VFS9 Parameter List for Version110 or later

Setting Date	
Customer	
End user	
Application	
Application No/Serial No	
Inverter's Type-Form	
Quantity	
Inverter's Serial No	
Motor's capacity	

If user's setting value is same as shipping value, entry column is blank.

-Terminal stand use state

	Terminal Name	Use state
Main terminal block	PA	
	PB	
	PC	
	PO	
	R/L1	
	S/L2	
	T/L3	
	U/T1	
	V/T2	
	W/T3	
	E/G	
Control terminal block	FLA	
	FLB	
	FLC	
	RY	
	RC	
	CC	
	VIA	
	VIB	
	PP	
	II	
	FM	
	F	
	R	
	RST	
	S1	
	S2	
	S3	
	CC	
	OUT	
	P24	
Jumper setting	JP301	Sink / Source
	JP301A	Sink / Source
	JP302	FMV / FMC

1 User parameter

Title	Function	Unit	min. unit	Adjustment range	Default	Reference	User setting
FC	Operation frequency of operation panel	Hz	0.1	LL-UL	0.0	3.2	

2 Basic parameter

-Four automatic functions

Title	Com. No	Function	Unit	min. unit	Adjustment range	Default	Reference	User setting
AU1	0000	Automatic acceleration/ deceleration	-	-	0: Disabled (manual) 1: Optimum rate 2: Minimum rate	0	5.1	
AU2	0001	Automatic torque boost	-	-	0: Disabled 1: Vector control + auto-tuning	0	5.2	
AU3	0002	Automatic environment setting	-	-	0: Disabled 1: Automatic setting	0	5.3	
AU4	0040	Automatic function setting	-	-	0: Disabled 1: Coast stop 2: 3-wire operation 3: External input UP/DOWN setting 4: 4-20 mA current input operation	0	5.4	
CMOd	0003	Command mode selection	-	-	0: Terminal board 1: Operation panel	1	5.5	
FMOd	0004	Frequency setting mode selection	-	-	0: Terminal board 1: Operation panel 2: Internal potentiometer 3: Serial communication	2	5.5	
FMSL	0005	Meter selection	-	-	0: Output frequency 1: Output current 2: Set frequency 3: For adjustment (current fixed at 100%) 4: Inverter load factor 5: Output power 6: Torque current 7: PBr load factor 8: PN voltage 9: Output voltage command 10: Frequency of VIA 11: Frequency command after PI	0	5.6	
FM	0006	Meter adjustment	-	-	-	-	5.6	

Title	Com. No	Function	Unit	min. unit	Adjustment range	Default	Reference	User setting
tYP	0007	Standard setting mode selection	-	-	0: -(invalid) 1: 50 Hz setting 2: 60 Hz setting 3: Default setting 4: Trip clear 5: Cumulative operation time clear 6: Initialization of type information	0	5.7	
Fr	0008	Forward/reverse run selection (Operation panel)	-	-	0: Forward run 1: Reverse run	0	5.8	
ACC	0009	Acceleration time 1	s	0.1	0.1-3600	10.0	5.1	
dEC	0010	Deceleration time 1	s	0.1	0.1-3600	10.0	5.1	
FH	0011	Maximum frequency	Hz	0.1	30.0-400	80.0	5.9	
UL	0012	Upper limit frequency	Hz	0.1	0.5 - FH	60.0	5.10	
LL	0013	lower limit frequency	Hz	0.1	0.0 - UL	0.0	5.10	
uL	0014	Base frequency 1	Hz	0.1	25 – 400	60.0	5.11	
Pt	0015	V/F control mode selection	-	-	0: V/F constant 1: Variable torque 2: Automatic torque boost 3: Sensorless Vector control 4: Automatic energy-saving 5: Sensorless Vector control (VFS7 mode)	0	5.12	
ub	0016	Torque boost	% (V)	0.1	0.0-30.0	*1	5.13	
tHr	0041	Motor electronic-thermal protection level 1 *4	% (A)	1	10-100	100	5.14	
OLM	0017	Electronic-thermal protection characteristic selection *2	-	-	value / / OL / Stall 0 / Standard motor / on / off 1 / Standard motor / on / on 2 / Standard motor / off / off 3 / Standard motor / off / on 4 / VF motor (Special motor) / on / off 5 / VF motor (Special motor) / on / on 6 / VF motor (Special motor) / off / off 7 / VF motor (Special motor) / off / on OL: Over load protection Stall: Stall action at over load	0	5.14	
Sr1	0018	Preset-speed frequencies 1 *4	Hz	0.1	LL-UL	0.0	5.15	
Sr2	0019	Preset-speed frequencies 2 *4	Hz	0.1	LL-UL	0.0		
Sr3	0020	Preset-speed frequencies 3 *4	Hz	0.1	LL-UL	0.0		
Sr4	0021	Preset-speed frequencies 4 *4	Hz	0.1	LL-UL	0.0		
Sr5	0022	Preset-speed frequencies 5 *4	Hz	0.1	LL-UL	0.0		
Sr6	0023	Preset-speed frequencies 6 *4	Hz	0.1	LL-UL	0.0		
Sr7	0024	Preset-speed frequencies 7 *4	Hz	0.1	LL-UL	0.0		
F---	-	Extended parameter	-	-	-	-	4.1	-
Gr.U	-	Automatic edit function *3	-	-	-	-	4.1	-

*1 Default value of parameter is difference in inverter's capacity.

*2 on: Enabled, off: Disabled

*3 If all parameter's setting value are same as default value, it is indicated "Gr.U" after serching.

*4 tHr is same as F600, and Sr1 to Sr7 are same as F280 to F286.

3 Extended parameters

-Input/ output parameters

Title	Com. No	Function	Unit	min. unit	Adjustment range	Default	Reference	User setting
F100	0100	Low-speed signal output frequency	Hz	0.1	0.0 - FH	0.0	6.1.1	
F101	0101	Speed reach setting frequency	Hz	0.1	0.0 - FH	0.0	6.1.3	
F102	0102	Speed reach detection band	Hz	0.1	0.0 - FH	2.5	6.1.2	
F103	0103	ST signal selection	-	-	0: Stand by on when ST is on 1: Stand by always on 2: Interlocked with F/R 3: Stand by on when ST is off	1	6.2.1	
F104	0104	RST signal selection	-	-	0: Default 1: Activated by turning RST off	0	6.2.2	
F105	0105	Movement of F/R input at same time	-	-	0: Reverse run 1: Stop	0	—	
F110	0110	Always-active function selection	-	-	0-53	0	6.3.1	
F111	0111	Input terminal selection 1 (F)	-	-	0-53 (F)	2 (F)	6.3.2	
F112	0112	Input terminal selection 2 (R)	-	-	0-53 (R)	3 (R)	6.3.2	
F113	0113	Input terminal selection 3 (RST)	-	-	0-53 (RST)	10 (RST)	6.3.2	
F114	0114	Input terminal selection 4 (S1)	-	-	0-53 (SS1)	6 (SS1)	6.3.2	
F115	0115	Input terminal selection 5 (S2)	-	-	0-53 (SS2)	7 (SS2)	6.3.2	
F116	0116	Input terminal selection 6 (S3)	-	-	0-53 (SS3)	8 (SS3)	6.3.2	
F130	0130	Output terminal selection 1 (RY-RC)	—	—	0-41 (LOW)	4 (LOW)	6.3.3	
F131	0131	Output terminal selection 2 (OUT)	—	—	0-41 (RCH)	6 (RCH)	6.3.3	
F132	0132	Output terminal selection 3 (FL)	—	—	0-41 (FL)	10 (FL)	6.3.3	
F170	0170	Base frequency 2	Hz	0.1	25-400	60.0	6.4.1	
F172	0172	Torque boost 2	% (V)	0.1	0.0-30.0	*1	6.4.1	
F173	0173	Motor electronic-thermal protection level 2	% (A)	1	10-100	100	6.4.1	

*1 Default value of parameter is difference in inverter's capacity.

-Frequency parameter

Title	Com. No	Function	Unit	min. unit	Adjustment range	Default	Reference	User setting
F200	0200	Frequency priority selection	-	-	0: VIA/II, VIB 1: VIB, VIA/II 2: External switching (FCHG enabled) 3: External contact UP/DOWN *2 4: External contact UP/DOWN *2 (Setting retained even if the power is turned off) 5: VIAI/II + VB	0	6.5.1	
F201	0201	VIA/II input point 1 setting	%	1	0-100	0	6.5.2	
F202	0202	VIA/II input point 1 frequency	Hz	0.1	0.0-400.0	0.0	6.5.2	
F203	0203	VIA/II input point 2setting	%	1	0-100	100	6.5.2	
F204	0204	VIA/II input point 2frequency	Hz	0.1	0.0-400.0	60.0	6.5.2	
F210	0210	VIB input point 1 setting	%	1	0-100	0	6.5.2	
		Frequency UP response time *5	(0.1s)	1	0-100	0		
F211	0211	VIB input point 1 frequency	Hz	0.1	0.0-400.0	0.0	6.5.2	
		Frequency UP step width *5		0.1	0.0-400.0	0.0		
F212	0212	VIB input point 2 setting	%	1	0-100	100	6.5.2	
		Frequency DOWN response time *5	(0.1s)	1	0-100	100		
F213	0213	VIB input point 2 frequency	Hz	0.1	0-400	60.0	6.5.2	
		Frequency DOWN step width *5		0.1	0.0-400.0	60.0		
F240	0240	Starting frequency setting	Hz	0.1	0.5-10.0	0.5	6.6.1	
F241	0241	Operation starting frequency	Hz	0.1	0.0 - FH	0.0	6.6.2	
F242	0242	Operation starting frequency hysterisis	Hz	0.1	0.0 - FH	0.0	6.6.2	
F250	0250	DC braking starting frequency	Hz	0.1	0.0 - FH	0.0	6.7.1	
F251	0251	DC braking current	%(A)	1	0-100	30	6.7.1	
F252	0252	DC braking time	s	0.1	0.0-20.0	1.0	6.7.1	
F254	0254	Motor shaft fixing control	-	-	0: Disabled 1: Enabled	0	—	
F256	0256	Auto stop of continuous running at LL	s	0.1	0.0: Disabled 0.1-25.5	0.0		
F260	0260	Jog run stopping pattern	Hz	0.1	0.0-20.0	0.0	6.8	
F261	0261	Jog run stopping pattern	-	-	0: Slowdown stop 1: Coast stop 2: DC braking 3: Slowdown stop (panel jog mode) 4: Coast stop (panel jog mode) 5: DC braking (panel jog mode)	0	6.8	
F270	0270	Jump frequency 1	Hz	0.1	LL - UL	0.0	6.9	
F271	0271	Jumping width 1	Hz	0.1	0.0 – 30.0	0.0	6.9	
F272	0272	Jump frequency 2	Hz	0.1	LL - UL	0.0	6.9	
F273	0273	Jumping width 2	Hz	0.1	0.0 – 30.0	0.0	6.9	
F274	0274	Jump frequency 3	Hz	0.1	LL - UL	0.0	6.9	
F275	0275	Jumping width 3	Hz	0.1	0.0 – 30.0	0.0	6.9	
F280	0280	Preset-speed operation frequencies 1	Hz	0.1	LL - UL	0.0	5.15	

F281	0281	Preset-speed operation frequencies 2	Hz	0.1	LL - UL	0.0		
F282	0282	Preset-speed operation frequencies 3	Hz	0.1	LL - UL	0.0		
F283	0283	Preset-speed operation frequencies 4	Hz	0.1	LL - UL	0.0		
F284	0284	Preset-speed operation frequencies 5	Hz	0.1	LL - UL	0.0		
F285	0285	Preset-speed operation frequencies 6	Hz	0.1	LL - UL	0.0		
F286	0286	Preset-speed operation frequencies 7	Hz	0.1	LL - UL	0.0		
F287	0287	Preset-speed operation frequencies 8	Hz	0.1	LL - UL	0.0		
F288	0288	Preset-speed operation frequencies 9	Hz	0.1	LL - UL	0.0		
F289	0289	Preset-speed operation frequencies 10	Hz	0.1	LL - UL	0.0	5.15	
F290	0290	Preset-speed operation frequencies 11	Hz	0.1	LL - UL	0.0		
F291	0291	Preset-speed operation frequencies 12	Hz	0.1	LL - UL	0.0		
F292	0292	Preset-speed operation frequencies 13	Hz	0.1	LL - UL	0.0		
F293	0293	Preset-speed operation frequencies 14	Hz	0.1	LL - UL	0.0		
F294	0294	Preset-speed operation frequencies 15	Hz	0.1	LL - UL	0.0		

*1 Default value of parameter is difference in inverter's capacity.

*2 When set the "3" or "4" in F200 (Frequency priority selection), F210～F213 は change the lower berth functions.

-Operation mode parameters

Title	Com. No	Function	Unit	min. unit	Adjustment range	Default	Reference	User setting
F300	0300	PWM carrier frequency	kHz	0.1	2.0-16.5	12.0	6.11	
F301	0301	Auto-restart control selection	-	-	0: Disabled 1: At auto-restart after momentary stop 2: When turning ST-CC on or off 3: At auto-restart or when turning ST-CC on or off 4: Motion of DC braking at start-up (at auto-restart after momentary stop) 5: Motion of DC braking at start-up (when turning ST-CC on or off) 6: Motion of DC braking at start-up (at auto-restart or when turning ST-CC on or off) 7: At first power on, or at auto-restart after momentary stop, or when turning ST-CC on/off, or restart from low frequency of FH or UL. 8: Motion of DC braking at start-up (At first power on or at auto-restart after momentary stop, or when turning ST-CC on /off) 9: Restart from low frequency of FH or UL at every start up (for changing sequence from commercial power supply) 10: Motion of DC braking at start-up (every start up) 11: At auto-restart after momentary stop (if command frequency is higher than starting frequency) 12: when turning ST-CC on or off (if command frequency is higher than starting frequency) 13: At auto-restart or when turning ST-CC on or off (if command frequency is higher than starting frequency)	0	6.12.1	
F302	0302	Regenerative power ride-through control	-	-	0: Disabled 1: Enabled 2: Enabled (deceleration stop)	0	6.12.2	
F303	0303	Retry selection (number of times)	Times	1	0-10	0	6.12.3	
F304	0304	Dynamic braking selection	-	-	0: Dynamic braking disabled 1: Dynamic braking enabled, overload protection disabled 2: Dynamic braking enabled, overload protection enabled	0	6.12.4	

F305	0305	Overvoltage limit operation	-	-	0: Enabled 1: Prohibited 2: Enabled (quick deceleration with overexcitation)	0	6.12.5	
F306	0306	Output voltage adjustment (Base frequency voltage)	V	1	0 to 300V, 0 to 600V	200V/400V	6.12.6	
F307	0307	Supply voltage correction	-	-	0: Supply voltage uncorrected, output voltage limited 1: Supply voltage corrected, output voltage limited 2: Supply voltage corrected (off during deceleration), output voltage limited 3: Supply voltage uncorrected, output voltage unlimited 4: Supply voltage corrected, output voltage unlimited 5: Supply voltage corrected (off during deceleration), output voltage unlimited	AN type 1 WN/WP type 3	6.12.6	
F308	0308	Braking resistor operation rate	%ED	1	1-100	3	6.12.4	
F312	0312	Random mode	-	-	0: Disabled 1: Enabled	0	6.11	
F319	0319	Voltage gain of overexcitation	-	1	0-255	*2	—	
F320	0320	Drooping gain	%	0.1	0-25.0	0	—	
F323	0323	Drooping insensitive torque band	%	1	0-100	100	—	
F360	0360	PI control	-	-	0: Disabled 1: Enabled	0	6.12.7	
F362	0362	Proportional gain	-	-	0-01-100.0	0.30	6.12.7	
F363	0363	Integral gain	-	-	0.01-100.0	0.20	6.12.7	

*1 Minimum setting unit is 200V class-“2”, 400V class-“4”.

*2 Default value of parameter is difference in inverter’s capacity.

-Torque boost parameters

Title	Com. No	Function	Unit	min. unit	Adjustment range	Default	Reference	User setting
F400	0400	Auto-tuning	-	-	0: Auto-tuning disabled (use of internal parameters) 1: Application of individual settings of F401 to F405 2: Auto-tuning enabled (returns to 1 after auto-tuning)	0	6.13	
F401	0401	Slip frequency	Hz	-	0.0-10.0	*2	6.13	
F402	0402	Motor primary constant	-	-	0-255	*2	6.13	
F403	0403	Motor secondary constant	-	-	0-255	*2	6.13	
F404	0404	Motor excitation constant	-	-	0-255	*2	6.13	
F405	0405	Magnification of load inertial moment	Times	-	0-200	0	6.13	
F408	0408	Rated capacity ratio of motor to inverter	-	-	0: Same capacity as inverter 1: One-size smaller than inverter	0	6.13	
F409	0409	Torque current filter	-	-	0-8	2	—	

*2 Default value of parameter is difference in inverter's capacity.

-Acceleration/ deceleration time parameters

Title	Com. No	Function	Unit	min. unit	Adjustment range	Default	Reference	User setting
F500	0500	Acceleration time 2	s	0.1	0.1-3600	10.0	6.14	
F501	0501	Deceleration time 2	s	0.1	0.1-3600	10.0	6.14	
F502	0502	Acceleration/ deceleration 1 pattern	-	-	0: Linear 1: S-pattern 1 2: S-pattern 2	0	6.14	
F503	0503	Acceleration deceleration 2 pattern	-	-		0	6.14	
F504	0504	Acceleration/ deceleration pattern selection (1 or 2)	-	-	0: Acceleration/deceleration1 1: Acceleration/deceleration2	0	6.14	
F505	0505	Acceleration/ deceleration 1 and 2 switching frequency	Hz	0.1	0 - UL	0.0	6.14	

-Protection parameters

Title	Com. No	Function	Unit	min. unit	Adjustment range	Default	Reference	User setting
F600	0600	Motor electronic-thermal protection level 1	%/ (A)	1	10-100	100	6.15.1	
F601	0601	Stall prevention level	%/ (A)	1	10-199 200 (disabled)	150	6.15.2	
F602	0602	Inverter trip retention selection	-	-	0: Not retained 1: Retained	0	6.15.3	
F603	0603	External input trip stop mode selection	-	-	0: Coast stop 1: Slowdown stop 2: Emergency DC braking	0	6.15.4	
F604	0604	Emergency DC braking time	s	0.1	0.0-20.0	1.0	6.15.4	
F605	0605	Output phase failure detection mode selection	-	-	0: Disabled 1: Enabled (during operation) 2: Enabled (disabled during auto-restart)	0	6.15.5	
F608	0608	Input phase failure detection mode selection	-	-	0: Disabled 1: Enabled	1	6.15.6	
F610	0610	Small current trip selection	-	-	0: Disabled 1: Enabled	0	6.15.7	
F611	0611	Small current (trip/alarm) detection current	%	1	0-100	0	6.15.7	
F612	0612	Small current (trip/alarm) detection time	s	1	0-255	0	6.15.7	
F613	0613	Selection of output short-circuit detection pulse during start-up	-	-	0: 60usec, every start to run 1: 60usec, only at power on or reset 2: 30usec, every start to run 3: 30usec, only at power on or reset	0	—	
F615	0615	Over-torque trip selection		-	0: Disabled 1: Enabled	0	6.15.8	
F616	0616	Over-torque (trip/alarm) level	%	1	0-250	150	6.15.8	
F618	0618	Over-torque detection time	s	0.1	0-10	0.5	6.15.8	
F619	0619	Over-torque (trip alarm) level hysterisis	%	1	0-100	10	6.15.8	
F626	0626	Overvoltage limit operation level	%	1	50-150	*1	—	
F627	0627	Undervoltage trip selection	-	-	0: Disabled 1: Enabled (Trip at 70% or less) 2: Disabled (Stop (not trip) at 50% or less)	0	6.15.9	
F633	0633	VIA analog input line break detection	%	1	0: Disabled 1-100%	0	—	
F692	0692	Meter bias	%	1	0-50	0	6.15.10	

*1 Default value of parameter is difference in inverter's capacity.

-Operation panel parameters

Title	Com. No	Function	Unit	min. unit	Adjustment range	Default	Reference	User setting
F700	0700	Prohibition of change of parameter settings	-	-	0: RUN/STOP key is effective Parameter setting permitted (CMOD, FMOD cannot be changed during operation) 1: RUN/STOP key is effective Parameter setting permitted (Panel frequency setting prohibited also) 2: RUN/STOP key is effective Parameter setting permitted (CMOD, FMOD change is possible during operation) 3: RUN/STOP key is effective Parameter setting prohibited (Panel frequency setting permitted) 4: RUN/STOP key is prohibited Parameter setting permitted (CMOD, FMOD is not possible during operation) 5: RUN/STOP key is prohibited Parameter setting is prohibiited (Panel frequency setting prohibited) 6: RUN/STOP key is prohibited Parameter setting permitted (CMOD, FMOD change is possible during operation) 7: RUN/STOP key is prohibited Parameter setting prohibited (Panel frequency setting permitted)	0	6.16.1	
F701	0701	Unit selection	-	-	0: No change 1: % → A (ampere)/V (volt) 2: Free unit selection enabled (F702) 3: % → A (ampere)/V (volt) Free unit selection enabled (F702)	0	6.16.2	
F702	0702	Free unit selection	-	0.01	0.01-200.0	1.00	6.16.2	
F710	0710	Standard monitor display selection	-	-	0: Operation frequency (Hz/free unit) 1: Output current (%/A) 2. Frequency command (Hz/free unit) 3: Inverter rated current (A) 4: Inverter over load factor (%) 5: Output power (%) 6: After compensation frequency (Hz/free unit)	0	6.16.3	

-Communication parameters

Title	Com. No	Function	Unit	min. unit	Adjustment range	Default	Reference	User setting
F800	0800	Communication band speed	-	-	0:1200bps , 1:2400bps , 2:4800bps 3:9600bps , 4:19200bps	3	6.17	
F801	0801	Parity	-	-	0:NON, 1:EVEN, 2:ODD	1	6.17	
F802	0802	Inverter number	-	1	0-255	0	6.17	
F803	0803	Communication error trip time	s	1	0 (Disabled) , 1-100	0	6.17	
F805	0805	Communication internal	s	0.01	0.00-2.00	0.00	—	
F806	0806	Inter-drive communication	-	-	0: Normal 1: Frequency reference 2: Output frequency	0	—	
F880	0880	Free memorize	-	-	0-65535	0	—	