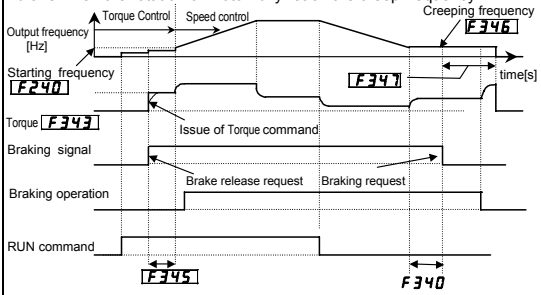
■Information on software version up

Following information is changed specification points by software version up (Ver.150).
The software version can be checked by the "CPU1 version" of status monitor.
Please refer to "8.2 Monitoring the status".
The software version would be changed without preliminary announcement.

Item	Changed contents	Page
Auto-tuning function (VFAS1-6110KPC and above)	The new function is for VFAS1-6110KPC and above. By the auto-tuning execution of F400=2 and 4, all parameter of motor constant 1-4 (F410 - F413) can be set. However, it might take about three minutes for the auto tuning. It is not error that the tuning time is long. Do not touch a motor, wiring equipment and so on during the tuning because the motor doesn't rotate but the electrical power is applied. Do not approach near the motor and the machine because the motor rotates after the tuning.	6.22
Added the monitor for options in parameter FM5L,AM5L	FM5L,AM5L :FM/AM terminal meter selection Adjustment range:0~64 → 0~76 65~73:Function none 74:MON1 75:MON2 76:RP	5.16
Added parameter F313	F313:Output voltage waveform selection Adjustment range 0:PWM carrier frequency control 1 1:PWM carrier frequency control 2 It is setting it as F313=1,Inverter loss can be reduced a little with following condition by F313=1. It has the effect of raising some amount of the overload for inverter(when inverter overload detection being estimation of temperature system (F631=1)). 1) when using it with the career frequency raised (4kHz or more) 2) The driving frequency is 30% or more of the base frequency However, the magnetic noise from a motor is changed a little. Please confirm the noise whether there is any problem. This parameter works at VFAS1-6110KPC and above.	—
Added parameter F340	F340:Creeping time1 Adjustment range:0.00~2.50sec. This function is for the brake control of hoist. It is possible to adjust the time of closed brake from reaching the creep frequency (F346). It is able to be minimize swing of burden because it is possible to close a brake when the rotation of motor fully reach the creep frequency. 	—
Added the setting for dancer control in parameter F359	F359:PID control switching Adjustment range:0~3 → 0~4 4:Dancer control The dancer control function for control of line speed by the speed reference and the positioning feedback signal of dancer roll was added.	*1
Added parameter F379	F379:PID output dead band Adjustment range:0~100% The parameter for dead band adjustment of the PID output was added for dancer control.	*1

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Item	Changed contents	Page
Added parameter F421	F421:Torque reference filter Adjustment range:0~1000ms The filter for the input command of the torque control was added.	*2
Added parameter F455	F455:Torque reference polarity selection Adjustment range 0:When reversing, reverse the polarity 1:When reversing, doesn't reverse the polarity The polarity of the torque signal passed from the master to the slave was added for the tune driving such as master (speed control) and slave (torque control) driving, and to make both the foword and reverse are made the same polarity.	*2
Added parameter F468	F468:Stall prevention control switching Adjustment range 0:Stall prevention control 1 1: Stall prevention control 2 The operation of the stall prevention control can be switched. Set F468=1 when the overvoltage trip etc. are displayed when acceleration and the deceleration are switched. This parameter is effective at only V/f control mode(PL =0,1,5).	—
Added parameter F469	F469:Overvoltage limit constant Adjustment range 0: Automatic, 1~1000ms The filter time constant of the overvoltage limitation can be adjusted. This parameter is effective at only V/f control mode(PL =0,1,5).	—
Added parameter F576~F594	This function is for Etherenet communication option. (planning)	*3
Enable range in parameter F622	F622: Abnormal speed detection time V/f:(PL =0,1,5):Disable → Enable Speed control :(PL =2,3,4) :Disable → Enable The function was added for sensorless control.	6.33.13
Enable range in parameter F623,F624	F623:Overspeed detection frequency upper band F624:Overspeed detection frequency lower band V/f（PL =0,1,5） :Disable → Enable Speed control(PL =2,3,4) :Disable → Enable The function was added for sensorless control.	6.33.13
Added the monitor for options in parameter F672,F674	F672,F674: MON1/MON2 terminal meter selection. Adjustment range:0~64 → 0~76 65~73:Function none 74:MON1 75:MON2 76:RP	*9
Added the conversion parameter of F703	F703=1 The following parameters were added to the conversion object. FC (Frequency on the operation panel). F202, AIF2, F208, F211, AUF2, F217, F219, F223, F225, F229, F231, F235, F237, F370, F371. Almost parameters used by the PID control were added.	6.36.2
Added the new monitor in parameter F710~F718	F710~F718:Status monitor Display selection Adjustment range:0~70 → 0~80 71:Rotational speed 72:Communication option Reception counter 73:Communication option Abnormal counter 74:MON1 75:MON2 76:RP 77:COUNT1 78:COUNT2 79:PID result frequency 80:Synchronous speed Frequency command	8.3
Added parameter F784~F799	This function is for Etherenet communication option. (planning)	*3
Added parameter F808	F808:Communication1 time-out condition selection Adjustment range 0:Disconnection detection 1:When communication mode enable 2:1+Driving operation	*4
Added parameter F815~F819	This function is for Modbus plus communication option. (planning)	*5
Added parameter F821~F824	This function is for Etherenet communication option. (planning)	*3
Added parameter F837,F838	F837,F838:Communication option setting 8,9 Adjustment range:0000~FFFF	*6

Item	Changed contents	Page
Added parameter F847,F848	F847,F848:Communication option setting 16,17 Adjustment range:0000~FFFF	*6
Added parameter F849	F849:Communication2 time-out condition selection Adjustment range 0:Disconnection detection 1:When communication mode enable 2:1+Driving operation	*6
Added parameter F856	F856:Motor pairs of poles for communication Adjustment range 1:2 Poles 5:10 Poles 2:4 Poles 6:12 Poles 3:6 Poles 7:14 Poles 4:8 Poles 8:16 Poles	*7
The adjustment range of parameter F870,F871	F870,F871:Block write data 1,2 Adjustment range:0~5 → 0~6 6:Rotational speed instruction	6.39.1
The adjustment range of parameter F875~F879	F875~F879:Block read data 1~5 Adjustment range:0~19 → 0~20 20:Rotational speed	6.39.1
The adjustment range of parameter F901	F901:Input function command 12 Adjustment range:0~20 → 0~22 21:CLR 22:CLRN	*8
The adjustment range of parameter F959	F959:Analog input function target 1 Adjustment range:0~5 → 0~6 6:Inner memory 1	*8
The adjustment range of parameter F962	F962:Analog input function target 2 Adjustment range:0~5 → 0~6 6:Inner memory 2	*8
The output frequency is added to the status monitor.	Display information on the output frequency [FE00] was added ahead of input terminal information #1 on the state monitor. This monitor keeps displaying the frequency at trip during the state of trip.	8.1

*1:⇒For details, refer to Instruction Manual (E6581329) specified in Section 6.42.
*2:⇒For details, refer to Instruction Manual (E6581331) specified in Section 6.42.
*3:⇒This function is for Etherenet communication option(planning).
*4:⇒For details, refer to Instruction Manual (E6581315) specified in Section 6.42.
*5:⇒This function is for Modbus plus communication option(planning).
*6:⇒For details, refer to Instruction Manual (E6581281,E6581343) specified in Section 6.42.
*7:⇒For details, refer to Instruction Manual (E6581281,E6581343,E6581477) specified in Section 6.42.
*8:⇒For details, refer to Instruction Manual (E6581335) specified in Section 6.42.
*9:⇒For details, refer to Instruction Manual (E6581341) specified in Section 6.42.

Monitor FM/AM/pulse output function selection　　Sensorless vector/vector with sensor (●:Effective, -:Ineffective)

FM/AM/Pulse output		Monitor output		Function	Unit of communi cation	Tripretention	Speed control	Torque Control	PM Control	V/f	Reference
Option No.	Communi cation No.	Option No.	Communi cation No.								
65~73 Function none		71	FE90	Rotational speed	1	×	●/●	●/●	●	●	5.16 8.3
		72	FA15	Communicationoption Reception counter	1	×	●/●	●/●	●	●	
		73	FA16	Communicationoption Abnormal counter	1	×	●/●	●/●	●	●	
74	FE43	74	FE43	MON1	0.01%	×	●/●	●/●	●	●	
75	FE44	75	FE44	MON2	0.01%	×	●/●	●/●	●	●	
76	FE56	76	FE56	RP	0.01%	×	●/●	●/●	●	●	
—	–	77	FD85	COUNT1	1	×	●/●	●/●	●	●	
—	–	78	FD86	COUNT2	1	×	●/●	●/●	●	●	
–	–	79	FD52	PID result frequency	0.1/0.01	×	●/●	–	●	●	
–	–	80	FE84	Synchronous speed Frequency command	0.1/0.01	○	●/●	–	●	●	

Input terminal function setting Sensorless vector/vector with sensor (●:Effective, -:Ineffective)

Positive logic	Negative logic	Function	Speed control	Torque Control	V/f	CN0d=1	F106=1	Reference
94	95	Dancer Correction OFF	●/●	–	●	●	–	7.2.1

Output terminal function setting Sensorless vector/vector with sensor (●:Effective, -:Ineffective)

Positive logic	Negative logic	Function	Speed control	Torque Control	V/f	Reference
164	165	Light load signal 1 (VFA7 Compatibility)	●/●	–/–	●	7.2.2

■ Trip information

Updated trip information on VF-AS1 Instruction Manual E6581528.

Specification of trip E-13	Possible causes : · Encoder error (inverter error) Remedies : · Check connection of encoder. · Connect encoder correctly. ↓ Possible causes : · Speed error(Inverter error ,Encoder error) · Over speed by overvoltage limit operation Remedies : · Check the setting of F622～F624 · Check connection of encoder. · In the case of overvoltage limit operation, install a dynamic braking resistor.	M-4
Specification of trip E-20	Possible causes: · An internal control error occurs. Remedies: · Make a service call. ↓ Possible causes: · Output voltage / Output frequency ratio is too high compared to motor rating. · It was run in vector control mode (PE=2,3,4,7 or 8) without setting parameters (Auto-tuning) concerning the motor. · Motor was in over-excitation state during deceleration. ·Motor constant 1 (Torque boost) F410 is too large. · Motor was started under the brake closed. Remedies : · Set Base frequency voltage 1 UL0 and Base frequency UL in accordance with motor rating. · When operating a motor in V/f control mode selection PE=2,3,4,7 or 8, follow section 6.22, and then set the parameters (Auto-tuning) concerning the motor. · If the inverter is tripped during deceleration because of V/f control error (E-20) when F305 (Over voltage limit operation) is set to 2 or 3, decrease the value for F319 (Regenerative over-excitation upper limit). · If the inverter is tripped during low frequency, decrease the value for F410. · If the inverter is tripped during braking, make the brake release timing early.	M-4

■ Errata information

Page	Change from	Change to
L-1	Output capacity 500V class VFAS1-6315KPC: 295(KVA)	Output capacity 500V class VFAS1-6315KPC: 338(KVA)

Sensorless vector/vector with sensor (●:Effective, -:Ineffective)

Title	Communication No.	Function		Adjustment range	Minimum setting unit (Panel/Communication)	Default setting			Write during running	Vector control		V/f	Reference	Remarks
						tYP=12 500V -50Hz	tYP=13 575V -60Hz	tYP=14 690V -50Hz		Speed control	Torque control			
FMSL	0005	FM terminal meter selection		0~76	1/1	0	0	0	Enabled	●/●	●/●	●	5.16	Change
AMSL	0670	AM terminal meter selection		0~76	1/1	2	2	2	Enabled	●/●	●/●	●	5.16	Change
F313	0313	Output voltage waveform selection *3		0:PWM carrier frequency control 1 1:PWM carrier frequency control 2	1/1	0	0	0	Disabled	●/●	●/●	●	–	Add
F340	0340	Creeping time1		0.00～2.50sec.	0.01/0.01	0	0	0	Enabled	●/●	—	—	–	Add
F359	0359	PID control switching		0:No PID control 1:Process type PID control (temp./pressure, etc.) operation 2:Speed type PID control (potentiometer, etc.) operation 3:Stop retaining P control 4:Dancer control	1/1	0	0	0	Disabled	●/●	—	●	*1,*2	Change
F379	0379	PID output dead band		0~100%	1/1	0	0	0	Enabled	●/●	—	●	*2	Add
F412	0412	Motor constant 3 (leak inductance)		0~200(×0.1%)	1/1	*4	*4	*4	Disabled	●/●	●/●	—	6.22	Change
F421	0421	Torque reference filter		0~1000ms	1/1	0	0	0	Enabled	—	●/●	—	*5	Add
F455	0455	Torque reference polarity selection		0:It is interchangeable so far. (When reversing,reverses the polarity.) 1:The polarity doesn't reverse when reversing.	1/1	0	0	0	Disabled	●/●	●/●	—	*5	Add
F468	0468	Stall prevention control switching		0: Stall prevention control 1 1: Stall prevention control 2	1/1	0	0	0	Disabled	—/—	—/—	●	–	Add
F469	0469	Overvoltage limit constant		0: Automatic, 1~1000ms	1/1	0	0	0	Disabled	—/—	—/—	●	–	Add
F576	0576	IP address setting method		0~2	1/1	0	0	0	Enabled	●/●	●/●	●	*6	Add
F577	0577	IP card	Data1	0~255	1/1	0	0	0	Enabled	●/●	●/●	●	*6	Add
F578	0588		Data2	0~255	1/1	0	0	0	Enabled	●/●	●/●	●	*6	Add
F579	0589		Data3	0~255	1/1	0	0	0	Enabled	●/●	●/●	●	*6	Add
F580	0580		Data4	0~255	1/1	0	0	0	Enabled	●/●	●/●	●	*6	Add
F581	0581	Subnet mask	Data1	0~255	1/1	0	0	0	Enabled	●/●	●/●	●	*6	Add
F582	0582		Data2	0~255	1/1	0	0	0	Enabled	●/●	●/●	●	*6	Add
F583	0583		Data3	0~255	1/1	0	0	0	Enabled	●/●	●/●	●	*6	Add
F584	0584		Data4	0~255	1/1	0	0	0	Enabled	●/●	●/●	●	*6	Add
F585	0585	IP gate1	Data1	0~255	1/1	0	0	0	Enabled	●/●	●/●	●	*6	Add
F586	0586		Data2	0~255	1/1	0	0	0	Enabled	●/●	●/●	●	*6	Add

*1:⇒For details, refer to Instruction Manual (E6581319) specified in Section 6.42.
*2:⇒For details, refer to Instruction Manual (E6581329) specified in Section 6.42.
*3:⇒ VFAS1-6110KPC and above.
*4:⇒Default values vary depending on the capacity. ⇒ See the table of K-46.
*5:⇒For details, refer to Instruction Manual (E6581331) specified in Section 6.42.
*6:⇒This function is for Etherenet communication option. (planning)

Sensorless vector/vector with sensor (●:Effective, -:Ineffective)

Title	Communication No.	Function		Adjustment range	Minimum setting unit (Panel/Communication)	Default setting			Write during running	Vector control		V/f	Reference	Remarks
						typ =12 500V -50Hz	typ =13 575V -60Hz	typ =14 690V -50Hz		Speed control	Torque control			
F587	0587	IP gate1	Data3	0~255	1/1	0	0	0	Enabled	●/●	●/●	●	*1	Add
F588	0588		Data4	0~255	1/1	0	0	0	Enabled	●/●	●/●	●	*1	Add
F589	0589	IP master	Data1	0~255	1/1	0	0	0	Enabled	●/●	●/●	●	*1	Add
F590	0590		Data2	0~255	1/1	0	0	0	Enabled	●/●	●/●	●	*1	Add
F591	0591		Data3	0~255	1/1	0	0	0	Enabled	●/●	●/●	●	*1	Add
F592	0592		Data4	0~255	1/1	0	0	0	Enabled	●/●	●/●	●	*1	Add
F593	0593	IO scan permission		0~1	1/1	0	0	0	Enabled	●/●	●/●	●	*1	Add
F594	0594	Communication time-out (Modbus)		0.0~60.0sec.	0.1/0.1	0	0	0	Enabled	●/●	●/●	●	*1	Add
F622	0622	Abnormal speed detection time		0.01~100.0sec.	0.01/0.01	0.01	0.01	0.01	Enabled	●/●	●/●	●	6.33.13	Change
F623	0623	Overspeed detection frequency upper band		0.00:Disableed, 0.01~30.00Hz	0.01/0.01	0.00	0.00	0.00	Enabled	●/●	●/●	●	6.33.13	Change
F624	0624	Overspeed detection frequency lower band		0.00:Disableed, 0.01~30.00Hz	0.01/0.01	0.00	0.00	0.00	Enabled	●/●	●/●	●	6.33.13	Change
F672	0672	MON1 terminal meter selection		0~76	1/1	4	4	4	Enabled	●/●	●/●	●	*2	Change
F674	0674	MON2 terminal meter selection		0~76	1/1	5	5	5	Enabled	●/●	●/●	●	*2	Change
F710 ~ F718	0710 ~ 0718	Status monitor display selection		0~80	1/1	*4	*4	*4	Enabled	●/●	●/●	●	8.3	Change
F784	0784	MAC address	Data1	0~255	1/1	0	0	0	-*3	●/●	●/●	●	*1	Add
F785	0785		Data2	0~255	1/1	0	0	0	-*3	●/●	●/●	●	*1	Add
F786	0786		Data3	0~255	1/1	0	0	0	-*3	●/●	●/●	●	*1	Add
F787	0787		Data4	0~255	1/1	0	0	0	-*3	●/●	●/●	●	*1	Add
F788	0788		Data5	0~255	1/1	0	0	0	-*3	●/●	●/●	●	*1	Add
F789	0789		Data6	0~255	1/1	0	0	0	-*3	●/●	●/●	●	*1	Add
F792	0792	Device name	Data1	0000~FFFF	1/1	0	0	0	-*3	●/●	●/●	●	*1	Add
F793	0793		Data2	0000~ FFFF	1/1	0	0	0	-*3	●/●	●/●	●	*1	Add
F794	0794		Data3	0000~ FFFF	1/1	0	0	0	-*3	●/●	●/●	●	*1	Add

*1:⇒This function is for Etherenet communication option.(planning)
*2:⇒For details, refer to Instruction Manual (E6581341) specified in Section 6.42.
*3:⇒ Read only
*4:⇒For details, refer to K-26

Sensorless vector/vector with sensor (●:Effective, -:Ineffective)

Title	Communication No.	Function		Adjustment range	Minimum setting unit (Panel/Communication)	Default setting			Write during running	Vector control		V/f	Reference	Remarks
						Typ=12 500V -50Hz	Typ=13 575V -60Hz	Typ=14 690V -50Hz		Speed control	Torque control			
F795	0795	Device name	Data4	0000~ FFFF	1/1	0	0	0	-*4	●/●	●/●	●	*1	Add
F796	0796		Data5	0000~ FFFF	1/1	0	0	0	-*4	●/●	●/●	●	*1	Add
F797	0797		Data6	0000~ FFFF	1/1	0	0	0	-*4	●/●	●/●	●	*1	Add
F798	0798		Data7	0000~ FFFF	1/1	0	0	0	-*4	●/●	●/●	●	*1	Add
F799	0799		Data8	0000~ FFFF	1/1	0	0	0	-*4	●/●	●/●	●	*1	Add
F808	0808	Communication1 time-out condition selection		0:Disconnection detection 1:When communication mode enable 2:1+Driving operation	1/1	0	0	0	Enabled	●/●	●/●	●	*2	Add
F815	0815	Address monitor (Modbus puls)		1~64	1/1	1	1	1	-*4	●/●	●/●	●	*3	Add
F816	0816	Command selection (Modbus puls)		0:Prohibition,1:Prohibition	1/1	0	0	0	Enabled	●/●	●/●	●	*3	Add
F817	0817	Number of command (Modbus puls)		0~8	1/1	0	0	0	Enabled	●/●	●/●	●	*3	Add
F818	0818	Number of monitors (Modbus puls)		0~8	1/1	0	0	0	Enabled	●/●	●/●	●	*3	Add
F819	0819	Command station (Modbus puls)		0~64	1/1	0	0	0	Enabled	●/●	●/●	●	*3	Add
F821	0821	Baud rate (Ethernet)		0:Automatic detection 1:10Mbps Full 2:10Mbps Half 3:100Mbps Full 4:100Mbps Half	1/1	0	0	0	Enabled	●/●	●/●	●	*1	Add
F822	0822	Baud rate monitor right port (Ethernet)		0:Automatic detection 1:10Mbps Full 2:10Mbps Half 3:100Mbps Full 4:100Mbps Half	1/1	—	—	—	—	●/●	●/●	●	*1	Add
F823	0823	Baud rate monitor left port (Ethernet)		0:Automatic detection 1:10 Mbps Full 2:10Mbps Half 3:100Mbps Full 4:100Mbps Half	1/1	—	—	—	—	●/●	●/●	●	*1	Add
F824	0824	(Reservation)		0:- 1:- 2:- 3:-	1/1	0	0	0	Enabled	●/●	●/●	●	*1	Add
F837	0837	Communication option setting 8		0000~FFFF	1/1	0	0	0	Enabled	●/●	●/●	●	*5	Add

*1:⇒This function is for Etherenet communication option.(planning). *2:⇒For details, refer to Instruction Manual (E6581315) specified in Section 6.42.
*3:⇒This function is for Modbus plus communication option(planning). *4:⇒Read only
*5:⇒For details, refer to Instruction Manual (E6581281,E6581343) specified in Section 6.42.

Sensorless vector/vector with sensor (●:Effective, -:Ineffective)

Title	Communication No.	Function	Adjustment range	Minimum setting unit (Panel/Communication)	Default setting			Write during running	Vector control		V/f	Reference	Remarks
					typ=12 500V -50Hz	typ=13 575V -60Hz	typ=14 690V -50Hz		Speed control	Torque control			
F838	0838	Communication option setting 9	0000~FFFF	1/1	0	0	0	Enabled	●/●	●/●	●	*1	Add
F847	0847	Communication option setting 15	0000~FFFF	1/1	0	0	0	Enabled	●/●	●/●	●	*1	Add
F848	0848	Communication option setting 16	0000~FFFF	1/1	0	0	0	Enabled	●/●	●/●	●	*1	Add
F849	0849	Communication2 time-out condition selection	0:Disconnection detection 1:When communication mode enable 2:1+Driving operation	1/1	0	0	0	Enabled	●/●	●/●	●	*1	Add
F856	0856	Motor pairs of poles for communication	1:2Poles 2:4 Poles 3:6 Poles 4:8 Poles 5:10 Poles 6:12 Poles 7:14 Poles 8:16 Poles	1/1	2	2	2	Enabled	●/●	●/●	●	*2	Add
F870	0870	Block write data 1	0~6 6:Rotational speed instruction	1/1	0	0	0	Enabled	●/●	●/●	●	6.39.1	Change
F871	0871	Block write data 2											
F875 ~ F879	0875 ~ 0879	Block read data 1~5	0~20 20:Rotational speed	1/1	0	0	0	Enabled	●/●	●/●	●	6.39.1	Change
F901	0901	Input function command 12	0~20 21:CLR 22:CLRN	1/1	0	0	0	Enabled	●/●	●/●	●	*3	Change
F959	0959	Analog input function target 1	0~6 6:Internal memory1	1/1	0	0	0	Enabled	●/●	●/●	●	*3	Change
F962	0962	Analog input function target 2	0~6 6:Internal memory2	1/1	0	0	0	Enabled	●/●	●/●	●	*3	Change

*1:⇒For details, refer to Instruction Manual (E6581281,E6581343) specified in Section 6.42.
*2:⇒For details, refer to Instruction Manual (E6581281,E6581343,E6581477) specified in Section 6.42.
*3:⇒For details, refer to Instruction Manual (E6581335) specified in Section 6.42.