	VWn	VW0 – VW9998	Word	
	DBWn	DBW0 – DBW9998		
Data Area	VDn	VD0 – VD9996	Double Word	
Special S	SWn	SW0 – SW99	Word	
Special S	SDn	SD0 – SD97	Double Word	

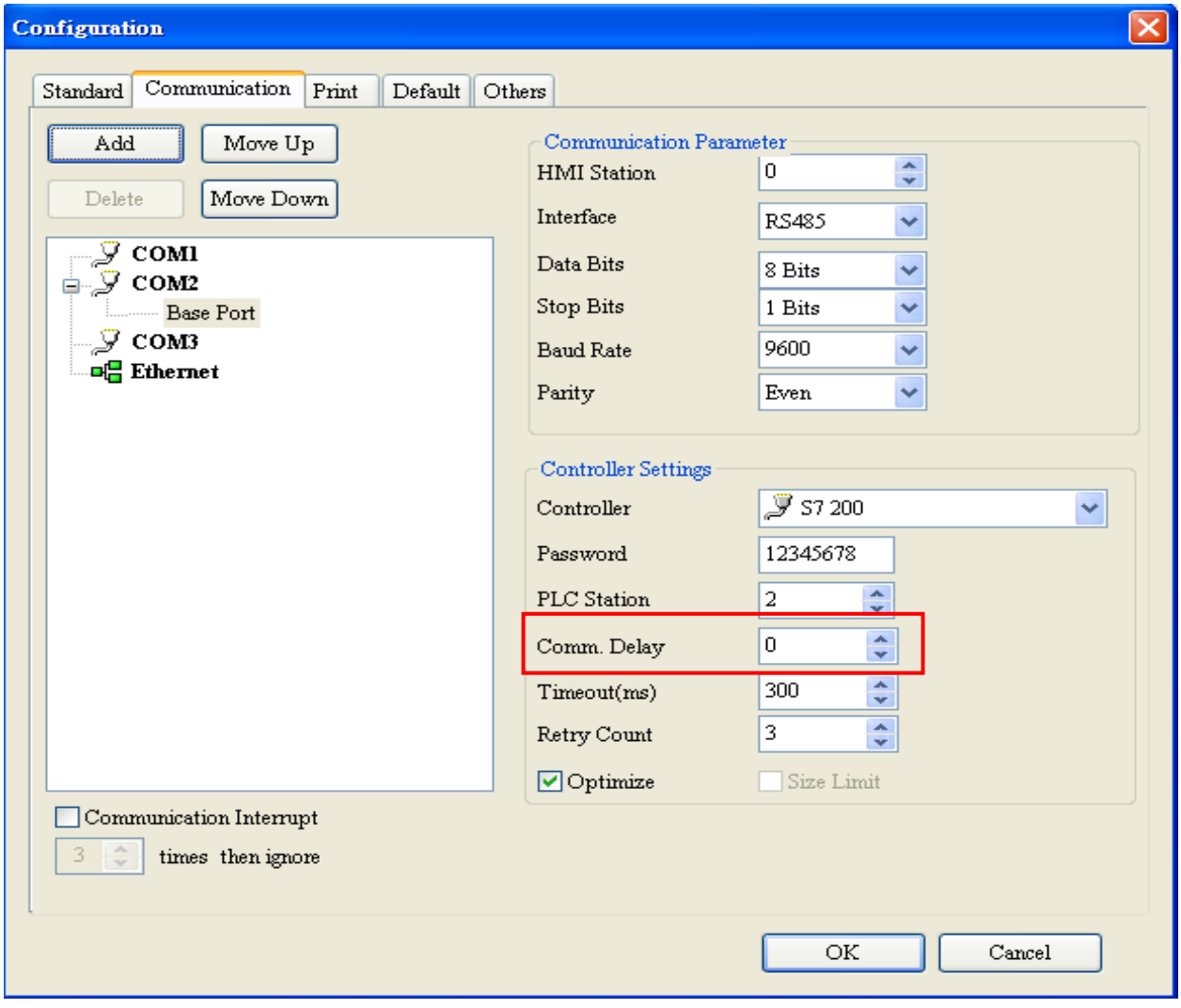
b. Contacts

Type	Format	Read/Write Range	Note
	Word No. (n) Bit No. (b)		
Timer Bit	Tb	T0 – T255	Read Only
Counter Bit	Cb	C0 – C255	Read Only
Input Image	In.b	I0.0 – I15.7	

Type	Format	Read/Write Range	Note
	Word No. (n) Bit No. (b)		
Output Image	Qn.b	Q0.0 – Q15.7	
Special Bit	SMn.b	SM0.0 – SM200.7	
Internal Bit	Mn.b	M0.0 – M99.7	
Data Area Bit	Vn.b	V0.0 – V9999.7	
Special S Bit	Sn.b	S0.0 – S100.7	

NOTE

1) S7-200 processes a longer period of internal program scanning or inputs an interruption command may slows down HMI response rate and cause “Must Retry” or “No Such Resource” error message. Communication Delay function is suggested to avoid this problem. The parameter setting unit is ms and suggested setting value is 10. The setting value should not be greater than 30.



Siemens S7 300 (Direct MPI)

HMI Factory Setting:

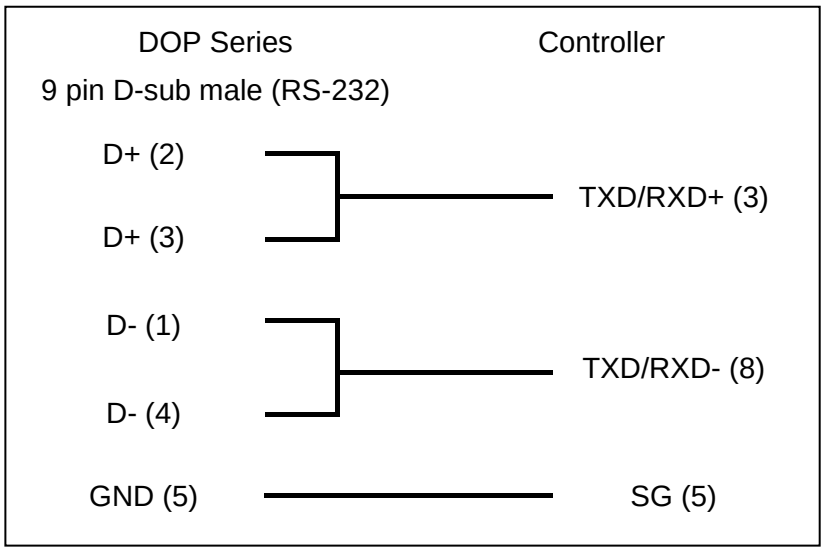
Baud rate: 187500, 8, Even, 1 (RS-485) (Note1)

Controller Station Number: 2(Note2、Note3、Note4)

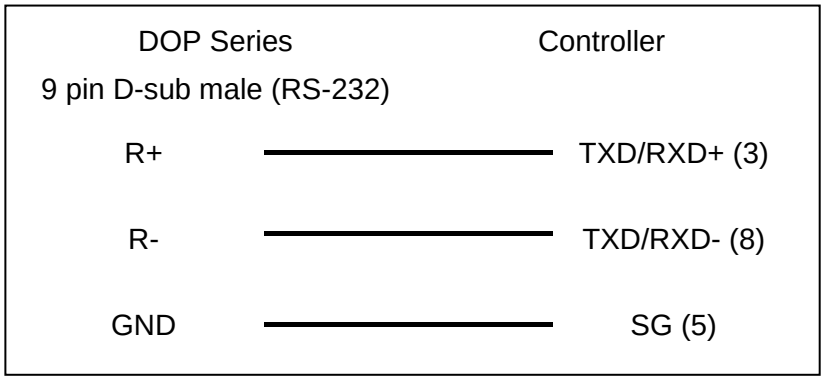
Control Area / Status Area: DBW0/DBW20

Connection

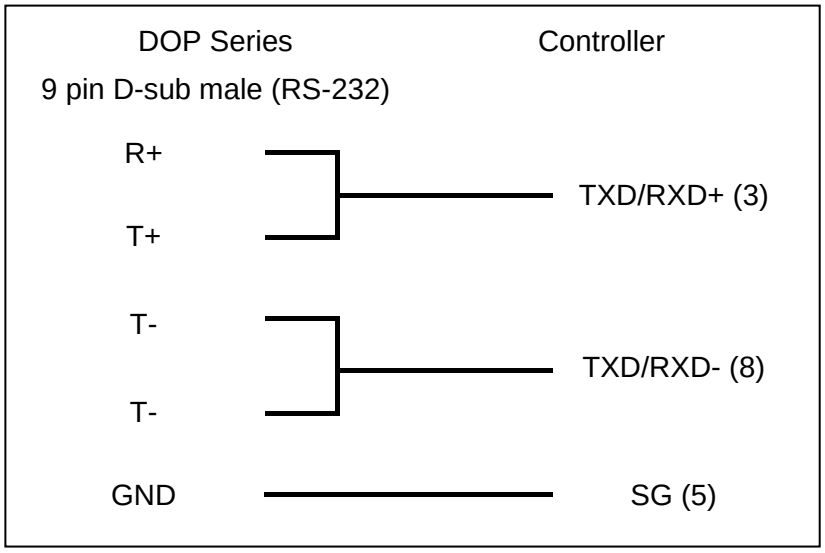
a. RS-485（Applicable to DOP-A/AE Series）



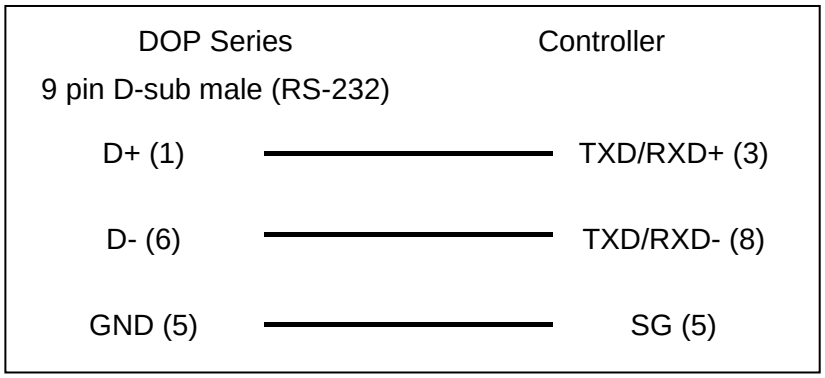
b. RS-485（Applicable to DOP-AS57 Series）



c. RS-485（Applicable to DOP-AS35/AS38 Series）



d. RS-485（Applicable to DOP-B Series）



Definition of PLC Read/Write Address

a. Registers

Type	Format Word No.(n) Bank No.(m)	Read/Write Range	Data Length	Note
Input Image	IWn	IW0 – IW65534	Word	
	IDn	ID0 – ID65532	Double Word	
Output Image	QWn	QW0 – QW65534	Word	
	QDn	QD0 – QD65532	Double Word	
Internal Bits	MWn	MW0 – MW65534	Word	
	MDn	MD0 – MD65532	Double Word	

Type	Format Word No.(n) Bank No.(m)	Read/Write Range	Data Length	Note
Data Area	DBm.DBWn	DB1.DBW0 – DB255.DBW65534	Word	5
	DBm.DBDn	DB1.DBD0 – DB255.DBW65532	Double Word	5
Data Area (DB10)	DBWn	DBW0 – DBW65534	Word	
	DBDn	DBD0 – DBD65532	Double Word	
	VWn	VW0 – VW65534	Word	
	VDn	VD0 – VD65532	Double Word	
Timer	Tn	T0 – T65535	Word	6
Counter	Cn	C0 – C65535	Double Word	6

b. Contacts

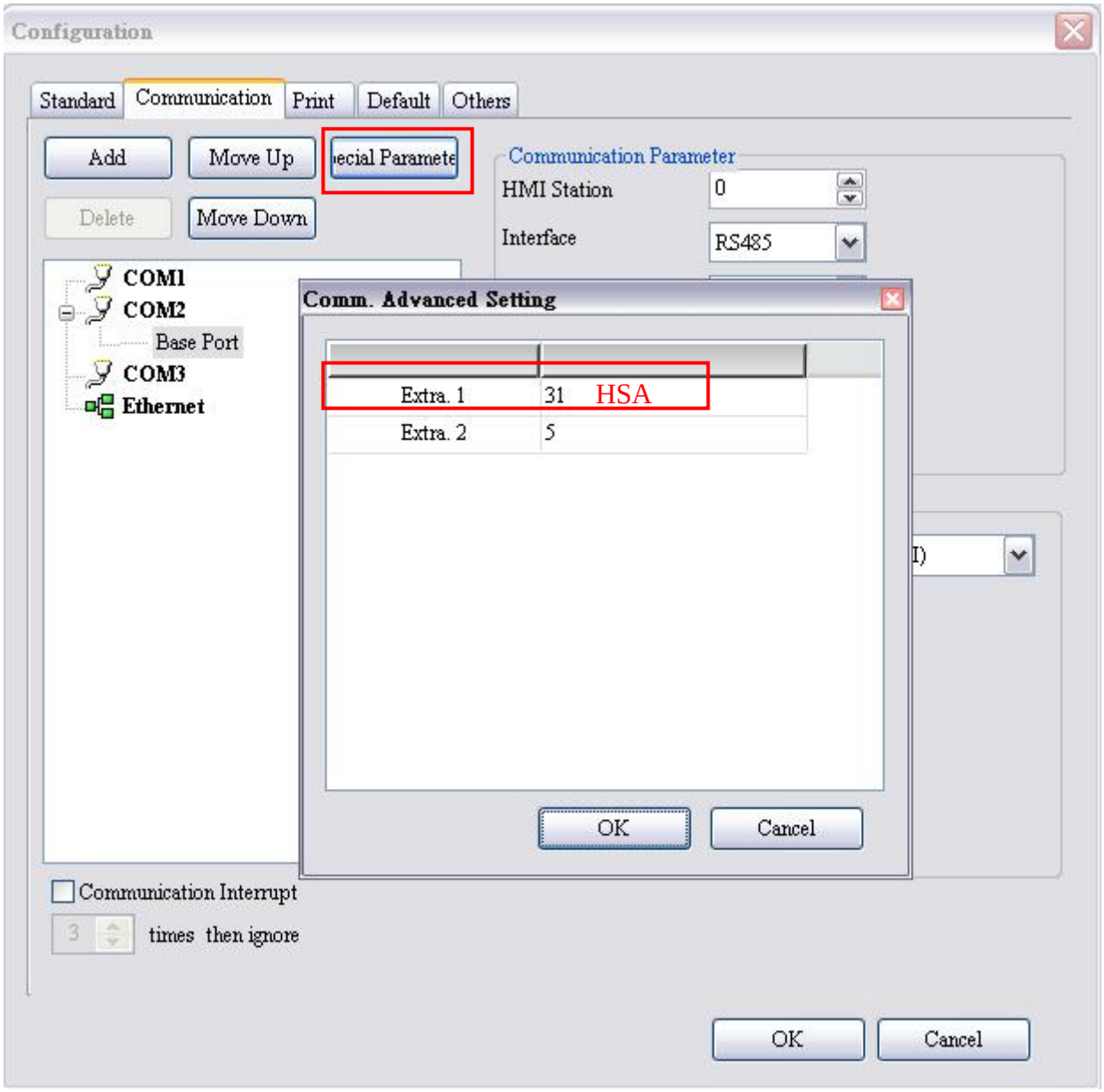
Type	Format Word No.(n) ; Bank No.(m) ; Bit No.(b)	Read/Write Range	Note
Input Image	In.b	I0.0 – I65535.7	
Output Image	Qn.b	Q0.0 – Q65535.7	
Internal Bits	Mn.b	M0.0 – M65535.7	
Data Area	DBm.DBXn.b	DB1.DBX0.0 – DB255.DBX65535.7	5
Data Area (DB10)	DBXn.b	DBX0.0 – DBX65535.7	
	Vn.b	V0.0 – V65535.7	

NOTE

1) This communication protocol only supports 187500 bps. Only one COM port can use this communication protocol for one project.

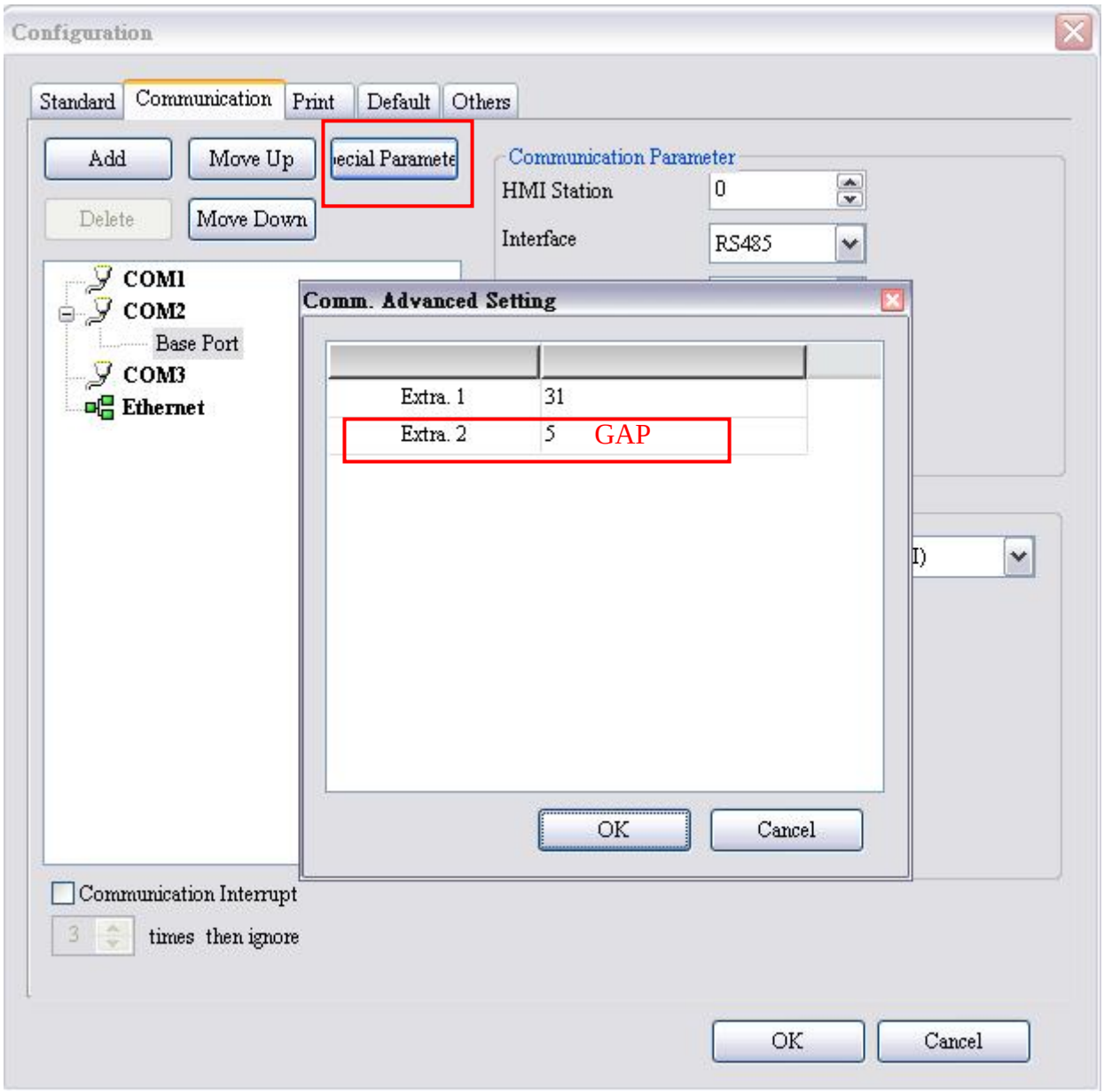
2) This communication protocol supports multiple HMI to multiple PLC connection. However, it is still recommend to connect a maximum of two HMI to a PLC at a time. A connection of more than two HMI would cause low baud rate and time out error may occur.

3) In order to set Highest Station Address(HSA) click Option > Configuration > Special Parameter > Extra. The default setting for HSA is 31, max. value is 126 and Min. value is 2. The setting for HSA must be in consistent with PLC setting.



4) In “Communication” section, click on “Extra” setting, and update GUF coefficient of GAP in setting 2. The GUF coefficient is the frequency of the HMI checking the existence of controller within the communication network. If coefficient is larger, the frequency of update will be low, in another word, it takes longer waiting time for other devices to join the network. The default setting of GUF is 5, maximum value is 31 and minimum value is 1. If multiple HMI connections are required, it is recommended to lower GUF coefficient

in order to shorten the waiting time of newly joined HMI and to prevent the error of "network can not be joined".



5) PLC needs to enable DB memory (**DB**m.DBWn、**DB**m.DBDn、**DB**m.DBXn.b) before DB data can be read.

6) The valid digit of value for Timer is only up to 3 digits. If a value input is more than 3 digits, the Timer will regards the highest 3 (decimal) and replace the rest by 0. For example, a value 12345 will be write as 12300 in PLC.

7) The valid digit of value for Counter is to 3 digits. If a value input is more than 3 digits, the Counter will regards the first 3 digits and leave out the rest. For example, a value 12345 will be write as 123 in PLC.

Siemens S7 300 (ISO TCP)

HMI Factory Setting:

IP Address: 192.168.0.1

COM Port: 102

Control Area / Status Area: DBW0 / DBW20

Connection

Standard Jumper Cable / Network Cable without jumper (Auto-detected by HMI)

Definition of PLC Read/Write Address

a. Registers

Type	Format Word No.(n) Bank No.(m)	Read/Write Range	Data Length	Note
Input Image	**IW**n	**IW**0 - **IW**65534	Word	
	IDn	**ID**0 - **ID**65532	Double Word	
Output Image	**QW**n	**QW**0 - **QW**65534	Word	
	QDn	**QD**0 - **QD**65532	Double Word	
Internal Bits	**MW**n	**MW**0 - **MW**65534	Word	
	MDn	**MD**0 - **MD**65532	Double Word	
Data Area	**DB**m.DBWn	**DB**1.DBW0 - **DB**255.DBW65534	Word	1
	DBm.DBDn	**DB**1.DBD0 - **DB**255.DBW65532	Double Word	1
Data Area (DB10)	**DBW**n	**DBW**0 - **DBW**65534	Word	
	DBDn	**DBD**0 - **DBD**65532	Double Word	
	VWn	**VW**0 - **VW**65534	Word	
	VDn	**VD**0 - **VD**65532	Double Word	
Timer	**T**n	**T**0 - **T**65535	Word	2

Type	Format Word No.(n) Bank No.(m)	Read/Write Range	Data Length	Note
Counter	Cn	C0 – C65535	Double Word	3

b. Contacts

Type	Format Word No.(n) Bank No.(m) Bit No.(b)	Read/Write Range	Note
Input Image	In.b	I0.0 – I65535.7	
Output Image	Qn.b	Q0.0 – Q65535.7	
Internal Bits	Mn.b	M0.0 – M65535.7	
Data Area	DBm.DBXn.b	DB1.DBX0.0 – DB255.DBX65535.7	
Data Area (DB10)	DBXn.b	DBX0.0 – DBX65535.7	
	Vn.b	V0.0 – V65535.7	

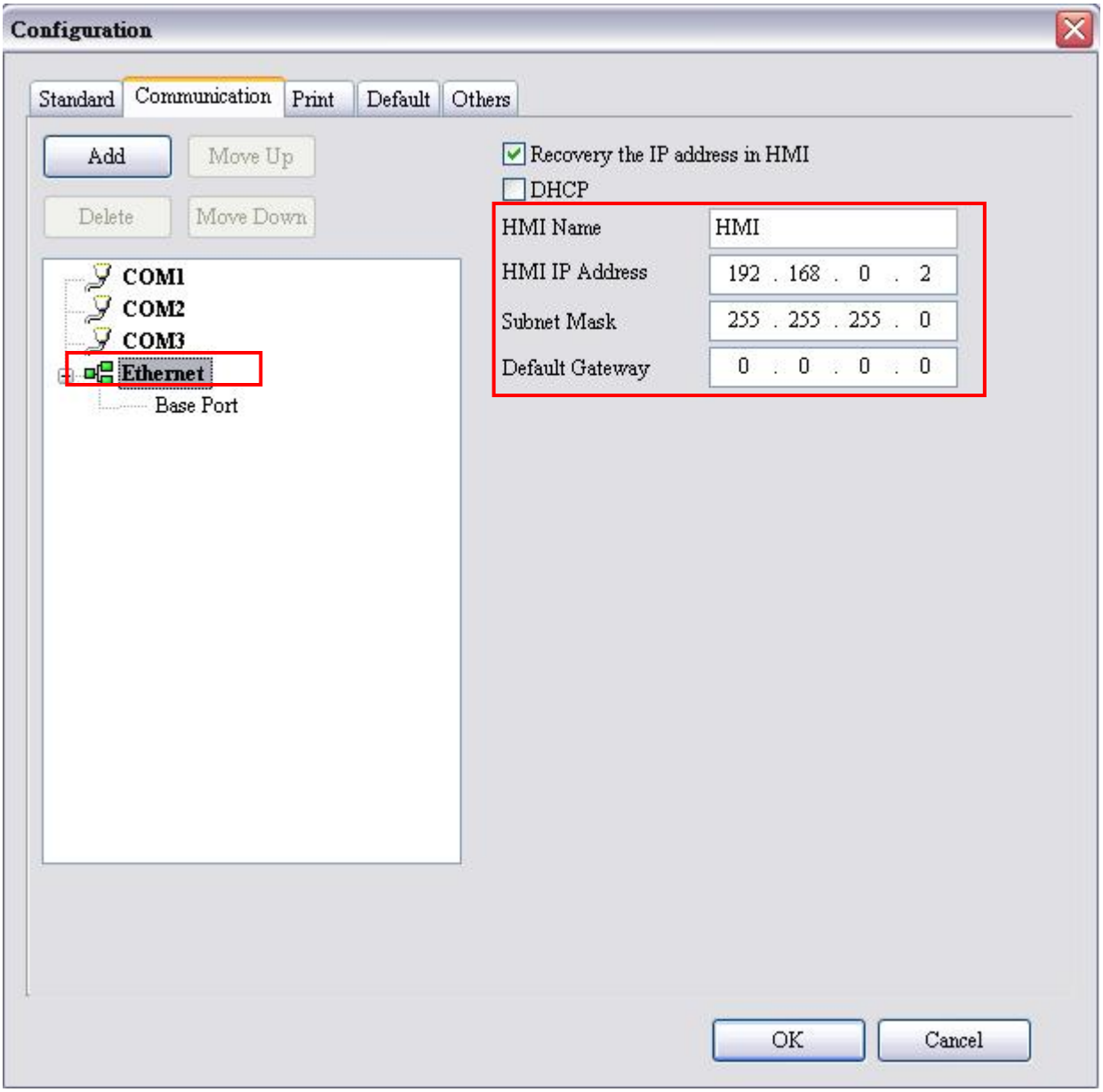
NOTE

1) PLC needs to enable DB memory (DBm.DBWn、DBm.DBDn、DBm.DBXn.b) before DB data can be read.
2) Timer reads only up to 3 digits. If a value input is more than 3 digits, the Timer will regards the highest 3 (decimal) and replace the rest by 0. For example, a value 12345 will be write as 12300 in PLC.
3) Counter reads only up to 3 digits. If a value input is more than 3 digits, the Counter will regards the first 3 digits and leave out the rest. For example, a value 12345 will be write as 123 in PLC.

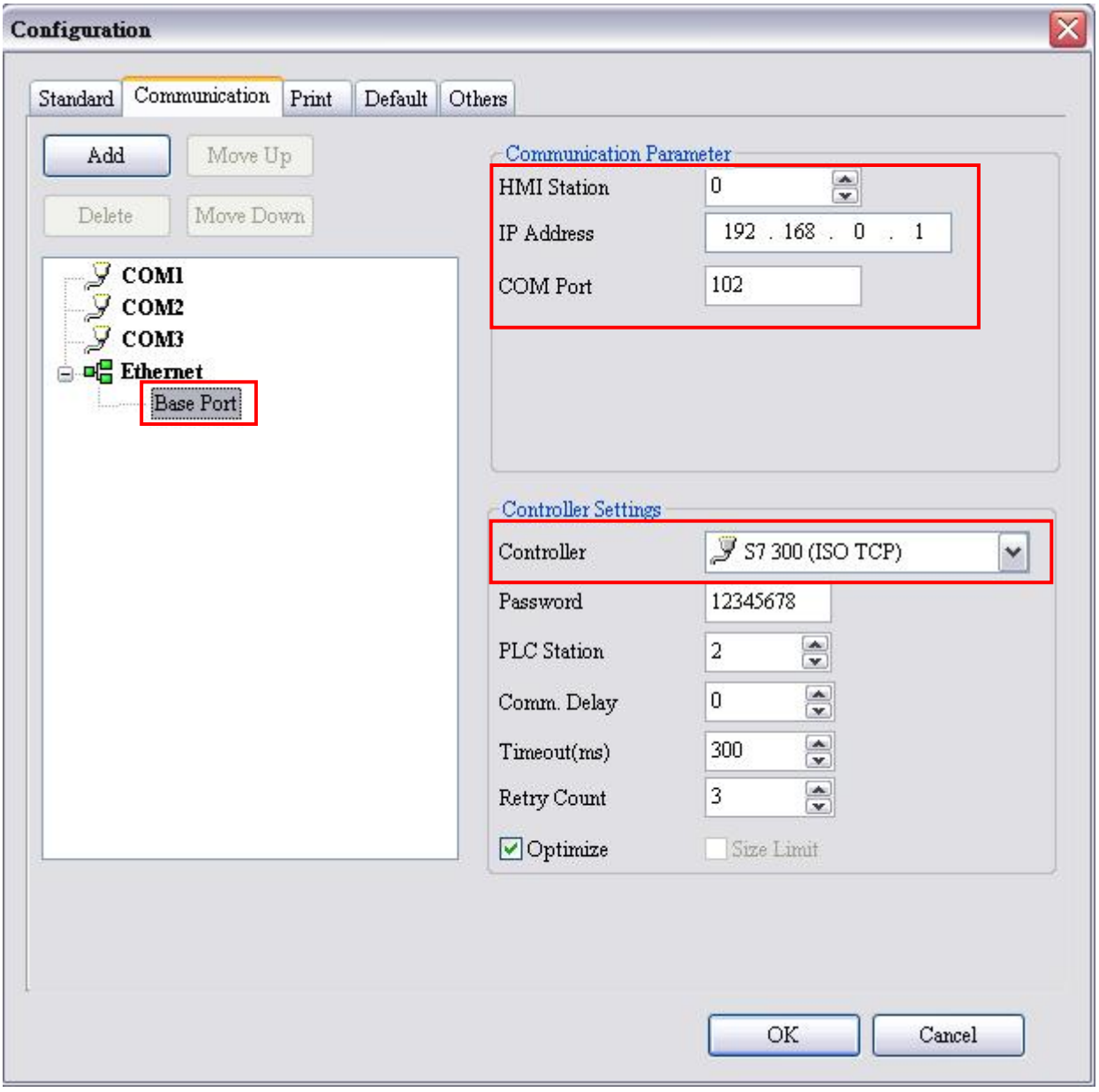
Settings

Screen Editor :

1. HMI Ethernet Setting



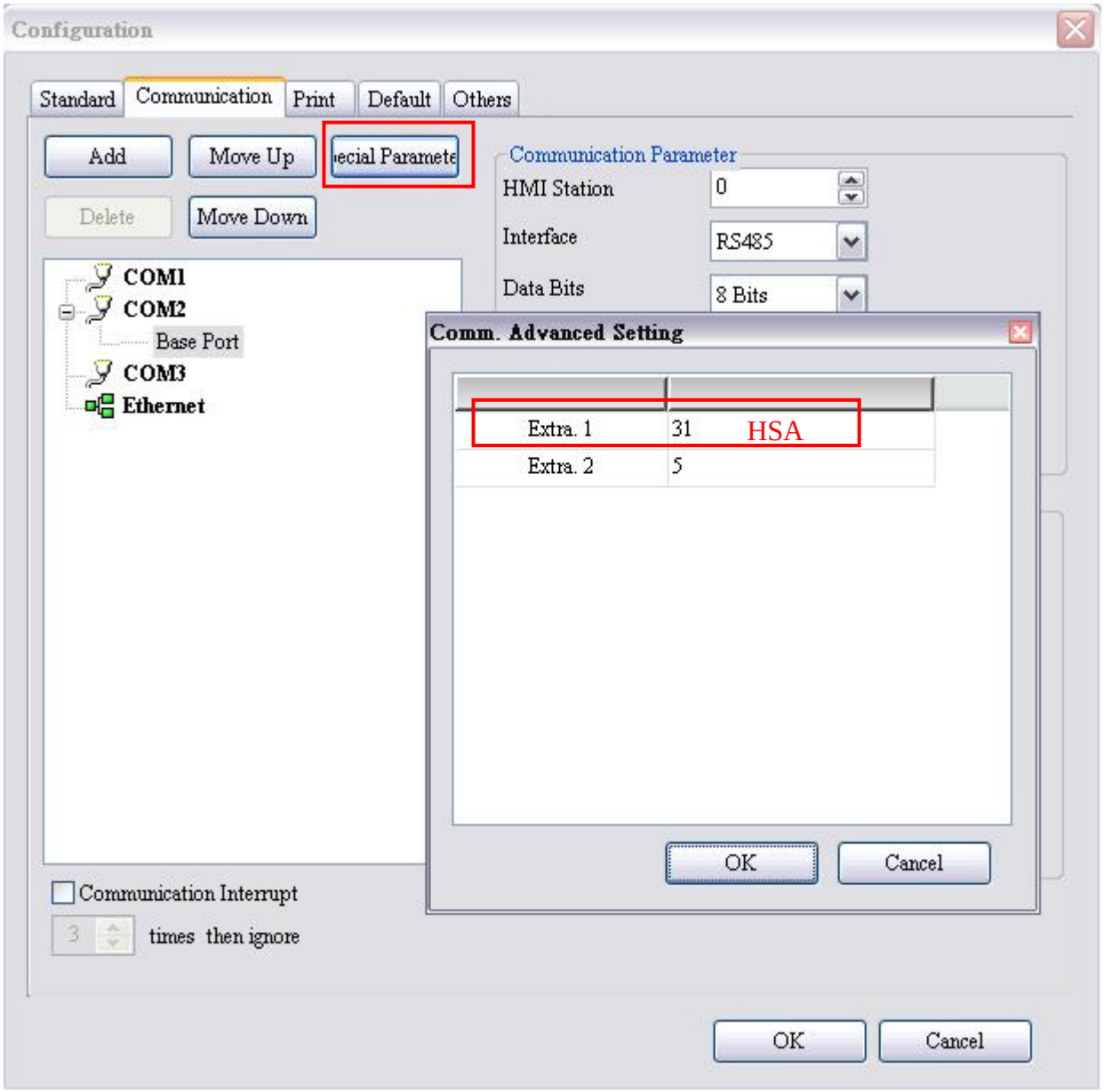
2. PLC Ethernet Setting



Simatic (V5.4) :

1. Right click on “CP343-1 Lean” module and select "Object Properties", on this page set up “IP address” and “Subnet mask” for CP343-1 Lean Module. Please be aware that the “IP address” setting must be the same as PLC Ethernet setting in Screen Editor and the “Subnet mask” setting must be the same as the HMI Ethernet setting in Screen Editor.
2. To add a new "Other station", right click on “Object Properties", add a new Interface and set the “Type” as “Industrial Ethernet”. To set up HMI “IP address” and “Subnet mask”, go to “Ethernet interface" > "Properties", please be aware that this setting must be the same as the HMI Ethernet setting in Screen Editor. As the setting is completed, left click on the green box above “Other station” and drag to link with the green line above.

3. Right click on the CPU module and select "Insert New Connection", for “Connection Partner” select “Unspecified” and for “Type” select “TCP connection”. Then go to "Properties – TCP connection" >"Options", and set “Mode” to “Fetch passive”; please follows the restriction for “Address” setting, set “Address” to Local Port No. must be the same as PLC Ethernet setting in Screen Editor, to Partner’s IP must be the same as HMI Ethernet setting in Screen Editor, but Port No. can be any Port No. depending on the structure of network connection.
4. Right click on another CPU to add a new “TCP connection” and repeats setting 3, except the “Mode”, go to “Options” > “Mode” and select “Write passive”.
5. After setting 1~4 is done, you will see two “TCP connection” at the bottom of PLC Ethernet setting page. PLC Ethernet setting is completed.
6. For detail on parameter setting, please refer to Siemens PLC user manual.



Siemens S7 300 (with PC adapter)

HMI Factory Setting:

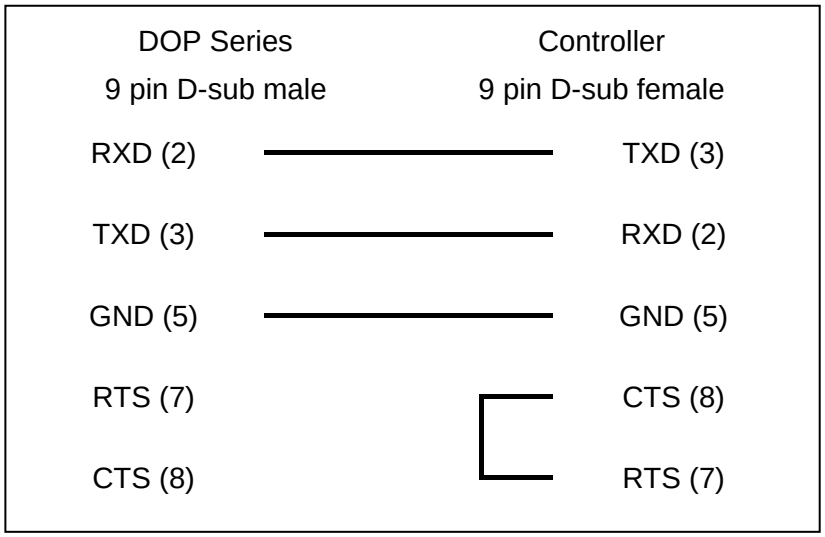
Baud rate: 19200, 8, Even, 1

Controller Station Number: 2(Note1, Note2, Note3)

Control Area / Status Area: DBW0/DBW20

Connection

a. RS-232 (via PC adapter)（Applicable to DOP-A/AE/AS, DOP-B Series）



Definition of PLC Read/Write Address

a. Registers

Type	Format Word No.(n) Bank No.(m)	Read/Write Range	Data Length	Note
Input Image	IWn	IW0 - IW65534	Word	
	IDn	ID0 - ID65532	Double Word	
Output Image	QWn	QW0 - QW65534	Word	
	QDn	QD0 - QD65532	Double Word	
Internal Bits	MWn	MW0 - MW65534	Word	
	MDn	MD0 - MD65532	Double Word	

Type	Format Word No.(n) Bank No.(m)	Read/Write Range	Data Length	Note
Data Area	DBm.DBWn	DB1.DBW0 – DB255.DBW65534	Word	4

b. Contacts

Type	Format Word No.(n) Bank No.(m) Bit No.(b)	Read/Write Range	Note
Input Image	In.b	I0.0 – I65535.7	
Output Image	Qn.b	Q0.0 – Q65535.7	
Internal Bits	Mn.b	M0.0 – M65535.7	
Data Area	DBm.DBXn.b	DB1.DBX0.0 – DB255.DBX65535.7	4
Data Area (DB10)	DBXn.b	DBX0.0 – DBX65535.7	
	Vn.b	V0.0 – V65535.7	

NOTE

1) Communication via PC adapter, PLC station will not be used, therefore, only 1(HMI) to 1 (PLC) communication is allowed.

2) Baud rate setting of PLC must be 187.5kps or above (but not 19.2kps). For HMI, the baud rate can only be 19.2kbps or 28.4kbps (by the Switch setting of PC adapter).

3) Set up both ends of PC adapter for PLC connection and HMI connection (one end to one connection). Once PLC is connected, the Power LED signal will be on instantly and the LED signal would blink only during the communication. If communication failure occur, the LED signal will remain off.

4) PLC needs to enable DB memory (DBm.DBWn、DBm.DBDn、DBm.DBXn.b) before DB data can be read.

5) Timer reads only up to 3 digits. If a value input is more than 3 digits, the Timer will regards the highest 3 (decimal) and replace the rest by 0. For example, a value 12345 will be write as 12300 in PLC.

6) Counter reads only up to 3 digits. If a value input is more than 3 digits, the Counter will regards the first 3 digits and leave out the rest. For example, a value 12345 will be write as 123 in PLC.

Siemens S7 300 (without PC adapter)

HMI Factory Setting:

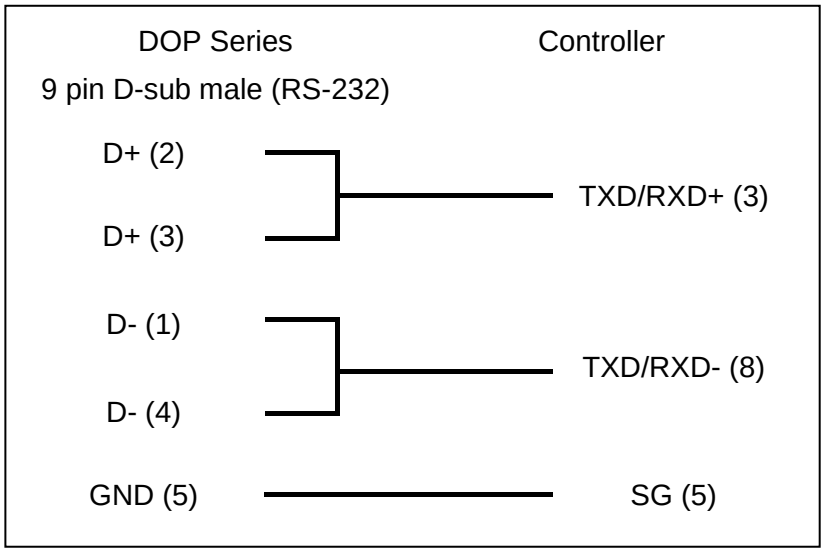
Baud rate: 19200, 8, Even, 1 (RS-485) (Note1)

Controller Station Number: 2(Note2、Note3、Note4)

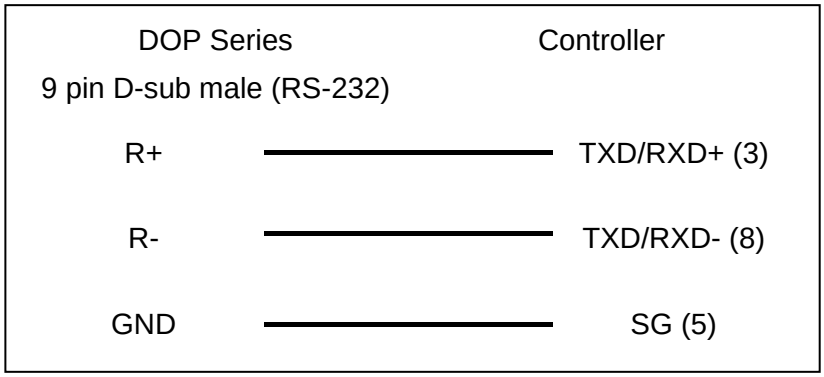
Control Area / Status Area: DBW0/DBW20

Connection

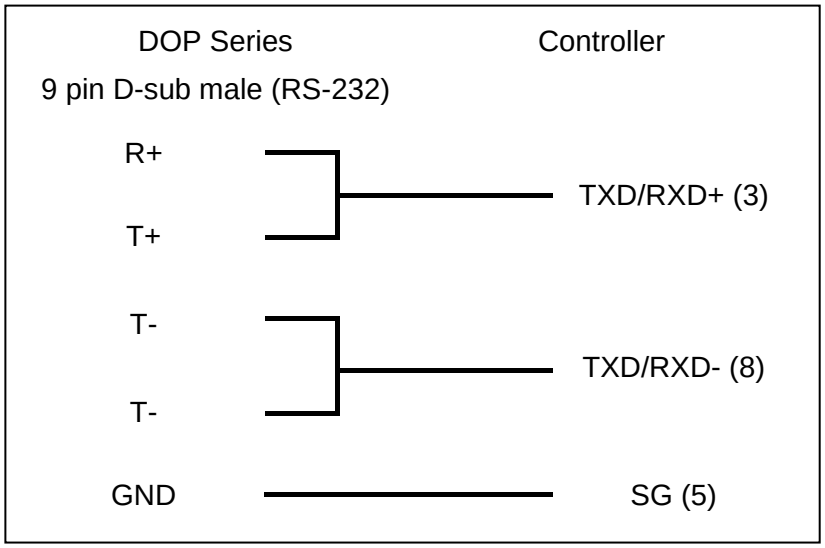
a. RS-485（Applicable to DOP-A/AE Series）



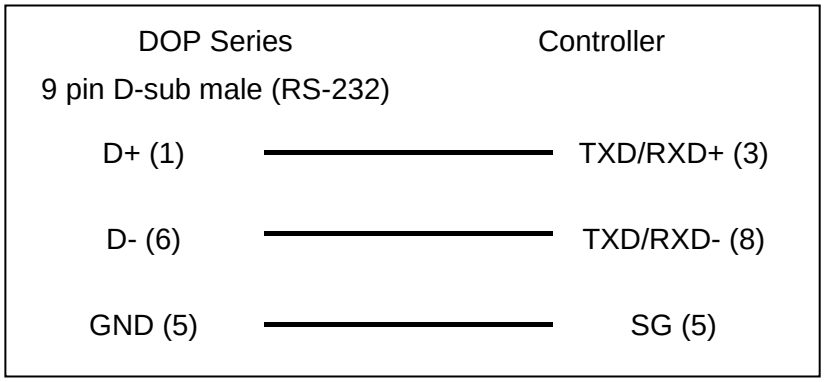
b. RS-485（Applicable to DOP-AS57 Series）



c. RS-485（Applicable to DOP-AS35/AS38 Series）



d. RS-485（Applicable to DOP-B Series）



Definition of PLC Read/Write Address

a. Registers

Type	Format Word No.(n) Bank No.(m)	Read/Write Range	Data Length	Note
Input Image	IWn	IW0 – IW65534	Word	
	IDn	ID0 – ID65532	Double Word	
Output Image	QWn	QW0 – QW65534	Word	
	QDn	QD0 – QD65532	Double Word	
Internal Bits	MWn	MW0 – MW65534	Word	
	MDn	MD0 – MD65532	Double Word	

Type	Format Word No.(n) Bank No.(m)	Read/Write Range	Data Length	Note
Data Area	DBm.DBWn	DB1.DBW0 – DB255.DBW65534	Word	5
	DBm.DBDn	DB1.DBD0 – DB255.DBW65532	Double Word	5
Data Area (DB10)	DBWn	DBW0 – DBW65534	Word	
	DBDn	DBD0 – DBD65532	Double Word	
	VWn	VW0 – VW65534	Word	
	VDn	VD0 – VD65532	Double Word	
Timer	Tn	T0 – T65535	Word	6
Counter	Cn	C0 – C65535	Double Word	6

b. Contacts

Type	Format Word No.(n) Bank No.(m) Bit No.(b)	Read/Write Range	Note
Input Image	In.b	I0.0 – I65535.7	
Output Image	Qn.b	Q0.0 – Q65535.7	
Internal Bits	Mn.b	M0.0 – M65535.7	
Data Area	DBm.DBXn.b	DB1.DBX0.0 – DB255.DBX65535.7	5
Data Area (DB10)	DBXn.b	DBX0.0 – DBX65535.7	
	Vn.b	V0.0 – V65535.7	

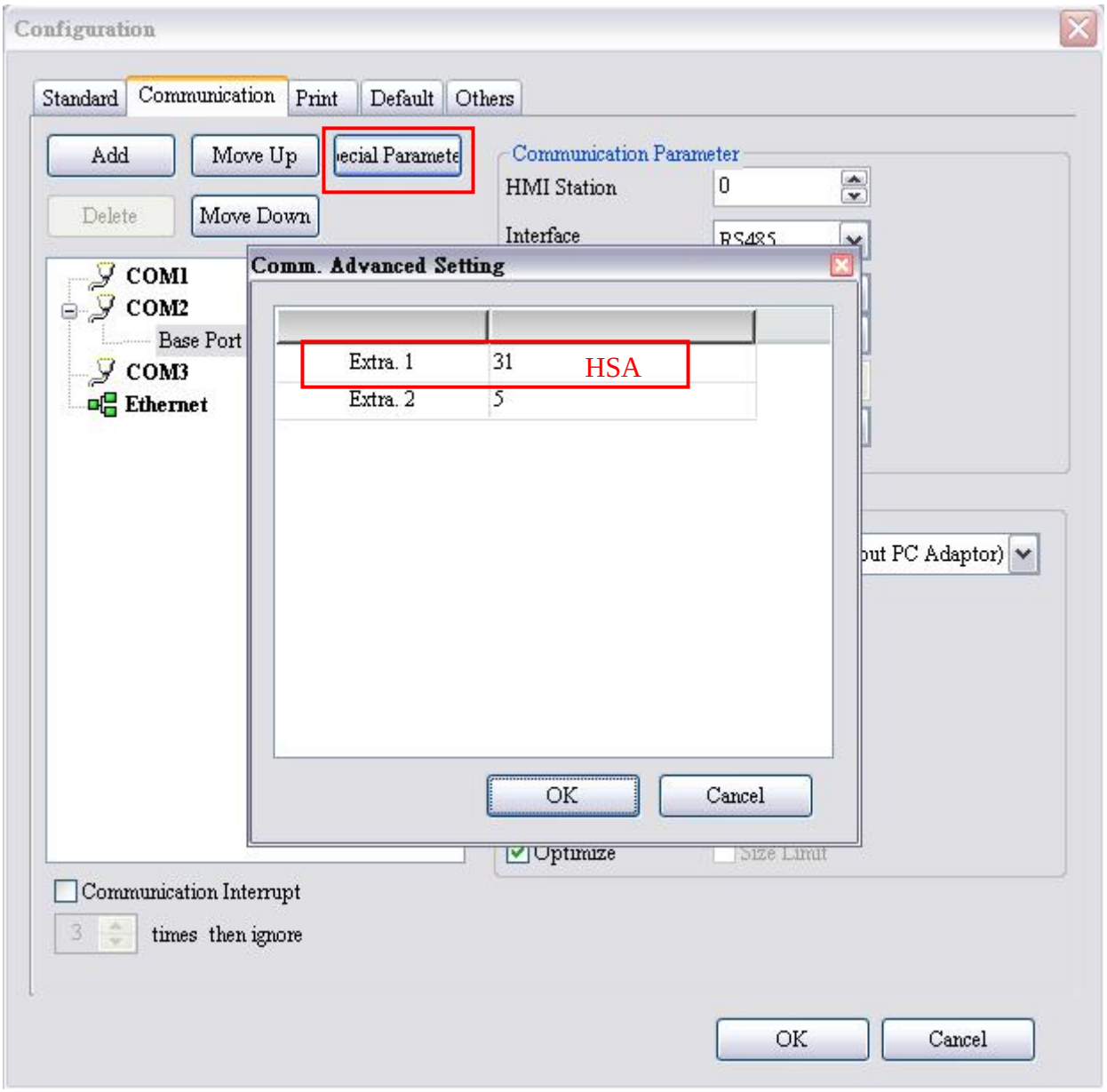
NOTE

1) This communication protocol only supports 19200 bps. Only one COM port can use this communication protocol for one project.

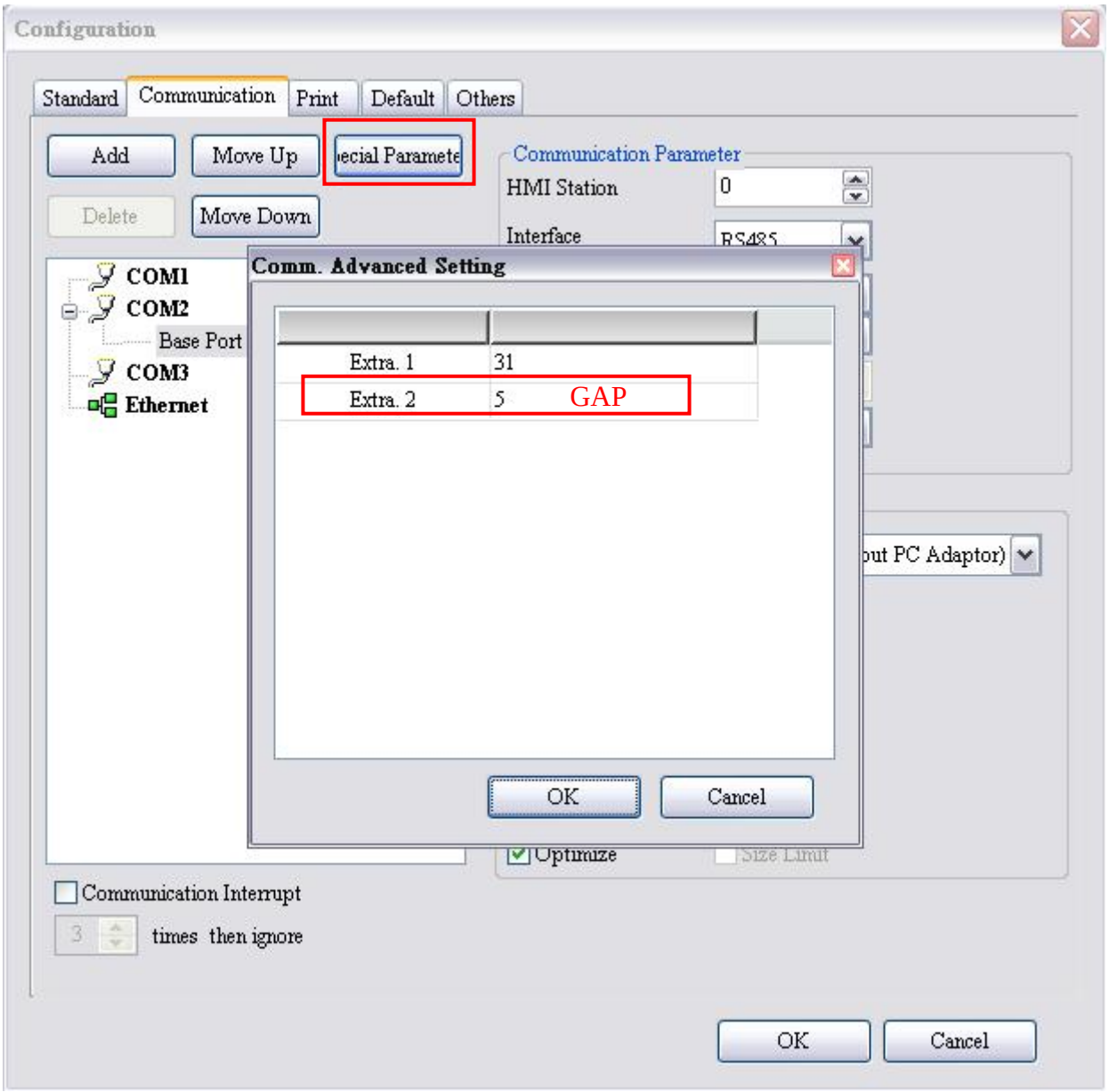
2) This communication protocol supports multiple HMI to multiple PLC connection. However, it is still recommend to connect a maximum of four HMI to a PLC at a time. A connection of more than four HMI would cause low baud rate and time out error may occur.

3) In order to set Highest Station Address(HSA) click Option > Configuration > Communication > Special Parameters> Extra. The default setting for HSA is 31, max.

value is 126 and Min. value is 2. The setting for HSA must be in consistent with PLC setting.



4) In “Special Parameter”, click on “Extra” to update GUF coefficient of GAP in setting 2. The GUF coefficient is the frequency of the HMI checking the existence of controller within the communication network. If coefficient is larger, the frequency of update will be low, in another word, it takes longer waiting time for other devices to join the network. The default setting of GUF is 5, maximum value is 31 and minimum value is 1. If multiple HMI connections are required, it is recommended to lower GUF coefficient in order to shorten the waiting time of newly joined HMI and to prevent the error of “network can not be joined”.



5) PLC needs to enable DB memory (**DB**m.DBWn、**DB**m.DBDn、**DB**m.DBXn.b) before DB data can be read.

6) The valid digit of value for Timer is only up to 3 digits. If a value input is more than 3 digits, the Timer will regards the highest 3 (decimal) and replace the rest by 0. For example, a value 12345 will be write as 12300 in PLC.

7) The valid digit of value for Counter is to 3 digits. If a value input is more than 3 digits, the Counter will regards the first 3 digits and leave out the rest. For example, a value 12345 will be write as 123 in PLC.

Taian TP02 PLC

HMI Factory Setting:

Baud rate: 19200, 7, None, 1

Controller Station Number: 1

Control Area / Status Area: V1 / V10

Connection

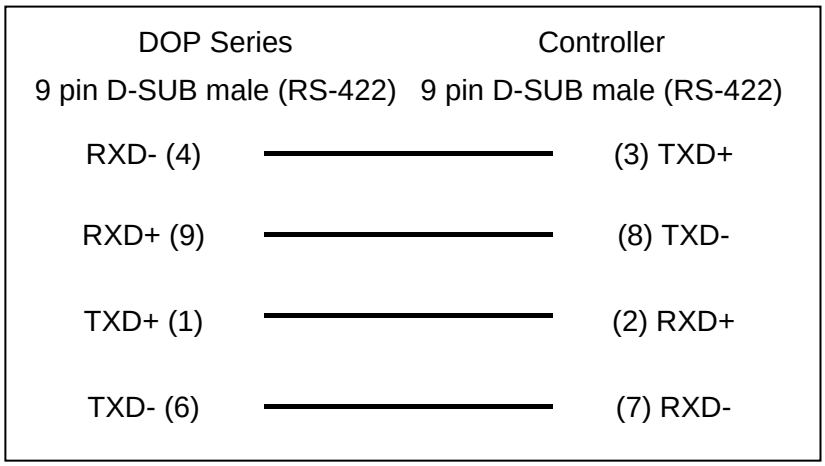
a. RS-422（Applicable to DOP-A/AE Series）

DOP Series 9 pin D-SUB male (RS-422)		Controller 9 pin D-SUB male (RS-422)
RXD+ (2)	———	(3) TXD+
RXD- (1)	———	(8) TXD-
TXD+ (3)	———	(2) RXD+
TXD- (4)	———	(7) RXD-

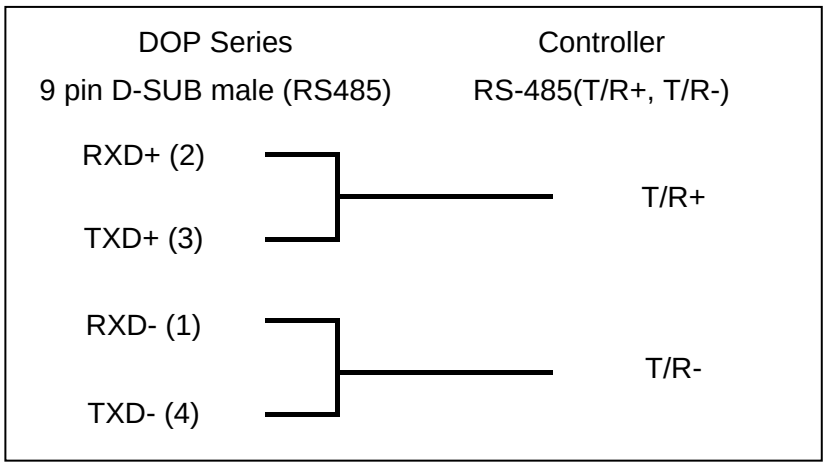
b. RS-422（Applicable to DOP-AS35/AS38/AS57 Series）

DOP Series Terminal Block(RS-422)		Controller 9 pin D-SUB male (RS-422)
R+	———	(3) TXD+
R-	———	(8) TXD-
T+	———	(2) RXD+
T-	———	(7) RXD-

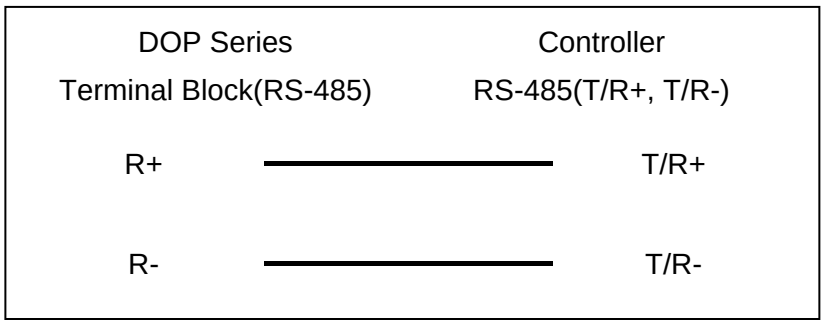
c. RS-422（Applicable to DOP-B Series）



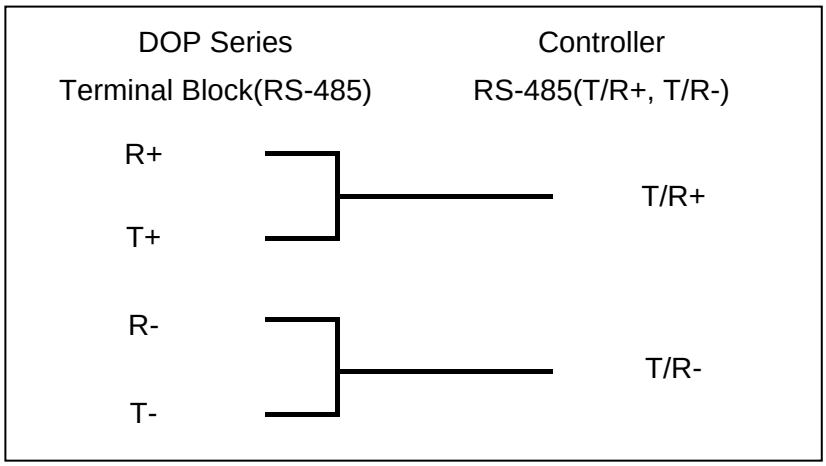
d. RS-485（Applicable to DOP-A/AE Series）



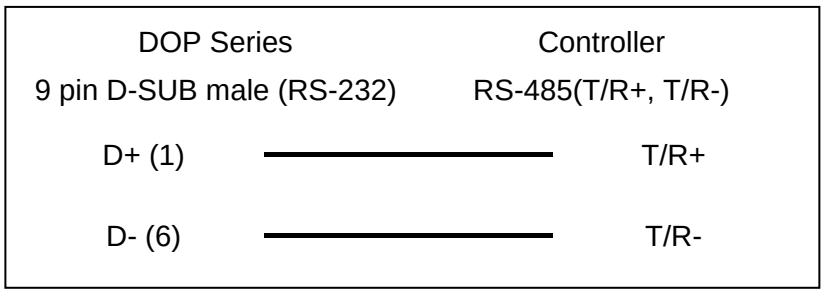
e. RS-485(Applicable to DOP-AS57 Series)



f. RS-485（Applicable to DOP-AS35/AS38 Series）



g. RS-485（Applicable to DOP-B Series）



Definition of PLC Read/Write Address

a. Registers

Type	Format	Read/Write Range	Data Length	Note
	Word No.(n)			
WORD_DEVICE_X	Xn	X1 – X384	Word	1
WORD_DEVICE_Y	Yn	Y1 – Y384	Word	1
WORD_DEVICE_C	Cn	C1 – C2048	Word	1
WORD_DEVICE_V	Vn	V1 – V1024	Word	
WORD_DEVICE_D	Dn	D1 – D2048	Word	
WORD_DEVICE_WS	WSn	WS1 – WS128	Word	
WORD_DEVICE_WC	WCn	WC1 – WC912	Word	

b. Contacts

Type	Format	Read/Write Range	Note
	Bit No.(b)		
BIT_DEVICE_X	Xb	X1 – X384	
BIT_DEVICE_Y	Yb	Y1 – Y384	
BIT_DEVICE_C	Cb	C1 – C2048	
BIT_DEVICE_SC	SCb	SC1 – SC128	

NOTE

1.) The device address must be the multiple of 16 plus 1.

Vigor M Series

HMI Factory Setting:

Baud rate: 19200, 7, Even, 1

Controller Station Number: 0 (Note1)

Control Area / Status Area: D0 / D10

Connection

a. RS-232（Applicable to DOP-A/AE/AS, DOP-B Series）

PROGRAMMER PORT

DOP Series 9 pin D-SUB (RS-232)		Controller USB TAPE A Connector
RXD (2)	———	(3) TXD
TXD (3)	———	(2) RXD
GND (5)	———	(4) GND

COM PORT

DOP Series 9 pin D-SUB (RS-232)		Controller 9 pin D-SUB female (RS-232)
RXD (2)	———	(3) TXD
TXD (3)	———	(2) RXD
GND (5)	———	(5) GND

Definition of PLC Read/Write Address

a. Registers

Type	Format Word No.(n)	Read/Write Range	Data Length	Note
Input Relay	Xn	X0 – X770	Word	Multiple of 8, 2
Output Relay	Yn	Y0 – Y770	Word	Multiple of 8, 2

Type	Format	Read/Write Range	Data Length	Note
	Word No.(n)			
Auxiliary Relay	Mn	M0 – M5112	Word	2
Special Relay	Mn	M9000 – M9248	Word	3
Step Relay	Sn	S0 – S992	Word	2
Timer Present Value	Tn	T0 – T255	Word	
16-bit Counter Present Value	Cn	C0 – C199	Word	
32-bit Counter Present Value	Cn	C200 – C255	Word	
Data Register	Dn	D0 – D8191	Word	
Special Data Register	Dn	D9000 – D9248	Word	

b. Contacts

Type	Format	Read/Write Range	Note
	Bit No.(b)		
Input Relay	Xb	X0 – X777	Octal
Output Relay	Yb	Y0 – Y777	Octal
Auxiliary Relay	Mb	M0 – M5119	
Special Relay	Mb	M9000 – M9255	
Step Relay	Sb	S0 – S999	
Timer Contact	Tb	T0 – T255	
Counter Contact	Cb	C0 – C255	
Timer Coil	TCb	TC0 – TC255	
Counter Coil	CCb	CC0 – CC255	

NOTE

1) Controller Station Number 0: PROGRAMMER PORT ; 1: COM PORT。

2) Advice address must be the multiple of 8.

3) Advice address must be 9000 plus the multiple of 8.

4) VB Series is suitable for this driver。

VIPA PLC

（Same as Siemens S7 300 PLC (with PC Adaptor)）

YOKOGAWA ACE PLC

HMI Factory Setting:

Baud rate: 9600, 8, Even, 1 (ASCII mode)

Controller Station Number: 1

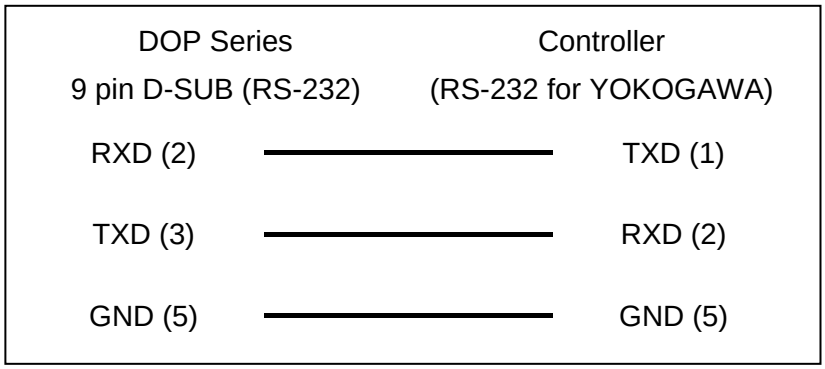
CPU No (HMI Station Number) : 0 (Note2)

Control Area / Status Area: D1 / D10

Connection

a. **RS-232（Applicable to DOP-A/AE/AS, DOP-B Series）**

It requires specific cable of YOKOGAWA ACE PLC



Definition of PLC Read/Write Address

a. Registers

Type	Format	Read/Write Range	Data Length	Note
	Word No.(n)			
WORD_DEVICE_X	Xn	X201 – X65464	Word	3
WORD_DEVICE_Y	Yn	Y201 – Y65464	Word	3
WORD_DEVICE_I	In	I1 – I16384	Word	4
WORD_DEVICE_E	En	E1 – E4096	Word	4
WORD_DEVICE_L	Ln	L1 – L65488	Word	4
WORD_DEVICE_M	Mn	M1 – M9984	Word	4
WORD_DEVICE_TP	TPn	TP1 – TP3072	Word	
WORD_DEVICE_CP	CPn	CP1 – CP3072	Word	
WORD_DEVICE_D	Dn	D1 – D8192	Word	
WORD_DEVICE_B	Bn	B1 – B32768	Word	
WORD_DEVICE_W	Wn	W1 – W65499	Word	
WORD_DEVICE_Z	Zn	Z1 – Z512	Word	

Type	Format	Read/Write Range	Data Length	Note
	Word No.(n)			
WORD_DEVICE_V	Vn	V1 – V64	Word	
WORD_DEVICE_R	Rn	R1 – R4096	Word	
WORD_DEVICE_TS	TSn	TS1 – TS3072	Word	
WORD_DEVICE_CS	CSn	CS1 – CS3072	Word	

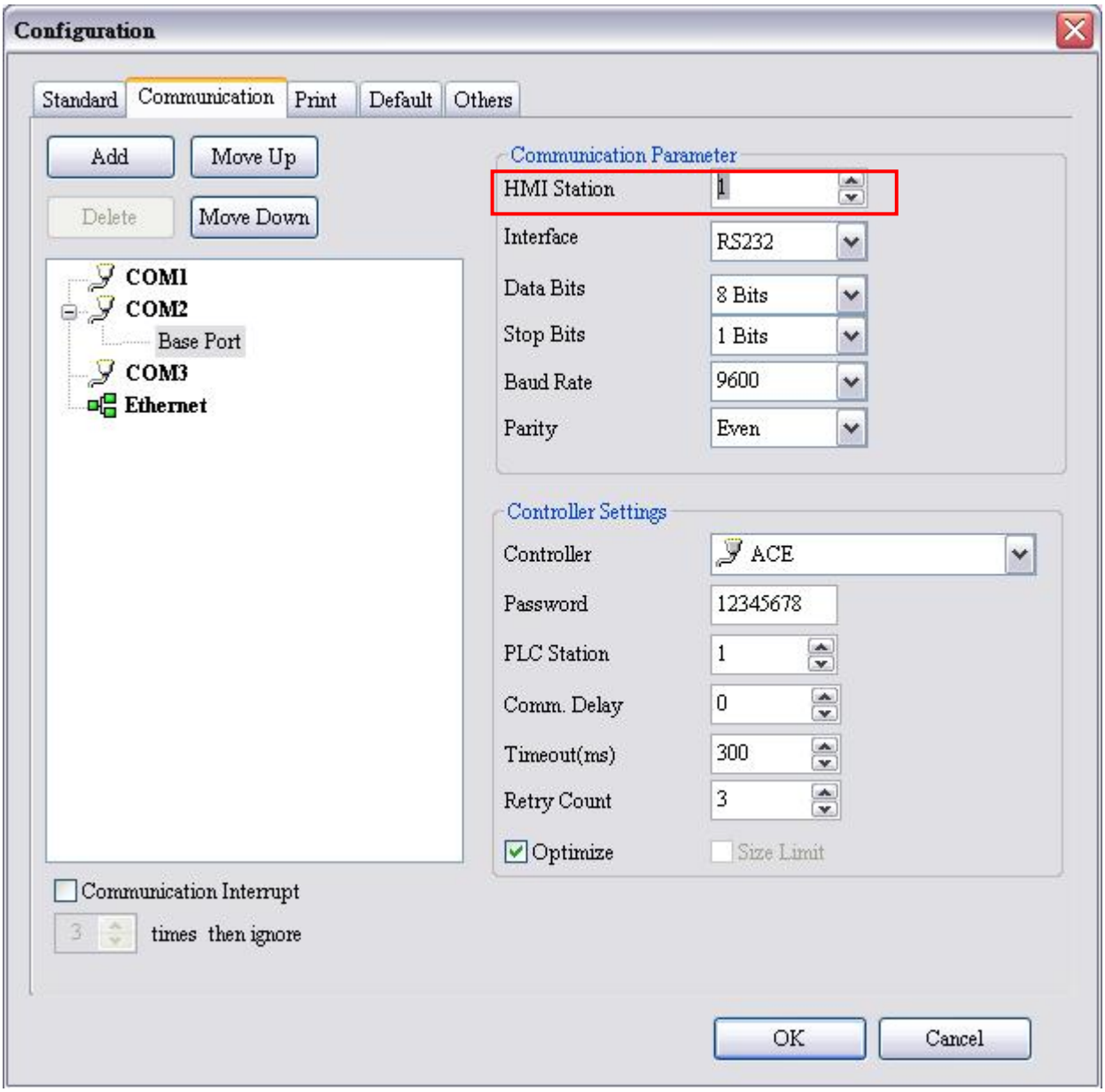
b. Contacts

Type	Format	Read/Write Range	Note
	Bit No.(b)		
Input Relay	Xb	X0 – X777	Octal
Output Relay	Yb	Y0 – Y777	Octal
BIT_DEVICE_X	Xb	X201 – X65464	3
BIT_DEVICE_Y	Yb	Y201 – Y65464	3
BIT_DEVICE_I	Ib	I1 – I16384	
BIT_DEVICE_E	Eb	E1 – E4096	
BIT_DEVICE_L	Lb	L1 – L65488	
BIT_DEVICE_M	Mb	M1 – M9984	
BIT_DEVICE_TU	TUb	TU1 – TU3072	
BIT_DEVICE_CU	CUb	CU1 – CU3072	

NOTE

1) Set the PLC to “not using Checksum” and “not using End character”.

2) CPU number in this communication protocol represents HMI Station Number, the setting of CPU number must be greater than 1.



3) The last two digits of the device address must be the multiple of 16 + 1 but less than 65.

4) The device address must be the multiple of 16 + 1.

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