

1. TROUBLESHOOTING

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1.1 Alarm and warning list

When an error occurs during operation, the corresponding alarm or warning is displayed. If any alarm or warning has occurred, refer to section 1.2 and take the appropriate action. When an alarm occurs, ALM (Malfunction) will turn off.

No.	Name	Detail display	Detail name	
Alarm	10	Undervoltage	10.1	Voltage drop in the control power
			10.2	Voltage drop in the main circuit power
	11	Switch setting error	11.1	Axis number setting error
			11.2	Disabling control axis setting error
	12	Memory error 1 (RAM)	12.1	RAM error 1
			12.2	RAM error 2
			12.3	RAM error 3
			12.4	RAM error 4
			12.5	RAM error 5
	13	Clock error	13.1	Clock error 1
			13.2	Clock error 2
	14	Control process error	14.1	Control process error 1
			14.2	Control process error 2
			14.3	Control process error 3
			14.4	Control process error 4
			14.5	Control process error 5
			14.6	Control process error 6
			14.7	Control process error 7
			14.8	Control process error 8
			14.9	Control process error 9
			14.A	Control process error 10
	15	Memory error 2 (EEP-ROM)	15.1	EEP-ROM error at power on
			15.2	EEP-ROM error during operation
	16	Encoder initial communication error 1	16.1	Encoder initial communication - Receive data error 1
			16.2	Encoder initial communication - Receive data error 2
			16.3	Encoder initial communication - Receive data error 3
			16.5	Encoder initial communication - Transmission data error 1
			16.6	Encoder initial communication - Transmission data error 2
16.7			Encoder initial communication - Transmission data error 3	
16.A			Encoder initial communication - Process error 1	
16.B			Encoder initial communication - Process error 2	
16.C			Encoder initial communication - Process error 3	
16.D			Encoder initial communication - Process error 4	
16.E			Encoder initial communication - Process error 5	
16.F			Encoder initial communication - Process error 6	
17	Board error	17.1	Board error 1	
		17.3	Board error 2	
		17.4	Board error 3	
		17.5	Board error 4	
		17.6	Board error 5	
19	Memory error 3 (Flash-ROM)	19.1	Flash-ROM error 1	
		19.2	Flash-ROM error 2	
1A	Servo motor combination error	1A.1	Servo motor combination error	
		1A.2	Servo motor control mode combination error	
1E	Encoder initial communication error 2	1E.1	Encoder malfunction	
1F	Encoder initial communication error 3	1F.1	Incompatible encoder	

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	No.	Name	Detail display	Detail name
Alarm	20	Encoder normal communication error 1	20.1	Encoder normal communication - Receive data error 1
			20.2	Encoder normal communication - Receive data error 2
			20.3	Encoder normal communication - Receive data error 3
			20.5	Encoder normal communication - Transmission data error 1
			20.6	Encoder normal communication - Transmission data error 2
			20.7	Encoder normal communication - Transmission data error 3
			20.9	Encoder normal communication - Receive data error 4
			20.A	Encoder normal communication - Receive data error 5
	21	Encoder normal communication error 2	21.1	Encoder data error 1
			21.2	Encoder data update error
			21.3	Encoder data waveform error
			21.4	Encoder non-signal error
			21.5	Encoder hardware error 1
			21.6	Encoder hardware error 2
			21.9	Encoder data error 2
	24	Main circuit error	24.1	Ground fault detected by hardware detection circuit
			24.2	Ground fault detected by software detection function
	25	Absolute position erased	25.1	Servo motor encoder - Absolute position erased
	27	Initial magnetic pole detection error	27.1	Magnetic pole detection - Abnormal termination
			27.2	Magnetic pole detection - Time out error
			27.3	Magnetic pole detection - Limit switch error
			27.4	Magnetic pole detection - Estimated error
			27.5	Magnetic pole detection - Position deviation error
			27.6	Magnetic pole detection - Speed deviation error
			27.7	Magnetic pole detection - Current error
	28	Linear encoder error 2	28.1	Linear encoder - Environment error
	2A	Linear encoder error 1	2A.1	Linear encoder error 1-1
			2A.2	Linear encoder error 1-2
			2A.3	Linear encoder error 1-3
			2A.4	Linear encoder error 1-4
			2A.5	Linear encoder error 1-5
			2A.6	Linear encoder error 1-6
			2A.7	Linear encoder error 1-7
			2A.8	Linear encoder error 1-8
	2B	Encoder counter error	2B.1	Encoder counter error 1
			2B.2	Encoder counter error 2
	30	Regenerative error	30.1	Regeneration heat error
			30.2	Regeneration signal error
			30.3	Regeneration feedback signal error
	31	Overspeed	31.1	Abnormal motor speed
	32	Overcurrent	32.1	Overcurrent detected at hardware detection circuit (during operation)
			32.2	Overcurrent detected at software detection function (during operation)
32.3			Overcurrent detected at hardware detection circuit (during a stop)	
32.4			Overcurrent detected at software detection function (during a stop)	
33	Overvoltage	33.1	Main circuit voltage error	
34	SSCNET receive error 1	34.1	SSCNET receive data error	
		34.2	SSCNET connector connection error	
		34.3	SSCNET communication data error	
		34.4	Hardware error signal detection	
35	Command frequency error	35.1	Command frequency error	
36	SSCNET receive error 2	36.1	Continuous communication data error	
37	Parameter error	37.1	Parameter setting range error	
		37.2	Parameter combination error	
3A	Inrush current suppression circuit error	3A.1	Inrush current suppression circuit error	
3E	Operation mode error	3E.1	Operation mode error	

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	No.	Name	Detail display	Detail name
Alarm	42	Servo control error	42.1	Servo control error by position deviation
			42.2	Servo control error by speed deviation
			42.3	Servo control error by torque/thrust deviation
	45	Main circuit device overheat	45.1	Main circuit device overheat error
	46	Servo motor overheat	46.1	Abnormal temperature of servo motor 1
			46.2	Abnormal temperature of servo motor 2
			46.3	Thermistor disconnected
			46.5	Abnormal temperature of servo motor 3
			46.6	Abnormal temperature of servo motor 4
	47	Cooling fan error	47.1	Cooling fan stop error
			47.2	Cooling fan speed reduction error
	50	Overload 1	50.1	Thermal overload error 1 during operation
			50.2	Thermal overload error 2 during operation
			50.3	Thermal overload error 4 during operation
			50.4	Thermal overload error 1 during a stop
			50.5	Thermal overload error 2 during a stop
			50.6	Thermal overload error 4 during a stop
	51	Overload 2	51.1	Thermal overload error 3 during operation
			51.2	Thermal overload error 3 during a stop
	52	Error excessive	52.1	Excess droop pulse 1
			52.3	Excess droop pulse 2
			52.4	Error excessive during 0 torque limit
			52.5	Excess droop pulse 3
	54	Oscillation detection	54.1	Oscillation detection error
	56	Forced stop error	56.2	Over speed during forced stop
			56.3	Estimated distance over during forced stop
	63	STO timing error	63.1	STO1 off
			63.2	STO2 off
	8A	USB communication time-out error	8A.1	USB communication time-out error
8E	USB communication error	8E.1	USB communication receive error	
		8E.2	USB communication checksum error	
		8E.3	USB communication character error	
		8E.4	USB communication command error	
		8E.5	USB communication data number error	
888/ 88888	Watchdog	88._/ 8888._	Watchdog	

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	No.	Name	Detail display	Detail name
Warning	91	Servo amplifier overheat warning	91.1	Main circuit device overheat warning
	92	Battery cable disconnection warning	92.1	Encoder battery cable disconnection warning
			92.3	Battery degradation
	95	STO warning	95.1	STO1 off detection
			95.2	STO2 off detection
	96	Home position setting warning	96.1	In-position warning at home positioning
			96.2	Command input warning at home positioning
			96.3	Servo off warning at home positioning
	99	Stroke limit warning	99.1	Forward rotation stroke end off
			99.2	Reverse rotation stroke end off
	9F	Battery warning	9F.1	Low battery
			9F.2	Battery degradation warning
	E0	Excessive regeneration warning	E0.1	Excessive regeneration warning
	E1	Overload warning 1	E1.1	Thermal overload warning 1 during operation
			E1.2	Thermal overload warning 2 during operation
			E1.3	Thermal overload warning 3 during operation
			E1.4	Thermal overload warning 4 during operation
			E1.5	Thermal overload error 1 during a stop
			E1.6	Thermal overload error 2 during a stop
			E1.7	Thermal overload error 3 during a stop
			E1.8	Thermal overload error 4 during a stop
	E2	Servo motor overheat warning	E2.1	Servo motor temperature warning
	E3	Absolute position counter warning	E3.1	Multi-revolution counter travel distance excess warning
			E3.2	Encoder absolute positioning counter warning
			E3.5	Absolute position counter warning
	E4	Parameter warning	E4.1	Parameter setting range error warning
	E5	ABS time-out warning	E5.1	Time-out during ABS data transfer
			E5.2	ABSM off during ABS data transfer
			E5.3	SON off during ABS data transfer
	E6	Servo forced stop warning	E6.1	Forced stop warning
	E7	Controller forced stop warning	E7.1	Controller forced stop warning
	E8	Cooling fan speed reduction warning	E8.1	Decreased cooling fan speed warning
	E9	Main circuit off warning	E9.1	Servo-on signal on during main circuit off
E9.2			Bus voltage drop during low speed operation	
E9.3			Ready-on signal on during main circuit off	
EA	ABS servo-on warning	EA.1	ABS servo-on warning	
EB	The other axis error warning	EB.1	The other axis error warning	
EC	Overload warning 2	EC.1	Overload warning 2	
ED	Output watt excess warning	ED.1	Output watt excess warning	
F0	Tough drive warning	F0.1	Instantaneous power failure tough drive warning	
		F0.3	Vibration tough drive warning	
F2	Drive recorder - Miswriting warning	F2.1	Drive recorder - Area writing time-out warning	
		F2.2	Drive recorder - Data miswriting warning	
F3	Oscillation detection warning	F3.1	Oscillation detection warning	

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1.2 Remedies for alarms



CAUTION

- When any alarm has occurred, eliminate its cause, ensure safety, and deactivate the alarm before restarting operation. Otherwise, it may cause injury.
- If [AL. 25 Absolute position erased] occurs, always make home position setting again. Otherwise, it may cause an unexpected operation.
- As soon as an alarm occurs, make the Servo-off status and interrupt the main circuit power.

POINT

- When any of the following alarms has occurred, do not cycle the power repeatedly to restart. Doing so will cause a malfunction of the servo amplifier and the servo motor. Remove its cause and allow about 30 minutes for cooling before resuming the operation.
 - [AL. 30 Regenerative error] • [AL. 45 Main circuit device overheat]
 - [AL. 46 Servo motor overheat] • [AL. 50 Overload 1]
 - [AL. 51 Overload 2]

Remove the cause of the alarm in accordance with this section. Use MR Configurator2 to refer to a factor of alarm occurrence.

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Alarm No.: 10		Name: Undervoltage					
Alarm content		<ul style="list-style-type: none"> • The voltage of the control circuit power supply has dropped. • The voltage of the main circuit power supply has dropped. 					
Display	Detail name	Cause	Check method	Check result	Action	Target	
10.1	Voltage drop in the control power	(1)	The connection of the control circuit power supply connector (CNP2) has a failure.	Check the control circuit power supply connector.	It has a failure.	Connect it correctly.	[A] [B] [WB]
					It has no failure.	Check (2).	
		(2)	The voltage of the control circuit power supply is low.	Check if the voltage of the control circuit power supply is lower than 160 V AC.	The voltage is lower than 160 V AC.	Review the voltage of the control circuit power supply.	
					The voltage is higher than 160 V AC.	Check (3).	
		(3)	An instantaneous power failure has occurred for longer time than the specified time. The time will be 60 ms when [Pr. PA20] is "_ 0 _". The time will be the value set in [Pr. PF25] when [Pr. PA20] is "_ 1 _".	Check if the power has a problem.	It has a problem.	Review the power.	
		10.2	Voltage drop in the main circuit power	(1)	The main circuit power supply connector (CNP1) was disconnected.	Check the main circuit power supply connector.	
It is connected.	Check (2).						
(2)	The voltage of the main circuit power supply is low.			Check if the voltage of the main circuit power supply is lower than 160 V AC.	The voltage is lower than 160 V AC.	Increase the voltage of the main circuit power supply.	
					The voltage is higher than 160 V AC.	Check (3).	
(3)	The alarm has occurred during acceleration.			Check that the bus voltage during acceleration is 200 V DC or more.	The voltage is less than 200 V DC.	Increase the acceleration time constant. Or increase the power supply capacity.	
					The voltage is 200 V DC or more.	Check (4).	
(4)	The servo amplifier is malfunctioning.			Check the bus voltage value.	The voltage of the main circuit power supply is 160 V AC or more, and the bus voltage is less than 200 V DC.	Replace the servo amplifier.	

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Alarm No.: 11		Name: Switch setting error					
Alarm content		<ul style="list-style-type: none"> • The setting of the axis selection rotary switch or auxiliary axis number setting switch is incorrect. • The setting of the disabling control axis switch is incorrect. 					
Display	Detail name	Cause	Check method	Check result	Action	Target	
11.1	Axis number setting error	(1)	The setting of the Axis No. is incorrect.	Check the settings of the auxiliary axis number setting switch (SW2) and axis selection rotary switch (SW1).	When both of the auxiliary axis number setting switches are on, check the axis selection rotary switch if "E" is selected for MR-J4W2, ("E" or "F" is selected for MR-J4W2).	Set the axis No. correctly.	[WB]
					Both of the auxiliary axis number setting switches are off.	Replace the servo amplifier.	
11.2	Disabling control axis setting error	(1)	The setting of the disabling control axis switch is incorrect.	Check the setting of the disabling control axis switch.	Check if the setting is as follows. 1) Only A-axis is disabled. 2) Only B-axis is disabled. 3) A-axis and B-axis are disabled. 4) A-axis and C-axis are disabled.	Set it correctly.	[WB]
					The setting is other than above.	Replace the servo amplifier.	

Alarm No.: 12		Name: Memory error 1 (RAM)					
Alarm content		<ul style="list-style-type: none"> • A part (RAM) in the servo amplifier is failure. 					
Display	Detail name	Cause	Check method	Check result	Action	Target	
12.1	RAM error 1	(1)	A part in the servo amplifier is failure.	Disconnect the cables except the control circuit power supply, and then check the repeatability.	It is repeatable.	Replace the servo amplifier.	[A] [B] [WB]
				It is not repeatable.	Check (2).		
		(2)	Something near the device caused it.	Check the power supply for noise.	It has a failure.	Take countermeasures against its cause.	
12.2	RAM error 2	Check it with the check method for [AL. 12.1].					
12.3	RAM error 3						
12.4	RAM error 4						
12.5	RAM error 5						

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Alarm No.: 13		Name: Clock error					
Alarm content		<ul style="list-style-type: none"> ▪ A part in the servo amplifier is failure. ▪ A clock error transmitted from the controller occurred. 					
Display	Detail name	Cause	Check method	Check result	Action	Target	
13.1	Clock error 1	(1)	A part in the servo amplifier is failure.	Disconnect the cables except the control circuit power supply, and then check the repeatability.	It is repeatable.	Replace the servo amplifier.	[A] [B] [WB]
					It is not repeatable.	Check (2).	
		(2)	A clock error transmitted from the controller occurred.	Check if the error occurs when you connect the amplifier to the controller.	It occurs.	Replace the controller.	[B] [WB]
					It does not occur.	Check (3).	
		(3)	The servo amplifier of the next axis is malfunctioning.	Check if the servo amplifier of the next axis is malfunctioning.	It is malfunctioning.	Replace the servo amplifier of the next axis.	[B] [WB]
					It is not malfunctioning.	Check (4).	
		(4)	Something near the device caused it.	Check the power supply for noise. Check if the connector is shorted.	It has a failure.	Take countermeasures against its cause.	[A] [B] [WB]
		13.2	Clock error 2	Check it with the check method for [AL. 13.1].			

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Alarm No.: 14		Name: Control process error					
Alarm content		• The process did not complete within the specified time.					
Display	Detail name	Cause	Check method	Check result	Action	Target	
14.1	Control process error 1	(1)	The parameter setting is incorrect.	Check if the parameter setting is incorrect.	It is incorrect.	Set it correctly.	[A] [B] [WB]
					It is correct.	Check (2).	
		(2)	Something near the device caused it.	Check the power supply for noise. Check if the connector is shorted.	It has a failure.	Take countermeasures against its cause.	
					It has no failure.	Check (3).	
		(3)	The servo amplifier is malfunctioning.	Replace the servo amplifier, and then check the repeatability.	It is not repeatable.	Replace the servo amplifier.	
		14.2	Control process error 2	(1)	A synchronous signal error transmitted from the controller occurred.	Replace the controller, and then check the repeatability.	
It is not repeatable.	Check (2).						
(2)	The parameter setting is incorrect.			Check if the parameter setting is incorrect.	It is incorrect.	Set it correctly.	[A] [B] [WB]
					It is correct.	Check (3).	
(3)	Something near the device caused it.			Check the power supply for noise. Check if the connector is shorted.	It has a failure.	Take countermeasures against its cause.	
					It has no failure.	Check (4).	
(4)	The servo amplifier is malfunctioning.			Replace the servo amplifier, and then check the repeatability.	It is not repeatable.	Replace the servo amplifier.	
14.3	Control process error 3			Check it with the check method for [AL. 14.1].			
14.4	Control process error 4						
14.5	Control process error 5						
14.6	Control process error 6						
14.7	Control process error 7						
14.8	Control process error 8						
14.9	Control process error 9						
14.A	Control process error 10						

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Alarm No.: 15		Name: Memory error 2 (EEP-ROM)					
Alarm content		• A part (EEP-ROM) in the servo amplifier is failure.					
Display	Detail name	Cause	Check method	Check result	Action	Target	
15.1	EEP-ROM error at power on	(1)	EEP-ROM is malfunctioning at power on.	Disconnect the cables except the control circuit power supply, and then check the repeatability.	It is repeatable.	Replace the servo amplifier.	[A] [B] [WB]
					It is not repeatable.	Check (2).	
		(2)	Something near the device caused it.	Check the power supply for noise. Check if the connector is shorted.	It has a failure.	Take countermeasures against its cause.	
					It has no failure.	Check (3).	
		(3)	The number of write times exceeded 100,000.	Check if parameters has been used very frequently.	It has a failure.	Replace the servo amplifier. Change the process to use parameters less frequently after replacement.	
		15.2	EEP-ROM error during operation	(1)	EEP-ROM is malfunctioning during normal operation.	Check if the error occurs when you change parameters during normal operation.	
It does not occur.	Check (2).						
(2)	A write error occurred while tuning results was processed.			Check if the alarm occurs after an hour from power on.	It takes an hour or more.	Replace the servo amplifier.	
					It takes less than an hour.	Check (3).	
(3)	Something near the device caused it.			Check the power supply for noise. Check if the connector is shorted.	It has a failure.	Take countermeasures against its cause.	

Alarm No.: 16		Name: Encoder initial communication error 1					
Alarm content		• Communication error occurred between encoder and servo amplifier.					
Display	Detail name	Cause	Check method	Check result	Action	Target	
16.1	Encoder initial communication - Receive data error 1	(1)	An encoder cable is malfunctioning.	Check if the encoder cable is disconnected or shorted.	It has a failure.	Replace or repair the cable.	[A] [B] [WB]
					It has no failure.	Check (2).	
		(2)	The servo amplifier is malfunctioning.	Replace the servo amplifier, and then check the repeatability.	It is not repeatable.	Replace the servo amplifier.	
					It is repeatable.	Check (3).	
		(3)	An encoder is malfunctioning.	Replace the servo motor or linear encoder, and then check the repeatability.	It is not repeatable.	Replace the servo motor.	
					It is repeatable.	Check (4).	
		(4)	Something near the device caused it.	Check the noise, ambient temperature, vibration, etc.	It has a failure.	Take countermeasures against its cause.	
		16.2	Encoder initial communication - Receive data error 2	Check it with the check method for [AL. 16.1].			

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Alarm No.: 16		Name: Encoder initial communication error 1					
Alarm content		▪ Communication error occurred between encoder and servo amplifier.					
Display	Detail name	Cause	Check method	Check result	Action	Target	
16.3	Encoder initial communication - Receive data error 3	(1)	An axis not used is not set as disabled-axis.	Check the setting of the disabling control axis switch (SW2).	It is not set as disabled-axis.	Set it as disabled-axis.	[WB]
					It is set as disabled-axis.	Check (2).	
		(2)	An encoder cable was disconnected.	Check if the encoder cable is connected correctly.	It is not connected.	Connect it correctly.	[A] [B] [WB]
					It is connected.	Check (3).	
		(3)	The parameter setting of two-wire type/four-wire type is incorrect. Type A: [Pr. PC22] Type B: [Pr. PC04]	Check the parameter setting.	The setting is incorrect.	Set it correctly.	
					The setting is correct.	Check (4).	
		(4)	An encoder cable is malfunctioning.	Check if the encoder cable is disconnected or shorted.	It has a failure.	Replace or repair the cable.	
					It has no failure.	Check (5).	
		(5)	The voltage of the control circuit power supply has been unstable.	Check the voltage of the control circuit power supply.	The control circuit power supply has been an instantaneous power failure.	Review the power and related parts.	
					It has no failure.	Check (6).	
		(6)	The servo amplifier is malfunctioning.	Replace the servo amplifier, and then check the repeatability.	It is not repeatable.	Replace the servo amplifier.	
					It is repeatable.	Check (7).	
		(7)	An encoder is malfunctioning.	Replace the servo motor, and then check the repeatability.	It is not repeatable.	Replace the servo motor.	
					It is repeatable.	Check (8).	
(8)	Something near the device caused it.	Check the noise, ambient temperature, vibration, etc.	It has a failure.	Take countermeasures against its cause.			
16.5	Encoder initial communication - Transmission data error 1	Check it with the check method for [AL. 16.1].					
16.6	Encoder initial communication - Transmission data error 2						
16.7	Encoder initial communication - Transmission data error 3						

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Alarm No.: 16		Name: Encoder initial communication error 1				
Alarm content		▪ Communication error occurred between encoder and servo amplifier.				
Display	Detail name	Cause	Check method	Check result	Action	Target
16.A	Encoder initial communication - Process error 1	(1) The servo amplifier is malfunctioning.	Replace the servo amplifier, and then check the repeatability.	It is not repeatable.	Replace the servo amplifier.	[A] [B] [WB]
				It is repeatable.	Check (2).	
		(2) An encoder is malfunctioning.	Replace the servo motor, and then check the repeatability.	It is not repeatable.	Replace the servo motor.	
				It is repeatable.	Check (3).	
		(3) Something near the device caused it.	Check the noise, ambient temperature, vibration, etc.	It has a failure.	Take countermeasures against its cause.	
16.B	Encoder initial communication - Process error 2	Check it with the check method for [AL. 16.A].				
16.C	Encoder initial communication - Process error 3					
16.D	Encoder initial communication - Process error 4					
16.E	Encoder initial communication - Process error 5					
16.F	Encoder initial communication - Process error 6					

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Alarm No.: 17		Name: Board error				
Alarm content		• A part in the servo amplifier is malfunctioning.				
Display	Detail name	Cause	Check method	Check result	Action	Target
17.1	Board error 1	(1) A current detection circuit is malfunctioning.	Check if the alarm occurs during the servo-on status.	It occurs.	Replace the servo amplifier.	[A] [B] [WB]
				It does not occur.	Check (2).	
		(2) Something near the device caused it.	Check the noise, ambient temperature, etc.	It has a failure.	Take countermeasures against its cause.	
17.3	Board error 2	Check it with the check method for [AL. 17.1]".				
17.4	Board error 3	(1) The servo amplifier recognition signal was not read properly.	Disconnect the cables except the control circuit power supply, and then check the repeatability.	It is repeatable.	Replace the servo amplifier.	
				It is not repeatable.	Check (2).	
		(2) Something near the device caused it.	Check the noise, ambient temperature, etc.	It has a failure.	Take countermeasures against its cause.	
17.5	Board error 4	(1) The setting value of the rotary switch (SW1) was not read properly.	Disconnect the cables except the control circuit power supply, and then check the repeatability.	It is repeatable.	Replace the servo amplifier.	[B] [WB]
				It is not repeatable.	Check (2).	
		(2) Something near the device caused it.	Check the noise, ambient temperature, etc.	It has a failure.	Take countermeasures against its cause.	
17.6	Board error 5	(1) The setting value of the DIP switches (SW2) was not read properly.	Disconnect the cables except the control circuit power supply, and then check the repeatability.	It is repeatable.	Replace the servo amplifier.	
				It is not repeatable.	Check (2).	
		(2) Something near the device caused it.	Check the noise, ambient temperature, etc.	It has a failure.	Take countermeasures against its cause.	

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Alarm No.: 19		Name: Memory error 3 (Flash-ROM)					
Alarm content		• A part (Flash-ROM) in the servo amplifier is failure.					
Display	Detail name	Cause	Check method	Check result	Action	Target	
19.1	Flash-ROM error 1	(1)	The Flash-ROM is malfunctioning.	Disconnect the cables except the control circuit power supply, and then check the repeatability.	It is repeatable.	Replace the servo amplifier.	[A] [B] [WB]
				It is not repeatable.	Check (2).		
		(2)	Something near the device caused it.	Check the noise, ambient temperature, etc.	It has a failure.	Take countermeasures against its cause.	
19.2	Flash-ROM error 2	Check it with the check method for [AL. 19.1].					

Alarm No.: 1A		Name: Servo motor combination error					
Alarm content		• The combination of servo amplifier and servo motor is incorrect.					
Display	Detail name	Cause	Check method	Check result	Action	Target	
1A.1	Servo motor combination error	(1)	The servo amplifier and the servo motor was connected incorrectly.	Check the model name of the servo motor and corresponding servo amplifier.	The combination is incorrect.	Use them in the correct combination.	[A] [B] [WB]
				The combination is correct.	Check (2).		
		(2)	The setting of [Pr. PA01] is not corresponding to the connected servo motor.	Check the [Pr. PA01] setting. Rotary servo motor: "_ _ 0 _" Linear servo motor: "_ _ 4 _" Direct drive motor: "_ _ 6 _"	The combination is incorrect.	Set [Pr. PA01] correctly.	[B] [WB]
		(3)	An encoder is malfunctioning.	Replace the servo motor, and then check the repeatability.	It is not repeatable.	Replace the servo motor.	[A] [B] [WB]
1A.2	Servo motor control mode combination error	(1)	The setting of [Pr. PA01] is not corresponding to the connected servo motor.	Check the [Pr. PA01] setting. Rotary servo motor: "_ _ 0 _" Linear servo motor: "_ _ 4 _" Direct drive motor: "_ _ 6 _"	The combination is incorrect.	Set [Pr. PA01] correctly.	[B] [WB]

Alarm No.: 1E		Name: Encoder initial communication error 2					
Alarm content		• An encoder is malfunctioning.					
Display	Detail name	Cause	Check method	Check result	Action	Target	
1E.1	Encoder malfunction	(1)	An encoder is malfunctioning.	Replace the servo motor, and then check the repeatability.	It is not repeatable.	Replace the servo motor.	[A] [B] [WB]
				It is repeatable.	Check (2).		
		(2)	Something near the device caused it.	Check the noise, ambient temperature, vibration, etc.	It has a failure.	Take countermeasures against its cause.	

1. TROUBLESHOOTING

Alarm No.: 1F		Name: Encoder initial communication error 3					
Alarm content		▪ The connected encoder is not compatible with the servo amplifier.					
Display	Detail name	Cause	Check method	Check result	Action	Target	
1F.1	Incompatible encoder	(1)	A servo motor or linear encoder, which is not compatible with the servo amplifier, was connected.	Check the model the servo motor/linear encoder.	It is not compatible with the servo amplifier.	Replace it with a compatible one.	[A] [B] [WB]
					It is compatible with the servo amplifier.	Check (2).	
		(2)	The software version of the servo amplifier does not support the servo motor or linear encoder.	Check if the software version supports the servo motor/linear encoder.	It is not supported.	Replace the servo amplifier to one which software version supports the servo motor/linear encoder.	
					It is supported.	Check (3).	
		(3)	An encoder is malfunctioning.	Replace the servo motor or linear encoder, and then check the repeatability.	It is not repeatable.	Replace the servo motor or linear encoder.	
					It is repeatable.	Replace the servo amplifier.	

1. TROUBLESHOOTING

Alarm No.: 20		Name: Encoder normal communication error 1				
Alarm content		▪ Communication error occurred between encoder and servo amplifier.				
Display	Detail name	Cause	Check method	Check result	Action	Target
20.1	Encoder normal communication - Receive data error 1	(1) An encoder cable is malfunctioning.	Check if the encoder cable is disconnected or shorted.	It has a failure.	Repair or replace the cable.	[A] [B] [WB]
				It has no failure.	Check (2).	
		(2) The servo amplifier is malfunctioning.	Replace the servo amplifier, and then check the repeatability.	It is not repeatable.	Replace the servo amplifier.	
				It is repeatable.	Check (3).	
		(3) An encoder is malfunctioning.	Replace the servo motor or linear encoder, and then check the repeatability.	It is not repeatable.	Replace the servo motor or linear encoder.	
				It is repeatable.	Check (4).	
		(4) Something near the device caused it.	Check the noise, ambient temperature, vibration, etc.	It has a failure.	Take countermeasures against its cause.	
		20.2	Encoder normal communication - Receive data error 2	Check it with the check method for [AL. 20.1].		
20.3	Encoder normal communication - Receive data error 3					
20.5	Encoder normal communication - Transmission data error 1					
20.6	Encoder normal communication - Transmission data error 2					
20.7	Encoder normal communication - Transmission data error 3					
20.9	Encoder normal communication - Receive data error 4					
20.A	Encoder normal communication - Receive data error 5					

1. TROUBLESHOOTING

Alarm No.: 21		Name: Encoder normal communication error 2					
Alarm content		• The encoder detected an error signal.					
Display	Detail name	Cause	Check method	Check result	Action	Target	
21.1	Encoder data error 1	(1)	The encoder detected a high speed/acceleration rate due to an oscillation or other factors.	Decrease the loop gain, and then check the repeatability.	It is not repeatable.	Use the encoder with low loop gain.	[A] [B] [WB]
					It is repeatable.		
		(2)	An encoder is malfunctioning.	Replace the servo motor, and then check the repeatability.	It is not repeatable.	Replace the servo motor.	
					It is repeatable.		
		(3)	Something near the device caused it.	Check the noise, ambient temperature, vibration, etc.	It has a failure.	Take countermeasures against its cause.	
		21.2	Encoder data update error	(1)	An encoder is malfunctioning.	Replace the servo motor, and then check the repeatability.	
It is repeatable.	Check (2).						
(2)	Something near the device caused it.			Check the noise, ambient temperature, etc.	It has a failure.	Take countermeasures against its cause.	
21.3	Encoder data waveform error	Check it with the check method for for [AL. 21.2].					
21.4	Encoder non-signal error	(1)	A signal of the linear encoder has not been inputted.	Check if the linear encoder cable is wired correctly.	It has a failure.	Review the wiring.	[B] [WB]
					It has no failure.		
		(2)	Something near the device caused it.	Check the noise, ambient temperature, etc.	It has a failure.	Take countermeasures against its cause.	
21.5	Encoder hardware error 1	Check it with the check method for [AL. 21.2].					
21.6	Encoder hardware error 2						
21.9	Encoder data error 2	Check it with the check method for [AL. 21.1].					

1. TROUBLESHOOTING

Alarm No.: 24		Name: Main circuit error					
Alarm content		<ul style="list-style-type: none"> • A ground fault occurred on the servo motor power lines. • A ground fault occurred at the servo motor. 					
Display	Detail name	Cause	Check method	Check result	Action	Target	
24.1	Ground fault detected by hardware detection circuit	(1)	The servo amplifier is malfunctioning.	Disconnect the servo motor power cables (U, V, and W) and check if the alarm occurs.	It occurs.	Replace the servo amplifier.	[A] [B] [WB]
				It does not occur.	Check (2).		
		(2)	A ground fault or short occurred at the servo motor power cable.	Check if only the servo motor power cable is shorted.	It is shorted.	Replace the servo motor power cable.	
				It is not shorted.	Check (3).		
		(3)	A ground fault occurred at the servo motor.	Disconnect the servo motor power cables on motor side, and check insulation of the motor (between U, V, W, and \ominus).	It is shorted.	Replace the servo motor.	
					It is not shorted.	Check (4).	
		(4)	The main circuit power supply cable and servo motor power cable were shorted.	Shut off the power, and check if the main circuit power supply cable and servo motor power cable are in contact.	They are in contact.	Correct the wiring.	
					They are not in contact.	Check (5).	
		(5)	Something near the device caused it.	Check the noise, ambient temperature, etc.	It has a failure.	Take countermeasures against its cause.	
		24.2	Ground fault detected by software detection function	Check it with the check method for [AL. 24.1].			

1. TROUBLESHOOTING

Alarm No.: 25		Name: Absolute position erased						
Alarm content		<ul style="list-style-type: none"> • Absolute position data in error • Power was switched on for the first time in the absolute position detection system. 						
Display	Detail name	Cause	Check method	Check result	Action	Target		
25.1	Servo motor encoder - Absolute position erased	(1)	Power was switched on for the first time in the absolute position detection system.	Check if this is the first time in the absolute position detection system.	This is the first time.	Check that the battery is mounted, and make home position return.	[A] [B] [WB]	
					This is not the first time.	Check (2).		
		(2)	The battery was removed (replaced) when the control circuit power supply was off.	Check if the battery was removed (changed) when the control circuit power supply was off.	It was removed.	Check that the battery is mounted, and make home position return.		
					It was not removed.	Check (3).		
		(3)	The battery voltage is low. The battery is consumed.	Check the battery voltage with a tester.	It is less than DC 3.0 V.	Replace the battery.		
					It is DC 3.0 V or more.	Check (4).		
		(4)	The voltage drop of the battery cable is large.	Check if a recommended wire is used.	It is not used.	Use a recommended wire.		
					It is used.	Check (5).		
		(5)	A battery cable is malfunctioning.	Check for the loose connection with a tester.	It has a failure.	Replace the battery cable.		
					It has no failure.	Check (6).		
		(6)	There is a loose connection of the encoder cable on the servo motor side.	Check for the loose connection with a tester. Measure the voltage on the servo motor side.	It has a failure.	Repair or replace the encoder cable.		
					It has no failure.	Check (7).		
		(7)	The absolute position storage unit was not connected for using a direct drive motor.	Check if the absolute position storage unit is connected correctly.	It is not connected.	Connect the absolute position storage unit correctly.		[B] [WB]
					It is connected.	Check (8).		
		(8)	The servo amplifier is malfunctioning.	Replace the servo amplifier, and then check the repeatability.	It is not repeatable.	Replace the servo amplifier.		[A] [B] [WB]
					It is repeatable.	Check (9).		
		(9)	An encoder is malfunctioning.	Replace the servo motor, and then check the repeatability.	It is not repeatable.	Replace the servo motor.		

1. TROUBLESHOOTING

Alarm No.: 27		Name: Initial magnetic pole detection error					
Alarm content		▪ The initial magnetic pole detection was not completed properly.					
Display	Detail name	Cause	Check method	Check result	Action	Target	
27.1	Magnetic pole detection - Abnormal termination	(1)	A moving part collided against the machine.	Check if it collided.	It collided.	Move the start position of the magnetic pole detection.	[B] [WB]
					It did not collide.	Check (2).	
		(2)	The wiring of the servo motor power cable is incorrect.	Check if the wiring of the servo motor power cable is correct.	It has a failure.	Correct the wiring.	
					It has no failure.	Check (3).	
		(3)	The linear encoder resolution setting differs from the setting value.	Check the setting of [Pr. PL02] and [Pr. PL03].	The setting is incorrect.	Set it correctly.	
					The setting is correct.	Check (4).	
		(4)	The direction of mounting linear encoder is incorrect.	Check polarities of the linear encoder and the linear servo motor.	The mounting direction is incorrect.	Mount it correctly.	
					The mounting direction is correct.	Check (5).	
		(5)	The magnetic pole detection voltage level is small.	Check if the travel distance during the magnetic pole detection is too short (for a position detection method).	It is too short.	Increase it with the [Pr. PL09] setting.	
					The travel distance is too long or a vibration is occurring.	Review the [Pr. PL17] setting.	
27.2	Magnetic pole detection - Time out error	(1)	Only one of the limit switches of FLS/RLS is on.	Check the limit switches.	It has a failure.	Remove the cause. Move the start position of the magnetic pole detection.	
					It has no failure.	Check (2).	
		(2)	The magnetic pole detection voltage level is small.	Check if the travel distance during the magnetic pole detection is too short (for a position detection method).	It is too short.	Increase it with the [Pr. PL09] setting.	
27.3	Magnetic pole detection - Limit switch error	(1)	Both of the limit switches of FLS/RLS are on during the magnetic pole detection.	Check the limit switches.	Both of them are off.	Turn on the limit switches.	
27.4	Magnetic pole detection - Estimated error	Check it with the check method for [AL. 27.1].					
27.5	Magnetic pole detection - Position deviation error						
27.6	Magnetic pole detection - Speed deviation error						
27.7	Magnetic pole detection - Current error						

1. TROUBLESHOOTING

Alarm No.: 28		Name: Linear encoder error 2				
Alarm content		▪ Working environment of linear encoder is not normal.				
Display	Detail name	Cause	Check method	Check result	Action	Target
28.1	Linear encoder - Environment error	(1)	The ambient temperature of the linear encoder is out of specifications.	Check the ambient temperature of the linear encoder.	It is out of specifications.	Lower the temperature. Contact the linear encoder manufacturer.
					It is within specifications.	
		(2)	The signal level of the linear encoder has dropped.	Check the mounting condition of the linear encoder.	It has a failure.	Correct the mounting method of the linear encoder.

Alarm No.: 2A		Name: Linear encoder error 1				
Alarm content		▪ An error of the linear encoder was detected. (The details differ depending on the linear encoder manufacturer.)				
Display	Detail name	Cause	Check method	Check result	Action	Target
2A.1	Linear encoder error 1-1	(1)	Mounting condition of the linear encoder and head is failure.	Adjust the positions of the scale and head, and then check the repeatability.	It is not repeatable.	Use the equipment at the adjusted position.
					It is repeatable.	
		(2)	Something near the device caused it.	Check the noise, ambient temperature, vibration, etc.	It has a failure.	Take countermeasures against its cause.
					It has no failure.	
(3)	An alarm of the linear encoder was detected.	Check the content of the alarm detail list of the Linear Encoder Instruction Manual.	Remove its cause described in the instruction manual.	Contact each encoder manufacturer for how to deal with it.		
2A.2	Linear encoder error 1-2	Check it with the check method for [AL. 2A.1].				
2A.3	Linear encoder error 1-3					
2A.4	Linear encoder error 1-4					
2A.5	Linear encoder error 1-5					
2A.6	Linear encoder error 1-6					
2A.7	Linear encoder error 1-7					
2A.8	Linear encoder error 1-8					

1. TROUBLESHOOTING

Alarm No.: 2B		Name: Encoder counter error				
Alarm content		▪ Data which encoder created is failure.				
Display	Detail name	Cause	Check method	Check result	Action	Target
2B.1	Encoder counter error 1	(1) An encoder cable is malfunctioning.	Check if the encoder cable is disconnected or shorted.	It has a failure. It has no failure.	Repair or replace the cable. Check (2).	[B] [WB]
		(2) Something near the device caused it.	Check the noise, ambient temperature, vibration, etc.	It has a failure. It has no failure.	Take countermeasures against its cause. Check (3).	
		(3) An encoder is malfunctioning.	Replace the direct drive motor, and then check the repeatability.	It is not repeatable.	Replace the direct drive motor.	
2B.2	Encoder counter error 2	Check it with the check method for [AL. 2B.1].				

Alarm No.: 30		Name: Regenerative error				
Alarm content		▪ Permissible regenerative power of the built-in regenerative resistor or regenerative option is exceeded. ▪ A regenerative transistor in the servo amplifier is malfunctioning.				
Display	Detail name	Cause	Check method	Check result	Action	Target
30.1	Regeneration heat error	(1) The setting of the regenerative resistor (regenerative option) is incorrect.	Check the regenerative resistor (regenerative option) and [Pr. PA02] setting.	The setting value is incorrect.	Set it correctly.	[A] [B] [WB]
				It is set correctly.	Check (2).	
		(2) The regenerative resistor (regenerative option) is not connected.	Check if the regenerative resistor (regenerative option) is connected correctly.	It is not connected correctly.	Connect it correctly.	
				It is connected correctly.	Check (3).	
(3) Power supply voltage high.	Check the input power supply voltage.	It is 240 V AC or more.	Reduce the power supply voltage.			
		It is less than 240 V AC.	Check (4).			
(4) The regenerative load ratio has been over 100%.	Check the regenerative load ratio when alarm occurs.	It is 100% or more.	Reduce the frequency of positioning. Reduce the load. Use a regenerative option if not being using. Review the regenerative option capacity.			
30.2	Regeneration signal error	(1) A detection circuit of the servo amplifier is malfunctioning.	Check if the regenerative resistor (regenerative option) is overheating.	It is overheating abnormally.	Replace the servo amplifier.	
30.3	Regeneration feedback signal error	(1) A detection circuit of the servo amplifier is malfunctioning.	Remove the regenerative option or built-in regenerative resistor and then check if the alarm occur at power on.	The alarm occurs.	Replace the servo amplifier.	
				The alarm does not occur.	Check (2).	
		(2) Something near the device caused it.	Check the noise, ground fault, ambient temperature, etc.	It has a failure.	Take countermeasures against its cause.	

1. TROUBLESHOOTING

Alarm No.: 31		Name: Overspeed					
Alarm content		<ul style="list-style-type: none"> The servo motor speed has exceeded the permissible instantaneous speed. The linear servo motor speed has exceeded the permissible instantaneous speed. 					
Display	Detail name	Cause	Check method	Check result	Action	Target	
31.1	Abnormal motor speed	(1)	The command pulse frequency is high.	Check the command pulse frequency.	The command pulse frequency is high.	Check operation pattern.	[A]
					The command pulse frequency is low.	Check (3).	
		(2)	The command from the controller is excessive.	Check if the command from the controller is over the permissible speed.	It is over the permissible speed.	Check operation pattern.	[B] [WB]
					It is less than the permissible speed.	Check (3).	
		(3)	A larger speed command than the overspeed alarm level was inputted.	Check that the actual motor speed is higher than the setting value of [Pr. PC08 Overspeed alarm detection level].	The motor speed is higher than the overspeed alarm detection level.	Review the [Pr. PC08] setting.	
					The motor speed is lower than the overspeed alarm level.	Check (4).	
		(4)	The servo motor was at the maximum torque (maximum thrust) at the time of acceleration.	Check if the torque (thrust) at the time of acceleration is the maximum torque (maximum thrust).	It is the maximum torque (maximum thrust).	Increase the acceleration/deceleration time constant. Or reduce the load.	[A] [B] [WB]
					It is less than the maximum torque (maximum thrust).	Check (5).	
		(5)	The servo system is unstable and oscillating.	Check if the servo motor is oscillating.	It is oscillating.	Adjust the servo gain. Or reduce the load.	
					It is not oscillating.	Check (6).	
		(6)	The velocity waveform has overshoot.	Check if it is overshooting because the acceleration time constant is too short.	It is overshooting.	Increase the acceleration/deceleration time constant.	
					It is not overshooting.	Check (7).	
		(7)	The connection destination of the encoder cable is incorrect.	Check the connection destinations of CN2A, CN2B, and CN2C.	It is not correct.	Wire it correctly.	[WB]
					It is correct.	Check (8).	
		(8)	The encoder or linear encoder is malfunctioning.	Check if the alarm is occurring during less than permissible instantaneous speed.	It is occurring during less than permissible instantaneous speed.	Replace the servo motor or linear encoder.	[A] [B] [WB]

1. TROUBLESHOOTING

Alarm No.: 32		Name: Overcurrent					
Alarm content		• Current that flew is higher than the permissible current of the servo amplifier.					
Display	Detail name	Cause	Check method	Check result	Action	Target	
32.1	Overcurrent detected at hardware detection circuit (during operation)	(1)	The servo amplifier is malfunctioning.	Disconnect the servo motor power cables (U, V, and W) and check if the alarm occurs.	It occurs.	Replace the servo amplifier.	[A] [B] [WB]
					It does not occur.	Check (2).	
		(2)	A ground fault or short occurred at the servo motor power cable.	Check if only the servo motor power cable is shorted.	It is shorted.	Replace the servo motor power cable.	
					It is not shorted.	Check (3).	
		(3)	The servo motor is malfunctioning.	Disconnect the servo motor power cables on motor side, and check insulation of the motor (between U, V, W, and \ominus).	A ground fault is occurring.	Replace the servo motor.	
					A ground fault is not occurring.	Check (4).	
		(4)	The dynamic brake is malfunctioning.	Check if the error occurs when you turn on the servo-on command.	It occurs.	Replace the servo amplifier.	
					It does not occur.	Check (5).	
		(5)	The connection destination of the encoder cable is incorrect.	Check the connection destinations of CN2A, CN2B, and CN2C.	It is not correct.	Wire it correctly.	[WB]
					It is correct.	Check (6).	
		(6)	Something near the device caused it.	Check the noise, ambient temperature, etc.	It has a failure.	Take countermeasures against its cause.	[A] [B] [WB]

1. TROUBLESHOOTING

Alarm No.: 32		Name: Overcurrent						
Alarm content		▪ Current that flew is higher than the permissible current of the servo amplifier.						
Display	Detail name	Cause	Check method	Check result	Action	Target		
32.2	Overcurrent detected at software detection function (during operation)	(1)	The servo gain is high.	Check if an oscillation is occurring.	An oscillation is occurring.	Reduce the speed loop gain ([Pr. PB09]).	[A] [B] [WB]	
					An oscillation is not occurring.	Check (2).		
		(2)	The servo amplifier is malfunctioning.	Disconnect the servo motor power cables (U, V, and W) and check if the alarm occurs.	It occurs.	Replace the servo amplifier.		
					It does not occur.	Check (3).		
		(3)	A ground fault or short occurred at the servo motor power cable.	Check if only the servo motor power cable is shorted.	It is shorted.	Replace the servo motor power cable.		
					It is not shorted.	Check (4).		
		(4)	The servo motor is malfunctioning.	Disconnect the servo motor power cables on motor side, and check insulation of the motor (between U, V, W, and \oplus).	A ground fault is occurring.	Replace the servo motor.		
					A ground fault is not occurring.	Check (5).		
		(5)	The connection destination of the encoder cable is incorrect.	Check the connection destinations of CN2A, CN2B, and CN2C.	It is not correct.	Connect it correctly.		[WB]
					It is correct.	Check (6).		
		(6)	Something near the device caused it.	Check the noise, ambient temperature, etc.	It has a failure.	Take countermeasures against its cause.		[A] [B] [WB]
		32.3	Overcurrent detected at hardware detection circuit (during a stop)	Check it with the check method for [AL. 32.1].				
32.4	Overcurrent detected at software detection function (during a stop)	Check it with the check method for [AL. 32.2].						

1. TROUBLESHOOTING

Alarm No.: 33		Name: Overvoltage					
Alarm content		▪ The value of the bus voltage exceeded 400 V DC.					
Display	Detail name	Cause	Check method	Check result	Action	Target	
33.1	Main circuit voltage error	(1)	The setting of the regenerative resistor (regenerative option) is incorrect.	Check the regenerative resistor (regenerative option) and [Pr. PA02] setting.	The setting value is incorrect.	Set it correctly.	[A] [B] [WB]
					It is set correctly.	Check (2).	
		(2)	The regenerative resistor (regenerative option) is not connected.	Check if the regenerative resistor (regenerative option) is connected correctly.	It is not connected correctly.	Connect it correctly.	
					It is connected correctly.	Check (3).	
		(3)	Wire breakage of built-in regenerative resistor or regenerative option	Measure the resistance of the built-in regenerative resistor or regenerative option.	The resistance is abnormal.	When using a built-in regenerative resistor, replace the servo amplifier. When using a regenerative option, replace the regenerative option.	
					The resistance is normal.	Check (4).	
		(4)	The regeneration capacity is insufficient.	Set a larger deceleration time constant, and then check the repeatability.	It is not repeatable.	When using a built-in regenerative resistor, use a regenerative option. When using a regenerative option, use a larger capacity one.	
					It is repeatable.	Check (5).	
		(5)	Power supply voltage high.	Check the input voltage.	It is over 264 V AC.	Reduce the input voltage.	
					It is 264 V AC or less.	Check (6).	
		(6)	Something near the device caused it.	Check the noise, ambient temperature, etc.	It has a failure.	Take countermeasures against its cause.	

1. TROUBLESHOOTING

Alarm No.: 34		Name: SSCNET receive error 1					
Alarm content		• An error occurred in SSCNET III/H communication. (continuous communication error with 3.5 ms interval)					
Display	Detail name	Cause	Check method	Check result	Action	Target	
34.1	SSCNET receive data error	(1)	The SSCNET III cable is disconnected.	Check the SSCNET III cable connection.	It is disconnected.	Turn off the control circuit power supply of the servo amplifier, and then connect the SSCNET III cable.	[B] [WB]
					It is connected.	Check (2).	
		(2)	The surface at the end of SSCNET III cable got dirty.	Wipe off the dirt from the cable tip, and then check the repeatability.	It is not repeatable.	Take measure to keep the cable tip clean.	
					It is repeatable.	Check (3).	
		(3)	The SSCNET III cable is broken or severed.	Check if the SSCNET III cable is malfunctioning.	It has a failure.	Replace the SSCNET III cable.	
					It has no failure.	Check (4).	
		(4)	A vinyl tape is stacked to the SSCNET III cable. Or a wire insulator containing migrating plasticizer is adhered to the cable.	Check if a vinyl tape is used. Check if the cable is contacting with other cables.	It is used. They are in contact.	Take countermeasures against its cause.	
					It is not used. They are not in contact.	Check (5).	
		(5)	The servo amplifier is malfunctioning.	Replace the servo amplifier, and then check the repeatability.	It is not repeatable.	Replace the servo amplifier.	
					It is repeatable.	Check (6).	
		(6)	The previous or next axis servo amplifier of the alarm occurred is malfunctioning.	Replace the previous and next servo amplifier of the alarm occurred axis, and then check the repeatability.	It is not repeatable.	Replace the servo amplifier.	
					It is repeatable.	Check (7).	
		(7)	The controller is malfunctioning.	Replace the controller, and then check the repeatability.	It is not repeatable.	Replace the controller.	
					It is repeatable.	Check (8).	
		(8)	Something near the device caused it.	Check the noise, ambient temperature, etc.	It has a failure.	Take countermeasures against its cause.	
		34.2	SSCNET connector connection error	Check it with the check method for [AL. 34.1].			
34.3	SSCNET communication data error						
34.4	Hardware error signal detection						

1. TROUBLESHOOTING

Alarm No.: 35		Name: Command frequency error					
Alarm content		▪ Input pulse frequency of command pulse is too high.					
Display	Detail name	Cause	Check method	Check result	Action	Target	
35.1	Command frequency error	(1)	The command pulse frequency is high.	Check the command pulse frequency.	The command pulse frequency is high.	Check operation pattern.	[A]
					The command pulse frequency is low.	Check (4).	
		(2)	The command from the controller is excessive.	Check if the command from the controller is over the permissible speed.	It is over the permissible speed.	Check operation pattern.	[B] [WB]
					It is less than the permissible speed.	Check (3).	
		(3)	The controller is malfunctioning.	Replace the controller, and then check the repeatability.	It is not repeatable.	Replace the controller.	
					It is repeatable.	Check (4).	
		(4)	Something near the device caused it.	Check the noise, ambient temperature, etc.	It has a failure.	Take countermeasures against its cause.	[A] [B] [WB]

1. TROUBLESHOOTING

Alarm No.: 36		Name: SSCNET receive error 2					
Alarm content		<ul style="list-style-type: none"> An error occurred in SSCNET III/H communication. (intermittent communication error with about 70 ms interval) 					
Display	Detail name	Cause	Check method	Check result	Action	Target	
36.1	Continuous communication data error	(1)	The SSCNET III cable is disconnected.	Check the SSCNET III cable connection.	It is disconnected.	Turn off the control circuit power supply of the servo amplifier, and then connect the SSCNET III cable.	[B] [WB]
					It is connected.	Check (2).	
		(2)	The surface at the end of SSCNET III cable got dirty.	Wipe off the dirt from the cable tip, and then check the repeatability.	It is not repeatable.	Take measure to keep the cable tip clean.	
					It is repeatable.	Check (3).	
		(3)	The SSCNET III cable is broken or severed.	Check if the SSCNET III cable is malfunctioning.	It has a failure.	Replace the SSCNET III cable.	
					It has no failure.	Check (4).	
		(4)	A vinyl tape is stacked to the SSCNET III cable. Or a wire insulator containing migrating plasticizer is adhered to the cable.	Check if a vinyl tape is used. Check if the cable is contacting with other cables.	It is used. They are in contact.	Take countermeasures against its cause.	
					It is not used. They are not in contact.	Check (5).	
		(5)	The servo amplifier is malfunctioning.	Replace the servo amplifier, and then check the repeatability.	It is not repeatable.	Replace the servo amplifier.	
					It is repeatable.	Check (6).	
		(6)	The previous or next axis servo amplifier of the alarm occurred is malfunctioning.	Replace the previous and next servo amplifier of the alarm occurred axis, and then check the repeatability.	It is not repeatable.	Replace the servo amplifier.	
					It is repeatable.	Check (7).	
		(7)	The controller is malfunctioning.	Replace the controller, and then check the repeatability.	It is not repeatable.	Replace the controller.	
					It is repeatable.	Check (8).	
		(8)	Something near the device caused it.	Check the noise, ambient temperature, etc.	It has a failure.	Take countermeasures against its cause.	

1. TROUBLESHOOTING

Alarm No.: 37		Name: Parameter error					
Alarm content		▪ Parameter setting is incorrect.					
Display	Detail name	Cause	Check method	Check result	Action	Target	
37.1	Parameter setting range error	(1)	A parameter was set out of setting range.	Check the parameter error No. and setting value.	It is out of setting range.	Set it within the range.	[A]
				It is within the setting range.	Check (2).		
		(2)	The parameter setting has changed due to a servo amplifier malfunction.	Check the parameter error No. and setting value of the servo parameter of the controller.	It is out of setting range.	Set it within the range.	[B] [WB]
				It is within the setting range.	Check (2).		
37.2	Parameter combination error	(1)	A parameter setting contradicts another.	Check the parameter error No. and setting value.	A setting value is incorrect.	Correct the setting value.	[A]
				Check the parameter error No. and setting value of the servo parameter of the controller.	A setting value is incorrect.	Correct the setting value.	[B] [WB]

Alarm No.: 3A		Name: Inrush current suppression circuit error				
Alarm content		▪ The inrush current suppression circuit error was detected.				
Display	Detail name	Cause	Check method	Check result	Action	Target
3A.1	Inrush current suppression circuit error	(1) Inrush current suppressor circuit faulty.	Replace the servo amplifier, and then check the repeatability.	It is not repeatable.	Replace the servo amplifier.	[A] [B] [WB]

Alarm No.: 3E		Name: Operation mode error				
Alarm content		▪ The operation mode setting was changed.				
Display	Detail name	Cause	Check method	Check result	Action	Target
3E.1	Operation mode error	(1) The MR-J4 servo amplifier used in J3 compatibility mode was connected to the other SSCNET III/H controller. Or a MR-J4 servo amplifier which was connected another SSCNET III/H controller was connected to the SSCNET III controller.	Check if the connection was changed to like these.	It is changed.	Initialize the servo amplifier with the built-in application software "MR-J4(W)-B mode selection" of MR Configurator2, and then connect the amplifier to the controller.	[B] [WB]
		(2) The [Pr. PA01] setting value was changed.	Check if [Pr. PA01] was changed.	It is changed.	Set [Pr. PA01] correctly.	

1. TROUBLESHOOTING

Alarm No.: 42		Name: Servo control error					
Alarm content		• A servo control error occurred.					
Display	Detail name	Cause	Check method	Check result	Action	Target	
42.1	Servo control error by position deviation	(1)	The linear encoder resolution setting differs from the setting value.	Check the setting of [Pr. PL02] and [Pr. PL03].	The setting is incorrect.	Set it correctly.	[B] [WB]
					The setting is correct.	Check (2).	
		(2)	The direction of mounting linear encoder is incorrect.	Check polarities of the linear encoder and the linear servo motor.	The mounting direction is incorrect.	Mount it correctly.	
					The mounting direction is correct.	Check (3).	
		(3)	The connection of the servo motor is incorrect.	Check the wiring.	The wiring is incorrect.	Connect it correctly.	
					The wiring is correct.	Check (4).	
		(4)	The initial magnetic pole detection was not executed.	Execute the magnetic pole detection, and then check the repeatability.	It is not repeatable.	Execute the magnetic pole detection.	
					It is repeatable.	Check (5).	
		(5)	The position deviation exceeded the detection level.	Check the value of droop pulses.	The deviation is large.	Review the operation status. Review the [Pr. PL05] setting depending on circumstances.	
		42.2	Servo control error by speed deviation	(1)	The linear encoder resolution setting differs from the setting value.	Check the setting of [Pr. PL02] and [Pr. PL03].	
The setting is correct.	Check (2).						
(2)	The direction of mounting linear encoder is incorrect.			Check polarities of the linear encoder and the linear servo motor.	The mounting direction is incorrect.	Mount it correctly.	
					The mounting direction is correct.	Check (3).	
(3)	The connection of the servo motor is incorrect.			Check the wiring.	The wiring is incorrect.	Connect it correctly.	
					The wiring is correct.	Check (4).	
(4)	The initial magnetic pole detection was not executed.			Execute the magnetic pole detection, and then check the repeatability.	It is not repeatable.	Execute the magnetic pole detection.	
					It is repeatable.	Check (5).	
(5)	The speed deviation exceeded the detection level.			Calculate the deviation between the speed command and actual speed.	The deviation is large.	Review the operation status. Review the [Pr. PL06] setting depending on circumstances.	

1. TROUBLESHOOTING

Alarm No.: 42		Name: Servo control error					
Alarm content		• A servo control error occurred.					
Display	Detail name	Cause	Check method	Check result	Action	Target	
42.3	Servo control error by torque/thrust deviation	(1)	The linear encoder resolution setting differs from the setting value.	Check the setting of [Pr. PL02] and [Pr. PL03].	The setting is incorrect.	Set it correctly.	[B] [WB]
					The setting is correct.	Check (2).	
		(2)	The direction of mounting linear encoder is incorrect.	Check polarities of the linear encoder and the linear servo motor.	The mounting direction is incorrect.	Mount it correctly.	
					The mounting direction is correct.	Check (3).	
		(3)	The connection of the servo motor is incorrect.	Check the wiring.	The wiring is incorrect.	Connect it correctly.	
					The wiring is correct.	Check (4).	
		(4)	The initial magnetic pole detection was not executed.	Execute the magnetic pole detection, and then check the repeatability.	It is not repeatable.	Execute the magnetic pole detection.	
					It is repeatable.	Check (5).	
		(5)	The torque deviation exceeded the detection level.	Calculate the deviation between the current command and torque.	The deviation is large.	Review the operation status. Review the [Pr. PL07] setting depending on circumstances.	

1. TROUBLESHOOTING

Alarm No.: 45		Name: Main circuit device overheat					
Alarm content		▪ Inside of the servo amplifier overheated.					
Display	Detail name	Cause	Check method	Check result	Action	Target	
45.1	Main circuit device overheat error	(1)	Ambient temperature has exceeded 55 °C.	Check the ambient temperature.	It is over 55 °C.	Lower the ambient temperature.	[A] [B] [WB]
					It is less than 55 °C.	Check (2).	
		(2)	The close mounting is out of specifications.	Check the specifications of close mounting.	It is out of specifications.	Use within the range of specifications.	
					It is within specifications.	Check (3).	
		(3)	Turning on and off were repeated under the overload status.	Check if the overload status occurred many times.	It occurred.	Check operation pattern.	
					It did not occur.	Check (4).	
		(4)	A cooling fan, heat sink, or openings is clogged with foreign matter.	Clean the cooling fan, heat sink, or openings, and then check the repeatability.	It is not repeatable.	Clean it periodically.	
					It is repeatable.	Check (5).	
		(5)	The servo amplifier is malfunctioning.	Replace the servo amplifier, and then check the repeatability.	It is not repeatable.	Replace the servo amplifier.	

1. TROUBLESHOOTING

Alarm No.: 46		Name: Servo motor overheat					
Alarm content		▪ The servo motor overheated.					
Display	Detail name	Cause	Check method	Check result	Action	Target	
46.1	Abnormal temperature of servo motor 1	(1)	Ambient temperature of the servo motor has exceeded 40 °C.	Check the ambient temperature of the servo motor.	It is over 40 °C.	Lower the ambient temperature.	[A] [B] [WB]
					It is less than 40 °C.	Check (2).	
		(2)	Servo motor is overloaded.	Check the effective load ratio.	The effective load ratio is large.	Reduce the load or review the operation pattern.	
					The effective load ratio is small.	Check (3).	
(3)	The thermal sensor in the encoder is malfunctioning.	Check the servo motor temperature when the alarm occurs.	The servo motor temperature is low.	Replace the servo motor.			
46.2	Abnormal temperature of servo motor 2	(1)	Ambient temperature of the linear servo motor or direct drive motor has exceeded 40 °C.	Check the ambient temperature of the linear servo motor or direct drive motor.	It is over 40 °C.	Lower the ambient temperature.	[B] [WB]
					It is less than 40 °C.	Check (2).	
		(2)	The linear servo motor or direct drive motor has been under overload status.	Check the effective load ratio.	The effective load ratio is large.	Reduce the load or review the operation pattern.	
(3)	The thermal sensor in the encoder is malfunctioning.	Check the servo motor temperature when the alarm occurs.	The servo motor temperature is low.	Replace the servo motor.			
46.3	Thermistor disconnected	(1)	A thermistor wire is not connected.	Check the thermistor wire.	It is not connected.	Connect it correctly.	
					It is connected.	Check (2).	
		(2)	The thermistor wire is disconnected.	Check the thermistor wire.	It is disconnected.	Repair the lead wire.	
It is not disconnected.	Replace the servo motor.						
46.5	Abnormal temperature of servo motor 3	Check it with the check method for [AL. 46.1].				[A] [B] [WB]	
46.6	Abnormal temperature of servo motor 4	(1)	A current was applied to the servo amplifier in excess of its continuous output current.	Check the effective load ratio.	The effective load ratio is high.	Reduce the load or review the operation pattern. Or use a larger capacity motor.	

1. TROUBLESHOOTING

Alarm No.: 47		Name: Cooling fan error					
Alarm content		<ul style="list-style-type: none"> ▪ The speed of the servo amplifier cooling fan decreased. ▪ Or the fan speed decreased to the alarm occurrence level or less. 					
Display	Detail name	Cause	Check method	Check result	Action	Target	
47.1	Cooling fan stop error	(1)	Foreign matter was caught in the cooling fan.	Check if a foreign matter is caught in the cooling fan.	Something has been caught.	Remove the foreign matter.	[A] [B] [WB]
					Nothing has been caught.	Check (2).	
		(2)	Cooling fan life expired.	Check if the cooling fan is stopping.	It is stopping.	Replace the servo amplifier.	
47.2	Cooling fan speed reduction error	(1)	Foreign matter was caught in the cooling fan.	Check if a foreign matter is caught in the cooling fan.	Something has been caught.	Remove the foreign matter.	
					Nothing has been caught.	Check (2).	
		(2)	Cooling fan life expired.	Check the cooling fan speed.	The fan speed is less than the alarm occurrence level.	Replace the servo amplifier.	

1. TROUBLESHOOTING

Alarm No.: 50		Name: Overload 1					
Alarm content		▪ Load exceeded overload protection characteristic of servo amplifier.					
Display	Detail name	Cause	Check method	Check result	Action	Target	
50.1	Thermal overload error 1 during operation	(1)	The servo motor power cable was disconnected.	Check the servo motor power cable.	It is disconnected.	Repair or replace the servo motor power cable.	[A] [B] [WB]
					It is not disconnected.	Check (2).	
		(2)	The connection of the servo motor is incorrect.	Check the wiring of U, V, and W.	It is incorrect.	Connect it correctly.	[A] [B] [WB]
					It is correct.	Check (3).	
		(3)	The electromagnetic brake has not released. (The electromagnetic brake has been activated.)	Check if the electromagnetic brake is released during operation.	It is not released.	Release the electromagnetic brake.	[A] [B] [WB]
					It is released.	Check (4).	
		(4)	A current was applied to the servo amplifier in excess of its continuous output current.	Check the effective load ratio.	The effective load ratio is high.	Reduce the load. Or use a larger capacity motor.	[A] [B] [WB]
					The effective load ratio is small.	Check (5).	
		(5)	The connection destination of the encoder cable is incorrect.	Check the connection destinations of CN2A, CN2B, and CN2C.	It is not correct.	Connect it correctly.	[A] [B] [WB]
					It is correct.	Check (6).	
		(6)	The servo system is unstable and resonating.	Check if it is resonating.	It is resonating.	Adjust gains.	[A] [B] [WB]
					It is not resonating.	Check (7).	
		(7)	The servo amplifier is malfunctioning.	Replace the servo amplifier, and then check the repeatability.	It is not repeatable.	Replace the servo amplifier.	[A] [B] [WB]
					It is repeatable.	Check (8).	
(8)	The encoder or linear encoder is malfunctioning.	Replace the servo motor or linear encoder, and then check the repeatability.	It is not repeatable.	Replace the servo motor or linear encoder.	[A] [B] [WB]		
50.2	Thermal overload error 2 during operation	Check it with the check method for [AL. 50.1].					
50.3	Thermal overload error 4 during operation						

1. TROUBLESHOOTING

Alarm No.: 50		Name: Overload 1						
Alarm content		▪ Load exceeded overload protection characteristic of servo amplifier.						
Display	Detail name	Cause	Check method	Check result	Action	Target		
50.4	Thermal overload error 1 during a stop	(1)	A moving part collided against the machine.	Check if it collided.	It collided.	Check operation pattern.	[A] [B] [WB]	
					It did not collide.	Check (2).		
		(2)	The servo motor power cable was disconnected.	Check the servo motor power cable.	It is disconnected.	Repair or replace the servo motor power cable.		
					It is not disconnected.	Check (3).		
		(3)	Hunting occurs during servo-lock.	Check if the hunting is occurring.	The hunting is occurring.	Adjust gains.		
					The hunting is not occurring.	Check (4).		
		(4)	The electromagnetic brake has not released. (The electromagnetic brake has been activated.)	Check if the electromagnetic brake is released.	It is not released.	Release the electromagnetic brake.		
					It is released.	Check (5).		
		(5)	A current was applied to the servo amplifier in excess of its continuous output current.	Check the effective load ratio.	The effective load ratio is high.	Reduce the load. Or use a larger capacity motor.		
					The effective load ratio is small.	Check (6).		
		(6)	The connection destination of the encoder cable is incorrect.	Check the connection destinations of CN2A, CN2B, and CN2C.	It is not correct.	Connect it correctly.		[WB]
					It is correct.	Check (7).		
		(7)	The servo system is unstable and resonating.	Check if it is resonating.	It is resonating.	Adjust gains.		[A] [B] [WB]
					It is not resonating.	Check (8).		
		(8)	The servo amplifier is malfunctioning.	Replace the servo amplifier, and then check the repeatability.	It is not repeatable.	Replace the servo amplifier.		
It is repeatable.	Check (9).							
(9)	The encoder or linear encoder is malfunctioning.	Replace the servo motor or linear encoder, and then check the repeatability.	It is not repeatable.	Replace the servo motor or linear encoder.				
50.5	Thermal overload error 2 during a stop	Check it with the check method for [AL. 50.4].						
50.6	Thermal overload error 4 during a stop							

1. TROUBLESHOOTING

Alarm No.: 51		Name: Overload 2							
Alarm content		▪ Maximum output current flowed continuously due to machine collision or the like.							
Display	Detail name	Cause	Check method	Check result	Action	Target			
51.1	Thermal overload error 3 during operation	(1)	The servo motor power cable was disconnected.	Check the servo motor power cable.	It is disconnected.	Repair or replace the servo motor power cable.	[A] [B] [WB]		
					It is not disconnected.	Check (2).			
		(2)	The connection of the servo motor is incorrect.	Check the wiring of U, V, and W.	It is incorrect.	Connect it correctly.			
					It is correct.	Check (3).			
		(3)	The connection of the encoder cable is incorrect.	Check if the encoder cable is connected correctly.	It is incorrect.	Connect it correctly.			
					It is correct.	Check (4).			
		(4)	The torque is insufficient.	Check the peak load ratio.	The torque is saturated.	Reduce the load or review the operation pattern. Or use a larger capacity motor.			
					The torque is not saturated.	Check (5).			
		(5)	The servo amplifier is malfunctioning.	Replace the servo amplifier, and then check the repeatability.	It is not repeatable.	Replace the servo amplifier.			
					It is repeatable.	Check (6).			
		(6)	An encoder is malfunctioning.	Replace the servo motor, and then check the repeatability.	It is not repeatable.	Replace the servo motor.			
		51.2	Thermal overload error 3 during a stop	(1)	A moving part collided against the machine.	Check if it collided.		It collided.	Check operation pattern.
								It did not collide.	Refer to (2).
				(2)	The servo motor power cable was disconnected.	Check it with the check method for [AL. 50.1].			
(3)	The connection of the servo motor is incorrect.								
(4)	The connection of the encoder cable is incorrect.								
(5)	The torque is saturated.								
(6)	The servo amplifier is malfunctioning.								
(7)	An encoder is malfunctioning.								

1. TROUBLESHOOTING

Alarm No.: 52		Name: Error excessive					
Alarm content		• Droop pulses have exceeded the alarm occurrence level.					
Display	Detail name	Cause	Check method	Check result	Action	Target	
52.1	Excess droop pulse 1	(1)	The servo motor power cable was disconnected.	Check the servo motor power cable.	It is disconnected.	Repair or replace the servo motor power cable.	[A] [B] [WB]
					It is not disconnected.	Check (2).	
		(2)	The connection of the servo motor is incorrect.	Check the wiring of U, V, and W.	It is incorrect.	Connect it correctly.	
					It is correct.	Check (3).	
		(3)	The connection of the encoder cable is incorrect.	Check if the encoder cable is connected correctly.	It is incorrect.	Connect it correctly.	
					It is correct.	Check (4).	
		(4)	The torque limit has been enabled.	Check if the limiting torque is in progress.	The limiting torque is in progress.	Increase the torque limit value.	
					The limiting torque is not in progress.	Check (5).	
		(5)	A moving part collided against the machine.	Check if it collided.	It collided.	Check operation pattern.	
					It did not collide.	Check (6).	
		(6)	The torque is insufficient.	Check the peak load ratio.	The torque is saturated.	Reduce the load or review the operation pattern. Or use a larger capacity motor.	
The torque is not saturated.	Check (7).						
(7)	Power supply voltage dropped.	Check the bus voltage value.	The bus voltage is low.	Check the power supply voltage and power supply capacity.			
			The bus voltage is high.	Check (8).			
(8)	Acceleration/deceleration time constant is too short.	Set a longer deceleration time constant, and then check the repeatability.	It is not repeatable.	Increase the acceleration/deceleration time constant.			
			It is repeatable.	Check (9).			
(9)	The position loop gain is small.	Increase the position loop gain, and then check the repeatability.	It is not repeatable.	Increase the position loop gain ([Pr. PB08]).			
			It is repeatable.	Check (10).			
(10)	Servo motor shaft was rotated by external force.	Measure the actual position under the servo-lock status.	It is rotated by external force.	Review the machine.			
			It is not rotated by external force.	Check (11).			
(11)	An encoder is malfunctioning.	Replace the servo motor, and then check the repeatability.	It is not repeatable.	Replace the servo motor.			
52.3	Excess droop pulse 2	Check it with the check method for [AL. 52.1].					
52.4	Error excessive during 0 torque limit	(1)	The torque limit has been 0.	Check the torque limit value.	The torque limit has been 0.	Do not input a command while the torque limit value is 0.	[A] [B] [WB]
52.5	Excess droop pulse 3	Check it with the check method for [AL. 52.1].					

1. TROUBLESHOOTING

Alarm No.: 54		Name: Oscillation detection					
Alarm content		• An oscillation of the servo motor was detected.					
Display	Detail name	Cause	Check method	Check result	Action	Target	
54.1	Oscillation detection error	(1)	The servo system is unstable and oscillating.	Check if the servo motor is oscillating. Check the torque ripple with MR Configurator2.	The torque ripple is vibrating.	Adjust the servo gain with the auto tuning. Set the machine resonance suppression filter.	[A] [B] [WB]
					The torque ripple is not vibrating.	Check (2).	
		(2)	The resonance frequency has changed due to deterioration.	Measure the resonance frequency of the equipment and compare it with the setting value of the machine resonance suppression filter.	The resonance frequency of the equipment is different from the filter setting value.	Change the setting value of the machine resonance suppression filter.	
					The resonance frequency of the equipment is the same as the filter setting value.	Check (3).	
		(3)	The encoder or liner encoder is malfunctioning.	Replace the servo motor or linear encoder, and then check the repeatability.	It is not repeatable.	Replace the servo motor or linear encoder.	

1. TROUBLESHOOTING

Alarm No.: 56		Name: Forced stop error							
Alarm content		▪ The servo motor does not decelerate normally during forced stop deceleration.							
Display	Detail name	Cause	Check method	Check result	Action	Target			
56.2	Over speed during forced stop	(1)	The forced stop deceleration time constant value is short. Type A: [Pr. PC51] Type B: [Pr. PC24]	Increase the parameter setting value, and then check the repeatability.	It is not repeatable.	Adjust the deceleration time constant.	[A] [B] [WB]		
					It is repeatable.	Check (2).			
		(2)	The torque limit has been enabled.	Check if the limiting torque is in progress.	The limiting torque is in progress.	Review the torque limit value.			
					The limiting torque is not in progress.	Check (3).			
		(3)	The servo system is unstable and oscillating.	Check if the servo motor is oscillating. Check the torque ripple with MR Configurator2.	The torque ripple is vibrating.	Adjust the servo gain. Set the machine resonance suppression filter.			
					The torque ripple is not vibrating.	Check (4).			
		(4)	The encoder or liner encoder is malfunctioning.	Replace the servo motor or linear encoder, and then check the repeatability.	It is not repeatable.	Replace the servo motor or linear encoder.			
		56.3	Estimated distance over during forced stop	(1)	The forced stop deceleration time constant value is short. Type A: [Pr. PC51] Type B: [Pr. PC24]	Increase the parameter setting value, and then check the repeatability.		It is not repeatable.	Adjust the deceleration time constant.
								It is repeatable.	Check (2).
				(2)	The torque limit has been enabled.	Check if the limiting torque is in progress.		The limiting torque is in progress.	Review the torque limit value.
								The limiting torque is not in progress.	Check (3).
				(3)	The encoder or liner encoder is malfunctioning.	Replace the servo motor or linear encoder, and then check the repeatability.		It is not repeatable.	Replace the servo motor or linear encoder.

1. TROUBLESHOOTING

Alarm No.: 63		Name: STO timing error				
Alarm content		• STO was activated during motor driving.				
Display	Detail name	Cause	Check method	Check result	Action	Target
63.1	STO1 off	(1) STO1 was turned off under the following speed conditions. 1) Servo motor speed: 50 r/min or more 2) Linear servo motor speed: 50 mm/s or more 3) Direct drive motor speed: 5 r/min or more	Check if STO1 is off.	It is off.	Turn on STO1.	[A] [B] [WB]
63.2	STO2 off	(1) STO2 was turned off under the following speed conditions. 1) Servo motor speed: 50 r/min or more 2) Linear servo motor speed: 50 mm/s or more 3) Direct drive motor speed: 5 r/min or more	Check if STO2 is off.	It is off.	Turn on STO2.	

Alarm No.: 8A		Name: USB communication time-out error/serial communication time-out error					
Alarm content		• Communication between the servo amplifier and a personal computer stopped for the specified time or longer.					
Display	Detail name	Cause	Check method	Check result	Action	Target	
8A.1	USB communication time-out error/serial communication time-out error	(1)	Communication commands have not been transmitted.	Check if a command was transmitted from the personal computer.	It was not transmitted.	Transmit a command.	[A] [B] [WB]
					It was transmitted.	Check (2).	
		(2)	A USB cable is disconnected.	Replace the USB cable, and then check the repeatability.	It is not repeatable.	Replace the USB cable.	
					It is repeatable.	Check (3).	
(3)	The servo amplifier is malfunctioning.	Replace the servo amplifier, and then check the repeatability.	It is not repeatable.	Replace the servo amplifier.			

1. TROUBLESHOOTING

Alarm No.: 8E		Name: USB communication error/serial communication error					
Alarm content		• The USB communication error occurred between servo amplifier and a personal computer.					
Display	Detail name	Cause	Check method	Check result	Action	Target	
8E.1	USB communication receive error	(1)	A USB cable is malfunctioning.	Check the USB cable, and then check the repeatability.	It is not repeatable.	Replace the USB cable.	[A] [B] [WB]
					It is repeatable.	Check (2).	
		(2)	The setting of the personal computer is incorrect.	Check the setting of the personal computer.	It is incorrect.	Review the settings.	
					It is correct.	Check (3).	
		(3)	The servo amplifier is malfunctioning.	Replace the servo amplifier, and then check the repeatability.	It is not repeatable.	Replace the servo amplifier.	
		8E.2	USB communication checksum error	(1)	The setting of the personal computer is incorrect.	Check the setting of the personal computer.	
8E.3	USB communication character error	(1)	The transmitted character is out of specifications.	Check the character code at the time of transmission.	The transmitted character is out of specifications.	Correct the transmission data.	
					The transmitted character is within specifications.	Check (2).	
					(2)	The communication protocol is failure.	Check if transmission data conforms the communication protocol.
		It is conforming.	Check (3).				
		(3)	The setting of the personal computer is incorrect.	Check the setting of the personal computer.	It is incorrect.	Review the settings.	
		8E.4	USB communication command error	(1)	The transmitted command is out of specifications.	Check the command at the time of transmission.	The transmitted command is out of specifications.
The transmitted command is within specifications.	Check (2).						
(2)	The communication protocol is failure.						Check if transmission data conforms the communication protocol.
				It is conforming.	Check (3).		
(3)	The setting of the personal computer is incorrect.			Check the setting of the personal computer.	It is incorrect.	Review the settings.	
8E.5	USB communication data number error			(1)	The transmitted data number is out of specifications.	Check the data number at the time of transmission.	The transmitted data number is out of specifications.
		The transmitted data number is within specifications.	Check (2).				
		(2)	The communication protocol is failure.				Check if transmission data conforms the communication protocol.
				It is conforming.	Check (3).		
		(3)	The setting of the personal computer is incorrect.	Check the setting of the personal computer.	It is incorrect.	Review the settings.	