

General-Purpose AC Servo

MITSUBISHI SERVO AMPLIFIERS & MOTORS

MELSERVO-J4

MELSERVO-J4 Servo amplifier

INSTRUCTION MANUAL TROUBLE SHOOTING

● Safety Instructions ●

Please read the instructions carefully before using the equipment.

To use the equipment correctly, do not attempt to install, operate, maintain, or inspect the equipment until you have read through this Instruction Manual, Installation guide, and appended documents carefully. Do not use the equipment until you have a full knowledge of the equipment, safety information and instructions. In this Instruction Manual, the safety instruction levels are classified into "WARNING" and "CAUTION".




Indicates that incorrect handling may cause hazardous conditions, resulting in death or severe injury.




Indicates that incorrect handling may cause hazardous conditions, resulting in medium or slight injury to personnel or may cause physical damage.

Note that the CAUTION level may lead to a serious consequence according to conditions. Please follow the instructions of both levels because they are important to personnel safety. What must not be done and what must be done are indicated by the following diagrammatic symbols.



Indicates what must not be done. For example, "No Fire" is indicated by .



Indicates what must be done. For example, grounding is indicated by .

In this Instruction Manual, instructions at a lower level than the above, instructions for other functions, and so on are classified into "POINT".

After reading this Instruction Manual, keep it accessible to the operator.

1. To prevent electric shock, note the following

WARNING

- Before wiring or inspection, turn off the power and wait for 15 minutes or more until the charge lamp turns off. Then, confirm that the voltage between P+ and N- is safe with a voltage tester and others. Otherwise, an electric shock may occur. In addition, when confirming whether the charge lamp is off or not, always confirm it from the front of the servo amplifier.
- Do not operate switches with wet hands. Otherwise, it may cause an electric shock.

2. To prevent fire, note the following

CAUTION

- When you use a MR-J4 multi-axis servo amplifier, connecting an encoder for different axis to the CN2A, CN2B, or CN2C connector may cause a fire.

3. To prevent injury, note the following

CAUTION

- The servo amplifier heat sink, regenerative resistor, servo motor, etc. may be hot while power is on or for some time after power-off. Take safety measures, e.g. provide covers, to prevent accidental contact of hands and parts (cables, etc.) with them.

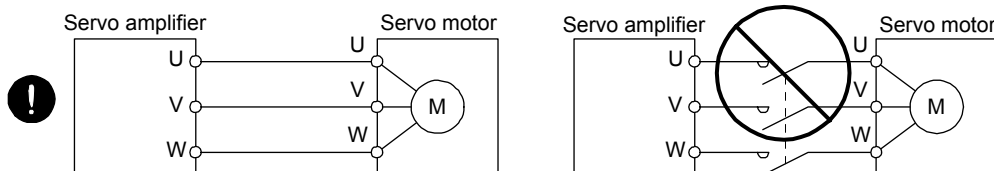
4. Additional instructions

The following instructions should also be fully noted. Incorrect handling may cause a malfunction, injury, electric shock, etc.

(1) Wiring

CAUTION

- Wire the equipment correctly and securely. Otherwise, the servo motor may operate unexpectedly.
- To avoid a malfunction, connect the wires to the correct phase terminals (U, V, and W) of the servo amplifier and servo motor.
- Connect the servo amplifier power output (U, V, and W) to the servo motor power input (U, V, and W) directly. Do not let a magnetic contactor, etc. intervene. Otherwise, it may cause a malfunction.



(2) Usage

⚠ CAUTION

- Before resetting an alarm, make sure that the run signal of the servo amplifier is off in order to prevent a sudden restart. Otherwise, it may cause an accident.
- Use the servo amplifier with the specified servo motor.

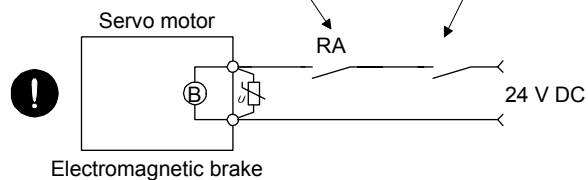
(3) Corrective actions

⚠ CAUTION

- When it is assumed that a hazardous condition may occur due to a power failure or product malfunction, use a servo motor with an electromagnetic brake or external brake to prevent the condition.
- Configure an electromagnetic brake circuit so that it is activated also by an external EMG stop switch.

Contacts must be opened when CALM (Common malfunction) or MBR (Electromagnetic brake interlock) turns off.

Contacts must be opened with the EMG stop switch.



- When any alarm has occurred, eliminate its cause, ensure safety, and deactivate the alarm before restarting operation.
- Provide an adequate protection to prevent unexpected restart after an instantaneous power failure.

«About the manual»

This Instruction Manual covers the following models.

- MR-J4-_A/MR-J4-_A4/MR-J4-_A-RJ/MR-J4-_A4-RJ
- MR-J4-_B/MR-J4-_B4/MR-J4-_B-RJ/MR-J4-_B4-RJ
- MR-J4W_-_B
- MR-J4-_B-RJ010 + MR-J3-T10

The symbols in the target column mean as follows.

MR-J4-_A/MR-J4-_A4/MR-J4-_A-RJ/MR-J4-_A4-RJ: [A]

MR-J4-_B/MR-J4-_B4/MR-J4-_B-RJ/MR-J4-_B4-RJ: [B]

MR-J4W_-_B: [WB]

MR-J4-_B-RJ010 + MR-J3-T10: [RJ010]

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1. TROUBLESHOOTING

1. TROUBLESHOOTING

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 No.	Detail name	
Alarm	10	Undervoltage	10.1	Voltage drop in the control circuit 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	
		17.8	Board error 6 (Note)	
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	
		1E.2	Load-side encoder malfunction	

1. TROUBLESHOOTING

No.	Name	Detail No.	Detail name	
Alarm	1F	Encoder initial communication error 3	1F.1 Incompatible encoder	
			1F.2 Incompatible load-side encoder	
	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
			25.2	Scale measurement 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
	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	

1. TROUBLESHOOTING

	No.	Name	Detail No.	Detail name
Alarm	3A	Inrush current suppression circuit error	3A.1	Inrush current suppression circuit error
	3D	Parameter setting error for driver communication	3D.1	Parameter combination error for driver communication on slave
			3D.2	Parameter combination error for driver communication on master
	3E	Operation mode error	3E.1	Operation mode error
	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
		Fully closed loop control error	42.8	Fully closed loop control error by position deviation
			42.9	Fully closed loop control error by speed deviation
			42.A	Fully closed loop control error by position deviation (during command stop)
	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 error
			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
	70	Load-side encoder initial communication error 1	70.1	Load-side encoder initial communication - Receive data error 1
70.2			Load-side encoder initial communication - Receive data error 2	
70.3			Load-side encoder initial communication - Receive data error 3	
70.5			Load-side encoder initial communication - Transmission data error 1	
70.6			Load-side encoder initial communication - Transmission data error 2	
70.7			Load-side encoder initial communication - Transmission data error 3	
70.A			Load-side encoder initial communication - Process error 1	
70.B			Load-side encoder initial communication - Process error 2	
70.C			Load-side encoder initial communication - Process error 3	
70.D			Load-side encoder initial communication - Process error 4	
70.E			Load-side encoder initial communication - Process error 5	
70.F	Load-side encoder initial communication - Process error 6			

1. TROUBLESHOOTING

No.	Name	Detail No.	Detail name	
Alarm	71	Load-side encoder normal communication error 1	71.1	Load-side encoder communication - Receive data error 1
			71.2	Load-side encoder communication - Receive data error 2
			71.3	Load-side encoder communication - Receive data error 3
			71.5	Load-side encoder communication - Transmission data error 1
			71.6	Load-side encoder communication - Transmission data error 2
			71.7	Load-side encoder communication - Transmission data error 3
			71.9	Load-side encoder communication - Transmission data error 4
			71.A	Load-side encoder communication - Transmission data error 5
	72	Load-side encoder normal communication error 2	72.1	Load-side encoder data error 1
			72.2	Load-side encoder data update error
			72.3	Load-side encoder data waveform error
			72.4	Load-side encoder non-signal error
			72.5	Load-side encoder hardware error 1
			72.6	Load-side encoder hardware error 2
			72.9	Load-side encoder data error 2
	74	Option card error 1	74.1	Option card error 1
			74.2	Option card error 2
			74.3	Option card error 3
			74.4	Option card error 4
			74.5	Option card error 5
	75	Option card error 2	75.3	Option card connection error
			75.4	Option card disconnected
	82	Master-slave operation error 1	82.1	Master-slave operation error 1
	8A	USB communication time-out error/Serial communication time-out error	8A.1	USB communication time-out error/Serial communication time-out error
	8D	CC-Link IE communication error	8D.1	CC-Link IE communication error 1
			8D.2	CC-Link IE communication error 2
			8D.3	Master station setting error 1
			8D.5	Master station setting error 2
			8D.6	CC-Link IE communication error 3
			8D.7	CC-Link IE communication error 4
			8D.8	CC-Link IE communication error 5
			8D.9	Synchronization error 1
			8D.A	Synchronization error 2
8E			USB communication error/Serial communication error	8E.1
	8E.2	USB communication checksum error/Serial communication checksum error		
	8E.3	USB communication character error/Serial communication character error		
	8E.4	USB communication command error/Serial communication command error		
	8E.5	USB communication data number error/Serial communication data number error		
888/ 88888	Watchdog	88_/ 8888_	Watchdog	

Note. This alarm will occur only in the J3 compatibility mode.

1. TROUBLESHOOTING

No.	Name	Detail No.	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
	93	ABS data transfer warning	93.1 ABS data transfer requirement warning during magnetic pole detection
	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
			96.4 Home positioning warning during magnetic pole detection
	99	Stroke limit warning	99.1 Forward rotation stroke end off
			99.2 Reverse rotation stroke end off
	9D	CC-Link IE warning 1	9D.1 Station number switch change warning
			9D.2 Master station setting warning
			9D.3 Overlapping station number warning
			9D.4 Mismatched station number warning
	9E	CC-Link IE warning 2	9E.1 CC-Link IE communication warning
	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 warning 1 during a stop
			E1.6 Thermal overload warning 2 during a stop
			E1.7 Thermal overload warning 3 during a stop
			E1.8 Thermal overload warning 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 Absolute position counter warning
			E3.5 Encoder absolute positioning 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	
		E8.2 Cooling fan stop	
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	

1. TROUBLESHOOTING

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]
- [AL. 37 Parameter error] is not recorded in the alarm history.

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

1. TROUBLESHOOTING

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. 					
Detail No.	Detail name	Cause	Check method	Check result	Action	Target	
10.1	Voltage drop in the control circuit 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] [RJ010]
					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 prescribed value. 200 V amplifier: 160 V AC or less 400 V amplifier: 280 V AC or less	The voltage is the prescribed value or lower.	Review the voltage of the control circuit power supply.	
					The voltage is higher than the prescribed value.	Check (3).	
		(3)	The power was cycled before the internal control circuit power supply stopped.	Check the power-on method if it has a problem.	It has a problem.	Cycle the power after the seven-segment LED of the servo amplifier is turned off.	
It does not have a problem.	Check (4).						
(4)	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 disconnected.	Connect it correctly.	
					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 the prescribed value or lower. 200 V amplifier: 160 V AC or less 400 V amplifier: 280 V AC or less	The voltage is the prescribed value or lower.	Increase the voltage of the main circuit power supply.	
					The voltage is higher than the prescribed value.	Check (3).	
		(3)	The alarm has occurred during acceleration.	Check that the bus voltage during acceleration is the prescribed value or more. 200 V amplifier: 200 V DC or less 400 V amplifier: 380 V DC or less	The voltage is lower than the prescribed value.	Increase the acceleration time constant. Or increase the power supply capacity.	
The voltage is the prescribed value or higher.	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. 200 V amplifier: 200 V DC or less 400 V amplifier: 380 V DC or less	Replace the servo amplifier.			

1. TROUBLESHOOTING

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. 					
Detail No.	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 (SW2-5 and SW2-6) and axis selection rotary switch (SW1).	When both of the auxiliary axis number setting switches are on, check the axis selection rotary switch if "F" 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.	Set it correctly.	
					<ol style="list-style-type: none"> 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. 5) All axes are set disabled. 		
				The setting is other than above.	Replace the servo amplifier.		

Alarm No.: 12		Name: Memory error 1 (RAM)					
Alarm content		• A part (RAM) in the servo amplifier is failure.					
Detail No.	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] [RJ010]
				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						

1. TROUBLESHOOTING

Alarm No.: 13		Name: Clock error					
Alarm content		<ul style="list-style-type: none"> • [RJ010]: MR-J3-T10 came off. • A part in the servo amplifier is failure. • A clock error transmitted from the controller occurred. 					
Detail No.	Detail name	Cause	Check method	Check result	Action	Target	
13.1	Clock error 1	(1)	The MR-J3-T10 came off during the CC-Link IE communication.	Check if [AL. 74 Option card error 1] occurred with alarm history.	It occurred.	Check it with the check method for [AL. 74].	[RJ010]
				It did not occur.	Check (2).		
		(2)	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] [RJ010]
					It is not repeatable.	Check (3).	
		(3)	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 (4).	
		(4)	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.	[A] [B] [WB] [RJ010]
					It is not malfunctioning.	Check (5).	
		(5)	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] [RJ010]
		13.2	Clock error 2	Check it with the check method for [AL. 13.1].			

Alarm No.: 14		Name: Control process error					
Alarm content		<ul style="list-style-type: none"> • [RJ010]: MR-J3-T10 came off. • The process did not complete within the specified time. 					
Detail No.	Detail name	Cause	Check method	Check result	Action	Target	
14.1	Control process error 1	(1)	The MR-J3-T10 came off during the CC-Link IE communication.	Check if [AL. 74 Option card error 1] occurred with alarm history.	It occurred.	Check it with the check method for [AL. 74].	[RJ010]
				It did not occur.	Check (2).		
		(2)	The parameter setting is incorrect.	Check if the parameter setting is incorrect.	It is incorrect.	Set it correctly.	[A] [B] [WB] [RJ010]
					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.	[A] [B] [WB] [RJ010]
					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.	[A] [B] [WB] [RJ010]

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Alarm No.: 14		Name: Control process error					
Alarm content		<ul style="list-style-type: none"> • [RJ010]: MR-J3-T10 came off. • The process did not complete within the specified time. 					
Detail No.	Detail name	Cause	Check method	Check result	Action	Target	
14.2	Control process error 2	(1)	The MR-J3-T10 came off during the CC-Link IE communication.	Check if [AL. 74 Option card error 1] occurred with alarm history.	It occurred.	Check it with the check method for [AL. 74].	[RJ010]
					It did not occur.	Check (2).	
		(2)	A synchronous signal error transmitted from the controller occurred.	Replace the controller, and then check the repeatability.	It is repeatable.	Replace the servo amplifier.	[B] [WB]
					It is not repeatable.	Check (3).	
		(3)	Adaptive tuning mode ([Pr. PB01]) or vibration suppression control tuning mode ([Pr. PB02]) has been executed for multiple axes simultaneously.	Check the setting of [Pr. PB01] or [Pr. PB02].	It has been executed for multiple axes simultaneously.	Execute it for each axis.	[WB]
					It has not been executed for multiple axes simultaneously.	Check (4).	
		(4)	The parameter setting is incorrect.	Check if the parameter setting is incorrect.	It is incorrect.	Set it correctly.	[A] [B] [WB] [RJ010]
					It is correct.	Check (5).	
		(5)	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 (6).	
		(6)	The servo amplifier is malfunctioning.	Replace the servo amplifier, and then check the repeatability.	It is not repeatable.	Replace the servo amplifier.	

Alarm No.: 14		Name: Control process error				
Alarm content		<ul style="list-style-type: none"> • The process did not complete within the specified time. 				
Detail No.	Detail name	Cause	Check method	Check result	Action	Target
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					

1. TROUBLESHOOTING

Alarm No.: 15		Name: Memory error 2 (EEP-ROM)					
Alarm content		<ul style="list-style-type: none"> • [RJ010]: MR-J3-T10 came off. • A part (EEP-ROM) in the servo amplifier is failure. 					
Detail No.	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] [RJ010]
					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)	The MR-J3-T10 came off during the CC-Link IE communication.	Check if [AL. 74 Option card error 1] occurred with alarm history.	
It did not occur.	Check (2).						
(2)	EEP-ROM is malfunctioning during normal operation.			Check if the error occurs when you change parameters during normal operation.	It occurs.	Replace the servo amplifier.	[A] [B] [WB] [RJ010]
					It does not occur.	Check (3).	
(3)	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 (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.	

1. TROUBLESHOOTING

Alarm No.: 16		Name: Encoder initial communication error 1					
Alarm content		• Communication error occurred between encoder and servo amplifier.					
Detail No.	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] [RJ010]
					It has no failure.	Check (2).	
		(2)	When you use a linear servo motor with an A/B/Z-phase differential output linear encoder, the servo amplifier is not compatible with the linear encoder.	Check if the servo amplifier (MR-J4-_A(4)-RJ or MR-J4-_B(4)-RJ) is compatible with the A/B/Z-phase differential output linear encoder.	The servo amplifier is not compatible with it.	Use a servo amplifier which is compatible with it.	[A] [B]
					The servo amplifier is compatible with it.	Check (3).	
		(3)	When you use a linear servo motor with an A/B/Z-phase differential output linear encoder, the connection with the linear encoder is incorrect.	Check if the wiring of the linear encoder is correct. (Check if it is wired to PSEL.)	The wiring is incorrect.	Wire it correctly.	
					The wiring is correct.	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.	[A] [B] [WB] [RJ010]
					It is repeatable.	Check (5).	
		(5)	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 (6).	
		(6)	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.					
Detail No.	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 (SW2-2, SW2-3 and SW2-4).	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]
					It is connected.	Check (3).	[B] [WB] [RJ010]
		(3)	The parameter setting of two-wire type/four-wire type is incorrect. [A]: [Pr. PC22] [B] [WB] [RJ010]: [Pr. PC04]	Check the parameter setting.	The setting is incorrect.	Set it correctly.	[RJ010]
					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.	[RJ010]
					It has no failure.	Check (5).	
		(5)	When you use a linear servo motor with an A/B/Z-phase differential output linear encoder, the connection with the linear encoder is incorrect.	Check if the wiring of the linear encoder is correct. (Check if it is wired to PSEL.)	The wiring is incorrect.	Wire it correctly.	[A]
					The wiring is correct.	Check (6).	[B]
		(6)	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.	[A]
					It has no failure.	Check (7).	[B] [WB] [RJ010]
		(7)	The servo amplifier is malfunctioning.	Replace the servo amplifier, and then check the repeatability.	It is not repeatable.	Replace the servo amplifier.	[RJ010]
It is repeatable.	Check (8).						
(8)	An encoder is malfunctioning.	Replace the servo motor, and then check the repeatability.	It is not repeatable.	Replace the servo motor.	[RJ010]		
			It is repeatable.	Check (9).			
(9)	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						

1. TROUBLESHOOTING

Alarm No.: 16		Name: Encoder initial communication error 1					
Alarm content		• Communication error occurred between encoder and servo amplifier.					
Detail No.	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] [RJ010]
					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						

Alarm No.: 17		Name: Board error					
Alarm content		• A part in the servo amplifier is malfunctioning.					
Detail No.	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] [RJ010]
					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.	
					Check it with the check method for [AL. 17.1].		
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 axis selection 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.	

1. TROUBLESHOOTING

Alarm No.: 17		Name: Board error					
Alarm content		• A part in the servo amplifier is malfunctioning.					
Detail No.	Detail name	Cause	Check method	Check result	Action	Target	
17.6	Board error 5	(1)	The setting value of the control axis setting switch (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.	[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.	
17.8	Board error 6	(1)	Inrush current suppressor circuit is malfunctioning.	Replace the servo amplifier, and then check the repeatability.	It is not repeatable.	Replace the servo amplifier.	

Alarm No.: 19		Name: Memory error 3 (Flash-ROM)					
Alarm content		• A part (Flash-ROM) in the servo amplifier is failure.					
Detail No.	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] [RJ010]
					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.						
Detail No.	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] [RJ010]	
					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.		[A] [B] [WB]
					The combination is correct.	Check (3).		
(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] [RJ010]			
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.	[A] [B] [WB]	

1. TROUBLESHOOTING

Alarm No.: 1E		Name: Encoder initial communication error 2					
Alarm content		• An encoder is malfunctioning.					
Detail No.	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] [RJ010]
				It is repeatable.	Check (2).		
1E.2	Load-side encoder malfunction	(1)	A load-side encoder is malfunctioning.	Replace the load-side encoder, and then check the repeatability.	It is not repeatable.	Replace the load-side encoder.	[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.	

Alarm No.: 1F		Name: Encoder initial communication error 3					
Alarm content		• The connected encoder is not compatible with the servo amplifier.					
Detail No.	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] [RJ010]
				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.	[A] [B] [WB]
				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.	[A] [B] [WB]
				It is repeatable.	Replace the servo amplifier.		
1F.2	Incompatible load-side encoder	(1)	A load-side encoder, which is not compatible with the servo amplifier, was connected.	Check the model of the load-side encoder.	It is not compatible with the servo amplifier.	Use a load-side encoder which is compatible with the servo amplifier.	[A] [B] [WB]
				It is compatible with the servo amplifier.	Check (2).		
		(2)	The software version of the servo amplifier does not support the load-side encoder.	Check if the software version of the servo amplifier supports the load-side encoder.	It is not supported.	Replace the servo amplifier to one which software version supports the load-side encoder.	[A] [B] [WB]
				It is supported.	Check (3).		
		(3)	A load-side encoder is malfunctioning.	Replace the load-side encoder, and then check the repeatability.	It is not repeatable.	Replace the load-side encoder.	[A] [B] [WB]
				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.				
Detail No.	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. When you use an A/B/Z-phase differential output linear encoder, check the wiring of the linear encoder.	It has a failure.	Repair or replace the cable.	[A] [B] [WB] [RJ010]
				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	(1) When you use an A/B/Z-phase differential output linear encoder, the wiring of the linear encoder is incorrect.	Check if the A/B-phase pulse signals (PA, PAR, PB, and PBR) of the encoder cable are disconnected or shorted.	It is disconnected or shorted.	Repair the encoder cable.	[A] [B]
				It is not disconnected or shorted.	Check (2).	
		(2) An encoder cable is malfunctioning.	Check it with the check method for [AL. 20.1]			[A] [B] [WB] [RJ010]
		(3) The servo amplifier is malfunctioning.				
		(4) An encoder is malfunctioning.				
(5) Something near the device caused it.						
20.6	Encoder normal communication - Transmission data error 2	(1) When you use an A/B/Z-phase differential output linear encoder, the wiring of the linear encoder is incorrect.	Check if the Z-phase pulse signals (PZ and PZR) of the encoder cable are disconnected or shorted.	It is disconnected or shorted.	Repair the encoder cable.	[A] [B]
				It is not disconnected or shorted.	Check (2).	
		(2) An encoder cable is malfunctioning.	Check it with the check method for [AL. 20.1].			[A] [B] [WB] [RJ010]
		(3) The servo amplifier is malfunctioning.				
		(4) An encoder is malfunctioning.				
(5) Something near the device caused it.						

1. TROUBLESHOOTING

Alarm No.: 20		Name: Encoder normal communication error 1				
Alarm content		• Communication error occurred between encoder and servo amplifier.				
Detail No.	Detail name	Cause	Check method	Check result	Action	Target
20.7	Encoder normal communication - Transmission data error 3	Check it with the check method for [AL. 20.1].				
20.9	Encoder normal communication - Receive data error 4					
20.A	Encoder normal communication - Receive data error 5					

Alarm No.: 21		Name: Encoder normal communication error 2					
Alarm content		• The encoder detected an error signal.					
Detail No.	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] [RJ010]
					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.	
		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 [AL. 21.2].					
21.4	Encoder non-signal error	(1)	A signal of the encoder has not been inputted.	Check if the encoder cable is wired correctly.	It has a failure.	Review the wiring.	[A] [B] [WB]
					It has no failure.	Check (2).	
		(2)	Something near the device caused it.	Check the noise, ambient temperature, etc.	It has a failure.	Take countermeasures against its cause.	
21.5	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. 					
Detail No.	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] [RJ010]
				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 ⊕).	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"> The absolute position data is faulty. Power was switched on for the first time in the absolute position detection system. After the scale measurement encoder was set to the absolute position detection system, the power was switched on for the first time. 						
Detail No.	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 you switched on the power in the absolute position detection system.	This is the first time.	Check that the battery is mounted correctly, and make home position return.	[A] [B] [WB] [RJ010]	
					This is not the first time.			Check (2).
		(2)	1) When an MR-BAT6V1SET battery or MR-BT6VCASE battery case was used, CN4 of the servo amplifier was disconnected during control circuit power supply off. 2) When an MR-BAT6V1BJ battery for junction battery cable was used, both CN4 of the servo amplifier and MR-BAT6V1BJ battery for junction battery cable are disconnected from the MR-BT6VCBL03M junction battery cable.	Check if the battery was removed in this way when the control circuit power supply was off.	It was removed.	Check that the battery is mounted correctly, and make home position return.		
					It was not removed.			Check (3).
		(3)	1) When an MR-BAT6V1SET battery or MR-BT6VCASE battery case was used, the power was turned off with the battery disconnected from CN4. 2) When an MR-BAT6V1BJ battery for junction battery cable was used, the power was turned off with the battery disconnected from CN4 and MR-BT6VCBL03M junction battery cable.	Check if the power was turned off in this state.	It was turned off.	Check that the battery is mounted correctly, and make home position return.		
					It was not turned off.			When an MR-BAT6V1BJ battery for junction battery cable was used: Check (4). When an MR-BAT6V1SET battery or MR-BT6VCASE battery case was used: Check (6).
		(4)	The encoder cable was disconnected with the MR-BAT6V1BJ battery disconnected from MR-BT6VCBL03M junction battery cable.	Check if the encoder cable was disconnected in this state.	It was disconnected.	Check that the MR-BAT6V1BJ battery is connected to CN4 and MR-BT6VCBL03M junction battery cable, and execute a home position return.		[A] [B] [RJ010]
					It was not disconnected.			

1. TROUBLESHOOTING

Alarm No.: 25		Name: Absolute position erased					
Alarm content		<ul style="list-style-type: none"> The absolute position data is faulty. Power was switched on for the first time in the absolute position detection system. After the scale measurement encoder was set to the absolute position detection system, the power was switched on for the first time. 					
Detail No.	Detail name	Cause	Check method	Check result	Action	Target	
25.1	Servo motor encoder - Absolute position erased	(5)	The MR-BT6VCBL03M junction battery cable is not connected to the encoder cable.	Check if the MR-BT6VCBL03M junction battery cable is connected to the encoder cable.	It is not connected.	Connect the MR-BT6VCBL03M junction battery cable is to the encoder cable.	[A] [B] [RJ010]
					It is connected.	Check (6).	
		(6)	The battery voltage is low. The battery is consumed.	Check the battery voltage with a tester. When an MR-BAT6V1BJ battery for junction battery cable was used, check the voltage of the connector (orange) for servo amplifier.	It is less than 3 V DC.	Replace the battery.	[A] [B] [WB] [RJ010]
					It is 3 V DC or more.	Check (7).	
		(7)	The voltage has dropped greatly in the encoder cable wired to the battery.	Check if a recommended cable is used for the encoder cable.	It is not used.	Use a recommended wire.	
					It is used.	Check (8).	
		(8)	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 (9).	
		(9)	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 (10).	
		(10)	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.	[A] [B] [WB]
					It is connected.	Check (11).	
(11)	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] [RJ010]		
			It is repeatable.	Check (12).			
(12)	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.: 25		Name: Absolute position erased					
Alarm content		<ul style="list-style-type: none"> The absolute position data is faulty. Power was switched on for the first time in the absolute position detection system. After the scale measurement encoder was set to the absolute position detection system, the power was switched on for the first time. 					
Detail No.	Detail name	Cause	Check method	Check result	Action	Target	
25.2	Scale measurement encoder - Absolute position erased	(1)	After the scale measurement encoder was set to the absolute position detection system, the power was switched on for the first time.	Check if this is the first time to switch on the power after the scale measurement encoder was set to the absolute position detection system.	This is the first time.	Check that the battery is mounted correctly, and make home position return.	[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 when the control circuit power supply was off.	It was removed.	Check that the battery is mounted correctly, and make home position return.	
					It was not removed.	Check (3).	
		(3)	The power was turned off with the battery disconnected from CN4.	Check if the power was turned off in this state.	It was turned off.	Check that the battery is mounted correctly, and make home position return.	
					It was not turned off.	Check (4).	
		(4)	The battery voltage is low. The battery is consumed.	Check the battery voltage with a tester.	It is less than 3 V DC.	Replace the battery.	
					It is 3 V DC or more.	Check (5).	
		(5)	The voltage has dropped greatly in the encoder cable wired to the battery.	Check if a recommended cable is used for the encoder cable.	It is not used.	Use a recommended wire.	
					It is used.	Check (6).	
		(6)	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 (7).	
		(7)	There is a loose connection of the encoder cable on the scale measurement encoder side.	Check for the loose connection with a tester. Measure the voltage on the scale measurement encoder side.	It has a failure.	Repair or replace the encoder cable.	
					It has no failure.	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 scale measurement encoder is malfunctioning.	Replace the scale measurement encoder, and then check the repeatability.	It is not repeatable.	Replace the scale measurement encoder.	

1. TROUBLESHOOTING

Alarm No.: 27		Name: Initial magnetic pole detection error					
Alarm content		• The initial magnetic pole detection was not completed properly.					
Detail No.	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.	[A] [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. Review the "encoder pulse count polarity selection" setting of the parameter as required. [A]: [Pr. PC45] [B] [WB]: [Pr. PC27]	
					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.	
				Check if the travel distance during the magnetic pole detection is too long or if a vibration is occurring (for a minute position detection method).	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 is on during magnetic pole detection.	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 are off 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.					
Detail No.	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.	[A] [B] [WB]
					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.)					
Detail No.	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.	[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.	
					It has no failure.	Check (3).	
		(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.					
Detail No.	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.	Repair or replace the cable.	[A] [B] [WB]
				It has no failure.	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.	
				It has no failure.	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.					
Detail No.	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] [RJ010]
				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 higher than the prescribed value. 200 V amplifier: 264 V AC or less 400 V amplifier: 523 V AC or less	Reduce the power supply voltage.	
					It is the prescribed value or lower.	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.	
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. 					
Detail No.	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 (2).	
		(2)	The settings of the electronic gear are incorrect.	Check the setting value of the electronic gear.	The setting value is incorrect.	Review the settings.	[A]
					The setting value is correct.	Check (5).	
		(3)	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] [RJ010]
					It is less than the permissible speed.	Check (4).	
		(4)	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.	[B] [WB] [RJ010]
					The motor speed is lower than the overspeed alarm level.	Check (5).	
		(5)	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] [RJ010]
					It is less than the maximum torque (maximum thrust).	Check (6).	
		(6)	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.	[B] [WB] [RJ010]
					It is not oscillating.	Check (7).	
		(7)	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.	[B] [WB] [RJ010]
					It is not overshooting.	Check (8).	
(8)	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] [RJ010]		
			It is correct.	Check (9).			
(9)	The encoder or liner 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] [RJ010]		

1. TROUBLESHOOTING

Alarm No.: 32		Name: Overcurrent						
Alarm content		• Current that flew is higher than the permissible current of the servo amplifier.						
Detail No.	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] [RJ010]	
					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 ⊕).	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.	[WB]: Check (5). [A] [B] [RJ010]: Check (7).		
		(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] [RJ010]
		(7)	Something near the device caused it.	Check the noise, ambient temperature, etc.	It has a failure.	Take countermeasures against its cause.		
					It has no failure.	Check it with the check method for [AL. 45.1].		
		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.
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 ⊕).	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] [RJ010]	

1. TROUBLESHOOTING

Alarm No.: 32		Name: Overcurrent				
Alarm content		• Current that flew is higher than the permissible current of the servo amplifier.				
Detail No.	Detail name	Cause	Check method	Check result	Action	Target
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].				

Alarm No.: 33		Name: Overvoltage					
Alarm content		<ul style="list-style-type: none"> • The value of the bus voltage exceeded the prescribed value. • 200 V amplifier: 400 V DC or less • 400 V amplifier: 800 V DC or less 					
Detail No.	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] [RJ010]
				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 resistor. 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 higher than the prescribed value. 200 V amplifier: 264 V AC or less 400 V amplifier: 523 V AC or less	Reduce the input voltage.	
					It is the prescribed value or lower.	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)					
Detail No.	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.		
		(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.		
		(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.		
		(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.		
		(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.		
		(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.		
		(7)	The controller is malfunctioning.	Replace the controller, and then check the repeatability.	It is not repeatable.	Replace the controller.	
					It is repeatable.		
(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.					
Detail No.	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 (2).	
		(2)	The setting of "Command input pulse train filter selection" in [Pr. PA13] is not correct.	Check if the command pulse frequency is within the setting range of the filter.	It is out of setting range.	Review the filter setting.	
					It is within the setting range.	Check (5).	
		(3)	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] [RJ010]
					It is less than the permissible speed.	Check (4).	
		(4)	The controller is malfunctioning.	Replace the controller, and then check the repeatability.	It is not repeatable.	Replace the controller.	
					It is repeatable.	Check (5).	
		(5)	Something near the device caused it.	Check the noise, ambient temperature, etc.	It has a failure.	Take countermeasures against its cause.	[A] [B] [WB] [RJ010]

1. TROUBLESHOOTING

Alarm No.: 36		Name: SSCNET receive error 2					
Alarm content		• An error occurred in SSCNET III/H communication. (intermittent communication error with about 70 ms interval)					
Detail No.	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.					
Detail No.	Detail name	Cause	Check method	Check result	Action	Target	
37.1	Parameter setting range error	(1)	A parameter was set for a function not supported by the software version of the servo amplifier.	Check if the software version of the servo amplifier supports the function you want to use.	It is not supported. It is supported.	Replace with the servo amplifier that supports the function you want to use. Check (2).	[A] [B] [WB] [RJ010]
		(2)	A parameter was set out of setting range.	Check the parameter error No. and setting value.	It is out of setting range. It is within the setting range.	Set it within the range. Check (3).	
		(3)	The parameter setting has changed due to a servo amplifier malfunction.	Replace the servo amplifier, and then check the repeatability.	It is not repeatable.	Replace the servo amplifier.	
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. (When the master-slave function is set, also check (2).)	[A] [B] [WB] [RJ010]
		(2)	[Pr. PA01] on the master side was set to other than "standard control mode" or "fully closed loop control mode".	Check the parameter setting.	[Pr. PA01] is set to other than "standard control mode" or "fully closed loop control mode".	Set [Pr. PA01] to "standard control mode" or "fully closed loop control mode".	[B] (master)
					[Pr. PA01] is set to "standard control mode" or "fully closed loop control mode".	Check (4).	
		(3)	[Pr. PA01] on the slave side was set to other than "standard control mode".	Check the parameter setting.	[Pr. PA01] is set to other than "standard control mode".	Set [Pr. PA01] to "standard control mode".	[B] (slave)
[Pr. PA01] is set to "standard control mode".	Check (4).						
(4)	"Forced stop deceleration function selection" in [Pr. PA04] is enabled.	Check the parameter setting.	"Forced stop deceleration function selection" setting in [Pr. PA04] is enabled.	Disable "forced stop deceleration function selection" in [Pr. PA04].	[B] (master) (slave)		

1. TROUBLESHOOTING

Alarm No.: 3A		Name: Inrush current suppression circuit error				
Alarm content		• The inrush current suppression circuit error was detected.				
Detail No.	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] [RJ010]

Alarm No.: 3D		Name: Parameter setting error for driver communication				
Alarm content		• The control parameter setting value for driver communication is incorrect.				
Detail No.	Detail name	Cause	Check method	Check result	Action	Target
3D.1	Parameter combination error for driver communication on the slave side	(1) The master transmit data selection for driver communication is not set correctly.	Check the settings of [Pr. PD16] and [Pr.PD17] on the master side.	The setting is incorrect.	Set it correctly.	[B] (slave)
3D.2	Parameter combination error for driver communication on the master side	Check it with the check method for [AL. 3D.1].				[B] (master)

Alarm No.: 3E		Name: Operation mode error				
Alarm content		• The operation mode setting was changed.				
Detail No.	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.	

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Alarm No.: 42		Name: Servo control error					
Alarm content		• A servo control error occurred.					
Detail No.	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.	[A] [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. Review the "encoder pulse count polarity selection" setting of the parameter as required. [A]: [Pr. PC45] [B] [WB]: [Pr. PC27]	
					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.	

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Alarm No.: 42		Name: Servo control error					
Alarm content		• A servo control error occurred.					
Detail No.	Detail name	Cause	Check method	Check result	Action	Target	
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 incorrect.	Set it correctly.	[A] [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. Review the "encoder pulse count polarity selection" setting of the parameter as required. [A]: [Pr. PC45] [B] [WB]: [Pr. PC27]	
					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.	
		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 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. Review the "encoder pulse count polarity selection" setting of the parameter as required. [A]: [Pr. PC45] [B] [WB]: [Pr. PC27]	
					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/thrust deviation exceeded the detection level.			Calculate the deviation between the current command and torque/thrust.	The deviation is large.	Review the operation status. Review the [Pr. PL07] setting depending on circumstances.	

1. TROUBLESHOOTING

Alarm No.: 42		Name: Fully closed loop control error detection (during fully closed loop control)					
Alarm content		• A fully closed loop control error has occurred.					
Detail No.	Detail name	Cause	Check method	Check result	Action	Target	
42.8	Fully closed loop control error by position deviation	(1)	The resolution of the load-side encoder setting differs from the setting value.	Check the setting of [Pr. PE04] and [Pr. PE05].	The setting is incorrect.	Set it correctly.	[A] [B] [WB]
					The setting is correct.	Check (2).	
		(2)	The direction of mounting load-side encoder is incorrect.	Check the mounting direction of the load-side encoder.	The mounting direction is incorrect.	Mount it correctly. Review the "encoder pulse count polarity selection" setting of the parameter as required. [A]: [Pr. PC45] [B] [WB]: [Pr. PC27]	
					The mounting direction is correct.	Check (3).	
(3)	The position deviation exceeded the detection level.	Check the value of droop pulses.	The deviation is large.	Review the operation status. Review the [Pr. PE07] setting depending on circumstances.			

Alarm No.: 42		Name: Fully closed loop control error detection (during fully closed loop control)					
Alarm content		• A fully closed loop control error has occurred.					
Detail No.	Detail name	Cause	Check method	Check result	Action	Target	
42.9	Fully closed loop control error by speed deviation	(1)	The resolution of the load-side encoder setting differs from the setting value.	Check the setting of [Pr. PE04] and [Pr. PE05].	The setting is incorrect.	Set it correctly.	[A] [B] [WB]
					The setting is correct.	Check (2).	
		(2)	The direction of mounting load-side encoder is incorrect.	Check the mounting direction of the load-side encoder.	The mounting direction is incorrect.	Mount it correctly. Review the "encoder pulse count polarity selection" setting of the parameter as required. [A]: [Pr. PC45] [B] [WB]: [Pr. PC27]	
					The mounting direction is correct.	Check (3).	
(3)	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. PE06] setting depending on circumstances.			
42.A	Fully closed loop control error by position deviation during command stop	Check it with the check method for [AL. 42.8].					

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Alarm No.: 45		Name: Main circuit device overheat					
Alarm content		• Inside of the servo amplifier overheated.					
Detail No.	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] [RJ010]
					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.	

Alarm No.: 46		Name: Servo motor overheat					
Alarm content		• The servo motor overheated.					
Detail No.	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] [RJ010]
					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.	

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Alarm No.: 46		Name: Servo motor overheat					
Alarm content		• The servo motor overheated.					
Detail No.	Detail name	Cause	Check method	Check result	Action	Target	
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.	[A] [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.	
					The effective load ratio is small.	Replace the servo motor.	
46.3	Thermistor disconnected error	(1)	A thermistor wire is not connected.	Check the thermistor wire.	It is not connected.	Connect it correctly.	[A] [B] [WB] [RJ010]
					It is connected.	Check (2).	
		(2)	The encoder cable MR-ENECBL_M-H for HF-JP servo motors is used for the HG-JR22K1M(4) servo motor.	Check the model of the encoder cable.	MR-ENECBL_M-H is used.	Change it to MR-ENECBL_M-H-MTH.	
					MR-ENECBL_M-H-MTH is used.	Check (3).	
		(3)	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] [RJ010]	
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.	[RJ010]

Alarm No.: 47		Name: Cooling fan error					
Alarm content		• The speed of the servo amplifier cooling fan decreased. • Or the fan speed decreased to the alarm occurrence level or less.					
Detail No.	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] [RJ010]
					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.	[A] [B] [WB] [RJ010]
					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.						
Detail No.	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] [RJ010]	
					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 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.		
					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.		
					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.		[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] [RJ010]
					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.				
			It is repeatable.	Check (8).				
(8)	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.				
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.						
Detail No.	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] [RJ010]	
					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] [RJ010]
					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 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.				
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							

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Alarm No.: 51		Name: Overload 2					
Alarm content		• Maximum output current flowed continuously due to machine collision or the like.					
Detail No.	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] [RJ010]
					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 did not collide.	Refer to (2).						
(2)	The servo motor power cable was disconnected.			Check it with the check method for [AL. 51.1].			
(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.						

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Alarm No.: 52		Name: Error excessive					
Alarm content		• Droop pulses have exceeded the alarm occurrence level.					
Detail No.	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] [RJ010]
					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 or the moving part of the linear servo motor was moved by external force.	Measure the actual position under the servo-lock status.	It was rotated by external force or it was moved by external force.	Review the machine.			
			It was not rotated by external force or it was not moved 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] [RJ010]
52.5	Excess droop pulse 3	Check it with the check method for [AL. 52.1].					

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Alarm No.: 54		Name: Oscillation detection					
Alarm content		• An oscillation of the servo motor was detected.					
Detail No.	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] [RJ010]
				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.			

Alarm No.: 56		Name: Forced stop error					
Alarm content		• The servo motor does not decelerate normally during forced stop deceleration.					
Detail No.	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. [A]: [Pr. PC51] [B] [WB] [RJ010]: [Pr. PC24]	Increase the parameter setting value, and then check the repeatability.	It is not repeatable.	Adjust the deceleration time constant.	[A] [B] [WB] [RJ010]
				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.	

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Alarm No.: 56		Name: Forced stop error					
Alarm content		• The servo motor does not decelerate normally during forced stop deceleration.					
Detail No.	Detail name	Cause	Check method	Check result	Action	Target	
56.3	Estimated distance over during forced stop	(1)	The forced stop deceleration time constant value is short. [A]: [Pr. PC51] [B] [WB] [RJ010]: [Pr. PC24]	Increase the parameter setting value, and then check the repeatability.	It is not repeatable.	Adjust the deceleration time constant.	[A] [B] [WB] [RJ010]
					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.	

Alarm No.: 63		Name: STO timing error				
Alarm content		• STO was activated during motor driving.				
Detail No.	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] [RJ010]
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.	

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Alarm No.: 70		Name: Load-side encoder initial communication error 1					
Alarm content		• An error occurs in the communication between the load-side encoder and the servo amplifier.					
Detail No.	Detail name	Cause	Check method	Check result	Action	Target	
70.1	Load-side encoder initial communication - Receive data error 1	(1)	A load-side encoder cable is malfunctioning.	Check if the load-side 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)	When you use an A/B/Z-phase differential output linear encoder, the servo amplifier is not compatible with the linear encoder.	Check if the servo amplifier (MR-J4-_A(4)-RJ or MR-J4-_B(4)-RJ) is compatible with the A/B/Z-phase differential output linear encoder.	The servo amplifier is not compatible with it.	Use a servo amplifier which is compatible with it.	[A] [B]
					The servo amplifier is compatible with it.	Check (3).	
		(3)	When you use an A/B/Z-phase differential output linear encoder, the connection with the linear encoder is incorrect.	Check if the wiring of the linear encoder is correct. (Check if it is wired to PSEL.)	The wiring is incorrect.	Wire it correctly.	[A] [B] [WB]
					The wiring is correct.	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.	[A] [B] [WB]
					It is repeatable.	Check (5).	
		(5)	A load-side encoder is malfunctioning.	Replace the load-side encoder, and then check the repeatability.	It is not repeatable.	Replace the load-side encoder.	[A] [B] [WB]
					It is repeatable.	Check (6).	
		(6)	Something near the device caused it.	Check the noise, ambient temperature, vibration, etc.	It has a failure.	Take countermeasures against its cause.	
		70.2	Load-side encoder initial communication - Receive data error 2	Check it with the check method for [AL. 70.1].			

1. TROUBLESHOOTING

Alarm No.: 70		Name: Load-side encoder initial communication error 1					
Alarm content		• An error occurs in the communication between the load-side encoder and the servo amplifier.					
Detail No.	Detail name	Cause	Check method	Check result	Action	Target	
70.3	Load-side 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 (SW2-2, SW2-3 and SW2-4).	It is not set as disabled-axis.	Set it as disabled-axis.	[WB]
				It is set as disabled-axis.	Check (2).		
		(2)	The load-side encoder cable is malfunctioning.	Check if the load-side encoder cable is connected correctly.	It is not connected correctly.	Connect it correctly.	[A]
					It is connected.	Check (3).	[B]
		(3)	A load-side encoder cable is malfunctioning.	Check if the load-side encoder cable is disconnected or shorted.	It has a failure.	Replace or repair the cable.	[WB]
					It has no failure.	Check (4).	
		(4)	The power voltage has been unstable. (For the load-side encoder with the external power supply input)	Check the power capacity and voltage.	It has a failure.	Review the power and related parts.	[WB]
					It has no failure.	Check (5).	
		(5)	When you use an A/B/Z-phase differential output linear encoder, the connection with the linear encoder is incorrect.	Check if the wiring of the linear encoder is correct. (Check if it is wired to PSEL.)	The wiring is incorrect.	Wire it correctly.	[A]
					The wiring is correct.	Check (6).	[B]
		(6)	When you use a four-wire type linear encoder, the servo amplifier is not compatible with the four-wire type linear encoder. (MR-J4-_A(4)-RJ or MR-J4-_B(4)-RJ)	Check if the servo amplifier is compatible with the four-wire type linear encoder. (MR-J4-_A(4)-RJ or MR-J4-_B(4)-RJ)	It is not supported.	Use a servo amplifier which is compatible with it.	[WB]
					It is supported.	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]
					It is repeatable.	Check (8).	[B]
(8)	A load-side encoder is malfunctioning.	Replace the load-side encoder, and then check the repeatability.	It is not repeatable.	Replace the load-side encoder.	[WB]		
			It is repeatable.	Check (9).			
(9)	Something near the device caused it.	Check the noise, ambient temperature, vibration, etc.	It has a failure.	Take countermeasures against its cause.			
70.5	Load-side encoder initial communication - Transmission data error 1	(1)	When you use an A/B/Z-phase differential output linear encoder, the wiring of the linear encoder is incorrect.	Check if the A/B-phase pulse signals (PA, PAR, PB, and PBR) of the encoder cable are disconnected or shorted.	It is disconnected or shorted.	Repair the encoder cable.	[A]
				It is not disconnected or shorted.	Check (2).	[B]	
		(2)	An load-side encoder cable is malfunctioning.	Check it with the check method for [AL. 70.1].			[A]
		(3)	The servo amplifier is malfunctioning.				[B]
		(4)	A load-side encoder is malfunctioning.				[WB]
		(5)	Something near the device caused it.				

1. TROUBLESHOOTING

Alarm No.: 70		Name: Load-side encoder initial communication error 1					
Alarm content		• An error occurred in the initial communication between the load-side encoder and servo amplifier.					
Detail No.	Detail name	Cause	Check method	Check result	Action	Target	
70.6	Load-side encoder initial communication - Transmission data error 2	(1)	When you use an A/B/Z-phase differential output linear encoder, the wiring of the linear encoder is incorrect.	Check if the Z-phase pulse signals (PZ and PZR) of the encoder cable are disconnected or shorted.	It is disconnected or shorted.	Repair the encoder cable.	[A] [B]
					It is not disconnected or shorted.	Check (2).	
		(2)	An load-side encoder cable is malfunctioning.	Check it with the check method for [AL. 70.1].			[A] [B] [WB]
		(3)	The servo amplifier is malfunctioning.				
		(4)	A load-side encoder is malfunctioning.				
	(5)	Something near the device caused it.					
70.7	Load-side encoder initial communication - Transmission data error 3	Check it with the check method for [AL. 70.1].					
70.A	Load-side 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)	A load-side encoder is malfunctioning.	Replace the load-side encoder, and then check the repeatability.	It is not repeatable.	Replace the load-side encoder.	
			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.		
70.B	Load-side encoder initial communication - Process error 2	Check it with the check method for [AL. 70.A].					
70.C	Load-side encoder initial communication - Process error 3						
70.D	Load-side encoder initial communication - Process error 4						
70.E	Load-side encoder initial communication - Process error 5						
70.F	Load-side encoder initial communication - Process error 6						

1. TROUBLESHOOTING

Alarm No.: 71		Name: Load-side encoder normal communication error 1					
Alarm content		• An error occurred in the communication between the load-side encoder and servo amplifier.					
Detail No.	Detail name	Cause	Check method	Check result	Action	Target	
71.1	Load-side encoder communication - Receive data error 1	(1)	A load-side encoder cable is malfunctioning.	Check if the load-side 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)	A load-side encoder is malfunctioning.	Replace the load-side encoder, and then check the repeatability.	It is not repeatable.	Replace the load-side 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.	
		71.2	Load-side encoder communication - Receive data error 2	Check it with the check method for [AL. 71.1].			
71.3	Load-side encoder communication - Receive data error 3						
71.5	Load-side encoder communication - Transmission data error 1						
71.6	Load-side encoder communication - Transmission data error 2						
71.7	Load-side encoder communication - Transmission data error 3						
71.9	Load-side encoder communication - Transmission data error 4						
71.A	Load-side encoder communication - Transmission data error 5						

1. TROUBLESHOOTING

Alarm No.: 72		Name: Load-side encoder normal communication error 2					
Alarm content		• The load-side encoder detected an error signal.					
Detail No.	Detail name	Cause	Check method	Check result	Action	Target	
72.1	Load-side 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. It is repeatable.	Use the encoder with low loop gain. Check (2).	[A] [B] [WB]
		(2)	A load-side encoder is malfunctioning.	Replace the load-side encoder, and then check the repeatability.	It is not repeatable. It is repeatable.	Replace the load-side encoder. 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.	
72.2	Load-side encoder data update error	(1)	A load-side encoder is malfunctioning.	Replace the load-side encoder, and then check the repeatability.	It is not repeatable. It is repeatable.	Replace the load-side encoder. Check (2).	
		(2)	Something near the device caused it.	Check the noise, ambient temperature, etc.	It has a failure.	Take countermeasures against its cause.	
72.3	Load-side encoder data waveform error	Check it with the check method for [AL. 72.2].					
72.4	Load-side encoder non-signal error	(1)	A signal of the load-side encoder has not been inputted.	Check if the load-side encoder cable is wired correctly.	It has a failure. It has no failure.	Review the wiring. Check (2).	[A] [B] [WB]
		(2)	Something near the device caused it.	Check the noise, ambient temperature, etc.	It has a failure.	Take countermeasures against its cause.	
72.5	Load-side encoder hardware error 1	Check it with the check method for [AL. 72.2].					
72.6	Load-side encoder hardware error 2						
72.9	Load-side encoder data error 2	Check it with the check method for [AL. 72.1].					

Alarm No.: 74		Name: Option card error 1					
Alarm content		• MR-J3-T10 came off. • MR-J3-T10 is not properly recognized.					
Detail No.	Detail name	Cause	Check method	Check result	Action	Target	
74.1	Option card error 1	(1)	The MR-J3-T10 came off during the CC-Link IE communication.	Check if the MR-J3-T10 is mounted correctly.	It is not mounted correctly. It is mounted correctly.	Mount it correctly. Check (2).	[RJ010]
		(2)	MR-J3-T10 is malfunctioning.	Replace the MR-J3-T10, and then check the repeatability.	It is not repeatable. It is repeatable.	Replace the MR-J3-T10. 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.: 74		Name: Option card error 1				
Alarm content		<ul style="list-style-type: none"> • MR-J3-T10 came off. • MR-J3-T10 is not properly recognized. 				
Detail No.	Detail name	Cause	Check method	Check result	Action	Target
74.2	Option card error 2	Check it with the check method for [AL. 74.1].				
74.3	Option card error 3					
74.4	Option card error 4					
74.5	Option card error 5					

Alarm No.: 75		Name: Option card error 2					
Alarm content		• MR-J3-T10 came off.					
Detail No.	Detail name	Cause	Check method	Check result	Action	Target	
75.3	Option card connection error	(1)	MR-J3-T10 came off.	Check if the MR-J3-T10 is mounted correctly.	It is not mounted correctly.	Mount it correctly.	[RJ010]
					It is mounted correctly.	Check (2).	
		(2)	MR-J3-T10 is malfunctioning.	Replace the MR-J3-T10, and then check the repeatability.	It is not repeatable.	Replace the MR-J3-T10.	
					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.	
		75.4	Option card disconnected	(1)	MR-J3-T10 was not connected correctly.	Check if the MR-J3-T10 is mounted correctly.	
It is mounted correctly.	Check (2).						
(2)	MR-J3-T10 is malfunctioning.			Replace the MR-J3-T10, and then check the repeatability.	It is not repeatable.	Replace the MR-J3-T10.	
					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.	

Alarm No.: 82		Name: Master-slave operation error 1				
Alarm content		• Driver communication error was detected.				
Detail No.	Detail name	Cause	Check method	Check result	Action	Target
82.1	Master-slave operation error 1	Check it with the check method for [AL. 34.1].				[B] (slave)

1. TROUBLESHOOTING

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.					
Detail No.	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] [RJ010]
					It was transmitted.	Check (2).	
		(2)	A communication cable is disconnected.	Replace the communication cable, and then check the repeatability.	It is not repeatable.	Replace the communication 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.: 8D		Name: CC-Link IE communication error					
Alarm content		<ul style="list-style-type: none"> • MR-J3-T10 came off. • An error occurred in CC-Link IE communication. 					
Detail No.	Detail name	Cause	Check method	Check result	Action	Target	
8D.1	CC-Link IE communication error 1	(1)	The MR-J3-T10 came off during the CC-Link IE communication.	Check if [AL. 74 Option card error 1] occurred with alarm history.	It occurred.	Check it with the check method for [AL. 74].	[RJ010]
					It did not occur.	Check (2).	
		(2)	The CC-Link IE cable was disconnected.	Check the CC-Link IE cable connection.	It is disconnected.	Turn off the control circuit power supply of the servo amplifier, and then connect the CC-Link IE cable.	
					It is connected.	Check (3).	
		(3)	The wiring of the CC-Link IE cable was incorrect.	Check if the wiring of CC-Link IE cable is correct.	The wiring is incorrect.	Wire it correctly.	
					The wiring is correct.	Check (4).	
		(4)	A CC-Link IE cable was disconnected.	Check if the CC-Link IE cable is malfunctioning.	It has a failure.	Replace the CC-Link IE cable.	
					It has no failure.	Check (5).	
		(5)	The transmission status of the CC-Link IE communication is abnormal.	Check the noise, ambient temperature, etc.	It has a failure.	Take countermeasures against its cause.	
					It has no failure.	Check (6).	
		(6)	MR-J3-T10 is malfunctioning.	Replace the MR-J3-T10, and then check the repeatability.	It is not repeatable.	Replace the MR-J3-T10.	
					It is repeatable.	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.	
					It is repeatable.	Check (8).	
(8)	The master station is malfunctioning.	Check if the master station is malfunctioning.	It has a failure.	Replace the master station.			
8D.2	CC-Link IE communication error 2	Check it with the check method for [AL. 8D.1].					
8D.3	Master station setting error 1	(1)	The station No. is set to a value other than 1 to 120 with the master station.	Check the [Pr. Po02] setting.	The setting value is incorrect.	Set it correctly.	[RJ010]
					The setting value is correct.	Check (2).	
		(2)	The network number is set to a value other than 1 to 239 with the master station.	Check the [Pr. Po03] setting.	The setting value is incorrect.	Set it correctly.	
					The setting value is correct.	Check (3).	
		(3)	MR-J3-T10 is malfunctioning.	Replace the MR-J3-T10, and then check the repeatability.	It is not repeatable.	Replace the MR-J3-T10.	
					It is repeatable.	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.	
					It is repeatable.	Check (5).	
		(5)	The master station is malfunctioning.	Check if the master station is malfunctioning.	It has a failure.	Replace the master station.	
		8D.5	Master station setting error 2	(1)	A reserved station has been selected by the master station, and the cyclic communication has stopped.	Check if a reserved station is selected.	
8D.6	CC-Link IE communication error 3	Check it with the check method for [AL. 8D.1].					

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Alarm No.: 8D		Name: CC-Link IE communication error					
Alarm content		• An error occurred in CC-Link IE communication.					
Detail No.	Detail name	Cause	Check method	Check result	Action	Target	
8D.7	CC-Link IE communication error 4	(1)	The transmission status of the CC-Link IE communication is abnormal.	Check the noise, ambient temperature, etc.	It has a failure.	Take countermeasures against its cause.	[RJ010]
					It has no failure.	Check (2).	
		(2)	MR-J3-T10 is malfunctioning.	Replace the MR-J3-T10, and then check the repeatability.	It is not repeatable.	Replace the MR-J3-T10.	
					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.			
			It is repeatable.	Check (4).			
(4)	The master station is malfunctioning.	Check if the master station is malfunctioning.	It has a failure.	Replace the master station.			
8D.8	CC-Link IE communication error 5	Check it with the check method for [AL. 8D.7].					
8D.9	Synchronization error 1	Check it with the check method for [AL. 8D.1].					
8D.A	Synchronization error 2						

Alarm No.: 8E		Name: USB communication error/serial communication error					
Alarm content		• The communication error occurred between servo amplifier and a personal computer.					
Detail No.	Detail name	Cause	Check method	Check result	Action	Target	
8E.1	USB communication receive error/Serial communication receive error	(1)	A communication cable is malfunctioning.	Check the communication cable, and then check the repeatability.	It is not repeatable.	Replace the communication cable.	[A] [B] [WB] [RJ010]
					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/Serial communication checksum error	(1) The setting of the personal computer is incorrect.	Check the setting of the personal computer.	It is incorrect.	Review the settings.		
8E.3	USB communication character error/Serial 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 not conforming.	Modify the transmission data according to 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.			

1. TROUBLESHOOTING

Alarm No.: 8E		Name: USB communication error/serial communication error					
Alarm content		• The communication error occurred between servo amplifier and a personal computer.					
Detail No.	Detail name	Cause	Check method	Check result	Action	Target	
8E.4	USB communication command error/Serial 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.	Correct the transmission data.	[A] [B] [WB] [RJ010]
					The transmitted command is within specifications.	Check (2).	
		(2)	The communication protocol is failure.	Check if transmission data conforms the communication protocol.	It is not conforming.	Modify the transmission data according to 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/Serial 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 within specifications.	Check (2).						
(2)	The communication protocol is failure.			Check if transmission data conforms the communication protocol.	It is not conforming.	Modify the transmission data according to 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.	

Alarm No.: 888/88888		Name: Watchdog					
Alarm content		• [RJ010]: MR-J3-T10 came off. • A part such as CPU is malfunctioning.					
Detail No.	Detail name	Cause	Check method	Check result	Action	Target	
88_/_ 8888_/_	Watchdog	(1)	The MR-J3-T10 came off during the CC-Link IE communication.	Check if [AL. 74 Option card error 1] occurred with alarm history.	It occurred.	Check it with the check method for [AL. 74].	[RJ010]
					It did not occur.	Check (2).	
		(2)	A part in the servo amplifier is failure.	Replace the servo amplifier, and then check the repeatability.	It is not repeatable.	Replace the servo amplifier.	[A] [B] [WB] [RJ010]

1. TROUBLESHOOTING

1.3 Remedies for warnings



CAUTION

● If [AL. E3 Absolute position counter warning] occurs, always make home position setting again. Otherwise, it may cause an unexpected operation.

POINT

- When any of the following alarms has occurred, do not cycle the power of the servo amplifier repeatedly to restart. Doing so will cause a malfunction of the servo amplifier and the servo motor. If the power of the servo amplifier is switched off/on during the alarms, allow more than 30 minutes for cooling before resuming operation.
 - [AL. 91 Servo amplifier overheat warning]
 - [AL. E0 Excessive regeneration warning]
 - [AL. E1 Overload warning 1]
 - [AL. E2 Servo motor overheat warning]
 - [AL. EC Overload warning 2]
- Warnings are not recorded in the alarm history.

If [AL. E6], [AL. E7], [AL. E9], [AL. EA], or [AL. EB] occurs, the servo-off status is established. If any other warning occurs, operation can be continued but an alarm may take place or proper operation may not be performed.

Remove the cause of warning according to this section. Use MR Configurator2 to refer to a factor of warning occurrence.

Alarm No.: 91		Name: Servo amplifier overheat warning				
Alarm content		• The temperature inside of the servo amplifier reached a warning level.				
Detail No.	Detail name	Cause	Check method	Check result	Action	Target
91.1	Main circuit device overheat warning	(1) Ambient temperature of the servo amplifier has exceeded 55 °C.	Check the ambient temperature.	It is over 55 °C.	Lower the ambient temperature.	[A] [B]
		(2) The close mounting is out of specifications.	Check the specifications of close mounting.	It is out of specifications.	Check (2). Use within the range of specifications.	[WB] [RJ010]

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Alarm No.: 92		Name: Battery cable disconnection warning					
Alarm content		• Battery voltage for absolute position detection system decreased.					
Detail No.	Detail name	Cause	Check method	Check result	Action	Target	
92.1	Encoder battery cable disconnection warning	(1)	1) When an MR-BAT6V1SET battery or MR-BT6VCASE battery case was used, the battery was not connected to CN4. 2) When an MR-BAT6V1BJ battery for junction battery cable was used, the battery was not connected to both CN4 and MR-BT6VCBL03M junction battery cable.	Check if the battery is connected correctly.	It is not connected.	Connect it correctly.	[A] [B] [WB] [RJ010]
					It is connected.	Check (2).	
		(2)	Battery cable is disconnected.	Check if the battery cable is malfunctioning.	It has a failure.	Replace or repair the cable.	
					It has no failure.	Check (3).	
		(3)	The battery voltage is low. The battery is consumed.	Check the battery voltage with a tester. When an MR-BAT6V1BJ battery for junction battery cable was used, check the voltage of the connector (orange) for servo amplifier.	It is less than 3.1 V DC.	Replace the battery.	
It is 3.1 V DC or more.	Check (4).						
(4)	An encoder cable was disconnected.	Check if the encoder cable is disconnected.	It is disconnected.	Replace or repair the cable.			
92.3	Battery degradation	(1)	The battery voltage is low. The battery is consumed.	Check the battery voltage with a tester.	It is less than 3.0 V DC.	Replace the battery.	
					It is 3.0 V DC or more.	Check (2).	
		(2)	The battery has deteriorated.	Replace the battery, and then check the repeatability.	It is not repeatable.	Replace the battery.	

1. TROUBLESHOOTING

Alarm No.: 93		Name: ABS transfer data warning					
Alarm content		• ABS data was not transferred.					
Detail No.	Detail name	Cause	Check method	Check result	Action	Target	
93.1	ABS data transfer requirement warning during magnetic pole detection	(1)	The Z-phase was not turned on at servo-on.	Check if the position within one-revolution is "0".	It is "0". (The Z-phase was not turned on.)	Turn on the Z-phase and disable the magnetic pole detection. Always make home position setting again.	[A]
					It is other than "0". (The Z-phase was turned on.)	Check (2).	
		(2)	The magnetic pole detection was executed.	Check if the ABS data is transferred during the magnetic pole detection.	The ABS data is transferred.	Disable the magnetic pole detection. After that, cycle SON (Servo-on) and transfer the ABS data.	

Alarm No.: 95		Name: STO warning					
Alarm content		• The STC signal turned off while the servo motor is stopped.					
Detail No.	Detail name	Cause	Check method	Check result	Action	Target	
95.1	STO1 off detection	(1)	STO1 was turned off under the following speed conditions. 1) Servo motor speed: 50 r/min or less 2) Linear servo motor speed: 50 mm/s or less 3) Direct drive motor speed: 5 r/min or less	Check if STO1 is off.	It is off.	Turn on STO1.	[A] [B] [WB] [RJ010]
95.2	STO2 off detection	(1)	STO2 was turned off under the following speed conditions. 1) Servo motor speed: 50 r/min or less 2) Linear servo motor speed: 50 mm/s or less 3) Direct drive motor speed: 5 r/min or less	Check if STO2 is off.	It is off.	Turn on STO2.	

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Alarm No.: 96		Name: Home position setting warning				
Alarm content		• Home position setting could not be made.				
Detail No.	Detail name	Cause	Check method	Check result	Action	Target
96.1	In-position warning at home positioning	(1) INP (In-position) did not turn on within the specified time during home positioning.	Check the droop pulses during home positioning.	It is In-position range or more.	Adjust gains to set droop pulses within the In-position range. Remove the cause of droop pulse occurrence.	[A] [B] [WB] [RJ010]
96.2	Command input warning at home positioning	(1) A command has already inputted at the time of home positioning.	Check if a command is inputted at home positioning.	A command is inputted. A command is not inputted.	Set it after home positioning. Check (2).	
		(2) Creep speed is high.	Decrease the creep speed, and then check the repeatability.	It is not repeatable.	Reduce the creep speed.	
96.3	Servo off warning at home positioning	(1) A home positioning was executed during servo-off.	Check if the status is servo-off at home positioning.	It is servo-off.	Turn to servo-on, and then execute the home positioning.	
96.4	Home positioning warning during magnetic pole detection	(1) Z-phase was not turned on after servo-on.	Check if the Z-phase was turned on.	The Z-phase was not turned on.	Rotate the direct drive motor to turn on the Z-phase.	

Alarm No.: 99		Name: Stroke limit warning				
Alarm content		• The stroke limit signal is off.				
Detail No.	Detail name	Cause	Check method	Check result	Action	Target
99.1	Forward rotation stroke end off	(1) The forward rotation stroke limit switch has not connected.	Check if the limit switch is connected correctly.	It is not connected. It is connected.	Connect it correctly. Check (2).	[A]
		(2) The forward rotation stroke limit was exceeded during driving.	Check if the forward rotation stroke limit switch turned off.	It turned off.	Check operation pattern.	
99.2	Reverse rotation stroke end off	(1) The reverse rotation stroke limit switch has not connected.	Check if the limit switch is connected correctly.	It is not connected. It is connected.	Connect it correctly. Check (2).	
		(2) The reverse rotation stroke limit was exceeded during driving.	Check if the reverse rotation stroke limit switch turned off.	It turned off.	Check operation pattern.	

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Alarm No.: 9D		Name: CC-Link IE warning 1					
Alarm content		<ul style="list-style-type: none"> • The station No. switch setting was changed after power-on. • The station No. setting differs from that of master station. 					
Detail No.	Detail name	Cause	Check method	Check result	Action	Target	
9D.1	Station number switch change warning	(1)	The station No. switch setting was changed after power-on.	Check if the switch was changed.	It was changed.	Restore the setting. Do not change the station No. switch after power-on.	[RJ010]
					It was not changed.	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.	
9D.2	Master station setting warning	(1)	The settings of station type or cyclic points on the master station side are incorrect.	Check the setting of the master station.	The setting is incorrect.	Review the setting on the master station side.	
9D.3	Overlapping station number warning	(1)	The same station No. as other station was set.	Check devices on the network if station Nos. are overlapped.	They are overlapped.	Review the settings of the station Nos.	
9D.4	Mismatched station number warning	(1)	The station No. controlled on master side differs from that set on slave side.	Check the station No. on master side and slave side if they are matched together.	They are not matched.	Review the settings of the station Nos.	

Alarm No.: 9E		Name: CC-Link IE warning 2					
Alarm content		<ul style="list-style-type: none"> • The receive data of the CC-Link IE communication is abnormal. 					
Detail No.	Detail name	Cause	Check method	Check result	Action	Target	
9E.1	CC-Link IE warning	(1)	The transmission status of the CC-Link IE communication is abnormal.	Check the noise, ambient temperature, etc.	It has a failure.	Take countermeasures against its cause.	[RJ010]
					It has no failure.	Check (2).	
		(2)	The CC-Link IE cable was disconnected.	Check the CC-Link IE cable connection.	It is disconnected.	Turn off the control circuit power supply of the servo amplifier, and then connect the CC-Link IE cable.	
					It is connected.	Check (3).	
		(3)	The wiring of the CC-Link IE cable was incorrect.	Check if the wiring of CC-Link IE cable is correct.	The wiring is incorrect.	Wire it correctly.	
					The wiring is correct.	Check (4).	
(4)	A CC-Link IE cable was disconnected.	Check if the CC-Link IE cable is malfunctioning.	It has a failure.	Replace the CC-Link IE cable.			
			It has no failure.	Check (5).			
(5)	Communication with the master station is abnormal.	Check the setting of [Pr. Po02] and [Pr. Po03].	The setting value is incorrect.	Review the communication settings.			

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Alarm No.: 9F		Name: Battery warning					
Alarm content		• Battery voltage for absolute position detection system decreased.					
Detail No.	Detail name	Cause	Check method	Check result	Action	Target	
9F.1	Low battery	(1)	The battery is not connected to CN4.	Check if the battery is connected correctly.	It is not connected. It is connected.	Connect it correctly. Check (2).	[A] [B] [WB] [RJ010]
		(2)	The battery voltage is low. The battery is consumed.	Check the battery voltage with a tester. When an MR-BAT6V1BJ battery for junction battery cable was used, check the voltage of the connector (orange) for servo amplifier.	It is less than 4.9 V DC.	Replace the battery.	
9F.2	Battery degradation warning	(1)	The absolute position storage unit has not connected.	Check if the absolute position storage unit is connected correctly.	It is not connected.	Connect it correctly.	[A] [B] [WB]

Alarm No.: E0		Name: Excessive regeneration warning					
Alarm content		• There is a possibility that regenerative power may exceed permissible regenerative power of built-in regenerative resistor or regenerative option.					
Detail No.	Detail name	Cause	Check method	Check result	Action	Target	
E0.1	Excessive regeneration warning	(1)	The regenerative power exceeded 85% of the permissible regenerative power of the built-in regenerative resistor or regenerative option.	Check the effective load ratio.	It is 85% or more.	Reduce the frequency of positioning. Increase the deceleration time constant. Reduce the load. Use a regenerative option if not being using.	[A] [B] [WB] [RJ010]

Alarm No.: E1		Name: Overload 1				
Alarm content		• [AL.50 Overload 1] or [AL.51 Overload 2] may occur.				
Detail No.	Detail name	Cause	Check method	Check result	Action	Target
E1.1	Thermal overload warning 1 during operation	(1)	The load was over 85% to the alarm level of [AL. 50.1 Thermal overload error 1 during operation].	Check it with the check method for [AL. 50.1].		[A] [B] [WB] [RJ010]
E1.2	Thermal overload warning 2 during operation	(1)	The load was over 85% to the alarm level of [AL. 50.2 Thermal overload error 2 during operation].	Check it with the check method for [AL. 50.2].		
E1.3	Thermal overload warning 3 during operation	(1)	The load was over 85% to the alarm level of [AL. 51.1 Thermal overload error 3 during operation].	Check it with the check method for [AL. 51.1].		
E1.4	Thermal overload warning 4 during operation	(1)	The load was over 85% to the alarm level of [AL. 50.3 Thermal overload error 4 during operation].	Check it with the check method for [AL. 50.3].		

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Alarm No.: E1		Name: Overload 1				
Alarm content		• [AL.50 Overload 1] or [AL.51 Overload 2] may occur.				
Detail No.	Detail name	Cause	Check method	Check result	Action	Target
E1.5	Thermal overload warning 1 during a stop	(1) The load was over 85% to the alarm level of [AL. 50.4 Thermal overload error 1 during a stop].	Check it with the check method for [AL. 50.4].			
E1.6	Thermal overload warning 2 during a stop	(1) The load was over 85% to the alarm level of [AL. 50.5 Thermal overload error 2 during a stop].	Check it with the check method for [AL. 50.5].			
E1.7	Thermal overload warning 3 during a stop	(1) The load was over 85% to the alarm level of [AL. 51.2 Thermal overload error 3 during operation].	Check it with the check method for [AL. 51.2].			
E1.8	Thermal overload warning 4 during a stop	(1) The load was over 85% to the alarm level of [AL. 50.6 Thermal overload error 4 during a stop].	Check it with the check method for [AL. 50.6].			

Alarm No.: E2		Name: Servo motor overheat warning				
Alarm content		• [AL. 46.2 Abnormal temperature of servo motor 2] may occur.				
Detail No.	Detail name	Cause	Check method	Check result	Action	Target
E2.1	Servo motor temperature warning	(1) The temperature of the linear servo motor or direct drive motor reached 85% of the occurrence level of [AL. 46.2 Abnormal temperature of servo motor 2].	Check it with the check method for [AL. 46.2].			[A] [B] [WB]

Alarm No.: E3		Name: Absolute position counter warning				
Alarm content		• The multi-revolution counter value of the absolute position encoder exceeded the maximum range. • Absolute position encoder pulses are faulty.				
Detail No.	Detail name	Cause	Check method	Check result	Action	Target
E3.1	Multi-revolution counter travel distance excess warning	(1) The travel distance from the home position exceeded 32768 rotation in the absolute position system.	Check the value of the multi-revolution counter.	It is over 32768 rotation.	Review operation range. Execute the home position return again.	[A]
E3.2	Absolute position counter warning	(1) Something near the device caused it.	Check the noise, ambient temperature, etc.	It has a failure.	Take countermeasures against its cause.	[A] [B] [WB] [RJ010]
				It has no failure.	Check (2).	
		(2) An encoder is malfunctioning.	Replace the servo motor, and then check the repeatability.	It is not repeatable.	Replace the servo motor.	
E3.5	Encoder absolute positioning counter warning	Check it with the check method for [AL. E3.2].				

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Alarm No.: E4		Name: Parameter warning				
Alarm content		• Out of the setting range was attempted to write during parameter writing.				
Detail No.	Detail name	Cause	Check method	Check result	Action	Target
E4.1	Parameter setting range error warning	(1) Parameter value set from servo system controller is outside setting range.	Check the parameter setting value set with the servo system controller.	It is out of setting range.	Set it within the range.	[B] [WB] [RJ010]

Alarm No.: E5		Name: ABS time-out warning				
Alarm content		<ul style="list-style-type: none"> • A response from the programmable controller was over 5 s at the absolute position erased data transfer. • ABSM (ABS transfer mode) turned off during the absolute position erased data transfer. • SON (Servo-on), RES (Reset), or EM2/EM1 (Forced stop) turned off during the absolute position erased data transfer. 				
Detail No.	Detail name	Cause	Check method	Check result	Action	Target
E5.1	Time-out during ABS data transfer	(1) The wiring of I/O signals is incorrect.	Check if the I/O signal wire is disconnected or connected loosely.	It has a failure.	Repair or replace the I/O signal wire.	[A]
		(2) The sequence program is incorrect.	Check the sequence program.	It has no failure.	Check (2).	
E5.2	ABSM off during ABS data transfer	Check it with the check method for [AL. E5.1].				
E5.3	SON off during ABS data transfer					

Alarm No.: E6		Name: Servo forced stop warning				
Alarm content		• EM2/EM1 (Forced stop) turned off.				
Detail No.	Detail name	Cause	Check method	Check result	Action	Target
E6.1	Forced stop warning	(1) EM2/EM1 (Forced stop) turned off.	Check the status of EM2/EM1.	It is off.	Ensure safety and turn on EM2/EM1 (Forced stop).	[A] [B] [WB] [RJ010]
		(2) An external 24 V DC power supply have not inputted.	Check if the external 24 V DC power supply is inputted.	It is on.	Check (2).	
				It is not inputted.	Input the 24 V DC power supply.	
(3) The servo amplifier is malfunctioning.	Replace the servo amplifier, and then check the repeatability.	It is inputted.	Check (3).	It is not repeatable.	Replace the servo amplifier.	

Alarm No.: E7		Name: Controller forced stop warning				
Alarm content		• The forced stop signal of the servo system controller was enabled.				
Detail No.	Detail name	Cause	Check method	Check result	Action	Target
E7.1	Controller forced stop warning	(1) The forced stop signal of the servo system controller was inputted.	Check if the servo system controller is a forced stop status.	It is the forced stop status.	Ensure safety and cancel the forced stop signal of the controller.	[B] [WB] [RJ010]

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Alarm No.: E8		Name: Cooling fan speed reduction warning					
Alarm content		• The cooling fan speed decreased to the warning occurrence level or less.					
Detail No.	Detail name	Cause	Check method	Check result	Action	Target	
E8.1	Decreased cooling fan speed warning	(1)	Foreign matter caught in the cooling fan and the speed was decreased.	Check if a foreign matter is caught in the cooling fan.	Something has been caught.	Remove the foreign matter.	[A] [B] [WB] [RJ010]
					Nothing has been caught.	Check (2).	
		(2)	Cooling fan life expired.	Check the total of power on time of the servo amplifier.	It exceed the cooling fan life.	Replace the servo amplifier.	
E8.2	Cooling fan stop	Check it with the check method for [AL. E8.1].					

Alarm No.: E9		Name: Main circuit off warning					
Alarm content		• The servo-on command was inputted with main circuit power supply off. • The bus voltage dropped during the servo motor driving under 50 r/min.					
Detail No.	Detail name	Cause	Check method	Check result	Action	Target	
E9.1	Servo-on signal on during main circuit off	(1)	The main circuit power supply is off.	Check if the main circuit power supply is inputted.	It is not inputted.	Turn on the main circuit power.	[A] [B] [WB] [RJ010]
				It is inputted.	Check (2).		
		(2)	The main circuit power supply connector was disconnected.	Check the main circuit power supply connector.	It is disconnected.	Connect it correctly.	
				It has no failure.	Check (3).		
(3)	The bus voltage is less than the prescribed value. 200 V amplifier: 215 V DC 400 V amplifier: 430 V DC	Check the bus voltage.	The voltage is lower than the prescribed value.	Review the wiring. Check the power supply capacity.			
			The voltage is the prescribed value or higher.	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.			

Alarm No.: E9		Name: Main circuit off warning					
Alarm content		• The servo-on command was inputted with main circuit power supply off. • The bus voltage dropped during the servo motor driving under 50 r/min.					
Detail No.	Detail name	Cause	Check method	Check result	Action	Target	
E9.2	Bus voltage drop during low speed operation	(1)	The bus voltage dropped during the servo motor driving under 50 r/min.	Check the bus voltage.	It is lower than the prescribed value. 200 V amplifier: 200 V DC 400 V amplifier: 430 V DC	Review the power supply capacity. Increase the acceleration time constant.	[A] [B] [WB] [RJ010]
E9.3	Ready-on signal on during main circuit off	Check it with the check method for [AL. E9.1].				[B] [WB] [RJ010]	

Alarm No.: EA		Name: ABS servo-on warning					
Alarm content		• The servo-on was not executed within 1 s after ABSM (ABS transfer mode) was turned on.					
Detail No.	Detail name	Cause	Check method	Check result	Action	Target	
EA.1	ABS servo-on warning	(1)	The wiring of I/O signals is incorrect.	Check if the I/O signal wire is disconnected or connected loosely.	It has a failure.	Repair or replace the I/O signal wire.	[A]
				It has no failure.	Check (2).		
(2)	The sequence program is incorrect.	Check the sequence program.	The sequence program is incorrect.	Modify the sequence program.			

1. TROUBLESHOOTING

Alarm No.: EB		Name: The other axis error warning					
Alarm content		<ul style="list-style-type: none"> An alarm, which stops all axes, such as [AL. 24 Main circuit error] or [AL. 32 Overcurrent] occurred in other axis. "All alarms (_ _ _ 1)" of "Target alarm selection of the other axis error warning" is selected in [Pr. PF02]. 					
Detail No.	Detail name	Cause	Check method	Check result	Action	Target	
EB.1	The other axis error warning	(1)	[AL. 24] occurred at other axis.	Check if [AL. 24] is occurring at other axis.	It is occurring.	Eliminate the cause of [AL. 24] on the other axis side.	[WB]
			It did not occur.	Check (2).			
		(2)	[AL. 32] occurred at other axis.	Check if [AL. 32] is occurring at other axis.	It is occurring.	Eliminate the cause of [AL. 32] on the other axis side.	
			It did not occur.	Check (3).			
		(3)	"All alarms" was set for alarm occurrence.	Check the [Pr. PF02] setting.	"All alarms" is selected.	Remove the cause of the occurring alarm at other axis.	

Alarm No.: EC		Name: Overload 2				
Alarm content		<ul style="list-style-type: none"> Operations over rated output were repeated while the servo motor shaft was not rotated. 				
Detail No.	Detail name	Cause	Check method	Check result	Action	Target
EC.1	Overload warning 2	(1) The load is too large or the capacity is not enough.	Check the effective load ratio.	The effective load ratio is high.	Reduce the load. Replace the servo motor with the one of larger capacity.	[A] [B] [WB] [RJ010]

Alarm No.: ED		Name: Output watt excess warning				
Alarm content		<ul style="list-style-type: none"> The status, in which the output wattage (speed × torque) of the servo motor exceeded the rated output, continued steadily. 				
Detail No.	Detail name	Cause	Check method	Check result	Action	Target
ED.1	Output watt excess warning	(1) The status, in which the output wattage (speed × torque or thrust) of the servo motor exceeded 120% of the rated output (continuous thrust), continued steadily.	Check the servo motor speed and torque, or check the motor speed and thrust.	The output wattage is 120% of rating.	Reduce the servo motor speed. Reduce the load.	[A] [B] [WB] [RJ010]

Alarm No.: F0		Name: Tough drive warning				
Alarm content		<ul style="list-style-type: none"> Tough drive function was activated. 				
Detail No.	Detail name	Cause	Check method	Check result	Action	Target
F0.1	Instantaneous power failure tough drive warning	(1) The voltage of the control circuit power supply has dropped.	Check it with the check method for alarm No. "10.1".			[A] [B] [WB] [RJ010]
F0.3	Vibration tough drive warning	(1) The setting value of the machine resonance suppression filter was changed due to a machine resonance.	Check if it was changed frequently.	It was changed frequently.	Set the machine resonance suppression filter. Check the machine status if screws are loose or the like.	

1. TROUBLESHOOTING

Alarm No.: F2		Name: Drive recorder - Miswriting warning				
Alarm content		• A waveform measured by the drive recorder function was not recorded.				
Detail No.	Detail name	Cause	Check method	Check result	Action	Target
F2.1	Drive recorder - Area writing time-out warning	(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] [RJ010]
F2.2	Drive recorder - Data miswriting warning	(1) Data were not written to the drive recorder area.	Check if clearing alarm history disables this alarm with MR Configurator2.	It is not disabled.	Replace the servo amplifier.	

Alarm No.: F3		Name: Oscillation detection warning				
Alarm content		• [AL. 54 Oscillation detection] may occur.				
Detail No.	Detail name	Cause	Check method	Check result	Action	Target
F3.1	Oscillation detection warning	Check it with the check method for [AL. 54.1].				[A] [B] [WB] [RJ010]

1. TROUBLESHOOTING

1.4 Trouble which does not trigger alarm/warning

POINT
<p>●When the servo amplifier, servo motor, or encoder malfunctions, the following status may occur.</p>

The following example shows possible causes which do not trigger alarm or warning. Remove each cause referring this section.

Description	Possible cause	Check result	Action	Target
The display shows "AA".	The power of the servo system controller was turned off.	Check the power of the servo system controller.	Switch on the power of the servo system controller.	[B] [WB]
	A SSCNET III cable was disconnected.	Check if "AA" is displayed in the corresponding axis and following axes.	Replace the SSCNET III cable of the corresponding axis.	
		Check if the connectors (CNIA, CNIB) are unplugged.	Connect it correctly.	
	The power of the servo amplifier was turned off.	Check if "AA" is displayed in the corresponding axis and following axes.	Check the power of the servo amplifier.	
	The amplifier-less operation function of servo system controller is enabled.	Check if the amplifier-less operation function of servo system controller is enabled.	Disable the amplifier-less operation function.	
A CC-Link IE cable was disconnected.	Check if "AA" is displayed in the corresponding axis and following axes.	Replace the CC-Link IE cable of the corresponding axis.	[RJ010]	
	Check if the connectors (CN10A, CN10B) are unplugged.	Connect it correctly.		

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Description	Possible cause	Check result	Action	Target
The display shows "Ab".	The axis is disabled.	Check if the disabling control axis switch is on. [B]: SW2-2 [WB]: SW2-2 to 2-4	Turn off the disabling control axis switch.	[B] [WB]
	The setting of the axis No. is incorrect.	Check that the other servo amplifier is not assigned to the same axis No.	Set it correctly.	
	Axis No. does not match with the axis No. set to the servo system controller.	Check the setting and axis No. of the servo system controller.	Set it correctly.	
	Information about the servo series has not set in the simple motion module.	Check the value set in Servo series (Pr.100) in the simple motion module.	Set it correctly.	
	Communication cycle does not match.	Check the communication cycle at the servo system controller side. When using 8 axes or less: 0.222 ms When using 16 axes or less: 0.444 ms When using 32 axes or less: 0.888 ms	Set it correctly.	
	Connection to MR-J4W3-_B with software version A2 or earlier was attempted in 0.222 ms communication cycle.	Check if the communication cycle on servo system controller side is 0.222 ms.	Use them with 0.444 ms or more communication cycle.	[WB]
	MR-J4W3-_B was attempted to use in fully closed loop system.	Check if it was attempted to use in fully closed loop system.	MR-J4W3-_B does not support the fully closed loop control system. Use MR-J4-_B or MR-J4W2-_B.	
	A SSCNET III cable was disconnected.	Check if "Ab" is displayed in the corresponding axis and following axes.	Replace the SSCNET III cable of the corresponding axis.	[B] [WB]
		Check if the connectors (CN1A, CN1B) are unplugged.	Connect it correctly.	
	The power of the servo amplifier was turned off.	Check if "Ab" is displayed in the corresponding axis and following axes.	Check the power of the servo amplifier.	
The amplifier-less operation function of servo system controller is enabled.	Check if the amplifier-less operation function of servo system controller is enabled.	Disable the amplifier-less operation function.		
The servo amplifier is malfunctioning.	Check if "Ab" is displayed in the corresponding axis and following axes.	Replace the servo amplifier of the corresponding axis.		
A CC-Link IE cable was disconnected.	Check if "Ab" is displayed in the corresponding axis and following axes.	Replace the CC-Link IE cable of the corresponding axis.	[RJ010]	
	The servo amplifier power was switched on when the master station was off.	Check the power of the master station.		Turn on the power of the master station.
	Communication cycle does not match.	Check the communication cycle on the master station side. When using 8 axes or less: 0.888 ms When using 16 axes or less: 1.777 ms		Set it correctly.
	MR-J3-T10 is malfunctioning.	Replace the MR-J3-T10, and then check the repeatability.		Replace the MR-J3-T10.
	The servo amplifier is malfunctioning.	Replace the servo amplifier, and then check the repeatability.		Replace the servo amplifier.
	The master station is malfunctioning.	Replace the master station, and then check the repeatability.		Replace the master station.

1. TROUBLESHOOTING

Description	Possible cause	Check result	Action	Target
The display shows "b##". (Note)	Test operation mode has been enabled.	Test operation setting switch (SW2-1) is turned on.	Turn off the test operation setting switch (SW2-1).	[B] [WB] [RJ010]
	The system has been in the ready-off state.	Check if the servo ready state is off with the servo system controller.	Turn on the servo-on signals for all axes.	
The display shows "off".	Operation mode for manufacturer setting is enabled.	Check if all of the control axis setting switches (SW2) are on.	Set the control axis setting switches (SW2) correctly.	[B] [WB] [RJ010]
The display turned off.	The external I/O terminal was shorted.	When the display is on by disconnecting the following connectors, check if the disconnected cable wire is shorted. [A]: CN1, CN2, CN3 [B] [WB] [RJ010]: CN2, CN3	Review the wiring of I/O signals.	[A] [B] [WB] [RJ010]
	The control circuit power supply is not applied.	Check if the control circuit power supply of the servo amplifier is off.	Turn on the control circuit power.	
	The voltage of the control circuit power supply has dropped.	Check if the voltage of the control circuit power supply has dropped.	Increase the voltage of the control circuit power supply.	
The servo motor does not operate.	The connection of the servo motor is incorrect.	Check the wiring of U, V, and W.	Connect it correctly.	[A] [B] [WB] [RJ010]
	The servo motor power supply cable was connected to a servo amplifier of other axis.	Check if the encoder cable and servo motor power supply cable are connected to the same servo amplifier.	Connect the encoder cable and servo motor power supply cable correctly.	
	The servo-on command was inputted with main circuit power supply off.	Check if [AL. E9] is occurring.	Turn on the main circuit power.	
	An alarm or warning is occurring.	Check if an alarm or warning is occurring.	Check the content of the alarm/warning and remove its cause.	
	The system has been in the test operation mode.	[A]: Check if the lower right point is flickering. [B] [WB] [RJ010]: Check if the test operation setting switch (SW2-1) is on (up).	Cancel the test operation mode.	
	The motor-less operation has been enabled.	[A]: Check the [Pr. PC60] setting. [B] [WB] [RJ010]: Check the [Pr. PC05] setting.	Disable the motor-less operation.	
	The torque is insufficient due to large load.	Check instantaneous torque using status display (only [A]) or MR Configurator2 if the load exceeds the maximum torque or torque limit value.	Reduce the load or use a larger capacity servo motor.	
	An unintended torque limit has been enabled.	Check if the torque limit is enabled.	Cancel the torque limit.	

Note. ## indicates axis No.

1. TROUBLESHOOTING

Description	Possible cause	Check result	Action	Target
The servo motor does not operate.	The setting of the torque limit is incorrect.	Check if the torque limit is "0". [A]: [Pr. PA11] and [Pr. PA12], or analog input [B] [WB] [RJ010]: Setting on controller side	Set it correctly.	[A] [B] [WB] [RJ010]
	Machine is interfering with the motor.	Check if machine is interfering.	Remove the interference.	
	For a servo motor with an electromagnetic brake, the brake has not released.	Check the power supply of the electromagnetic brake.	Turn on the electromagnetic brake power.	
The servo motor does not operate.	LSP (Forward rotation stroke end) and LSN (Reverse rotation stroke end) are not on.	Check if [AL. 99] is occurring.	Turn on LSP and LSN.	[A]
	SON (Servo-on) is not on.	Check the SON (Servo-on) state.	Turn on SON (Servo-on).	
	RES (Reset) is on.	Check the RES (Reset) state.	Turn off RES (Reset).	
	The setting of the control mode is incorrect.	Check the [Pr. PA01] setting.	Set it correctly.	
	The command pulse is not inputted for the position control.	Check if the pulse train is outputted on the controller side.	Review the setting on the controller side.	
	The wiring of the command pulse train signal is incorrect for the position control.	Check the cumulative command pulse using the status display or MR Configurator2. Input the pulse train command and check if the display changes.	Review the wiring. When the signal is used in open-collector type, input 24 V DC to OPC.	
	The setting of the command pulse input form is incorrect for the position control.	Check if the pulse train form outputted with the controller and the setting of [Pr. PA13] are matched together.	Review the [Pr. PA13] setting.	
	Both of ST1 (Forward rotation start) and ST2 (Reverse rotation start) are off for the speed control.	Check the status of ST1 (Forward rotation start) and ST2 (Reverse rotation start).	Turn on ST1 (Forward rotation start) or ST2 (Reverse rotation start).	
	Both of RS1 (Forward rotation selection) and RS2 (Reverse rotation selection) are on or off for the torque control.	Check the status of RS1 (Forward rotation selection) and RS2 (Reverse rotation selection).	Turn on RS1 (Forward rotation selection) or RS2 (Reverse rotation selection).	
	The selection of SP1 (Speed selection 1), SP2 (Speed selection 2), or SP3 (Speed selection 3) is incorrect for the speed control or torque control.	Check SP1 (Speed selection 1), SP2 (Speed selection 2), and SP3 (Speed selection 3) if the selected speed command is correct.	Review the settings of SP1 (Speed selection 1), SP2 (Speed selection 2), SP3 (Speed selection 3), and speed command.	
	An analog signal is not inputted correctly.	Check the values of analog speed command and analog torque command using status display or MR Configurator2.	Input the analog signals correctly.	
	The ABS transfer mode is selected when the absolute position detection system is used.	Check if ABSM is on.	Turn off ABSM.	
	The settings of the electronic gear are incorrect.	Check the setting value of the electronic gear.	Set a proper value of the electronic gear.	

1. TROUBLESHOOTING

Description	Possible cause	Check result	Action	Target
The servo motor does not operate.	The axis is disabled.	Check if the disabling control axis switch is on. [B]: SW2-2 [WB]: SW2-2 to 4	Turn off the disabling control axis switch.	[B] [WB]
	An error is occurring on the servo system controller side.	Check if an error is occurring on the servo system controller side.	Cancel the error of the servo system controller.	
	The setting of a servo parameter is incorrect on the servo system controller side.	Check the settings of servo parameters on the servo system controller side.	Review the setting of the servo parameter on the servo system controller side.	
	The position command is not inputted correctly.	Check cumulative command pulses using MR Configurator2 and check if numerical values are changed by inputting the command.	Review the setting of the servo system controller and the servo program.	
	The connection destination of the encoder cable is incorrect.	Check if the connection destinations of CN2A, CN2B, and CN2C are the same as CNP3A, CNP3B, and CNP3C.	Connect encoder cables correctly.	[WB]
The speed of the servo motor or linear servo motor is not increased. Or the speed is increased too much.	The setting of the speed command, speed limit, or electronic gear is not correct.	Check the settings of the speed command, speed limit, and electronic gear.	Review the settings of the speed command, speed limit, and electronic gear.	[A] [B] [WB] [RJ010]
	The connection of the servo motor is incorrect.	Check the wiring of U, V, and W.	Connect it correctly.	
	The voltage of the main circuit power supply has dropped.	Check if the voltage of the main circuit power supply has dropped.	Increase the voltage of the main circuit power supply.	
	For a servo motor with an electromagnetic brake, the brake has not released.	Check the power supply of the electromagnetic brake.	Turn on the electromagnetic brake power.	
	The selection of SP1 (Speed selection 1), SP2 (Speed selection 2), or SP3 (Speed selection 3) is incorrect for the speed control or torque control.	Check SP1 (Speed selection 1), SP2 (Speed selection 2), and SP3 (Speed selection 3) if the selected speed command is correct.	Review the settings of SP1 (Speed selection 1), SP2 (Speed selection 2), SP3 (Speed selection 3), and speed command.	[A]
The servo motor vibrates with low frequency.	The estimated value of the load to motor inertia ratio by auto tuning is incorrect. When the load to motor inertia ratio is set by manual, the setting value is incorrect.	If the servo motor may be driven with safety, repeat acceleration and deceleration several times to complete auto tuning. Check if the load to motor inertia ratio is proper compared with the actual ratio for manual setting.	Execute auto tuning and one-touch tuning to reset the load to motor inertia ratio. Set the load to motor inertia ratio correctly for manual setting.	[A] [B] [WB] [RJ010]
	The command from the controller is unstable.	Check the command from the controller.	Review the command from the controller. Check the cable for command if there is failure such as disconnection.	
	Torque or thrust during acceleration/deceleration is overshooting exceeding the limit of the servo motor when the motor stops.	Check the effective load ratio during acceleration/deceleration if torque/thrust exceeds the maximum torque/thrust.	Reduce the effective load ratio by increasing acceleration/deceleration time and reducing load.	
	The servo gain is low. Or the response of auto tuning is low.	Check if the trouble is solved by increasing auto tuning response ([Pr. PA09]).	Adjust gains.	

1. TROUBLESHOOTING

Description	Possible cause	Check result	Action	Target
An unusual noise is occurring at the servo motor.	The servo gain is low. Or the response of auto tuning is low.	Check if the trouble is solved by increasing auto tuning response ([Pr. PA09]).	Adjust gains.	[A] [B] [WB] [RJ010]
	Bearing life expired.	If the servo motor may be driven with safety, remove the load and check the noise with the servo motor only. If you can remove the servo motor from machine, remove the servo motor power cable to release the brake and check the noise by rotating the shaft by your hands.	Noising means that the bearing life expired. Replace the servo motor. When not noising, maintain the machine.	
	For a servo motor with an electromagnetic brake, the brake has not released.	Check the power supply of the electromagnetic brake.	Turn on the electromagnetic brake power.	
	For a servo motor with an electromagnetic brake, the brake release timing is not correct.	Check the brake release timing.	Review the brake release timing. Please consider that the electromagnetic brake has release delay time.	
The servo motor vibrates.	The servo gain is too high. Or the response of auto tuning is too high.	Check if the trouble is solved by reducing auto tuning response ([Pr. PA09]).	Adjust gains.	[A] [B] [WB] [RJ010]
	The machine is vibrating (resonating).	If the servo motor may be driven with safety, check if the trouble is solved by one-touch tuning or adaptive tuning.	Adjust the machine resonance suppression filter.	
	The load side is vibrating.	If the servo motor may be driven with safety, check if the trouble is solved by advanced vibration suppression control II.	Execute the advanced vibration suppression control II.	
	Feedback pulses are being miscounted due to entered noise into an encoder cable.	Check the cumulative feedback pulses using status display (only [A]) or MR Configurator2 if its numerical value is skipped.	Please take countermeasures against noise by laying the encoder cable apart from power cables, etc.	
	There is a backlash between the servo motor and machine (such as gear, coupling).	Check if there is a backlash on the machine.	Adjust the backlash on the coupling and machine.	
	The rigidity of the servo motor mounting part is low.	Check the mounting part of the servo motor.	Increase the rigidity of the mounting part by such as increasing the board thickness and by reinforcing the part with ribs.	
	The connection of the servo motor is incorrect.	Check the wiring of U, V, and W.	Connect it correctly.	
	An unbalanced torque of the machine is large.	Check if the vibration varies depending on the speed.	Adjust balance of the machine.	
	The eccentricity due to core gap is large.	Check the mounting accuracy of the servo motor and machine.	Review the accuracy.	
	A load for the shaft of the servo motor is large.	Check the load for the shaft of the servo motor.	Adjust the load for the shaft to within specifications of the servo motor. For the shaft permissible load, refer to "Servo Motor Instruction Manual (Vol. 3)".	
An external vibration propagated to the servo motor.	Check the vibration from outside.	Prevent the vibration from the external vibration source.		

1. TROUBLESHOOTING

Description	Possible cause	Check result	Action	Target
The rotation accuracy is low. (The speed is unstable.)	The servo gain is low. Or the response of auto tuning is low.	Check if the trouble is solved by increasing auto tuning response ([Pr. PA09]).	Adjust gains.	[A] [B] [WB] [RJ010]
	The torque is insufficient due to large load.	Check instantaneous torque using status display (only [A]) or MR Configurator2 if the load exceeds the maximum torque or torque limit value.	Reduce the load or use a larger capacity servo motor.	
	An unintended torque limit has been enabled.	Check if TLC (Limiting torque) is on using status display or MR Configurator2.	Cancel the torque limit.	
	The setting of the torque limit is incorrect.	Check if the limiting torque is too low. [A]: [Pr. PA11] and [Pr. PA12], or analog input [B] [WB] [RJ010]: Setting on controller side	Set it correctly.	
	For a servo motor with an electromagnetic brake, the brake has not released.	Check the power supply of the electromagnetic brake.	Turn on the electromagnetic brake power.	
	The command from the controller is unstable.	Check the ripple of the command frequency with MR Configurator2.	Review the command from the controller. Check the cable for command if there is failure such as disconnection.	
The machine vibrates unsteadily when it stops.	The servo gain is low. Or the response of auto tuning is low.	Check if the trouble is solved by increasing auto tuning response ([Pr. PA09]).	Adjust gains.	[A] [B] [WB] [RJ010]
The servo motor starts to drive immediately after power on of the servo amplifier. The servo motor starts to drive immediately after servo-on.	SON (Servo-on) is on at power on.	Check if SON (Servo-on) and RD (Ready) are on using status display or MR Configurator2.	Review the sequence of SON (Servo-on).	[A]
	An analog signal is inputted from the beginning.	Check the status of analog speed command and analog torque command using status display or MR Configurator2.	Review the timing of inputting analog signals.	
	Zero point of an analog signal deviates.	Check if the servo motor drives while 0 V is inputted to the analog signal.	Execute the VC automatic offset or adjust offset of the analog signal with [Pr. PC37] or [Pr. PC38].	
	For a servo motor with an electromagnetic brake, the brake release timing is not correct.	Check the brake release timing.	Review the brake release timing.	[A] [B] [WB] [RJ010]
	The connection of the servo motor is incorrect.	Check the wiring of U, V, and W.	Connect it correctly.	

1. TROUBLESHOOTING

Description	Possible cause	Check result	Action	Target
Home position deviates at home position return.	For the dog type home position return, the point which the dog turns off and the point which Z-phase pulse is detected (CR input position) are too close.	Check if a fixed amount (in one revolution) deviates.	Adjust the dog position.	[A] [B] [WB] [RJ010]
	The in-position range is too large.	Check the setting of the in-position range in [Pr. PA10].	Set a narrower in-position range.	
	The proximity dog switch is failure. Or mounting proximity dog switch is incomplete.	Check if the proximity dog signal is inputted correctly.	Repair or replace the proximity dog switch. Adjust the mounting of the proximity dog switch.	
	The program on the controller side is incorrect.	Check the program on the controller side such as home position address settings or sequence programs.	Review the programs on the controller side.	
The position deviates during operation after home position return.	An alarm or warning is occurring.	Check if an alarm or warning is occurring.	Check the content of the alarm/warning and remove its cause.	[A] [B] [WB] [RJ010]
	The servo gain is low. Or the response of auto tuning is low.	Check if the trouble is solved by increasing auto tuning response ([Pr. PA09]).	Adjust gains.	
	The reduction ratio is not calculated correctly for the geared servo motor.	Check the following settings. [A]: Number of command input pulses per revolution ([Pr. PA05]) or electronic gear ([Pr. PA06] and [Pr. PA07]) [B] [WB] [RJ010]: Number of pulses per revolution, travel distance (setting on the controller side)	Review the calculation of the reduction ratio.	
	The in-position range is too large.	Check the setting of the in-position range in [Pr. PA10].	Set a narrower in-position range.	
	A mechanical slip occurred. Or backlash of the machine part is large.	Check if "cumulative feedback pulses × travel distance per pulse" matches actual machine position.	Adjust the machine part.	
	The command pulses were miscounted due to noise.	Check if the command value of the controller and cumulative command pulses are matched together.	Please take countermeasures against noise for the cable for command.	[A]
	A cable for command is connected loosely or disconnected.	Check if the command value of the controller and cumulative command pulses are matched together.	Repair the cable for command.	
	Frequency of the pulse train command is too high.	Check the pulse train command frequency is within the range of specifications. It is 500 kpulses/s or less for the open-collector type. It is 4 Mpulses/s or less for the differential line driver type.	Review the pulse train command frequency. Select a filter according to the pulse train command frequency from "Command input pulse train filter selection" in [Pr. PA13].	
A cable for command is too long.	Check the ripple of the command frequency with oscilloscope.	Shorten the wiring length. Cable length must be 10 m or shorter for differential line driver output and 2 m or shorter for open-collector output.		

1. TROUBLESHOOTING

Description	Possible cause	Check result	Action	Target
The position deviates during operation after home position return.	SON (Servo-on) turned off during operation.	Check if SON (Servo-on) is off during operation using status display or MR Configurator2.	Review the wiring and sequence not to turn off SON (Servo-on) during operation.	[A]
	LSP (Forward rotation stroke end) or LSN (Reverse rotation stroke end) turned off. ([AL. 99] occurred.)	Check if the operation range exceeds stroke end.	Review the operation range or the position of stroke end.	
	CR (Clear) or RES (Reset) turned on during operation.	Check if CR (Clear) or RES (Reset) is on during operation using status display or MR Configurator2.	Review the wiring and sequence not to turn on CR (Clear) or RES (Reset) during operation.	
A restoration position deviates at restoration of power for the absolute position detection system.	The motor was rotated exceeding the maximum permissible speed at power failure (6000 r/min) by an external force during servo amplifier power off. (Note: The acceleration time is 0.2 s or less.)	Check if the motor was accelerated suddenly to 6000 r/min by an external force.	Extend the acceleration time.	[A] [B] [WB] [RJ010]
	The servo amplifier power turned on while the servo motor was rotated exceeding 3000 r/min by an external force.	Check if the servo amplifier power turned on while the servo motor was rotated exceeding 3000 r/min by an external force.	Review the power-on timing.	
	Transfer data to the controller is incorrect.	Check the ABS data with MR Configurator2.	Review the controller programs.	[A]
Overshoot/undershoot occurs.	The servo gain is low or too high. The response of auto tuning is low or too high.	Check the velocity waveform with a graph using MR Configurator2 if overshoot/undershoot is occurring.	Adjust the response of auto tuning and execute the gain adjustment again.	[A] [B] [WB] [RJ010]
	Capacity shortage or shortage of the maximum torque (thrust) due to too large load	Check the instantaneous torque using status display if the maximum torque (maximum thrust) exceeds the torque limit value (thrust limit value).	Reduce the effective load ratio by increasing acceleration/deceleration time and reducing load.	
	The setting of the torque limit is incorrect.	Check the instantaneous torque using status display if the maximum torque (maximum thrust) exceeds the torque limit value (thrust limit value).	Review the torque limit setting.	
	Backlash of the machine part is large.	Check if there is a backlash on the machine part.	Adjust the backlash on the coupling and machine part.	

1. TROUBLESHOOTING

Description	Possible cause	Check result	Action	Target
A communication with servo amplifier fails using MR Configurator2. (For details, refer to Help of MR Configurator2.)	They are off-line status.	Check if they are off-line.	Set them to on-line.	[A] [B] [WB] [RJ010]
	A communication cable is malfunctioning.	Check if the communication cable is malfunctioning.	Replace the communication cable.	
	The communication setting is incorrect.	Check the communication setting such as baud rate and ports.	Set the communication setting correctly.	
	A model is being connected other than the model set in model selection.	Check if the model selection is set correctly.	Set the mode selection correctly.	
	The driver was not set correctly.	Check the bottom of the USB (Universal Serial Bus) controller with the device manager of the personal computer if "MITSUBISHI MELSERVO USB Controller" is being displayed.	Delete an unknown device or other devices, cycle the power of the servo amplifier, and reset according to Found New Hardware Wizard.	
For a servo motor with an electromagnetic brake, the brake went out.	The electromagnetic brake is failure due to its life. For the life of electromagnetic brake, refer to "Servo Motor Instruction Manual (Vol. 3)".	Remove the servo motor and all wirings from the machine and check if the servo motor shaft can be rotated by hands. (If it is rotated by hands, the brake is failure.)	Replace the servo motor.	[A] [B] [WB] [RJ010]
The coasting distance of the servo motor became longer.	The load was increased and permissible load to motor inertia ratio was exceeded.	Check if the load was increased.	Reduce the load.	[A] [B] [WB] [RJ010]
	An external relay is malfunctioning. Or the wiring of MBR (Electromagnetic brake interlock) is incorrect.	Check the external relay and wirings connected to MBR (Electromagnetic brake interlock) if they are malfunctioning.	Replace the external relay. Or review the wiring.	
	The electromagnetic brake is failure due to its life. For the life of electromagnetic brake, refer to "Servo Motor Instruction Manual (Vol. 3)".	Remove the servo motor and all wirings from the machine and check if the servo motor shaft can be rotated by hands. (If it is rotated by hands, the brake is failure.)	Replace the servo motor.	

2. DRIVE RECORDER

2. DRIVE RECORDER

2.1 How to use drive recorder

POINT
<ul style="list-style-type: none">● The drive recorder will not operate on the following conditions.<ul style="list-style-type: none">▪ You are using the graph function of MR Configurator2.▪ You are using the machine analyzer function.▪ [Pr. PF21] is set to "1".▪ The controller is not connected (except the test operation mode).▪ You are operating in the J3 compatibility mode.● When the following alarms occur, the drive recorder will not operate.<ul style="list-style-type: none">▪ [AL. 10.1 Voltage drop in the control circuit power]▪ [AL. 12 Memory error 1 (RAM)]▪ [AL. 15 Memory error 2 (EEP-ROM)]▪ [AL. 16 Encoder initial communication error 1]▪ [AL. 17 Board error]▪ [AL. 19 Memory error 3 (FLASH-ROM)]▪ [AL. 1A Servo motor combination error]▪ [AL. 1E Encoder initial communication error 2]▪ [AL. 1F Encoder initial communication error 3]▪ [AL. 25 Absolute position erased]▪ [AL. 37 Parameter error]▪ [AL. 70 Load-side encoder initial communication error 1]▪ [AL. 888.88888 Watchdog]● When the graph is displayed with MR Configurator2, the drive recorder function will be enabled. After the graph function is completed, passing time set with [Pr. PF21] or cycling the power of the servo amplifier will enable the drive recorder function again. For MR-J4-_A_(-RJ), enabling/disabling the drive recorder function can be made with the display (diagnostic mode).

When an alarm occurs at the servo amplifier, the conditions (such as motor speed and droop pulses) of the servo amplifier before/after alarm occurrences will be recorded. You can refer to the recorded data with MR Configurator2.

The drive recorder records sixteen data at alarm occurrences in the past. Occurring an alarm deletes the oldest data. However, sixteen data at alarm occurrences are recorded in total of A-axis, B-axis, and C-axis for MR-J4W_-_B. Therefore, alarms fewer than sixteen will be displayed on the alarm history display for each axis.

(1) Trigger setting of drive recorder

When you operate the drive recorder only for any alarms, set [Pr. PA23 Drive recorder arbitrary alarm trigger setting]. For settings, refer to explanation for [Pr. PA23] of each instruction manual.

When the setting value is "0 0 0 0" (initial value) in [Pr. PA23 Drive recorder arbitrary alarm trigger setting], the drive recorder will operate at alarm occurrences other than alarms described in above POINT.

2. DRIVE RECORDER

(2) Recordable data by drive recorder

When the setting value is "0 0 0 0" (initial value) in [Pr. PA23 Drive recorder arbitrary alarm trigger setting], the drive recorder will record data of standard column in table 2.1 or 2.2 for all alarms. When you set an alarm in table 2.1 or 2.2 to [Pr. PA23], each data described in alarm column will be recorded. When you set an alarm other than in table 2.1 and 2.2, data described in standard column will be recorded. Refer to table 2.3 for description of each signal.

(3) When the power of the servo amplifier is turned off during data storage (immediately after alarm occurrence), the data at alarm occurrence can not be recorded normally. When the following alarms occur, the data at alarm occurrence can not be recorded depending on its circumstances.

- [AL. 13 Clock error]
- [AL. 14 Control process error]
- [AL. 34 SSCNET receive error 1]
- [AL. 36 SSCNET receive error 2]

2. DRIVE RECORDER

Table 2.1 MR-J4-_B_(-RJ), MR-J4-_B-RJ010, or MR-J4W_ _B

		Data 1	Data 2	Data 3	Data 4	Data 5	Data 6	Data 7	Data 8	Sampling time [ms]	Measurement time [ms]
Standard	Analog	Motor speed	Torque	Current command	Droop pulses (1 pulse)	Speed command	Bus voltage	Effective load ratio		0.888	227
	Digital	CSON	EMG	ALM2	INP	MBR	RD	STO	IPF		
AL.10	Analog	Motor speed	Torque	Current command	Droop pulses (1 pulse)	Speed command	Bus voltage	Effective load ratio		0.888	227
	Digital	CSON	EMG	ALM2	INP	MBR	RD	STO	IPF		
AL.20	Analog	Motor speed	Torque	ABS counter	Within one-revolution position	Current command	Encoder error counter 1	Encoder error counter 2		0.888	227
	Digital	CSON	EMG	ALM2	INP	MBR	RD	STO	IPF		
AL.21	Analog	Motor speed	Torque	ABS counter	Within one-revolution position	Current command	Encoder error counter 1	Encoder error counter 2		0.888	227
	Digital	CSON	EMG	ALM2	INP	MBR	RD	STO	IPF		
AL.24	Analog	Motor speed	Torque	Current command	Within one-revolution position	Bus voltage	U-phase current feedback	V-phase current feedback		0.888	227
	Digital	CSON	EMG	ALM2	INP	MBR	RD	STO	IPF		
AL.30	Analog	Motor speed	Torque	Current command	Droop pulses (1 pulse)	Bus voltage	Regenerative load ratio	Effective load ratio		56.8	14563
	Digital	CSON	EMG	ALM2	INP	MBR	RD	STO	IPF		
AL.31	Analog	Motor speed	Torque	Current command	Command pulse frequency	Within one-revolution position	Speed command	Bus voltage		0.888	227
	Digital	CSON	EMG	ALM2	INP	MBR	RD	STO	IPF		
AL.32	Analog	Motor speed	Torque	Current command	Bus voltage	Effective load ratio	U-phase current feedback	V-phase current feedback		0.444	113
	Digital	CSON	EMG	ALM2	INP	MBR	RD	STO	IPF		
AL.33	Analog	Motor speed	Torque	Current command	Speed command	Bus voltage	Regenerative load ratio	Effective load ratio		3.5	910
	Digital	CSON	EMG	ALM2	INP	MBR	RD	STO	IPF		
AL.35	Analog	Motor speed	Torque	Current command	Command pulse frequency	Droop pulses (1 pulse)	Speed command	Bus voltage		0.888	227
	Digital	CSON	EMG	ALM2	INP	MBR	RD	STO	IPF		
AL. 42 (Note)	Analog	Motor speed	Torque	Motor-side/load-side position deviation (100 pulses)	Motor-side/load-side speed deviation	Command pulse frequency (speed unit)	Droop pulses (100 pulses)	Load-side droop pulses (100 pulses)		0.888	227
	Digital	CSON	EMG	ALM2	INP	MBR	RD	STO	IPF		
AL.46	Analog	Motor speed	Torque	Current command	Internal temperature of encoder	Temperature of motor thermistor	Bus voltage	Effective load ratio		56.8	14563
	Digital	CSON	EMG	ALM2	INP	MBR	RD	STO	IPF		
AL.50	Analog	Motor speed	Torque	Current command	Droop pulses (100 pulses)	Overload alarm margin	Bus voltage	Effective load ratio		56.8	14563
	Digital	CSON	EMG	ALM2	INP	MBR	RD	STO	IPF		
AL.51	Analog	Motor speed	Torque	Current command	Droop pulses (100 pulses)	Overload alarm margin	Bus voltage	Effective load ratio		56.8	14563
	Digital	CSON	EMG	ALM2	INP	MBR	RD	STO	IPF		

2. DRIVE RECORDER

		Data 1	Data 2	Data 3	Data 4	Data 5	Data 6	Data 7	Data 8	Sampling time [ms]	Measurement time [ms]
AL. 52	Analog	Motor speed	Torque	Current command	Droop pulses (100 pulses)	Speed command	Bus voltage	Error excessive alarm margin		3.5	910
	Digital	CSON	EMG	ALM2	INP	MBR	RD	STO	TLC		
AL. 71 (Note)	Analog	Motor speed	Torque	Load-side encoder information 2	Load-side encoder information 1	Current command	Load-side encoder error counter 1	Load-side encoder error counter 2		0.888	227
	Digital	CSON	EMG	ALM2	INP	MBR	RD	STO	IPF		
AL. 72 (Note)	Analog	Motor speed	Torque	Load-side encoder information 2	Load-side encoder information 1	Current command	Load-side encoder error counter 1	Load-side encoder error counter 2		0.888	227
	Digital	CSON	EMG	ALM2	INP	MBR	RD	STO	IPF		

Note. MR-J4-_B-RJ010 is not supported.

2. DRIVE RECORDER

Table 2.2 MR-J4-_A_(-RJ)

		Data 1	Data 2	Data 3	Data 4	Data 5	Data 6	Data 7	Data 8	Sampling time [ms]	Measurement time [ms]
Standard	Analog	Motor speed	Torque	Current command	Droop pulses (1 pulse)	Speed command	Bus voltage	Effective load ratio		0.888	227
	Digital	SON	EM2/EM1	ALM2	INP	MBR	RD	STO	IPF		
AL.10	Analog	Motor speed	Torque	Current command	Droop pulses (1 pulse)	Speed command	Bus voltage	Effective load ratio		0.888	227
	Digital	SON	EM2/EM1	ALM2	INP	MBR	RD	STO	IPF		
AL.20	Analog	Motor speed	Torque	ABS counter	Within one-revolution position	Current command	Encoder error counter 1	Encoder error counter 2		0.888	227
	Digital	SON	EM2/EM1	ALM2	INP	MBR	RD	STO	IPF		
AL.21	Analog	Motor speed	Torque	ABS counter	Within one-revolution position	Current command	Encoder error counter 1	Encoder error counter 2		0.888	227
	Digital	SON	EM2/EM1	ALM2	INP	MBR	RD	STO	IPF		
AL.24	Analog	Motor speed	Torque	Current command	Within one-revolution position	Bus voltage	U-phase current feedback	V-phase current feedback		0.888	227
	Digital	SON	EM2/EM1	ALM2	INP	MBR	RD	STO	IPF		
AL.30	Analog	Motor speed	Torque	Current command	Droop pulses (1 pulse)	Bus voltage	Regenerative load ratio	Effective load ratio		56.8	14563
	Digital	SON	EM2/EM1	ALM2	INP	MBR	RD	STO	IPF		
AL.31	Analog	Motor speed	Torque	Current command	Command pulse frequency	Within one-revolution position	Speed command	Bus voltage		0.888	227
	Digital	SON	EM2/EM1	ALM2	INP	MBR	RD	STO	IPF		
AL.32	Analog	Motor speed	Torque	Current command	Bus voltage	Effective load ratio	U-phase current feedback	V-phase current feedback		0.444	113
	Digital	SON	EM2/EM1	ALM2	INP	MBR	RD	STO	IPF		
AL.33	Analog	Motor speed	Torque	Current command	Speed command	Bus voltage	Regenerative load ratio	Effective load ratio		3.5	910
	Digital	SON	EM2/EM1	ALM2	INP	MBR	RD	STO	IPF		
AL.35	Analog	Motor speed	Torque	Current command	Command pulse frequency	Droop pulses (1 pulse)	Speed command	Bus voltage		0.888	227
	Digital	SON	EM2/EM1	ALM2	INP	MBR	RD	STO	IPF		
AL.42	Analog	Motor speed	Torque	Motor-side/load-side position deviation (100 pulses)	Motor-side/load-side speed deviation	Command pulse frequency (speed unit)	Droop pulses (100 pulses)	Load-side droop pulses (100 pulses)		0.888	227
	Digital	SON	EM2/EM1	ALM2	INP	MBR	RD	STO	IPF		
AL.46	Analog	Motor speed	Torque	Current command	Internal temperature of encoder	Temperature of motor thermistor	Bus voltage	Effective load ratio		56.8	14563
	Digital	SON	EM2/EM1	ALM2	INP	MBR	RD	STO	IPF		
AL.50	Analog	Motor speed	Torque	Current command	Droop pulses (100 pulses)	Overload alarm margin	Bus voltage	Effective load ratio		56.8	14563
	Digital	SON	EM2/EM1	ALM2	INP	MBR	RD	STO	IPF		
AL.51	Analog	Motor speed	Torque	Current command	Droop pulses (100 pulses)	Overload alarm margin	Bus voltage	Effective load ratio		56.8	14563
	Digital	SON	EM2/EM1	ALM2	INP	MBR	RD	STO	IPF		

2. DRIVE RECORDER

		Data 1	Data 2	Data 3	Data 4	Data 5	Data 6	Data 7	Data 8	Sampling time [ms]	Measurement time [ms]
AL.52	Analog	Motor speed	Torque	Current command	Droop pulses (100 pulses)	Speed command	Bus voltage	Error excessive alarm margin		3.5	910
	Digital	SON	EM2/EM1	ALM2	INP	MBR	RD	STO	TLC		
AL.71	Analog	Motor speed	Torque	Load-side encoder information 2	Load-side encoder information 1	Current command	Load-side encoder error counter 1	Load-side encoder error counter 2		0.888	227
	Digital	SON	EM2/EM1	ALM2	INP	MBR	RD	STO	IPF		
AL.72	Analog	Motor speed	Torque	Load-side encoder information 2	Load-side encoder information 1	Current command	Load-side encoder error counter 1	Load-side encoder error counter 2		0.888	227
	Digital	SON	EM2/EM1	ALM2	INP	MBR	RD	STO	IPF		

2. DRIVE RECORDER

Table 2.3 Signal explanations

	Signal name	Description	Unit
Analog	Motor speed	The servo motor speed is displayed.	[r/min]
	Torque	The servo motor torque is displayed with current value. The value of torque being occurred is displayed in real time considering a rated torque as 100%.	[0.1%]
	Current command	This indicates current command applying to the servo motor.	[0.1%]
	Droop pulses (1 pulse)	This indicates the number of droop pulses in the deviation counter per pulse.	[pulse]
	Droop pulses (100 pulses)	This indicates the number of droop pulses in the deviation counter per 100 pulses.	[100 pulses]
	Speed command	This indicates speed command applying to the servo motor.	[r/min]
	Bus voltage	This indicates bus voltage at the converter of the servo amplifier.	[V]
	Effective load ratio	The continuous effective load torque is displayed. This indicates effective value for past 15 seconds.	[0.1%]
	ABS counter	The travel distance from the home position is displayed as multi-revolution counter value of the absolute position encoder in the absolute position detection system.	[rev]
	Within one-revolution position	Position within one revolution is displayed in encoder pulses.	[16 pulses]
	Encoder error counter 1	This indicates the number of cumulative errors during a communication with the encoder.	[times]
	Encoder error counter 2	The same as encoder error counter 1.	[times]
	U-phase current feedback	This indicates U-phase current value applying to the servo motor per internal unit.	
	V-phase current feedback	This indicates V-phase current value applying to the servo motor per internal unit.	
	Regenerative load ratio	The ratio of regenerative power to permissible regenerative power is displayed in %.	[0.1%]
	Command pulse frequency	This indicates the command pulse frequency.	[1.125 kpulses/s]
	Command pulse frequency (speed unit)	This converts and indicates command pulse frequency per servo motor speed.	[r/min]
	Motor-side/load-side position deviation (100 pulses)	This indicates a deviation between motor-side position and load-side position during fully closed loop control. The number of pulses displayed is in the load-side encoder pulse unit.	[100 pulses]
	Motor-side/load-side speed deviation	This indicates a deviation between motor speed and load-side speed during fully closed loop control.	[r/min]
	Load-side droop pulses (100 pulses)	Droop pulses of the deviation counter between a load-side position and a command are displayed.	[100 pulses]
	Internal temperature of encoder	Inside temperature of encoder detected by the encoder is displayed.	[°C]
	Temperature of motor thermistor	The thermistor temperature is displayed for the rotary servo motor with thermistor, linear servo motor with thermistor, and direct drive motor.	[°C]
	Overload alarm margin	This indicates margins to the levels which trigger [AL. 50 Overload 1] and [AL. 51 Overload 2] in percent. When the value becomes 0%, the overload alarm will occur.	[0.1%]
	Error excessive alarm margin	This indicates a margin to the level which trigger the error excessive alarm in encoder pulse unit. When the value becomes 0 pulse, the error excessive alarm will occur.	[pulse]
	Load-side encoder information 1	The position in load-side encoder 1-revolution is displayed. This indicates a Z-phase counter for the INC linear encoder. The value is counted up from 0 based on the home position (reference mark). This indicates an absolute position for the ABS linear encoder. It is displayed in load-side encoder pulse unit.	[pulse]
	Load-side encoder information 2	Multi-revolution counter of the load-side encoder is displayed.	[pulse]
Load-side encoder error counter 1	This indicates the number of cumulative errors during a communication with the load-side encoder.	[times]	
Load-side encoder error counter 2	The same as load-side encoder error counter 1.	[times]	

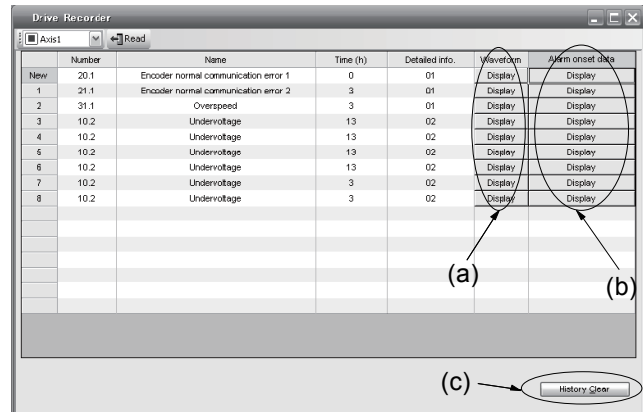
2. DRIVE RECORDER

	Signal name	Description	Unit
Digital	CSON	This indicates status of the servo-on signal from the controller.	
	SON	This Indicates the SON status of the external input signal.	
	EMG	This indicates status of the emergency stop input.	
	EM2/EM1	This Indicates the EM2/EM1 status of the external input signal.	
	ALM2	This will turn on when an alarm is detected in the servo amplifier. This changes faster than ALM of the external output signal.	
	INP	This indicates INP status of the external output signal.	
	MBR	This indicates MBR status of the external output signal.	
	RD	This indicates RD status of the external output signal.	
	STO	This Indicates the STO status of the external input signal.	
IPF	This will turn on when the control circuit power becomes instantaneous power failure status.		

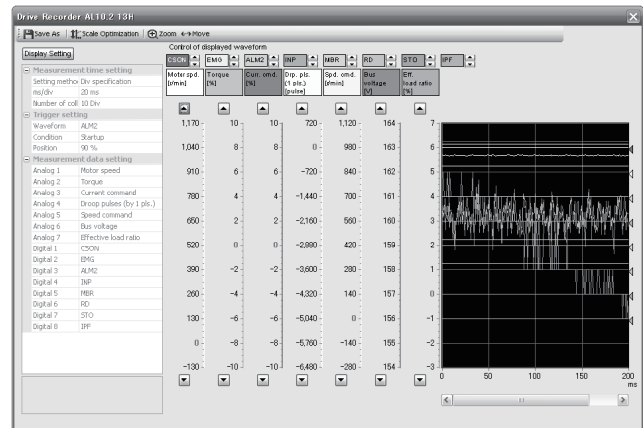
2. DRIVE RECORDER

2.2 How to display drive recorder information

Select "Diagnosis" and "Drive Recorder" from the menu bar of MR Configurator2. The window shown in the right hand image will be displayed.



- (a) Click the Waveform-Display button to display the graph preview window which shows data before and after alarm occurrence. For operating the graph preview window, refer to Help of MR Configurator2.



- (b) Click the Display button of Alarm onset data to display each data at alarm occurrence.

Number	Name	Occurrence time (h)	Detailed information
20.1	Encoder normal communication error 1	0	01

No.	Item	Units	Axis1
1	Cumulative feedback pulses	pulse	0
2	Servo motor speed	r/min	0
3	Drop pulses	pulse	0
4	Cumulative command pulses	pulse	0
5	Command pulse frequency	kpps	0
6	Regenerative load ratio	%	0
7	Effective load ratio	%	0
8	Peak load ratio	%	0
9	Instantaneous torque	%	0
10	Within one-revolution position	pulse	62885
11	ABS counter	rev	127
12	Load to motor inertia ratio	times	0.00
13	Bus voltage	V	290
35	Encoder inside temperature	°C	29
36	Settling time	ms	0
37	Oscillation detection frequency	Hz	0
38	Number of tough drive operations	times	0
43	Unit power consumption	W	10
44	Unit total power consumption	Wh	0

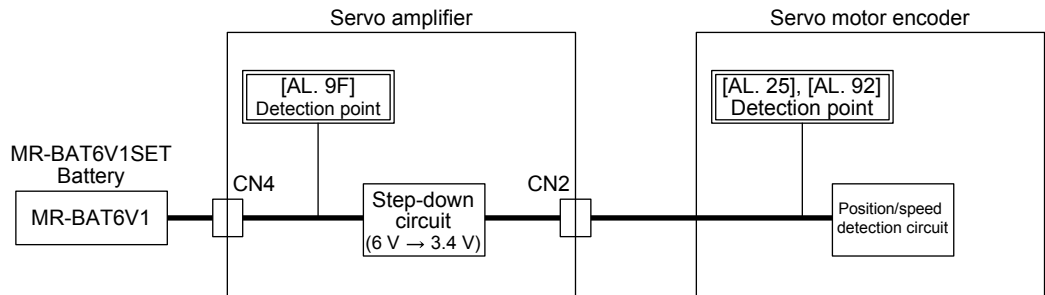
- (c) Click the History Clear button to delete all data at alarm occurrence recorded in the servo amplifier. After clicking the History Clear button, cycle the power of the servo amplifier. Note that the time to restart will be longer than usual due to the deletion of the data.

APPENDIX

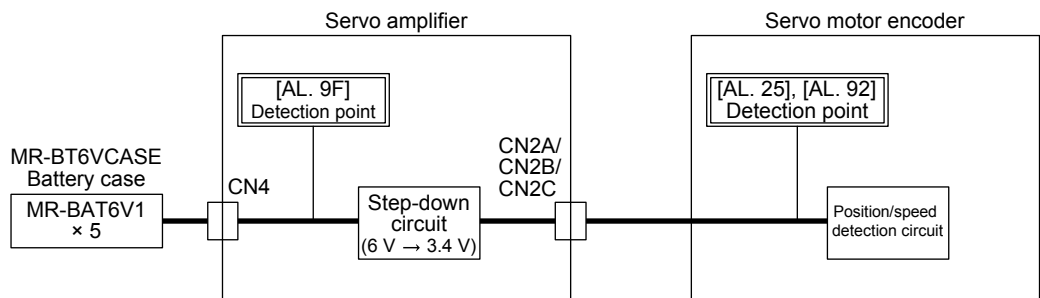
App. 1 Detection points of [AL. 25], [AL. 92], and [AL. 9F]

The following diagram shows detection points of [AL. 25 Absolute position erased], [AL. 92 Battery cable disconnection warning], and [AL. 9F Battery warning].

(1) MR-J4-_A or MR-J4-_B



(2) MR-J4W_-_B



REVISIONS

*The manual number is given on the bottom left of the back cover.

Print Data	*Manual Number	Revision	
Mar. 2012	SH(NA)030109-A	First edition	
Jun. 2012	SH(NA)030109-B	Section 1.1	[AL. 1E.2] is added. [AL. 1F.2] is added. [AL. 42.8] is added. [AL. 42.9] is added. [AL. 42.A] is added. [AL. 70] is added. [AL. 71] is added. [AL. 72] is added. [AL. E8.2] is added.
		Section 1.2	[AL. 1E.2] is added. [AL. 1F.2] is added. [AL. 42.8] is added. [AL. 42.9] is added. [AL. 42.A] is added. Check result and Action of [AL. 46.2] (2) are partially changed. The reference of [AL. 51.2] is changed. [AL. 52.1] (10) is changed. [AL. 70] is added. [AL. 71] is added. [AL. 72] is added. The serial communication is added to [AL. 8A]. The serial communication is added to [AL. 8E].
		Section 1.3	[AL. E8.1] (1) is added. [AL. E8.2] is added.
Feb. 2013	SH(NA)030109-C	Section 1.1	[AL. 17.8] is added. [AL. 74] is added. [AL. 75] is added. [AL. 8D] is added. [AL. 93] is added. [AL. 96.4] is added. [AL. 9D] is added. [AL. 9E] is added.
		Section 1.2	[AL. 17.8] is added. [AL. 74] is added. [AL. 75] is added. [AL. 8D] is added.
		Section 1.3	The part of table is changed. [AL. 93] is added. [AL. 96.4] is added. [AL. 9D] is added. [AL. 9E] is added.
		Section 1.4 Chapter 2	The part of table is changed. Addition Addition
Aug. 2013	SH(NA)030109-D	Section 1.1	[AL. 25.2] is added. [AL. 3D] is added. [AL. 82] is added.
		Section 1.2	[AL. 11.2] The part of table is changed. [AL. 25.2] is added. [AL. 27.1] The part of table is changed. [AL. 37] The part of table is changed. [AL. 3D] is added. [AL. 42] The part of table is changed. [AL. 82] is added.
		Section 1.4 Section 2.1	The part of table is changed. The part of table is changed.

Print Data	*Manual Number	Revision	
Oct. 2013	SH(NA)030109-E	Section 1.2 Section 1.3	[AL. 25.1] The part of table is changed. [AL. 25.2] The part of table is changed. [AL. 92.1] The part of table is changed. [AL. 9F.1] The part of table is changed.

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Warranty

1. Warranty period and coverage

We will repair any failure or defect hereinafter referred to as "failure" in our FA equipment hereinafter referred to as the "Product" arisen during warranty period at no charge due to causes for which we are responsible through the distributor from which you purchased the Product or our service provider. However, we will charge the actual cost of dispatching our engineer for an on-site repair work on request by customer in Japan or overseas countries. We are not responsible for any on-site readjustment and/or trial run that may be required after a defective unit are repaired or replaced.

[Term]

The term of warranty for Product is twelve (12) months after your purchase or delivery of the Product to a place designated by you or eighteen (18) months from the date of manufacture whichever comes first ("Warranty Period"). Warranty period for repaired Product cannot exceed beyond the original warranty period before any repair work.

[Limitations]

- (1) You are requested to conduct an initial failure diagnosis by yourself, as a general rule.
It can also be carried out by us or our service company upon your request and the actual cost will be charged. However, it will not be charged if we are responsible for the cause of the failure.
- (2) This limited warranty applies only when the condition, method, environment, etc. of use are in compliance with the terms and conditions and instructions that are set forth in the instruction manual and user manual for the Product and the caution label affixed to the Product.
- (3) Even during the term of warranty, the repair cost will be charged on you in the following cases;
 - (i) a failure caused by your improper storing or handling, carelessness or negligence, etc., and a failure caused by your hardware or software problem
 - (ii) a failure caused by any alteration, etc. to the Product made on your side without our approval
 - (iii) a failure which may be regarded as avoidable, if your equipment in which the Product is incorporated is equipped with a safety device required by applicable laws and has any function or structure considered to be indispensable according to a common sense in the industry
 - (iv) a failure which may be regarded as avoidable if consumable parts designated in the instruction manual, etc. are duly maintained and replaced
 - (v) any replacement of consumable parts (battery, fan, smoothing capacitor, etc.)
 - (vi) a failure caused by external factors such as inevitable accidents, including without limitation fire and abnormal fluctuation of voltage, and acts of God, including without limitation earthquake, lightning and natural disasters
 - (vii) a failure generated by an unforeseeable cause with a scientific technology that was not available at the time of the shipment of the Product from our company
 - (viii) any other failures which we are not responsible for or which you acknowledge we are not responsible for

2. Term of warranty after the stop of production

- (1) We may accept the repair at charge for another seven (7) years after the production of the product is discontinued. The announcement of the stop of production for each model can be seen in our Sales and Service, etc.
- (2) Please note that the Product (including its spare parts) cannot be ordered after its stop of production.

3. Service in overseas countries

Our regional FA Center in overseas countries will accept the repair work of the Product. However, the terms and conditions of the repair work may differ depending on each FA Center. Please ask your local FA center for details.

4. Exclusion of responsibility for compensation against loss of opportunity, secondary loss, etc.

Whether under or after the term of warranty, we assume no responsibility for any damages arisen from causes for which we are not responsible, any losses of opportunity and/or profit incurred by you due to a failure of the Product, any damages, secondary damages or compensation for accidents arisen under a specific circumstance that are foreseen or unforeseen by our company, any damages to products other than the Product, and also compensation for any replacement work, readjustment, start-up test run of local machines and the Product and any other operations conducted by you.

5. Change of Product specifications

Specifications listed in our catalogs, manuals or technical documents may be changed without notice.

6. Application and use of the Product

- (1) For the use of our General-Purpose AC Servo, its applications should be those that may not result in a serious damage even if any failure or malfunction occurs in General-Purpose AC Servo, and a backup or fail-safe function should operate on an external system to General-Purpose AC Servo when any failure or malfunction occurs.
- (2) Our General-Purpose AC Servo is designed and manufactured as a general purpose product for use at general industries. Therefore, applications substantially influential on the public interest for such as atomic power plants and other power plants of electric power companies, and also which require a special quality assurance system, including applications for railway companies and government or public offices are not recommended, and we assume no responsibility for any failure caused by these applications when used
In addition, applications which may be substantially influential to human lives or properties for such as airlines, medical treatments, railway service, incineration and fuel systems, man-operated material handling equipment, entertainment machines, safety machines, etc. are not recommended, and we assume no responsibility for any failure caused by these applications when used. We will review the acceptability of the abovementioned applications, if you agree not to require a specific quality for a specific application. Please contact us for consultation.

MODEL	MR-J4 INSTRUCTIONMANUAL (TROUBLESHOOTING)
MODEL CODE	1CW808

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