ภาคผนวก ง
การตั้งค่าพารามิเตอร์ของเซอร์โวมอเตอร์

Parameter

> **CAUTION** ▪ Never adjust or change the parameter values extremely as it will make operation instable.

In the MR-J3-A servo amplifier, the parameters are classified into the following groups on a function basis.

Parameter Group	Main Description
Basic setting parameters (No. PA ☐☐)	When using this servo amplifier in the position control mode, make basic setting with these parameters.
Gain/filter parameters (No. PB ☐☐)	Use these parameters when making gain adjustment manually.
Extension setting parameters (No. PC ☐☐)	When using this servo amplifier in the speed control mode or torque control mode, mainly use these parameters.
I/O setting parameters (No. PD ☐☐)	Use these parameters when changing the I/O signals of the servo amplifier.

When using this servo in the position control mode, mainly setting the basic setting parameters (No. PA [][]) allows the setting of the basic parameters at the time of introduction. 5.1 Basic setting parameters (No.PA [][])

> **POINT**
> ▪ For any parameter whose symbol is preceded by *, set the parameter value and switch power off once, then switch it on again to make that parameter setting valid.

Parameter list

No.	Symbol	Name	Setting Value	Unit	Control Mode		
					Position	Speed	Torque
PA01	*STY	Control mode	0000h		○	○	○
PA02	*REG	Regenerative option	0000h		○	○	○
PA03	*ABS	Absolute position detection system	0000h		○		
PA04	*AOP1	Function selection A-1	0000h		○	○	○
PA05	*FBP	Number of command input pulses per revolution	0		○		
PA06	CMX	Electronic gear numerator (Command pulse multiplying factor numerator)	1		○		
PA07	CDV	Electronic gear denominator (Command pulse multiplying factor denominator)	1		○		
PA08	ATU	Auto tuning	0003h		○	○	
PA09	RSP	Auto tuning response	18		○	○	
PA10	INP	In-position range	100	pulse	○		
PA11	TLP	Forward torque limit	100.0	%	○	○	○
PA12	TLN	Reverse torque limit	100.0	%	○	○	○
PA13	*PLSS	Command pulse input from	0001h		○		
PA14	*POL	Rotation direction selection	0		○		
PA15	*ENR	Encoder output pulses	100000	pulse/rev	○	○	○
PA16		For manufacturer setting	0				
PA17			0000h				
PA18			0000h				
PA19	*BLK	Parameter write inhibit	000Ch		○	○	○

Gain/filter parameters (No. PB [][])

> **POINT**
>
> - For any parameter whose symbol is preceded by *, set the parameter value and switch power off once, then switch it on again to make that parameter setting valid.

Parameter list

No.	Symbol	Name	Setting Value	Unit	Control Mode		
					Position	Speed	Torque
PB01	FILT	Adaptive tuning mode (Adaptive filter II)	0000h		○	○	
PB02	VRFT	Vibration suppression control filter tuning mode (Advanced vibration suppression control)	0000h		○		
PB03	PST	Position command acceleration/deceleration time constant (Position smoothing)	100	ms	○		
PB04	FFC	Feed forward gain	0	%	○		
PB05		For manufacturer setting	500				
PB06	GD2	Ratio of load inertia moment to servo motor inertia moment	7.0	times	○	○	
PB07	PG1	Model loop gain	25	rad/s	○	○	
PB08	PG2	Position loop gain	6	rad/s	○		
PB09	VG2	Speed loop gain	1665	rad/s	○	○	
PB10	VIC	Speed integral compensation	16.2	ms	○	○	
PB11	VDC	Speed differential compensation	980		○	○	
PB12		For manufacturer setting	0				
PB13	NH1	Machine resonance suppression filter 1	4500	Hz	○	○	
PB14	NHQ1	Notch form selection 1	0000h		○	○	
PB15	NH2	Machine resonance suppression filter 2	4500	Hz	○	○	
PB16	NHQ2	Notch form selection 2	0000h		○	○	
PB17		Automatic setting parameter					
PB18	LPF	Low-pass filter	3141	rad/s	○	○	
PB19	VRF1	Vibration suppression control vibration frequency setting	100.0	Hz	○		
PB20	VRF2	Vibration suppression control resonance frequency setting	100.0	Hz	○		
PB21		For manufacturer setting	0.00				
PB22			0.00				
PB23	VFBF	Low-pass filter selection	0000h		○	○	
PB24	*MVS	Slight vibration suppression control selection	0000h		○		
PB25	*BOP1	Function selection B-1	0000h		○		
PB26	*CDP	Gain changing selection	0000h		○	○	
PB27	CDL	Gain changing condition	10		○	○	
PB28	CDT	Gain changing time constant	1	ms	○	○	
PB29	GD2B	Gain changing ratio of load inertia moment to servo motor inertia moment	7.0	times	○	○	
PB30	PG2B	Gain changing position loop gain	37	rad/s	○		
PB31	VG2B	Gain changing speed loop gain	823	rad/s	○	○	
PB32	VICB	Gain changing speed integral compensation	33.7	ms	○	○	
PB33	VRF1B	Gain changing vibration suppression control vibration frequency setting	100.0	Hz	○		
PB34	VRF2B	Gain changing vibration suppression control resonance frequency setting	100.0	Hz	○		
PB35		For manufacturer setting	0.00				
PB36			0.00				
PB37			100				
PB38			0.0				
PB39			0.0				
PB40			0.0				
PB41			1125				

Extension setting parameters (No. PC [][])

> **POINT**
>
> - For any parameter whose symbol is preceded by *, set the parameter value and switch power off once, then switch it on again to make that parameter setting valid.

Parameter list

No.	Symbol	Name	Setting Value	Unit	Control Mode		
					Position	Speed	Torque
PC01	STA	Acceleration time constant	0	ms		○	○
PC02	STB	Deceleration time constant	0	ms		○	○
PC03	STC	S-pattern acceleration/deceleration time constant	0	ms		○	○
PC04	TQC	Torque command time constant	0	ms			○
PC05	SC1	Internal speed command 1	100	r/min		○	
		Internal speed limit 1					○
PC06	SC2	Internal speed command 2	500	r/min		○	
		Internal speed limit 2					○
PC07	SC3	Internal speed command 3	1000	r/min		○	
		Internal speed limit 3					○
PC08	SC4	Internal speed command 4	200	r/min		○	
		Internal speed limit 4					○
PC09	SC5	Internal speed command 5	300	r/min		○	
		Internal speed limit 5					○
PC10	SC6	Internal speed command 6	500	r/min		○	
		Internal speed limit 6					○
PC11	SC7	Internal speed command 7	800	r/min		○	
		Internal speed limit 7					○
PC12	VCM	Analog speed command maximum speed	0	r/min		○	
		Analog speed limit maximum speed					○
PC13	TLC	Analog torque command maximum output	100.0	%			○
PC14	MOD1	Analog monitor output 1	0000h		○	○	○
PC15	MOD2	Analog monitor output 2	0001h		○	○	○
PC16	MBR	Electromagnetic brake sequence output	100	ms	○	○	○
PC17	ZSP	Zero speed	50	r/min	○	○	○
PC18	*BPS	Alarm history clear	0000h		○	○	○
PC19	*ENRS	Encoder output pulses selection	0000h		○	○	○
PC20	*SNO	Station number setting	0	station	○	○	○
PC21	*SOP	Communication function selection	0000h		○	○	○
PC22	*COP1	Function selection C-1	0000h		○	○	○
PC23	*COP2	Function selection C-2	0000h			○	○
PC24	*COP3	Function selection C-3	0000h		○		
PC25		For manufacturer setting	0000h				
PC26	*COP5	Function selection C-5	0000h		○	○	
PC27		For manufacturer setting	0000h				
PC28			0000h				
PC29			0000h				
PC30	STA2	Acceleration time constant 2	0	ms		○	○
PC31	STB2	Deceleration time constant 2	0	ms		○	○
PC32	CMX2	Command pulse multiplying factor numerator 2	1		○		
PC33	CMX3	Command pulse multiplying factor numerator 3	1		○		

No.	Symbol	Name	Setting Value	Unit	Control Mode		
					Position	Speed	Torque
PC34	CMX4	Command pulse multiplying factor numerator 4	1		○		
PC35	TL2	Internal torque limit 2	100.0	%	○	○	○
PC36	*DMD	Status display selection	0000h		○	○	○
PC37	VCO	Analog speed command offset	0	mV		○	
		Analog speed limit offset					○
PC38	TPO	Analog torque command offset	0	mV			○
		Analog torque limit offset				○	
PC39	MO1	Analog monitor 1 offset	0	mV	○	○	○
PC40	MO2	Analog monitor 2 offset	0	mV	○	○	○
PC41		For manufacturer setting	0				
PC42			0				
PC43			0				
PC44			0				
PC45			0				
PC46			0				
PC47			0				
PC48			0				
PC49			0				
PC50			0				

I/O Setting parameters (No. PD)

POINT

- For any parameter whose symbol is preceded by *, set the parameter value and switch power off once, then switch it on again to make that parameter setting valid.

Parameter list

No.	Symbol	Name	Setting Value	Unit	Control Mode		
					Position	Speed	Torque
PD01	*DIA1	Input signal automatic ON selection 1	0000h		○	○	○
PD02		For manufacturer setting	0000h				
PD03	*DI1	Input signal device selection 1 (CN1-15)	00020202h		○	○	○
PD04	*DI2	Input signal device selection 2 (CN1-16)	00212100h		○	○	○
PD05	*DI3	Input signal device selection 3 (CN1-17)	00070704h		○	○	○
PD06	*DI4	Input signal device selection 4 (CN1-18)	00080805h		○	○	○
PD07	*DI5	Input signal device selection 5 (CN1-19)	00030303h		○	○	○
PD08	*DI6	Input signal device selection 6 (CN1-41)	00202006h		○	○	○
PD09		For manufacturer setting	00000000h				
PD10	*DI8	Input signal device selection 8 (CN1-43)	00000A0Ah		○	○	○
PD11	*DI9	Input signal device selection 9 (CN1-44)	00000B0Bh		○	○	○
PD12	*DI10	Input signal device selection 10 (CN1-45)	00232323h		○	○	○
PD13	*DO1	Output signal device selection 1 (CN1-22)	0004h		○	○	○
PD14	*DO2	Output signal device selection 2 (CN1-23)	000Ch		○	○	○
PD15	*DO3	Output signal device selection 3 (CN1-24)	0004h		○	○	○
PD16	*DO4	Output signal device selection 4 (CN1-25)	0007h		○	○	○
PD17		For manufacturer setting	0003h				
PD18	*DO6	Output signal device selection 6 (CN1-49)	0002h		○	○	○
PD19	*DIF	Response level setting	0002h		○	○	○
PD20	*DOP1	Function selection D-1	0000h		○	○	○
PD21		For manufacturer setting	0000h				
PD22	*DOP3	Function selection D-3	0000h		○		
PD23		For manufacturer setting	0000h				
PD24	*DOP5	Function selection D-5	0000h		○	○	○
PD25		For manufacturer setting	0				
PD26			0				
PD27			0				
PD28			0				
PD29			0				
PD30			0				