MITSUBISHI ELECTRIC

General-Purpose AC Servo

MITSUBISHI SERVO AMPLIFIERS & MOTORS
MELSERVO-J4

MELSERVO-J4 Servo amplifier

INSTRUCTION MANUAL (TROUBLE SHOOTING)

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● 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".

⚠ WARNING	Indicates that incorrect handling may cause hazardous conditions, resulting in death or severe injury.
⚠ CAUTION	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 (20 minutes or more for converter unit) until the charge lamp turns off. Then, confirm that the voltage between P+ and N- (between L+ and L- for converter unit) is safe with a voltage tester and others. Otherwise, an electric shock may occur. In addition, always confirm whether the charge lamp is off or not from the front of the servo amplifier (converter unit).
- 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 an MR-J4 multi-axis servo amplifier, connecting an encoder for wrong axis to the CN2A, CN2B, or CN2C connector may cause a fire.

3. To prevent injury, note the following

⚠ CAUTION

- The servo amplifier (drive unit), converter unit heat sink, regenerative resistor, servo motor, etc. may become hot while power is on or for some time after power-off. Take safety measures, e.g. provide covers, to avoid accidentally touching the parts (cables, etc.) by hand.

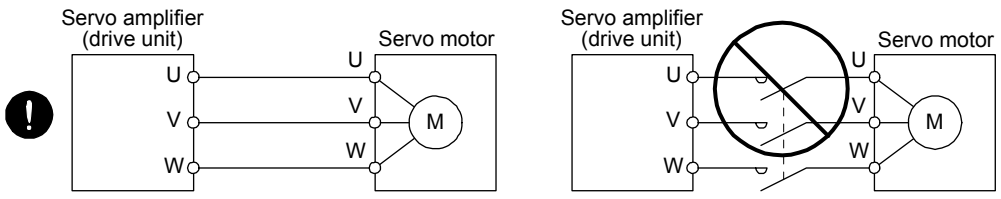
4. Additional instructions

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 of the servo motor, connect the wires to the correct phase terminals (U, V, and W) of the servo amplifier (drive unit) and the servo motor.
- Connect the servo amplifier (drive unit) 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

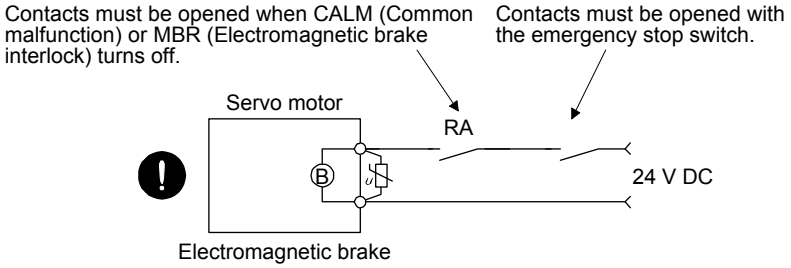
⚠ CAUTION

- Before resetting an alarm, make sure that the run signal of the servo amplifier (drive unit) is off in order to prevent a sudden restart. Otherwise, it may cause an accident.
- Use the servo amplifier (drive unit) and converter unit 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 emergency 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. These include servo amplifiers (drive units) which have optional units.

- MR-J4-_A/MR-J4-_A4/MR-J4-_A1/MR-J4-_A-RJ/MR-J4-_A4-RJ/MR-J4-_A1-RJ
- MR-J4-_B/MR-J4-_B4/MR-J4-_B1/MR-J4-_B-RJ/MR-J4-_B4-RJ/MR-J4-_B1-RJ
- MR-J4W_-_B
- MR-J4-_B-RJ010/MR-J4-_B4-RJ010
- MR-J4-DU_A/MR-J4-DU_A4/MR-J4-DU_A-RJ/MR-J4-DU_A4-RJ
- MR-J4-DU_B/MR-J4-DU_B4/MR-J4-DU_B-RJ/MR-J4-DU_B4-RJ
- MR-CR55K/MR-CR55K4
- MR-J4-03A6/MR-J4-03A6-RJ/MR-J4W2-0303B6

The symbols in the target column mean as follows.
[A]: MR-J4-_A/MR-J4-_A4/MR-J4-_A1/MR-J4-_A-RJ/MR-J4-_A4-RJ/MR-J4-_A1-RJ/MR-J4-DU_A/ MR-J4-DU_A4/MR-J4-DU_A-RJ/MR-J4-DU_A4-RJ/MR-J4-03A6/MR-J4-03A6-RJ
[B]: MR-J4-_B/MR-J4-_B4/MR-J4-_B1/MR-J4-_B-RJ/MR-J4-_B4-RJ/MR-J4-_B1-RJ/ MR-J4-DU_B/MR-J4-DU_B4/MR-J4-DU_B-RJ/MR-J4-DU_B4-RJ
[WB]: MR-J4W_-_B/MR-J4W2-0303B6
[RJ010]: MR-J4-_B-RJ010/MR-J4-_B4-RJ010

MEMO

CONTENTS

MEMO

1. TROUBLESHOOTING FOR SERVO AMPLIFIER (DRIVE UNIT)

POINT
●As soon as an alarm occurs, turn SON (Servo-on) off and interrupt the power. ●[AL. 37 Parameter error] and warnings (except [AL. F0 Tough drive warning]) are not recorded in the alarm history.

When an error occurs during operation, the corresponding alarm or warning is displayed. When an alarm is displayed, refer to section 1.4 and take the appropriate action. When an alarm occurs, ALM will turn off. When an warning is displayed, refer to section 1.5 and take the appropriate action.

1.1 Explanation for the lists

(1) No./Name/Detail No./Detail name
Indicates each No./Name/Detail No./Detail name of alarms or warnings.

(2) Stop method
For the alarms and warnings in which "SD" is written in the stop method column, the servo motor stops with the dynamic brake after forced stop deceleration. For the alarms and warnings in which "DB" or "EDB" is written in the stop method column, the servo motor stops with the dynamic brake without forced stop deceleration.

(3) Alarm deactivation
After its cause has been removed, the alarm can be deactivated in any of the methods marked ○ in the alarm deactivation column. Warnings are automatically canceled after the cause of occurrence is removed. Alarms are deactivated with alarm reset, CPU reset, or cycling the power.

(a) MR-J4-_A_(-RJ)/MR-J4-DU_A_(-RJ)

Alarm deactivation	Explanation
Alarm reset	1. Turning on RES (Reset) with input device 2. Pushing the "SET" button while the display of the servo amplifier is the current alarm display status 3. Pushing the "Occurring Alarm Reset" button in the "Alarm Display" window of MR Configurator2
Cycling the power	Turning off the power and on again

(b) MR-J4-_B_(-RJ010)/MR-J4W_-_B/MR-J4-DU_B_(-RJ)

Alarm deactivation	Explanation
Alarm reset	1. Reset command from controller 2. Pushing the "Occurring Alarm Reset" button in the "Alarm Display" window of MR Configurator2
CPU reset	Resetting the controller itself
Cycling the power	Turning off the power and on again

(4) Processing system (only for MR-J4W_-_B_)
Processing system of alarms is as follows.
Each axis: Alarm is detected for each axis.
Common: Alarm is detected as the whole servo amplifier.

(5) Stop system (only for MR-J4W_-_B_)
This means target axis to stop when the alarm occurs.
Each axis: Only alarming axis will stop.
All axes: All axes will stop.

(6) Alarm code (only MR-J4-_A_(-RJ)/MR-J4-DU_A_(-RJ))
To output alarm codes, set [Pr. PD34] to "_ _ _ 1" when using an MR-J4-_A_(-RJ)/MR-J4-DU_A_(-RJ). Alarm codes are outputted by on/off of bit 0 to bit 2. Warnings ([AL. 90] to [AL. F3]) do not have alarm codes. The alarm codes in the following table will be outputted when they occur. The alarm codes will not be outputted in normal condition.
When using an MR-D01 extension IO unit, you can output alarm codes by setting [Pr. Po12] to "_ _ _ 1". Alarm codes are outputted by on/off of bit 0 to bit 3.

1.2 Alarm list

	No.	Name	Detail No.	Detail name	Stop method (Note 2, 3)	Alarm deactivation			Processing system (Note 9)	Stop system (Note 9)	Alarm code (Note 8)			
						Alarm reset	CPU reset	Cycling the power			ACD3 (Bit 3)	ACD2 (Bit 2)	ACD1 (Bit 1)	ACD0 (Bit 0)
Alarm	10	Undervoltage	10.1	Voltage drop in the control circuit power	EDB	○	○	○	Common	All axes	0	0	1	0
			10.2	Voltage drop in the main circuit power	SD	○	○	○	Common	All axes				
	11	Switch setting error	11.1	Axis number setting error	DB			○	Common	All axes				
			11.2	Disabling control axis setting error	DB			○	Common	All axes				
	12	Memory error 1 (RAM)	12.1	RAM error 1	DB			○	Common	All axes	0	0	0	0
			12.2	RAM error 2	DB			○	Common	All axes				
			12.3	RAM error 3	DB			○	Common	All axes				
			12.4	RAM error 4	DB			○	Common	All axes				
			12.5	RAM error 5	DB			○	Common	All axes				
	13	Clock error	13.1	Clock error 1	DB			○	Common	All axes	0	0	0	0
			13.2	Clock error 2	DB			○	Common	All axes				
	14	Control process error	14.1	Control process error 1	DB			○	Common	All axes	0	0	0	0
			14.2	Control process error 2	DB			○	Common	All axes				
			14.3	Control process error 3	DB			○	Common	All axes				
			14.4	Control process error 4	DB			○	Common	All axes				
			14.5	Control process error 5	DB			○	Common	All axes				
			14.6	Control process error 6	DB			○	Common	All axes				
			14.7	Control process error 7	DB			○	Common	All axes				
			14.8	Control process error 8	DB			○	Common	All axes				
			14.9	Control process error 9	DB			○	Common	All axes				
			14.A	Control process error 10	DB			○	Common	All axes				
	15	Memory error 2 (EEP-ROM)	15.1	EEP-ROM error at power on	DB			○	Common	All axes	0	0	0	0
			15.2	EEP-ROM error during operation	DB			○	Common	All axes				
			15.4	Home position information read error	DB			○						
	16	Encoder initial communication error 1	16.1	Encoder initial communication - Receive data error 1	DB			○	Each axis	Each axis	0	1	1	0
			16.2	Encoder initial communication - Receive data error 2	DB			○	Each axis	Each axis				
			16.3	Encoder initial communication - Receive data error 3	DB			○	Each axis	Each axis				
			16.5	Encoder initial communication - Transmission data error 1	DB			○	Each axis	Each axis				
			16.6	Encoder initial communication - Transmission data error 2	DB			○	Each axis	Each axis				
			16.7	Encoder initial communication - Transmission data error 3	DB			○	Each axis	Each axis				
			16.A	Encoder initial communication - Process error 1	DB			○	Each axis	Each axis				
			16.B	Encoder initial communication - Process error 2	DB			○	Each axis	Each axis				
			16.C	Encoder initial communication - Process error 3	DB			○	Each axis	Each axis				
			16.D	Encoder initial communication - Process error 4	DB			○	Each axis	Each axis				
			16.E	Encoder initial communication - Process error 5	DB			○	Each axis	Each axis				
			16.F	Encoder initial communication - Process error 6	DB			○	Each axis	Each axis				
	17	Board error	17.1	Board error 1	DB			○	Common	All axes	0	0	0	0
			17.3	Board error 2	DB			○	Common	All axes				
			17.4	Board error 3	DB			○	Common	All axes				
			17.5	Board error 4	DB			○	Common	All axes				
			17.6	Board error 5	DB			○	Common	All axes				
			17.7	Board error 7	DB			○						
			17.8	Board error 6 (Note 6)	EDB			○	Common	All axes				

	No.	Name	Detail No.	Detail name	Stop method (Note 2, 3)	Alarm deactivation			Process-ing system (Note 9)	Stop system (Note 9)	Alarm code (Note 8)			
						Alarm reset	CPU reset	Cycling the power			ACD3 (Bit 3)	ACD2 (Bit 2)	ACD1 (Bit 1)	ACD0 (Bit 0)
Alarm	19	Memory error 3 (Flash-ROM)	19.1	Flash-ROM error 1	DB			○	Common	All axes	0	0	0	0
			19.2	Flash-ROM error 2	DB			○	Common	All axes				
	1A	Servo motor combination error	1A.1	Servo motor combination error 1	DB			○	Each axis	Each axis	0	1	1	0
			1A.2	Servo motor control mode combination error	DB			○	Each axis	Each axis				
			1A.4	Servo motor combination error 2	DB			○	Each axis	Each axis				
	1B	Converter error	1B.1	Converter unit error	DB			○			0	0	1	0
	1E	Encoder initial communication error 2	1E.1	Encoder malfunction	DB			○	Each axis	Each axis	0	1	1	0
			1E.2	Load-side encoder malfunction	DB			○	Each axis	Each axis				
	1F	Encoder initial communication error 3	1F.1	Incompatible encoder	DB			○	Each axis	Each axis	0	1	1	0
			1F.2	Incompatible load-side encoder	DB			○	Each axis	Each axis				
	20	Encoder normal communication error 1	20.1	Encoder normal communication - Receive data error 1	EDB			○	Each axis	Each axis	0	1	1	0
			20.2	Encoder normal communication - Receive data error 2	EDB			○	Each axis	Each axis				
			20.3	Encoder normal communication - Receive data error 3	EDB			○	Each axis	Each axis				
			20.5	Encoder normal communication - Transmission data error 1	EDB			○	Each axis	Each axis				
			20.6	Encoder normal communication - Transmission data error 2	EDB			○	Each axis	Each axis				
			20.7	Encoder normal communication - Transmission data error 3	EDB			○	Each axis	Each axis				
			20.9	Encoder normal communication - Receive data error 4	EDB			○	Each axis	Each axis				
			20.A	Encoder normal communication - Receive data error 5	EDB			○	Each axis	Each axis				
	21	Encoder normal communication error 2	21.1	Encoder data error 1	EDB			○	Each axis	Each axis	0	1	1	0
			21.2	Encoder data update error	EDB			○	Each axis	Each axis				
			21.3	Encoder data waveform error	EDB			○	Each axis	Each axis				
			21.4	Encoder non-signal error	EDB			○	Each axis	Each axis				
			21.5	Encoder hardware error 1	EDB			○	Each axis	Each axis				
			21.6	Encoder hardware error 2	EDB			○	Each axis	Each axis				
			21.9	Encoder data error 2	EDB			○	Each axis	Each axis				
	24	Main circuit error	24.1	Ground fault detected by hardware detection circuit	DB			○	Each axis	All axes	1	1	0	0
			24.2	Ground fault detected by software detection function	DB	○	○	○	Each axis	All axes				
	25	Absolute position erased	25.1	Servo motor encoder - Absolute position erased	DB			○	Each axis	Each axis	1	1	1	0
			25.2	Scale measurement encoder - Absolute position erased	DB			○	Each axis	Each axis				

	No.	Name	Detail No.	Detail name	Stop method (Note 2, 3)	Alarm deactivation			Processing system (Note 9)	Stop system (Note 9)	Alarm code (Note 8)			
						Alarm reset	CPU reset	Cycling the power			ACD3 (Bit 3)	ACD2 (Bit 2)	ACD1 (Bit 1)	ACD0 (Bit 0)
Alarm	27	Initial magnetic pole detection error	27.1	Initial magnetic pole detection - Abnormal termination	DB	○		○	Each axis	Each axis	1	1	1	0
			27.2	Initial magnetic pole detection - Time out error	DB	○		○	Each axis	Each axis				
			27.3	Initial magnetic pole detection - Limit switch error	DB	○		○	Each axis	Each axis				
			27.4	Initial magnetic pole detection - Estimated error	DB	○		○	Each axis	Each axis				
			27.5	Initial magnetic pole detection - Position deviation error	DB	○		○	Each axis	Each axis				
			27.6	Initial magnetic pole detection - Speed deviation error	DB	○		○	Each axis	Each axis				
			27.7	Initial magnetic pole detection - Current error	DB	○		○	Each axis	Each axis				
	28	Linear encoder error 2	28.1	Linear encoder - Environment error	EDB			○	Each axis	Each axis	0	1	1	0
	2A	Linear encoder error 1	2A.1	Linear encoder error 1-1	EDB			○	Each axis	Each axis	0	1	1	0
			2A.2	Linear encoder error 1-2	EDB			○	Each axis	Each axis				
			2A.3	Linear encoder error 1-3	EDB			○	Each axis	Each axis				
			2A.4	Linear encoder error 1-4	EDB			○	Each axis	Each axis				
			2A.5	Linear encoder error 1-5	EDB			○	Each axis	Each axis				
			2A.6	Linear encoder error 1-6	EDB			○	Each axis	Each axis				
			2A.7	Linear encoder error 1-7	EDB			○	Each axis	Each axis				
			2A.8	Linear encoder error 1-8	EDB			○	Each axis	Each axis				
	2B	Encoder counter error	2B.1	Encoder counter error 1	EDB			○	Each axis	Each axis	1	1	1	0
			2B.2	Encoder counter error 2	EDB			○	Each axis	Each axis				
	30	Regenerative error	30.1	Regeneration heat error	DB	○ (Note 1)	○ (Note 1)	○ (Note 1)	Common	All axes	0	0	0	1
			30.2	Regeneration signal error	DB	○ (Note 1)	○ (Note 1)	○ (Note 1)	Common	All axes				
			30.3	Regeneration feedback signal error	DB	○ (Note 1)	○ (Note 1)	○ (Note 1)	Common	All axes				
	31	Overspeed	31.1	Abnormal motor speed	SD	○	○	○	Each axis	Each axis	0	1	0	1
	32	Overcurrent	32.1	Overcurrent detected at hardware detection circuit (during operation)	DB			○	Each axis	All axes	0	1	0	0
			32.2	Overcurrent detected at software detection function (during operation)	DB	○	○	○	Each axis	All axes				
			32.3	Overcurrent detected at hardware detection circuit (during a stop)	DB			○	Each axis	All axes				
			32.4	Overcurrent detected at software detection function (during a stop)	DB	○	○	○	Each axis	All axes				
	33	Overvoltage	33.1	Main circuit voltage error	EDB	○	○	○	Common	All axes	1	0	0	1

	No.	Name	Detail No.	Detail name	Stop method (Note 2, 3)	Alarm deactivation			Processing system (Note 9)	Stop system (Note 9)	Alarm code (Note 8)			
						Alarm reset	CPU reset	Cycling the power			ACD3 (Bit 3)	ACD2 (Bit 2)	ACD1 (Bit 1)	ACD0 (Bit 0)
Alarm	34	SSCNET receive error 1	34.1	SSCNET receive data error	SD	○	○ (Note 5)	○	Common	All axes				
			34.2	SSCNET connector connection error	SD	○	○	○	Common	All axes				
			34.3	SSCNET communication data error	SD	○	○	○	Each axis	Each axis				
			34.4	Hardware error signal detection	SD	○	○	○	Common	All axes				
			34.5	SSCNET receive data error (safety observation function)	SD	○	○	○						
			34.6	SSCNET communication data error (safety observation function)	SD	○	○	○						
	35	Command frequency error	35.1	Command frequency error	SD	○	○	○	Each axis	Each axis	1	1	0	1
	36	SSCNET receive error 2	36.1	Continuous communication data error	SD	○	○	○	Each axis	Each axis				
			36.2	Continuous communication data error (safety observation function)	SD	○	○	○						
	37	Parameter error	37.1	Parameter setting range error	DB		○	○	Each axis	Each axis	1	0	0	0
			37.2	Parameter combination error	DB		○	○	Each axis	Each axis				
			37.3	Point table setting error	DB			○						
	39	Program error	39.1	Program error	DB			○			0	0	0	0
			39.2	Command argument external error	DB			○						
			39.3	Register No. error	DB			○						
			39.4	Non-correspondence command error	DB			○						
	3A	Inrush current suppression circuit error	3A.1	Inrush current suppression circuit error	EDB			○	Common	All axes	0	0	0	0
	3D	Parameter setting error for driver communication	3D.1	Parameter combination error for driver communication on slave	DB			○						
			3D.2	Parameter combination error for driver communication on master	DB			○						
	3E	Operation mode error	3E.1	Operation mode error	DB		○	○	Each axis	Each axis				
			3E.6	Operation mode switch error	DB			○			1	0	0	0
	42	Servo control error (for linear servo motor and direct drive motor)	42.1	Servo control error by position deviation	EDB	(Note 4)	(Note 4)	○	Each axis	Each axis	0	1	1	0
			42.2	Servo control error by speed deviation	EDB	(Note 4)	(Note 4)	○	Each axis	Each axis				
			42.3	Servo control error by torque/thrust deviation	EDB	(Note 4)	(Note 4)	○	Each axis	Each axis				
		Fully closed loop control error (for fully closed loop control)	42.8	Fully closed loop control error by position deviation	EDB	(Note 4)	(Note 4)	○	Each axis	Each axis				
			42.9	Fully closed loop control error by speed deviation	EDB	(Note 4)	(Note 4)	○	Each axis	Each axis				
			42.A	Fully closed loop control error by position deviation during command stop	EDB	(Note 4)	(Note 4)	○	Each axis	Each axis				
	45	Main circuit device overheat	45.1	Main circuit device overheat error 1	SD	○ (Note 1)	○ (Note 1)	○ (Note 1)	Common	All axes	0	0	1	1
			45.2	Main circuit device overheat error 2	SD	○ (Note 1)	○ (Note 1)	○ (Note 1)	Common	All axes				

	No.	Name	Detail No.	Detail name	Stop method (Note 2, 3)	Alarm deactivation			Processing system (Note 9)	Stop system (Note 9)	Alarm code (Note 8)			
						Alarm reset	CPU reset	Cycling the power			ACD3 (Bit 3)	ACD2 (Bit 2)	ACD1 (Bit 1)	ACD0 (Bit 0)
Alarm	46	Servo motor overheat	46.1	Abnormal temperature of servo motor 1	SD	○ (Note 1)	○ (Note 1)	○ (Note 1)	Each axis	Each axis	0	0	1	1
			46.2	Abnormal temperature of servo motor 2	SD	○ (Note 1)	○ (Note 1)	○ (Note 1)	Each axis	Each axis				
			46.3	Thermistor disconnected error	SD	○ (Note 1)	○ (Note 1)	○ (Note 1)	Each axis	Each axis				
			46.4	Thermistor circuit error	SD	○ (Note 1)	○ (Note 1)	○ (Note 1)	Each axis	Each axis				
			46.5	Abnormal temperature of servo motor 3	DB	○ (Note 1)	○ (Note 1)	○ (Note 1)	Each axis	Each axis				
			46.6	Abnormal temperature of servo motor 4	DB	○ (Note 1)	○ (Note 1)	○ (Note 1)	Each axis	Each axis				
	47	Cooling fan error	47.1	Cooling fan stop error	SD			○	Common	All axes	0	0	1	1
			47.2	Cooling fan speed reduction error	SD			○	Common	All axes				
	50	Overload 1	50.1	Thermal overload error 1 during operation	SD	○ (Note 1)	○ (Note 1)	○ (Note 1)	Each axis	Each axis	0	0	1	1
			50.2	Thermal overload error 2 during operation	SD	○ (Note 1)	○ (Note 1)	○ (Note 1)	Each axis	Each axis				
			50.3	Thermal overload error 4 during operation	SD	○ (Note 1)	○ (Note 1)	○ (Note 1)	Each axis	Each axis				
			50.4	Thermal overload error 1 during a stop	SD	○ (Note 1)	○ (Note 1)	○ (Note 1)	Each axis	Each axis				
			50.5	Thermal overload error 2 during a stop	SD	○ (Note 1)	○ (Note 1)	○ (Note 1)	Each axis	Each axis				
			50.6	Thermal overload error 4 during a stop	SD	○ (Note 1)	○ (Note 1)	○ (Note 1)	Each axis	Each axis				
	51	Overload 2	51.1	Thermal overload error 3 during operation	DB	○ (Note 1)	○ (Note 1)	○ (Note 1)	Each axis	Each axis	0	0	1	1
			51.2	Thermal overload error 3 during a stop	DB	○ (Note 1)	○ (Note 1)	○ (Note 1)	Each axis	Each axis				
	52	Error excessive	52.1	Excess droop pulse 1	SD	○	○	○	Each axis	Each axis	0	1	0	1
			52.3	Excess droop pulse 2	SD	○	○	○	Each axis	Each axis				
			52.4	Error excessive during 0 torque limit	SD	○	○	○	Each axis	Each axis				
			52.5	Excess droop pulse 3	EDB	○	○	○	Each axis	Each axis				
	54	Oscillation detection	54.1	Oscillation detection error	EDB	○	○	○	Each axis	Each axis	0	0	1	1
	56	Forced stop error	56.2	Over speed during forced stop	EDB	○	○	○	Each axis	Each axis	0	1	1	0
			56.3	Estimated distance over during forced stop	EDB	○	○	○	Each axis	Each axis				
	61	Operation error	61.1	Point table setting range error	DB	○		○			0	1	0	1
	63	STO timing error	63.1	STO1 off	DB	○	○	○	Common	All axes	0	1	1	0
			63.2	STO2 off	DB	○	○	○	Common	All axes				
			63.5	STO by functional safety unit	DB	○	○	○						
	64	Functional safety unit setting error	64.1	STO input error	DB			○			1	0	0	0
			64.2	Compatibility mode setting error	DB			○						
			64.3	Operation mode setting error	DB			○						

	No.	Name	Detail No.	Detail name	Stop method (Note 2, 3)	Alarm deactivation			Process-ing system (Note 9)	Stop system (Note 9)	Alarm code (Note 8)			
						Alarm reset	CPU reset	Cycling the power			ACD3 (Bit 3)	ACD2 (Bit 2)	ACD1 (Bit 1)	ACD0 (Bit 0)
Alarm	65	Functional safety unit connection error	65.1	Functional safety unit communication error 1	SD			○			0	0	0	0
			65.2	Functional safety unit communication error 2	SD			○						
			65.3	Functional safety unit communication error 3	SD			○						
			65.4	Functional safety unit communication error 4	SD			○						
			65.5	Functional safety unit communication error 5	SD			○						
			65.6	Functional safety unit communication error 6	SD			○						
			65.7	Functional safety unit communication error 7	SD			○						
			65.8	Functional safety unit shut-off signal error 1	DB			○						
			65.9	Functional safety unit shut-off signal error 2	DB			○						
	66	Encoder initial communication error (safety observation function)	66.1	Encoder initial communication - Receive data error 1 (safety observation function)	DB			○			0	1	1	0
			66.2	Encoder initial communication - Receive data error 2 (safety observation function)	DB			○						
			66.3	Encoder initial communication - Receive data error 3 (safety observation function)	DB			○						
			66.7	Encoder initial communication - Transmission data error 1 (safety observation function)	DB			○						
			66.9	Encoder initial communication - Process error 1 (safety observation function)	DB			○						
	67	Encoder normal communication error 1 (safety observation function)	67.1	Encoder normal communication - Receive data error 1 (safety observation function)	DB			○			0	1	1	0
			67.2	Encoder normal communication - Receive data error 2 (safety observation function)	DB			○						
			67.3	Encoder normal communication - Receive data error 3 (safety observation function)	DB			○						
			67.4	Encoder normal communication - Receive data error 4 (safety observation function)	DB			○						
			67.7	Encoder normal communication - Transmission data error 1 (safety observation function)	DB			○						
	68	STO diagnosis error	68.1	Mismatched STO signal error	DB			○	Common	Common	0	0	0	0

	No.	Name	Detail No.	Detail name	Stop method (Note 2, 3)	Alarm deactivation			Processing system (Note 9)	Stop system (Note 9)	Alarm code (Note 8)			
						Alarm reset	CPU reset	Cycling the power			ACD3 (Bit 3)	ACD2 (Bit 2)	ACD1 (Bit 1)	ACD0 (Bit 0)
Alarm	70	Load-side encoder initial communication error 1	70.1	Load-side encoder initial communication - Receive data error 1	DB			○	Each axis	Each axis	0	1	1	0
			70.2	Load-side encoder initial communication - Receive data error 2	DB			○	Each axis	Each axis				
			70.3	Load-side encoder initial communication - Receive data error 3	DB			○	Each axis	Each axis				
			70.5	Load-side encoder initial communication - Transmission data error 1	DB			○	Each axis	Each axis				
			70.6	Load-side encoder initial communication - Transmission data error 2	DB			○	Each axis	Each axis				
			70.7	Load-side encoder initial communication - Transmission data error 3	DB			○	Each axis	Each axis				
			70.A	Load-side encoder initial communication - Process error 1	DB			○	Each axis	Each axis				
			70.B	Load-side encoder initial communication - Process error 2	DB			○	Each axis	Each axis				
			70.C	Load-side encoder initial communication - Process error 3	DB			○	Each axis	Each axis				
			70.D	Load-side encoder initial communication - Process error 4	DB			○	Each axis	Each axis				
			70.E	Load-side encoder initial communication - Process error 5	DB			○	Each axis	Each axis				
			70.F	Load-side encoder initial communication - Process error 6	DB			○	Each axis	Each axis				
	71	Load-side encoder normal communication error 1	71.1	Load-side encoder normal communication - Receive data error 1	EDB			○	Each axis	Each axis	0	1	1	0
			71.2	Load-side encoder normal communication - Receive data error 2	EDB			○	Each axis	Each axis				
			71.3	Load-side encoder normal communication - Receive data error 3	EDB			○	Each axis	Each axis				
			71.5	Load-side encoder normal communication - Transmission data error 1	EDB			○	Each axis	Each axis				
			71.6	Load-side encoder normal communication - Transmission data error 2	EDB			○	Each axis	Each axis				
			71.7	Load-side encoder normal communication - Transmission data error 3	EDB			○	Each axis	Each axis				
			71.9	Load-side encoder normal communication - Receive data error 4	EDB			○	Each axis	Each axis				
			71.A	Load-side encoder normal communication - Receive data error 5	EDB			○	Each axis	Each axis				

	No.	Name	Detail No.	Detail name	Stop method (Note 2, 3)	Alarm deactivation			Processing system (Note 9)	Stop system (Note 9)	Alarm code (Note 8)			
						Alarm reset	CPU reset	Cycling the power			ACD3 (Bit 3)	ACD2 (Bit 2)	ACD1 (Bit 1)	ACD0 (Bit 0)
Alarm	72	Load-side encoder normal communication error 2	72.1	Load-side encoder data error 1	EDB			○	Each axis	Each axis	0	1	1	0
			72.2	Load-side encoder data update error	EDB			○	Each axis	Each axis				
			72.3	Load-side encoder data waveform error	EDB			○	Each axis	Each axis				
			72.4	Load-side encoder non-signal error	EDB			○	Each axis	Each axis				
			72.5	Load-side encoder hardware error 1	EDB			○	Each axis	Each axis				
			72.6	Load-side encoder hardware error 2	EDB			○	Each axis	Each axis				
			72.9	Load-side encoder data error 2	EDB			○	Each axis	Each axis				
	74	Option card error 1	74.1	Option card error 1	DB			○						
			74.2	Option card error 2	DB			○						
			74.3	Option card error 3	DB			○						
			74.4	Option card error 4	DB			○						
			74.5	Option card error 5	DB			○						
	75	Option card error 2	75.3	Option card connection error	EDB			○						
			75.4	Option card disconnected	DB			○						
	79	Functional safety unit diagnosis error	79.1	Functional safety unit power voltage error	DB	○ (Note 7)		○			1	1	1	1
			79.2	Functional safety unit internal error	DB			○						
			79.3	Abnormal temperature of functional safety unit	SD	○ (Note 7)		○						
			79.4	Servo amplifier error	SD			○						
			79.5	Input device error	SD			○						
			79.6	Output device error	SD			○						
			79.7	Mismatched input signal error	SD			○						
			79.8	Position feedback fixing error	DB			○						
	7A	Parameter setting error (safety observation function)	7A.1	Parameter verification error (safety observation function)	DB			○			1	0	0	0
			7A.2	Parameter setting range error (safety observation function)	DB			○						
			7A.3	Parameter combination error (safety observation function)	DB			○						
			7A.4	Functional safety unit combination error (safety observation function)	DB			○						
	7B	Encoder diagnosis error (safety observation function)	7B.1	Encoder diagnosis error 1 (safety observation function)	DB			○			0	1	1	0
			7B.2	Encoder diagnosis error 2 (safety observation function)	DB			○						
			7B.3	Encoder diagnosis error 3 (safety observation function)	DB			○						
			7B.4	Encoder diagnosis error 4 (safety observation function)	DB			○						
	7C	Functional safety unit communication diagnosis error (safety observation function)	7C.1	Functional safety unit communication cycle error (safety observation function)	SD	○ (Note 7)	○	○			0	0	0	0
			7C.2	Functional safety unit communication data error (safety observation function)	SD	○ (Note 7)	○	○						
	7D	Safety observation error	7D.1	Stop observation error	DB	○ (Note 3)		○			1	1	1	1
			7D.2	Speed observation error	DB	○ (Note 7)		○						
	82	Master-slave operation error 1	82.1	Master-slave operation error 1	EDB	○	○	○						

	No.	Name	Detail No.	Detail name	Stop method (Note 2, 3)	Alarm deactivation			Processing system (Note 9)	Stop system (Note 9)	Alarm code (Note 8)			
						Alarm reset	CPU reset	Cycling the power			ACD3 (Bit 3)	ACD2 (Bit 2)	ACD1 (Bit 1)	ACD0 (Bit 0)
Alarm	8A	USB communication time-out error/serial communication time-out error/Modbus-RTU communication time-out error	8A.1	USB communication time-out error/serial communication time-out error	SD	○	○	○	Common	All axes	0	0	0	0
			8A.2	Modbus-RTU communication time-out error	SD	○	○	○						
	8D	CC-Link IE communication error	8D.1	CC-Link IE communication error 1	SD	○	○	○						
			8D.2	CC-Link IE communication error 2	SD	○	○	○						
			8D.3	Master station setting error 1	DB	○	○	○						
			8D.5	Master station setting error 2	DB		○	○						
			8D.6	CC-Link IE communication error 3	SD	○	○	○						
			8D.7	CC-Link IE communication error 4	SD	○	○	○						
			8D.8	CC-Link IE communication error 5	SD	○	○	○						
			8D.9	Synchronization error 1	SD		○	○						
			8D.A	Synchronization error 2	SD		○	○						
	8E	USB communication error/serial communication error/Modbus-RTU communication error	8E.1	USB communication receive error/serial communication receive error	SD	○	○	○	Common	All axes	0	0	0	0
			8E.2	USB communication checksum error/serial communication checksum error	SD	○	○	○	Common	All axes				
			8E.3	USB communication character error/serial communication character error	SD	○	○	○	Common	All axes				
			8E.4	USB communication command error/serial communication command error	SD	○	○	○	Common	All axes				
			8E.5	USB communication data number error/serial communication data number error	SD	○	○	○	Common	All axes				
			8E.6	Modbus-RTU communication receive error	SD	○	○	○						
			8E.7	Modbus-RTU communication message frame error	SD	○	○	○						
			8E.8	Modbus-RTU communication CRC error	SD	○	○	○						
	88888	Watchdog	8888._	Watchdog	DB			○	Common	All axes				

Note 1. Leave for about 30 minutes of cooling time after removing the cause of occurrence.

2. The following shows three stop methods of DB, EDB, and SD.

DB: Stops with dynamic brake. (Coasts for the servo amplifier without dynamic brake.)
Coasts for MR-J4-03A6(-RJ) and MR-J4W2-0303B6. Note that EDB is applied when an alarm below occurs;
[AL. 30.1], [AL. 32.2], [AL. 32.4], [AL. 51.1], [AL. 51.2], [AL. 888]

EDB: Electronic dynamic brake stop (available with specified servo motors)
Refer to the following table for the specified servo motors. The stop method for other than the specified servo motors will be DB.

Series	Servo motor
HG-KR	HG-KR053/HG-KR13/HG-KR23/HG-KR43
HG-MR	HG-MR053/HG-MR13/HG-MR23/HG-MR43
HG-SR	HG-SR51/HG-SR52
HG-AK	HG-AK0136/HG-AK0236/HG-AK0336

SD: Forced stop deceleration

3. This is applicable when [Pr. PA04] is set to the initial value. The stop system of SD can be changed to DB using [Pr. PA04].
4. The alarm can be canceled by setting as follows:
For the fully closed loop control: set [Pr. PE03] to "1 _ _ _".
When a linear servo motor or direct drive motor is used: set [Pr. PL04] to "1 _ _ _".
5. In some controller communication status, the alarm factor may not be removed.
6. This alarm will occur only in the J3 compatibility mode.
7. Reset this while all the safety observation functions are stopped.
8. Alarm codes are outputted only from MR-J4-_A_(-RJ)/MR-J4-DU_A_(-RJ). Refer to section 1.1 for details.
9. The processing and stop systems are applicable only for the multi-axis servo amplifiers (MR-J4W_-_B_). Refer to section 1.1 for details.

1.3 Warning list

	No.	Name	Detail No.	Detail name	Stop method (Note 2, 3)	Processing system (Note 5)	Stop system (Note 5)
Warning	90	Home position return incomplete warning	90.1	Home position return incomplete			
			90.2	Home position return abnormal termination			
			90.5	Z-phase unpassed			
	91	Servo amplifier overheat warning (Note 1)	91.1	Main circuit device overheat warning		Common	
	92	Battery cable disconnection warning	92.1	Encoder battery cable disconnection warning		Each axis	
			92.3	Battery degradation		Each axis	
	93	ABS data transfer warning	93.1	ABS data transfer requirement warning during magnetic pole detection			
	95	STO warning	95.1	STO1 off detection	DB	Common	All axes
			95.2	STO2 off detection	DB	Common	All axes
			95.3	STO warning 1 (safety observation function)	DB		
			95.4	STO warning 2 (safety observation function)	DB		
			95.5	STO warning 3 (safety observation function)	DB		
	96	Home position setting warning	96.1	In-position warning at home positioning		Each axis	
			96.2	Command input warning at home positioning		Each axis	
			96.3	Servo off warning at home positioning			
			96.4	Home positioning warning during magnetic pole detection			
	97	Program operation disabled/next station position warning	97.1	Program operation disabled warning			
			97.2	Next station position warning			
	98	Software limit warning	98.1	Forward rotation-side software stroke limit reached			
			98.2	Reverse rotation-side software stroke limit reached			
	99	Stroke limit warning	99.1	Forward rotation stroke end off	(Note 4)		
			99.2	Reverse rotation stroke end off	(Note 4)		
	9A	Optional unit input data error warning	9A.1	Optional unit input data sign error			
			9A.2	Optional unit BCD input data error			
	9B	Error excessive warning	9B.1	Excess droop pulse 1 warning		Each axis	
			9B.3	Excess droop pulse 2 warning		Each axis	
			9B.4	Error excessive warning during 0 torque limit		Each axis	
	9C	Converter error	9C.1	Converter unit error			
	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		Each axis	
			9F.2	Battery degradation warning		Each axis	

	No.	Name	Detail No.	Detail name	Stop method (Note 2, 3)	Process-ing system (Note 5)	Stop system (Note 5)
Warning	E0	Excessive regeneration warning	E0.1	Excessive regeneration warning		Common	
	E1	Overload warning 1	E1.1	Thermal overload warning 1 during operation		Each axis	
			E1.2	Thermal overload warning 2 during operation		Each axis	
			E1.3	Thermal overload warning 3 during operation		Each axis	
			E1.4	Thermal overload warning 4 during operation		Each axis	
			E1.5	Thermal overload error 1 during a stop		Each axis	
			E1.6	Thermal overload error 2 during a stop		Each axis	
			E1.7	Thermal overload error 3 during a stop		Each axis	
			E1.8	Thermal overload error 4 during a stop		Each axis	
	E2	Servo motor overheat warning	E2.1	Servo motor temperature warning		Each axis	
	E3	Absolute position counter warning	E3.1	Multi-revolution counter travel distance excess warning			
			E3.2	Absolute position counter warning		Each axis	
			E3.4	Absolute positioning counter EEP-ROM writing frequency warning			
			E3.5	Encoder absolute positioning counter warning		Each axis	
	E4	Parameter warning	E4.1	Parameter setting range error warning		Each axis	
	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	SD	Common	All axes
			E6.2	SS1 forced stop warning 1 (safety observation function)	SD		
			E6.3	SS1 forced stop warning 2 (safety observation function)	SD		
	E7	Controller forced stop warning	E7.1	Controller forced stop warning	SD	Common	All axes
	E8	Cooling fan speed reduction warning	E8.1	Decreased cooling fan speed warning		Common	
			E8.2	Cooling fan stop		Common	
	E9	Main circuit off warning	E9.1	Servo-on signal on during main circuit off	DB	Common	All axes
			E9.2	Bus voltage drop during low speed operation	DB	Common	All axes
			E9.3	Ready-on signal on during main circuit off	DB	Common	All axes
			E9.4	Converter unit forced stop	DB		
	EA	ABS servo-on warning	EA.1	ABS servo-on warning			
	EB	The other axis error warning	EB.1	The other axis error warning	DB	Each axis	(Note 6)
	EC	Overload warning 2	EC.1	Overload warning 2		Each axis	
	ED	Output watt excess warning	ED.1	Output watt excess warning		Each axis	
	F0	Tough drive warning	F0.1	Instantaneous power failure tough drive warning		Each axis	
			F0.3	Vibration tough drive warning		Each axis	

	No.	Name	Detail No.	Detail name	Stop method (Note 2, 3)	Process-ing system (Note 5)	Stop system (Note 5)
Warning	F2	Drive recorder - Miswriting warning	F2.1	Drive recorder - Area writing time-out warning		Common	
			F2.2	Drive recorder - Data miswriting warning		Common	
	F3	Oscillation detection warning	F3.1	Oscillation detection warning		Each axis	
	F5	Simple cam function - Cam data miswriting warning	F5.1	Cam data - Area writing time-out warning			
			F5.2	Cam data - Area miswriting warning			
			F5.3	Cam data checksum error			
	F6	Simple cam function - Cam control warning	F6.1	Cam axis one cycle current value restoration failed			
			F6.2	Cam axis feed current value restoration failed			
			F6.3	Cam unregistered error			
			F6.4	Cam control data setting range error			
			F6.5	Cam No. external error			
			F6.6	Cam control inactive			

Note 1. Leave for about 30 minutes of cooling time after removing the cause of occurrence.
2. The following shows two stop methods of DB and SD.
DB: Stops with dynamic brake. (Coasts for the servo amplifier without dynamic brake.)
Coasts for MR-J4-03A6(-RJ) and MR-J4W2-0303B6.
SD: Forced stop deceleration
3. This is applicable when [Pr. PA04] is set to the initial value. The stop system of SD can be changed to DB using [Pr. PA04].
4. Quick stop or slow stop can be selected using [Pr. PD30].
5. The processing and stop systems are applicable only for the multi-axis servo amplifiers (MR-J4W_-_B_). Refer to section 1.1 for details.
6. As the initial value, it is applicable only for [AL. 24] and [AL. 32]. All-axis stop can be selected using [Pr. PF02].

1.4 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 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 the cause of alarm occurrence.

Alarm No.: 10		Name: Undervoltage					
Alarm content		▪ 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 control circuit power supply connection is incorrect.	Check the connection of the control circuit power supply.	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 class: 160 V AC 400 V class: 280 V AC 100 V class: 83 V AC 24 V DC input: 17 V DC	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 has no 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 _ _". The time will be 60 ms when [Pr. PX25] is "_ 0 _ _" and the J3 extension function is used. The time will be the value set in [Pr. PX28] when [Pr. PX25] is "_ 1 _ _". An instantaneous power failure of 15 ms or longer has occurred on MR-J4-03A6(-RJ) or MR-J4W2-0303B6.	Check if the power has a problem.	It has a problem.	Review the power.	
					It has no problem.	Check (5).	
		(5)	When a power regeneration converter is used, the voltage of the control circuit power supply is distorted.	Check if the power has a problem. When power supply impedance is high, power supply voltage will be distorted due to current at power regeneration, and it may be recognized as undervoltage.	It has a problem.	Review the setting of "[AL. 10 Undervoltage] detection method selection" with the following parameters. [A]: [Pr. PC27] [B] [WB] [RJ010]: [Pr. PC20] Review the power.	

Alarm No.: 10		Name: Undervoltage					
Alarm content		・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
10.2	Voltage drop in the main circuit power	(1)	The main circuit power supply wiring was disconnected. For the drive unit, the main circuit power supply wiring of the converter unit was disconnected.	Check the main circuit power supply wiring. Check the main circuit power supply wiring of the converter unit.	It is disconnected.	Connect it correctly.	[A] [B] [WB] [RJ010]
					It is connected.	Check (2).	
		(2)	The wiring between P3 and P4 was disconnected. For the drive unit, the wiring between P1 and P2 of the converter unit was disconnected.	Check the wiring between P3 and P4. Check the wiring between P1 and P2 of the converter unit.	It is disconnected.	Connect it correctly.	
					It is connected.	Check (3).	
		(3)	For the drive unit, the magnetic contactor control connector of the converter unit was disconnected.	Check the magnetic contactor control connector of the converter unit.	It is disconnected.	Connect it correctly.	
					It has no failure.	Check (4).	
		(4)	For the drive unit, the bus bar between the converter unit and drive unit was disconnected.	Check the bus bar between the converter unit and drive unit.	It is disconnected.	Connect it correctly.	
					It has no failure.	Check (5).	
		(5)	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 class: 160 V AC 400 V class: 280 V AC 100 V class: 83 V AC 48 V DC setting: 35 V DC 24 V DC setting: 15 V DC	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 (6).	
		(6)	The alarm has occurred during acceleration.	Check if the bus voltage during acceleration is lower than the prescribed value. 200 V class: 200 V DC 400 V class: 380 V DC 100 V class: 158 V DC 48 V DC setting: 35 V DC 24 V DC setting: 15 V DC	The voltage is lower than the prescribed value.	Increase the acceleration time constant. Or increase the power supply capacity.	
					The voltage is equal to or higher than the prescribed value.	Check (7).	

Alarm No.: 10		Name: Undervoltage					
Alarm content		・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
10.2	Voltage drop in the main circuit power	(7)	The servo amplifier is malfunctioning.	Check the bus voltage value.	The bus voltage is less than the prescribed value although the voltage of the main circuit power supply is within specifications. 200 V class: 200 V DC 400 V class: 380 V DC 100 V class: 158 V DC 48 V DC setting: 35 V DC 24 V DC setting: 15 V DC	Replace the servo amplifier.	[A] [B] [WB] [RJ010]
		(8)	For the drive unit, the converter unit is malfunctioning.	Replace the converter unit, and then check the repeatability.	It is not repeatable.	Replace the converter unit.	

Alarm No.: 11		Name: Switch setting error					
Alarm content		・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 switches (SW2-5/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-J4W3).	Set the axis No. correctly.	[WB]
					Both of the auxiliary axis number setting switches are off.	Replace the servo amplifier.	
11.2	Disabling control axis setting error	(1)	The setting of the disabling control axis switch is incorrect.	Check the setting of the disabling control axis switch.	Check if the setting is as follows. 1) Only A-axis is disabled. 2) Only B-axis is disabled. 3) A-axis and B-axis are disabled. 4) A-axis and C-axis are disabled. 5) All axes are disabled.	Set it correctly.	
					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 for 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						

Alarm No.: 13		Name: Clock error					
Alarm content		・A part in the servo amplifier is failure. ・A clock error transmitted from the controller occurred. ・[RJ010]: MR-J3-T10 came off.					
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 is occurring.	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 for 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 alarm 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.	
					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		・The process did not complete within the specified time. ・[RJ010]: MR-J3-T10 came off.						
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 is occurring.	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.	
						It has no failure.	Check (4).	
		(4)	The servo amplifier is malfunctioning.		Replace the servo amplifier, and then check the repeatability.	It is not repeatable.	Replace the servo amplifier.	
14.2	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 is occurring.	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 or vibration suppression control tuning mode has been executed for multiple axes simultaneously.		Check the setting of [Pr. PB01] or [Pr. PB02]. With the J3 extension function, Check the setting of [Pr. PB01], [Pr. PB02], or [Pr. PX03].	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.	
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							

Alarm No.: 15		Name: Memory error 2 (EEP-ROM)					
Alarm content		・A part (EEP-ROM) in the servo amplifier is failure. ・[RJ010]: MR-J3-T10 came off.					
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 for 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, point tables, or programs are changed very frequently.	It was changed.	Replace the servo amplifier. Change the process to use parameters, point tables, and programs 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 is occurring.	Check it with the check method for [AL. 74].	[RJ010]
					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.	
15.4	Home position information read error	(1)	EEP-ROM is malfunctioning at power on.	Disconnect the cables except for the control circuit power supply, and then check the repeatability.	It is repeatable.	Replace the servo amplifier.	[A]
					It is not repeatable.	Check (2).	
		(2)	Multiple rotation data saved as a home position and read from EEP-ROM were failure.	Check if the home position was set correctly.	It has a failure.	Make home position setting again.	
					It has no failure.	Check (3).	
		(3)	Something near the device caused it.	Check the power supply for noise. Check if the connector is shorted.	It has a failure.	Take countermeasures against its cause.	
					It has no failure.	Check (4).	
		(4)	The number of write times exceeded 100,000.	Check if parameters has been used very frequently.	It was changed.	Replace the servo amplifier. Change the process to use parameters less frequently after replacement.	

Alarm No.: 16		Name: Encoder initial communication error 1					
Alarm content		▪ An error occurred in the communication between an 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_-RJ or MR-J4-_B_-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].					

Alarm No.: 16		Name: Encoder initial communication error 1						
Alarm content		▪ An error occurred in the communication between an 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 switches (SW2-2/SW2-3/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] [B] [WB] [RJ010]
					It is connected.	Check (3).	
		(3)	The parameter setting of communication method is incorrect. [A]: [Pr. PC22] [B] [WB] [RJ010]: [Pr. PC04]	Check the parameter setting.	The setting is incorrect.	Set it correctly.	
					The setting is correct.	Check (4).	
		(4)	An encoder cable is malfunctioning.	Check if the encoder cable is disconnected or shorted.	It has a failure.	Replace or repair the cable.	
					It has no failure.	Check (5).	
		(5)	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] [B]
					The wiring is correct.	Check (6).	
		(6)	The voltage of the control circuit power supply has been unstable.	Check the voltage of the control circuit power supply.	An instantaneous power failure is occurring at the control circuit power supply.	Review the power and related parts.	[A] [B] [WB] [RJ010]
					It has no failure.	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)	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 (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						

Alarm No.: 16		Name: Encoder initial communication error 1						
Alarm content		・An error occurred in the communication between an 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.	
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 for 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 for 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.	

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 for 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.	
17.7	Board error 7	Check it with the check method for [AL. 17.4].					[A] [B]
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.	[B] [WB]

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 for 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	(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. When using a linear servo motor, also check (3).	[A] [B] [WB]
					The combination is correct.	Check (4).	
		(3)	[Pr. PA17] and [Pr. PA18] were not set according to the linear servo motor to be used.	Check if [Pr. PA17] and [Pr. PA18] are set correctly.	It is not set correctly.	Set them correctly according to the linear servo motor to be used.	
		(4)	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]

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.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]
		(2)	When the fully closed loop control mode is selected, encoders of the servo motor side and the machine side are connected reversely.	Check the connection destination of the encoder.	The connection destination of the encoder is incorrect.	Connect it correctly.	
1A.4	Servo motor combination error 2	(1)	The servo amplifier is malfunctioning.	Replace the servo amplifier, and then check the repeatability.	It is not repeatable.	Replace the servo amplifier.	

Alarm No.: 1B		Name: Converter alarm					
Alarm content		・An alarm occurred in the converter unit during the servo-on.					
Detail No.	Detail name	Cause		Check method	Check result	Action	Target
1B.1	Converter unit error	(1)	The protection coordination cable is not correctly connected.	Check the protection coordination cable connection.	It is not connected.	Connect it correctly.	[A] [B]
					It is connected.	Check (2).	
		(2)	An alarm occurred in the converter unit during the servo-on.	Check the alarm of the converter unit, and take the action following the remedies for alarms of the converter unit.			

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).	
		(2)	Something near the device caused it.	Check the noise, ambient temperature, vibration, etc.	It has a failure.	Take countermeasures against its cause.	
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 compatible with.	Replace the servo amplifier to one which software version supports the servo motor/linear encoder.	
					It is compatible with.	Check (3).	
		(3)	An encoder is malfunctioning.	Replace the servo motor or linear encoder, and then check the repeatability.	It is not repeatable.	Replace the servo motor or linear encoder.	
					It is repeatable.	Replace the servo amplifier.	
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 compatible with.	Replace the servo amplifier to one which software version supports the load-side encoder.	
					It is compatible with.	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.	Replace the servo amplifier.	

Alarm No.: 20		Name: Encoder normal communication error 1						
Alarm content		▪ An error occurred in the communication between an 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 external conductor of the encoder cable is not connected to the ground plate of the connector.		Check if it is connected.	It is not connected.	Connect it correctly.	
						It is connected.	Check (3).	
		(3)	The parameter setting of communication method is incorrect. [A]: [Pr. PC22] [B] [WB] [RJ010]: [Pr. PC04]		Check the parameter setting.	The setting is incorrect.	Set it correctly.	
						The setting 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.	
						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 or linear encoder.	
						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.	
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							

Alarm No.: 20		Name: Encoder normal communication error 1						
Alarm content		▪ An error occurred in the communication between an encoder and servo amplifier.						
Detail No.	Detail name	Cause			Check method	Check result	Action	Target
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 external conductor of the encoder cable is not connected to the ground plate of the connector.					
		(4)	When you use an A/B/Z-phase differential output linear encoder, the parameter setting is incorrect.					
		(5)	The servo amplifier is malfunctioning.					
		(6)	An encoder is malfunctioning.					
		(7)	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/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 external conductor of the encoder cable is not connected to the ground plate of the connector.					
		(4)	When you use an A/B/Z-phase differential output linear encoder, the parameter setting is incorrect.					
		(5)	The servo amplifier is malfunctioning.					
		(6)	An encoder is malfunctioning.					
		(7)	Something near the device caused it.					
20.7	Encoder normal communication - Transmission data error 3	Check it with the check method for [AL. 20.1].						

Alarm No.: 20		Name: Encoder normal communication error 1				
Alarm content		・An error occurred in the communication between an encoder and servo amplifier.				
Detail No.	Detail name	Cause	Check method	Check result	Action	Target
20.9	Encoder normal communication - Receive data error 4	Check it with the check method for [AL. 20.1].				
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)	The external conductor of the encoder cable is not connected to the ground plate of the connector.	Check if it is connected.	It is not connected.	Connect it correctly.	
					It is connected.	Check (3).	
		(3)	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 (4).	
		(4)	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 not repeatable.	Replace the servo motor.	[A] [B] [WB] [RJ010]
					It is repeatable.	Check (2).	
		(2)	The external conductor of the encoder cable is not connected to the ground plate of the connector.	Check if it is connected.	It is not connected.	Connect it correctly.	
					It is connected.	Check (3).	
		(3)	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)	The external conductor of the encoder cable is not connected to the ground plate of the connector.	Check if it is connected.	It is not connected.	Connect it correctly.	
					It is connected.	Check (3).	
		(3)	Something near the device caused it.	Check the noise, ambient temperature, etc.	It has a failure.	Take countermeasures against its cause.	

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
21.5	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].				

Alarm No.: 24		Name: Main circuit error					
Alarm content		・A ground fault occurred on the servo motor power lines. ・A ground fault occurred at the servo motor. ・Power supply voltage for inverter circuit control is low. (Only for MR-J4W2-0303B6)					
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.	

Alarm No.: 24		Name: Main circuit error					
Alarm content		・A ground fault occurred on the servo motor power lines. ・A ground fault occurred at the servo motor. ・Power supply voltage for inverter circuit control is low. (Only for MR-J4W2-0303B6)					
Detail No.	Detail name	Cause		Check method	Check result	Action	Target
24.2	Ground fault detected by software detection function	(1)	For MR-J4W2-0303B6, the servo-on command was inputted when the control circuit power supply voltage was below 20 V.	Check the control circuit power supply voltage when the servo-on command was inputted.	The control circuit power supply voltage was below 20 V.	Input the servo-on command after the control circuit power supply voltage reaches 20 V or higher.	[WB]
					The control circuit power supply voltage was 20 V or higher.	Check (2).	
		(2)	The servo amplifier is malfunctioning.	Disconnect the servo motor power cable (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 (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)	A ground fault occurred at the servo motor.	Disconnect the servo motor power cables on motor side, and check insulation between phases (U, V, W, and ⏚).	It is shorted.	Replace the servo motor.	
					It is not shorted.	Check (5).	
		(5)	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 (6).	
		(6)	Something near the device caused it.	Check the noise, ambient temperature, etc.	It has a failure.	Take countermeasures against its cause.	

Alarm No.: 25		Name: Absolute position erased					
Alarm content		・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(-A) 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 were 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(-A) 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.	MR-BAT6V1BJ battery for junction battery cable: Refer to (4). MR-BAT6V1SET(-A) battery or MR-BT6VCASE battery case: Refer to (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.	Check (5).	

Alarm No.: 25		Name: Absolute position erased					
Alarm content		・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 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.	

Alarm No.: 25		Name: Absolute position erased					
Alarm content		・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.	

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 collided.	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)	An excitation level of 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)	Servo-on was enabled when the primary side of linear servo motor or rotor of direct drive motor did not stop.	Check if servo-on was enabled when the motor did not stop.	Servo-on was enabled when the motor did not stop.	Stop the linear servo motor and the direct drive motor, and enable servo-on again.	
					Servo-on was enabled when the motor stopped.	Check (2).	
		(2)	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 (3).	
		(3)	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.	

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
27.3	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. When using a direct drive motor, also check (2).	[A] [B] [WB]
		(2)	When using a direct drive motor in a system where the motor rotates one revolution or more, the following stroke limit signals are not enabled with a parameter. [A]: LSP and LSN [B] [WB]: FLS and RLS	Check the [Pr. PL08] setting.	The [Pr. PL08] setting is "_ 0 _ _".	Set the [Pr. PL08] setting to "_ 1 _ _".	
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						

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.	Check (2).	
		(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 vary 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)	The external conductor of the encoder cable is not connected to the ground plate of the connector.		Check if it is connected.	It is not connected.	Connect it correctly.	
						It is connected.	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.	
						It has no failure.	Check (4).	
		(4)	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							

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)	The external conductor of the encoder cable is not connected to the ground plate of the connector.		Check if it is connected.	It is not connected.	Connect it correctly.	
						It is connected.	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.	
						It has no failure.	Check (4).	
		(4)	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)	The power supply voltage is high.	Check if the voltage of the input power supply is over the prescribed value. 200 V class: 264 V AC 400 V class: 528 V AC 100 V class: 132 V AC 48 V DC setting: 70 V DC 24 V DC setting: 50 V DC	It is higher than the prescribed value.	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. Increase the deceleration time constant. Reduce the load. Use a regenerative option if it is not being used. Review the regenerative option capacity. For MR-J4-03A6(-RJ) and MR-J4W2-0303B6, check if the main circuit power supply voltage is 48 V DC even though the setting is 24 V DC.	
30.2	Regeneration signal error	(1)	A detection circuit of the servo amplifier is malfunctioning.	Check if the regenerative resistor (regenerative option) is overheating.	It is overheating abnormally.	Replace the servo amplifier.	
30.3	Regeneration feedback signal error	(1)	A detection circuit of the servo amplifier is malfunctioning.	Remove the regenerative option or built-in regenerative resistor, and then check if the alarm occurs at power on. For MR-J4-03A6(-RJ) and MR-J4W2-0303B, check if the alarm occurs 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.	

Alarm No.: 31		Name: Overspeed					
Alarm content		▪ The servo motor seed has exceeded the permissible instantaneous speed. ▪ The linear servo motor seed 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.	
					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 servo motor speed is higher than the setting value of [Pr. PC08 Overspeed alarm detection level].	The servo motor speed is higher than the overspeed alarm detection level.	Review the [Pr. PC08] setting.	
					The servo motor speed is lower than the overspeed alarm detection 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.	
					It is not oscillating.	Check (7).	
		(7)	The velocity waveform has overshot.	Check if it is overshooting because the acceleration time constant is too short.	It is overshooting.	Increase the acceleration/deceleration time constant.	
					It is not overshooting.	Check (8).	
		(8)	For MR-J4-03A6(-RJ) and MR-J4W2-0303B6, the speed has overshot when the power was restored from a temporary bus voltage drop during an operation.	Check if a bus voltage drops temporarily during an operation.	The bus voltage has dropped.	Review the capacity of the 24 V DC main circuit power supply. Increase the voltage of the 24 V DC main circuit power supply within the permissible voltage fluctuation range. Change the main circuit input voltage to 48 V DC. Check operation pattern.	[A] [WB]
					The bus voltage has not dropped.	Check (9).	
		(9)	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 (10).	

Alarm No.: 31		Name: Overspeed					
Alarm content		・The servo motor seed has exceeded the permissible instantaneous speed. ・The linear servo motor seed has exceeded the permissible instantaneous speed.					
Detail No.	Detail name	Cause		Check method	Check result	Action	Target
31.1	Abnormal motor speed	(10)	The connection of the servo motor is incorrect.	Check the wiring of U, V, and W.	It is incorrect.	Set it correctly.	[A] [B] [WB] [RJ010]
					It is correct.	Check (11).	
		(11)	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.	

Alarm No.: 32		Name: Overcurrent					
Alarm content		・A current higher than the permissible current was applied to 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 alarm 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.	
		(7)	Something near the device caused it.	Check the noise, ambient temperature, etc.	It has a failure.	Take countermeasures against its cause.	[A] [B] [RJ010]
					It has no failure.	Check it with the check method for [AL. 45.1].	

Alarm No.: 32		Name: Overcurrent					
Alarm content		▪ A current higher than the permissible current was applied to the servo amplifier.					
Detail No.	Detail name	Cause		Check method	Check result	Action	Target
32.2	Overcurrent detected at software detection function (during operation)	(1)	The servo gain is high.	Check if an oscillation is occurring.	An oscillation is occurring.	Reduce the speed loop gain ([Pr. PB09]). For MR-J4-03A6(-RJ) and MR-J4W2-0303B6, check if the main circuit power supply voltage is 48 V DC even though the setting is 24 V DC.	[A] [B] [WB] [RJ010]
					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]
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		・The value of the bus voltage exceeded the prescribed value. 200 V class: 400 V DC 400 V class: 800 V DC 100 V class: 400 V DC 48 V DC setting: 75 V DC 24 V DC setting: 55 V DC					
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 longer deceleration time constant, and then check the repeatability.	It is not repeatable.	When using a built-in regenerative resistor, use a regenerative option. When using a regenerative option, use a larger capacity one.	
					It is repeatable.	Check (5).	
		(5)	Power supply voltage high.	Check if the voltage of the input power supply is over the prescribed value. 200 V class: 264 V AC 400 V class: 528 V AC 100 V class: 132 V AC 48 V DC setting: 75 V DC 24 V DC setting: 55 V DC	It is higher than the prescribed value.	Reduce the power supply 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.	

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 was 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 axis alarm occurred, and then check the repeatability.	It is not repeatable.	Replace the servo amplifier.	
					It is repeatable.	Check (7).	
		(7)	The controller is malfunctioning.	Replace the controller, and then check the repeatability.	It is not repeatable.	Replace the controller.	
					It is repeatable.	Check (8).	
		(8)	Something near the device caused it.	Check the noise, ambient temperature, etc.	It has a failure.	Take countermeasures against its cause.	
34.2	SSCNET connector connection error	Check it with the check method for [AL. 34.1].					
34.3	SSCNET communication data error						
34.4	Hardware error signal detection						
34.5	SSCNET receive data error (safety observation function)						
34.6	SSCNET communication data error (safety observation function)						

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 (6).	
		(3)	Inputted frequency with a manual pulse generator is high.	Check the inputted frequency of the manual pulse generator.	The command pulse frequency is high.	Reduce the inputted frequency of the manual pulse generator.	
					The command pulse frequency is low.	Check (6).	
		(4)	The command from the controller is excessive.	Check if the command from the controller is the permissible speed or higher.	It is the permissible speed or higher.	Check operation pattern.	[B] [WB] [RJ010]
					It is lower than the permissible speed.	Check (5).	
		(5)	The controller is malfunctioning.	Replace the controller, and then check the repeatability.	It is not repeatable.	Replace the controller.	
					It is repeatable.	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]

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 was 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 axis alarm occurred, 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.	
36.2	Continuous communication data error (safety observation function)	Check it with the check method for [AL. 36.1].					

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 out of setting range.	Check the parameter error No. and setting value.	It is out of setting range.	Set it within the range.	[A] [B] [WB] [RJ010]
					It is within the setting range.	Check (2).	
		(2)	A parameter setting contradicts another.	Check the parameter error No. and setting value.	A setting value is incorrect.	Correct the setting value.	
					A setting value is correct.	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.	

Alarm No.: 37		Name: Parameter error					
Alarm content		・Parameter setting is incorrect. ・Point table setting is incorrect.					
Detail No.	Detail name	Cause		Check method	Check result	Action	Target
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)

Alarm No.: 37		Name: Parameter error					
Alarm content		・Parameter setting is incorrect. ・Point table setting is incorrect.					
Detail No.	Detail name	Cause		Check method	Check result	Action	Target
37.3	Point table setting error	(1)	The setting of point tables is incorrect.	Check if the setting of point tables is within the setting range. Check the parameter error No. and point table error No. with the point table error No. display on the display of the servo amplifier. Or check the setting value with the point table display of MR Configurator2.	A setting value is incorrect.	Correct the setting value.	[A]
					A setting value is correct.	Check (2).	
		(2)	A point table 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.	

Alarm No.: 39		Name: Program error					
Alarm content		・A program used for the program operation is incorrect.					
Detail No.	Detail name	Cause		Check method	Check result	Action	Target
39.1	Program error	(1)	A checksum of the program did not match at power-on. (The program has an error.)	Check if an error occurred (such as entered noise, power-off) at program write.	It has a failure.	Rewrite the program.	[A]
					It has no failure.	Check (2).	
		(2)	A program 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.	
39.2	Command argument external error	(1)	A program has never been written since program initialization.	Check if a program was written.	It was not executed.	Write the program.	
					It was executed.	Check (2).	
		(2)	A command argument is using a value out of specifications.	Check if the command description has a failure.	It has a failure.	Correct the command description.	
					It has no failure.	Check (3).	
		(3)	A program 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.	
39.3	Register No. error	(1)	A specified number of the general purpose register used for a command is a value out of specifications.	Check if the command description has a failure.	It has a failure.	Correct the command description.	
					It has no failure.	Check (2).	
		(2)	A program 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.	
39.4	Non-correspondence command error	(1)	A used command is not correspondent to the program.	Check if the command description has a failure.	It has a failure.	Correct the command description.	
					It has no failure.	Check (2).	
		(2)	A program 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.	

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 is malfunctioning.	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 slave	(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 master	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 an MR-J4 servo amplifier which was connected to SSCNET III/H controller was connected to another SSCNET III controller.	Check if the connection was changed to like these.	The connection was 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 was changed.	Set [Pr. PA01] correctly.	
3E.6	Operation mode switch error	(1)	A method of positioning data memorized in the servo amplifier (point table method/program method) is different from the actual positioning mode (point table method/program method).	Check if the positioning mode (point table method/program method) was changed. Positioning mode: [Pr. PA01] "_ _ _ x"	It was changed. (with a purpose)	After changing the positioning mode, initialize the point table method/ program method. (Refer to section 7.2.8 [Pr. PT34] of "MR-J4-_A_-RJ Servo Amplifier Instruction Manual (Positioning Mode)")	[A]
					It was changed by mistake.	Set the positioning mode back to the correct setting.	

Alarm No.: 42		Name: Servo control error (for linear servo motor and direct drive motor)						
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.	
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.	
					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.	

Alarm No.: 42		Name: Servo control error (for linear servo motor and direct drive motor)						
Alarm content		▪ A servo control error occurred.						
Detail No.	Detail name	Cause		Check method	Check result	Action	Target
42.3	Servo control error by torque/ thrust deviation	(1)	The linear encoder resolution setting differs from the setting value.	Check the setting of [Pr. PL02] and [Pr. PL03].	The setting is incorrect.	Set it correctly.	[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 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.	

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].					

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	(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.	
45.2	Main circuit device overheat error 2	(1)	Check it with the check method for [AL. 45.1].				

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 high.	Reduce the load or review the operation pattern.	
					The effective load ratio is small.	Check (3).	
		(3)	The thermal sensor in the encoder is malfunctioning.	Check the servo motor temperature when the alarm occurs.	The servo motor temperature is low.	Replace the servo motor.	
46.2	Abnormal temperature of servo motor 2	(1)	Ambient temperature of the linear servo motor or direct drive motor has exceeded 40 ˚C.	Check the ambient temperature of the linear servo motor or direct drive motor.	It is over 40 ˚C.	Lower the ambient temperature.	[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 high.	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.	
					It is connected.	Check (2).	
		(2)	The encoder cable MR-ENECBL_M-H for HF-JP series 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.	
46.4	Thermistor circuit error	(1)	A thermistor circuit of the servo amplifier is malfunctioning.	Replace the servo amplifier, and then check the repeatability.	It is not repeatable.	Replace the servo amplifier.	
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.	

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.	
					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.	

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. For MR-J4-03A6(-RJ) and MR-J4W2-0303B6, check if the main circuit power supply voltage is 48 V DC even though the setting is 24 V DC.	[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.	

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
50.2	Thermal overload error 2 during operation	Check it with the check method for [AL. 50.1].						
50.3	Thermal overload error 4 during operation							
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, servo motor, 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							

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 or servo motor is malfunctioning.	Replace the servo motor, and then check the repeatability.	It is not repeatable.	Replace the servo motor.	
51.2	Thermal overload error 3 during a stop	(1)	A moving part collided against the machine.	Check if it collided.	It collided.	Check operation pattern.	
					It did not collide.	Refer to (2).	
		(2)	The servo motor power cable was disconnected.	Check it with the check method for [AL. 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.				

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 electromagnetic brake has not released. (The electromagnetic brake has been activated.)	Check if electromagnetic brake is released.	It is not released.	Release the electromagnetic brake.	
					It is released.	Check (7).	
		(7)	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 (8).	
		(8)	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 (9).	
		(9)	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 (10).	
		(10)	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 (11).	
		(11)	The error excessive alarm level was not set correctly.	Check the setting of the error excessive alarm level. [A]: [Pr. PC24], [Pr. PC43] [B] [WB] [RJ010]: [Pr. PC01], [Pr. PC06]	It is not set correctly.	Set it correctly.	
					It is set correctly.	Check (12).	

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	(12)	Servo motor shaft was rotated by external force./ The moving part of the linear servo motor was moved by external force.		Measure the actual position under the servo-lock status.	It is rotated by external force./ It was moved by external force.	Review the machine.	[A] [B] [WB] [RJ010]
						It is not rotated by external force./ It was not moved by external force.	Check (13).	
		(13)	The encoder or the servo motor is malfunctioning.		Replace the servo motor, and then check the repeatability.	It is not repeatable.	Replace the servo motor.	
						It is repeatable.	Check (14).	
		(14)	The servo amplifier is malfunctioning.		Replace the servo amplifier, and then check the repeatability.	It is not repeatable.	Replace the servo amplifier.	
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].						

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 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.	
56.3	Estimated distance over during forced stop	(1)	The forced stop deceleration time constant 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.	
					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.: 61		Name: Operation error					
Alarm content		・An operation of the positioning function failed.					
Detail No.	Detail name	Cause		Check method	Check result	Action	Target
61.1	Point table setting range error	(1)	"1" or "3" was set to the sub function of the last point table (255).	Check if "1" or "3" was set.	It was set.	Review the settings.	[A]

Alarm No.: 63		Name: STO timing error					
Alarm content		・STO input signal turns off while the servo motor is rotating.					
Detail No.	Detail name	Cause		Check method	Check result	Action	Target
63.1	STO1 off	(1)	STO1 was turned off (enabled) 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 (enabled).	It is off (enabled).	Turn on STO1 (disabled).	[A] [B] [WB] [RJ010]
63.2	STO2 off	(1)	STO2 was turned off (enabled) 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 (enabled).	It is off (enabled).	Turn on STO2 (disabled).	
63.5	STO by functional safety unit	(1)	STO of the functional safety unit was turned off (enabled) 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 STO of the functional safety unit is off (enabled).	It is off (enabled).	Turn on STO (disabled).	[A] [B]

Alarm No.: 64		Name: Functional safety unit setting error					
Alarm content		・A setting of the servo amplifier or functional safety unit was incorrect.					
Detail No.	Detail name	Cause		Check method	Check result	Action	Target
64.1	STO input error	(1)	When a functional safety unit is used, a connector is connected to CN8 of the servo amplifier.	Check the connection of the CN8 connector.	It is connected.	Turn off the control circuit power supply of the servo amplifier, and then remove the connector of CN8.	[A] [B]
64.2	Compatibility mode setting error	(1)	When a functional safety unit is used, the J3 compatibility mode is set.	Check the parameter setting.	The J3 compatibility mode is set.	The J3 compatibility mode is not supported with the functional safety unit. Set it correctly.	
64.3	Operation mode setting error	(1)	The speed observation function turned to be enabled in the fully closed loop control mode, linear servo motor control mode, or DD motor control mode.	Check if the parameter setting is correct.	The setting is incorrect.	Set it correctly.	

Alarm No.: 65		Name: Functional safety unit connection error						
Alarm content		▪ Communication or signal between a functional safety unit and servo amplifier failed.						
Detail No.	Detail name	Cause			Check method	Check result	Action	Target
65.1	Functional safety unit communication error 1	(1)	The functional safety unit came off.		Check the installation of the functional safety unit.	It is disconnected.	Turn off the control circuit power supply of the servo amplifier, and then connect the functional safety unit.	[A] [B]
						It is connected.	Check (2).	
		(2)	The functional safety unit is malfunctioning.		Replace the functional safety unit, and then check the repeatability.	It is not repeatable.	Replace the functional safety unit.	
						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)	Something near the device caused it.		Check the noise, ambient temperature, etc.	It has a failure.	Take countermeasures against its cause.	
65.2	Functional safety unit communication error 2	Check it with the check method for [AL. 65.1].						
65.3	Functional safety unit communication error 3							
65.4	Functional safety unit communication error 4							
65.5	Functional safety unit communication error 5							
65.6	Functional safety unit communication error 6							
65.7	Functional safety unit communication error 7							
65.8	Functional safety unit shut-off signal error 1							
65.9	Functional safety unit shut-off signal error 2							

Alarm No.: 66		Name: Encoder initial communication error (safety observation function)						
Alarm content		・The connected encoder is not compatible with the servo amplifier. ・An error has occurred in the communication between an encoder and servo amplifier.						
Detail No.	Detail name	Cause			Check method	Check result	Action	Target
66.1	Encoder initial communication - Receive data error 1 (safety observation function)	(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]
						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, and then check the repeatability.	It is not repeatable.	Replace the servo motor.	
						It is repeatable.	Check (4).	
		(4)	Something near the device caused it.		Check the noise, ambient temperature, vibration, etc.	It has a failure.	Take countermeasures against its cause.	
66.2	Encoder initial communication - Receive data error 2 (safety observation function)	Check it with the check method for [AL. 66.1].						
66.3	Encoder initial communication - Receive data error 3 (safety observation function)							
66.7	Encoder initial communication - Transmission data error 1 (safety observation function)							
66.9	Encoder initial communication - Process error 1 (safety observation function)	(1)	A servo motor with functional safety is not connected.		Check if a servo motor with functional safety is connected.	It is not a servo motor with functional safety.	Connect a servo motor with functional safety.	[A] [B]
						It is a servo motor with functional safety.	Check (2).	
		(2)	The functional safety unit is malfunctioning.		Replace the functional safety unit, and then check the repeatability.	It is not repeatable.	Replace the functional safety unit.	
						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)	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 (5).	
		(5)	Something near the device caused it.		Check the noise, ambient temperature, etc.	It has a failure.	Take countermeasures against its cause.	

Alarm No.: 67		Name: Encoder normal communication error 1 (safety observation function)						
Alarm content		▪ An error has occurred in the communication between an encoder and servo amplifier.						
Detail No.	Detail name	Cause		Check method	Check result	Action	Target
67.1	Encoder normal communication - Receive data error 1 (safety observation function)	(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]
					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, and then check the repeatability.	It is not repeatable.	Replace the servo motor.	
					It is repeatable.	Check (4).	
		(4)	Something near the device caused it.	Check the noise, ambient temperature, vibration, etc.	It has a failure.	Take countermeasures against its cause.	
67.2	Encoder normal communication - Receive data error 2 (safety observation function)	Check it with the check method for [AL. 67.1].					
67.3	Encoder normal communication - Receive data error 3 (safety observation function)						
67.4	Encoder normal communication - Receive data error 4 (safety observation function)						
67.7	Encoder normal communication - Transmission data error 1 (safety observation function)						

Alarm No.: 68		Name: STO diagnosis error					
Alarm content		▪ An error of STO input signal was detected.					
Detail No.	Detail name	Cause		Check method	Check result	Action	Target
68.1	Mismatched STO signal error	(1)	STO1 and STO2 are not inputted correctly.	Check if the STO1 and STO2 of CN8 connector are wired correctly.	It is not wired correctly.	Wire it correctly.	[A] [B] [WB]
					It is wired correctly.	Check (2).	
		(2)	The input states of STO1 and STO2 are different.	Check the on/off states of STO1 and STO2.	The on/off states of STO1 and STO2 are different.	Set STO1 and STO2 to the same input states.	
					The on/off states of STO1 and STO2 are the same.	Check (3).	
		(3)	The setting of [Pr. PF18 STO diagnosis error detection time] ([Pr. PX43] for when the J3 extension function is used) is incorrect.	Set a longer time in the parameter, and then check the repeatability.	It is not repeatable.	Review the parameter setting.	
					It is repeatable.	Check (4).	
		(4)	The STO circuit 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)	Something near the device caused it.	Check the noise, ambient temperature, etc.	It has a failure.	Take countermeasures against its cause.	

Alarm No.: 70		Name: Load-side encoder initial 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
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_-RJ or MR-J4-_B_-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.	
					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.	
					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].					

Alarm No.: 70		Name: Load-side encoder initial 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
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 switches (SW2-2/SW2-3/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 was disconnected.	Check if the load-side encoder cable is connected correctly.	It is not connected.	Connect it correctly.	[A] [B] [WB]
					It is connected.	Check (3).	
		(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.	
					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.	
					It has no failure.	Check (5).	
		(5)	The parameter setting of communication method is incorrect. [A]: [Pr. PC44] [B]: [Pr. PC26]	Check the parameter setting.	The setting is incorrect.	Set it correctly.	[A] [B]
					The setting is correct.	Check (6).	
		(6)	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.	
					The wiring is correct.	Check (7).	
		(7)	When you use a four-wire type linear encoder, the servo amplifier is not compatible with the four-wire type linear encoder.	Check if the servo amplifier is compatible with the four-wire type linear encoder. (MR-J4-_A_-RJ or MR-J4-_B_-RJ)	It is not compatible with.	Use a servo amplifier which is compatible with it.	
					It is compatible with.	Check (8).	
		(8)	The servo amplifier is malfunctioning.	Replace the servo amplifier, and then check the repeatability.	It is not repeatable.	Replace the servo amplifier.	[A] [B] [WB]
					It is repeatable.	Check (9).	
		(9)	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 (10).	
		(10)	Something near the device caused it.	Check the noise, ambient temperature, vibration, etc.	It has a failure.	Take countermeasures against its cause.	

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
70.5	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] [B]
						It is not disconnected or shorted.	Check (2).	
		(2)	A 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.					
70.6	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/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)	A 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.	

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.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					

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 normal 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 external conductor of the encoder cable is not connected to the ground plate of the connector.	Check if it is connected.	It is not connected.	Connect it correctly.	
					It is connected.	Check (3).	
		(3)	The parameter setting of communication method is incorrect. [A]: [Pr. PC44] [B]: [Pr. PC26]	Check the parameter setting.	The setting is incorrect.	Set it correctly.	[A] [B]
					The setting 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.	
					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.	

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
71.2	Load-side encoder normal communication - Receive data error 2	Check it with the check method for [AL. 71.1].				
71.3	Load-side encoder normal communication - Receive data error 3					
71.5	Load-side encoder normal communication - Transmission data error 1					
71.6	Load-side encoder normal communication - Transmission data error 2					
71.7	Load-side encoder normal communication - Transmission data error 3					
71.9	Load-side encoder normal communication - Receive data error 4					
71.A	Load-side encoder normal communication - Receive data error 5					

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.	Use the encoder with low loop gain.	[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.	

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
72.2	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.	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, 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.	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.	
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.	Install 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.	
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.	Install 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 not mounted correctly.	Install it 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.: 79		Name: Functional safety unit diagnosis error						
Alarm content		・A diagnosis of the functional safety unit failed.						
Detail No.	Detail name	Cause		Check method	Check result	Action	Target
79.1	Functional safety unit power voltage error	(1)	The power supply of the functional safety unit is failure.	Check the installation of the functional safety unit.	It has a failure.	Install it correctly.	[A] [B]
					It has no failure.	Check (2).	
		(2)	The functional safety unit is malfunctioning.	Replace the functional safety unit, and then check the repeatability.	It is not repeatable.	Replace the functional safety unit.	
					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)	Something near the device caused it.	Check the power supply for noise.	It has a failure.	Take countermeasures against its cause.	
79.2	Functional safety unit internal error	(1)	The functional safety unit is malfunctioning.	Replace the functional safety unit, and then check the repeatability.	It is not repeatable.	Replace the functional safety unit.	
					It is 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.	

Alarm No.: 79		Name: Functional safety unit diagnosis error						
Alarm content		▪ A diagnosis of the functional safety unit failed.						
Detail No.	Detail name	Cause		Check method	Check result	Action	Target
79.3	Abnormal temperature of functional safety unit	(1)	Ambient temperature has exceeded 55 ˚C.	Check the ambient temperature.	It is over 55 ˚C.	Lower the ambient temperature.	[A] [B]
					It is less than 55 ˚C.	Check (2).	
		(2)	Ambient temperature is less than 0 ˚C.	Check the ambient temperature.	It is less than 0 ˚C.	Increase the ambient temperature.	
					It is 0 ˚C or more.	Check (3).	
		(3)	The close mounting is out of specifications.	Check the specifications of close mounting.	It is out of specifications.	Mount it correctly.	
					It is within specifications.	Check (4).	
		(4)	An opening is clogged up.	Clean the opening and check the repeatability.	It is not repeatable.	Clean it periodically.	
					It is repeatable.	Check (5).	
		(5)	The functional safety unit is malfunctioning.	Replace the functional safety unit, and then check the repeatability.	It is not repeatable.	Replace the functional safety unit.	
					It is repeatable.	Check (6).	
		(6)	Something near the device caused it.	Check the power supply for noise.	It has a failure.	Take countermeasures against its cause.	
79.4	Servo amplifier error	(1)	The functional safety unit came off.	Check the installation of the functional safety unit.	It has a failure.	Install it correctly.	
					It has no failure.	Check (2).	
		(2)	The functional safety unit is malfunctioning.	Replace the functional safety unit, and then check the repeatability.	It is not repeatable.	Replace the functional safety unit.	
					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)	Something near the device caused it.	Check the noise, ambient temperature, etc.	It has a failure.	Take countermeasures against its cause.	
79.5	Input device error	(1)	A signal of input device is not inputted correctly.	Check if the input device cable is wired correctly.	It has a failure.	Review the wiring.	
					It has no failure.	Check (2).	
		(2)	The input device setting parameter is not set correctly.	Check if the parameter is set correctly.	It is not set correctly.	Review the parameter.	
					It is set correctly.	Check (3).	
		(3)	The test pulse time was not set correctly.	Check the setting of [Pr. PSD26 Input device - Test pulse off time].	The test pulse width is longer than the set value.	Set the value longer.	
					The test pulse width is shorter than the set value.	Check (4).	
		(4)	The functional safety unit is malfunctioning.	Replace the functional safety unit, and then check the repeatability.	It is not repeatable.	Replace the functional safety unit.	
					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.	

Alarm No.: 79		Name: Functional safety unit diagnosis error					
Alarm content		▪ A diagnosis of the functional safety unit failed.					
Detail No.	Detail name	Cause		Check method	Check result	Action	Target
79.6	Output device error	(1)	A signal of an output device has not been outputted correctly.	Check if the output device cable is wired correctly. Or check if the load of the output device is within the specifications.	It has a failure.	Review the wiring or load.	[A] [B]
					It has no failure.	Check (2).	
		(2)	The test pulse time was not set correctly.	Check the setting of [Pr. PSD30 Output device - Test pulse off time].	The test pulse width is longer than the set value.	Set the value longer.	
					The test pulse width is shorter than the set value.	Check (3).	
		(3)	Current of the output device is excessive.	Check if the current is used within prescribed.	Not within prescribed.	Reduce the output current.	
					Within prescribed.	Check (4).	
		(4)	The functional safety unit is malfunctioning.	Replace the functional safety unit, and then check the repeatability.	It is not repeatable.	Replace the functional safety unit.	
					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.	
79.7	Mismatched input signal error	(1)	A mismatch of input signal DI_A and DI_B continued for a fixed time ([Pr. PSD18] to [Pr. PSD23]).	Check if the input device cable is wired correctly.	It has a failure.	Review the wiring.	
					It has no failure.	Check (2).	
		(2)	An input mismatch time was not set correctly.	Check the settings of [Pr. PSD18 Mismatch permissible time DI1] to [Pr. PSD23 Mismatch permissible time DI6].	The mismatched time is longer than the set value.	Set the value longer.	
					The mismatched time is shorter than the set value.	Check (3).	
		(3)	The functional safety unit is malfunctioning.	Replace the functional safety unit, and then check the repeatability.	It is not repeatable.	Replace the functional safety unit.	
					It is repeatable.	Check (4).	
		(4)	Something near the device caused it.	Check the noise, ambient temperature, etc.	It has a failure.	Take countermeasures against its cause.	

Alarm No.: 79		Name: Functional safety unit diagnosis error					
Alarm content		・A diagnosis of the functional safety unit failed.					
Detail No.	Detail name	Cause		Check method	Check result	Action	Target
79.8	Position feedback fixing error	(1)	The position feedback data do not change within the position feedback fixing error detection time [Pr. PSA22].	Check the [Pr. PSA22] setting.	It is not set correctly.	Review the parameter.	[A] [B]
					It is set correctly.	Check (2).	
		(2)	The position feedback data do not change.	Check the feedback data by rotating the servo motor.	The position feedback data changes.	Perform an operation which rotates the servo motor within the position feedback fixing error detection time [Pr. PSA22].	
					The position feedback data do not change.	Check (3).	
		(3)	The servo motor is malfunctioning.	Replace the servo motor, and then check the repeatability.	It is not repeatable.	Replace the servo motor.	
					It is repeatable.	Check (4).	
		(4)	The functional safety unit is malfunctioning.	Replace the functional safety unit, and then check the repeatability.	It is not repeatable.	Replace the functional safety unit.	

Alarm No.: 7A		Name: Parameter setting error (safety observation function)					
Alarm content		・A parameter of the functional safety unit failed.					
Detail No.	Detail name	Cause		Check method	Check result	Action	Target
7A.1	Parameter verification error (safety observation function)	(1)	A parameter of the functional safety unit is incorrect.	Review the parameter.	It is not repeatable.	Set the parameter correctly.	[A] [B]
					It is repeatable.	Check (2).	
		(2)	The functional safety unit is malfunctioning.	Replace the functional safety unit, and then check the repeatability.	It is not repeatable.	Replace the functional safety unit.	
					It is repeatable.	Check (3).	
		(3)	Something near the device caused it.	Check the noise, ambient temperature, etc.	It has a failure.	Take countermeasures against its cause.	
7A.2	Parameter setting range error (safety observation function)	(1)	The initial settings for the functional safety unit have not been finished.	Check the [Pr. PSA01] setting.	It is not enabled.	Enable the setting with checking parameter contents.	
					It is enabled.	Check (2).	
		(2)	A parameter of the functional safety unit was set out of range.	Check the value of set parameters.	It is out of setting range.	Set it within the range.	
7A.3	Parameter combination error (safety observation function)	(1)	A parameter of the functional safety unit or servo amplifier is incorrect.	Check the parameter settings of the functional safety unit and servo amplifier. Functional safety unit: [Pr. PSA02], [Pr. PSA18] to [Pr. PSA21], [Pr. PSC03], [Pr. PSD01] to [Pr. PSD17], [Pr. PSD26] Servo amplifier: [Pr. PA14]	It is not set correctly.	Set the parameter correctly.	

Alarm No.: 7A		Name: Parameter setting error (safety observation function)					
Alarm content		・A parameter of the functional safety unit failed.					
Detail No.	Detail name	Cause		Check method	Check result	Action	Target
7A.4	Functional safety unit combination error (safety observation function)	(1)	A combination of functional safety unit and servo amplifier is incorrect.	Check if correct combination of servo amplifier is connected.	A different servo amplifier is connected.	Return to the servo amplifier which was combined with the functional safety unit and was set the safety observation function, or initialize the setting.	[A] [B]

Alarm No.: 7B		Name: Encoder diagnosis error (safety observation function)					
Alarm content		・Error occurred in encoder.					
Detail No.	Detail name	Cause		Check method	Check result	Action	Target
7B.1	Encoder diagnosis error 1 (safety observation function)	(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]
					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.	
					It is repeatable.	Check (3).	
		(3)	The functional safety unit is malfunctioning.	Replace the functional safety unit, and then check the repeatability.	It is not repeatable.	Replace the functional safety unit.	
					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)	Something near the device caused it.	Check the noise, ambient temperature, vibration, etc.	It has a failure.	Take countermeasures against its cause.	
7B.2	Encoder diagnosis error 2 (safety observation function)	(1)	Check it with the check method for [AL. 7B.1].				
7B.3	Encoder diagnosis error 3 (safety observation function)	(1)					
7B.4	Encoder diagnosis error 4 (safety observation function)	(1)	Ambient temperature of the encoder has exceeded 40 °C.	Check the ambient temperature of the encoder.	It is over 40 ˚C.	Lower the ambient temperature.	[A] [B]
					It is 40 ˚C or less.	Check (2).	
		(2)	Ambient temperature of the encoder is less than 0 ˚C.	Check the ambient temperature of the encoder.	It is 0 ˚C or less.	Increase the ambient temperature.	
					It is 0 ˚C or more.	Check (3).	
		(3)	Servo motor is overloaded.	Check the effective load ratio.	The effective load ratio is high.	Reduce the load or review the operation pattern.	
					The effective load ratio is small.	Check (4).	
		(4)	The thermal sensor in the encoder is malfunctioning.	Replace the servo motor, and then check the repeatability.	It is not repeatable.	Replace the servo motor.	
					It is repeatable.	Check (5).	
		(5)	The functional safety unit is malfunctioning.	Replace the functional safety unit, and then check the repeatability.	It is not repeatable.	Replace the functional safety unit.	

Alarm No.: 7C		Name: Functional safety unit communication diagnosis error (safety observation function)					
Alarm content		・The SSCNET III/H communication had an error in the functional safety unit.					
Detail No.	Detail name	Cause		Check method	Check result	Action	Target
7C.1	Functional safety unit communication cycle error (safety observation function)	(1)	Communication cycle does not match.	Check the communication cycle setting ([Pr. PSC01]) of the servo system controller and functional safety unit.	Communication cycle setting is not correct.	Set it correctly.	[A] [B]
					Communication cycle setting is correct.	Check (2).	
		(2)	The functional safety unit is malfunctioning.	Replace the functional safety unit, and then check the repeatability.	It is not repeatable.	Replace the functional safety unit.	
					It is repeatable.	Check (3).	
		(3)	Something near the device caused it.	Check the noise, ambient temperature, etc.	It has a failure.	Take countermeasures against its cause.	
7C.2	Functional safety unit communication data error (safety observation function)	(1)	An error occurred at the servo system controller side.	Check if the settings of the servo system controller side.	It has a failure.	Set it correctly.	
					It has no failure.	Check (2).	
		(2)	The SSCNET III cable was 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.	
					It is connected.	Check (3).	
		(3)	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 (4).	
		(4)	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 (5).	
		(5)	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 (6).	
		(6)	The servo amplifier is malfunctioning.	Replace the servo amplifier, and then check the repeatability.	It is not repeatable.	Replace the servo amplifier.	
					It is repeatable.	Check (7).	
		(7)	The previous or next axis servo amplifier of the alarm occurred is malfunctioning.	Replace the previous and next servo amplifier of the axis alarm occurred, and then check the repeatability.	It is not repeatable.	Replace the servo amplifier.	
					It is repeatable.	Check (8).	
		(8)	The controller is malfunctioning.	Replace the controller, and then check the repeatability.	It is not repeatable.	Replace the controller.	
					It is repeatable.	Check (9).	
		(9)	Something near the device caused it.	Check the noise, ambient temperature, etc.	It has a failure.	Take countermeasures against its cause.	

Alarm No.: 7D		Name: Safety observation error					
Alarm content		▪ The safety observation function detected an error.					
Detail No.	Detail name	Cause		Check method	Check result	Action	Target
7D.1	Stop observation error	(1)	During activation of SOS function, the position of the servo motor has changed by more than the SOS allowance value set by parameter.	Check that the actual servo motor position is higher than the setting value of [Pr. PSA05].	The travel amount of the servo motor is larger than the setting value in [Pr. PSA05].	Review the alarm level.	[A] [B]
					The travel amount of the servo motor is smaller than the alarm detection level.	Check (2).	
		(2)	During activation of SOS function, the servo motor speed has changed by larger than the SOS allowance value set by parameter, and that state has continued for longer than the set time (specified by [Pr. PSA15]).	The actual servo motor speed is higher than the setting value of [Pr. PSA04].	The servo motor speed is higher than the setting value in [Pr. PSA04].	Review the parameter setting.	
					The servo motor speed is higher than the setting value in [Pr. PSA15] and equal to or lower than that in [Pr. PSA04].	Check (3).	
		(3)	During activation of SOS function, the speed command has changed by larger than the SOS allowance value set by parameter, and that state has continued for longer than the set time (specified by [Pr. PSA15]).	Check if the command from the controller is over the standstill speed set in [Pr. PSA04].	The command from the controller is over the setting valued in [Pr. PSA04].	Check the operation pattern.	
					The command from controller is higher than the setting value in [Pr. PSA15] and equal to or lower than that in [Pr. PSA04].	Check (4).	
		(4)	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 (5).	
		(5)	The functional safety unit is malfunctioning.	Replace the functional safety unit, and then check the repeatability.	It is not repeatable.	Replace the functional safety unit.	
					It is repeatable.	Check (6).	
		(6)	The servo amplifier is malfunctioning.	Replace the servo amplifier, and then check the repeatability.	It is not repeatable.	Replace the servo motor.	
					It is repeatable.	Check (7).	
		(7)	Something near the device caused it.	Check the noise, ambient temperature, vibration, etc.	It has a failure.	Take countermeasures against its cause.	

Alarm No.: 7D		Name: Safety observation error					
Alarm content		▪ The safety observation function detected an error.					
Detail No.	Detail name	Cause		Check method	Check result	Action	Target
7D.2	Speed observation error	(1)	The command pulse frequency is high.	Check the command pulse frequency.	The command pulse frequency is high.	Check operation pattern.	[A] [B]
					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.	
					The setting value is correct.	Check (3).	
		(3)	The command from the controller is excessive.	Check if the command from the controller is the SLS speed ([Pr. PSA11] to [Pr. PSA14]) or more.	It is over the permissible speed.	Check operation pattern.	
					It is less than the permissible speed.	Check (4).	
		(4)	A larger speed command than the SLS speed ([Pr. PSA11] to [Pr. PSA14]) was inputted.	Check that the actual servo motor speed is higher than the setting value of the SLS speed.	The servo motor speed is higher than the SLS speed.	Review the setting value of the SLS speed.	
					The servo motor speed is lower than the SLS speed.	Check (5).	
		(5)	The servo system is unstable and oscillating.	Check if the servo motor is oscillating.	It is oscillating.	Adjust the servo gain. Or reduce the load.	
					It is not oscillating.	Check (6).	
		(6)	The velocity waveform has overshot.	Check if it is overshooting because the acceleration time constant is too short.	It is overshooting.	Increase the acceleration/deceleration time constant.	
					It is not overshooting.	Check (7).	
		(7)	The connection destination of the encoder cable is incorrect.	Check the connection destination of the encoder.	It is not correct.	Wire it correctly.	
					It is correct.	Check (8).	
		(8)	The encoder or liner encoder is malfunctioning.	Replace the servo motor, and then check the repeatability.	It is not repeatable.	Replace the servo motor.	
					It is repeatable.	Check (9).	
		(9)	The functional safety unit is malfunctioning.	Replace the functional safety unit, and then check the repeatability.	It is not repeatable.	Replace the functional safety unit.	
					It is repeatable.	Check (10).	
		(10)	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 (11).	
		(11)	Something near the device caused it.	Check the noise, ambient temperature, etc.	It has a failure.	Take countermeasures against its cause.	

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)

Alarm No.: 8A		Name: USB communication time-out error/serial communication time-out error/Modbus-RTU communication time-out error					
Alarm content		・Communication between the servo amplifier and a personal computer/controller stopped for the specified time or longer. ・An error occurred in USB communication, serial communication (Mitsubishi general-purpose AC servo protocol), or Modbus-RTU communication.					
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, etc.	It was not transmitted.	Transmit a command.	[A] [B] [WB] [RJ010]
					It was transmitted.	Check (2).	
		(2)	A communication cable was 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.	
8A.2	Modbus-RTU communication time-out error	(1)	Communication commands have not been transmitted.	Check if a command was transmitted from the controller, etc.	It was not transmitted.	Transmit a command.	[A]
					It was transmitted.	Check (2).	
		(2)	A communication cable was 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.	

Alarm No.: 8D		Name: CC-Link IE communication error						
Alarm content		・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 is occurring.	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.	

Alarm No.: 8D		Name: CC-Link IE communication error						
Alarm content		・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.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.	It is selected.	Cancel the reserved station.	[RJ010]
8D.6	CC-Link IE communication error 3	Check it with the check method for [AL. 8D.1].						
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/Modbus-RTU communication error						
Alarm content		・A communication error occurred between the servo amplifier and a personal computer/controller. ・An error occurred in USB communication, serial communication (Mitsubishi general-purpose AC servo protocol), or Modbus-RTU communication.						
Detail No.	Detail name	Cause			Check method	Check result	Action	Target
8E.1	USB communication receive error/serial communication receive error	(1)	The setting of the personal computer, etc. is incorrect.		Check the setting of the personal computer, etc.	It is incorrect.	Review the settings.	[A] [B] [WB] [RJ010]
						It is correct.	Check (2).	
		(2)	A communication cable is malfunctioning.		Check 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.	
8E.2	USB communication checksum error/serial communication checksum error	(1)	The setting of the personal computer, etc. is incorrect.		Check the setting of the personal computer, etc.	It is incorrect.	Review the settings.	

Alarm No.: 8E		Name: USB communication error/serial communication error/Modbus-RTU communication error					
Alarm content		▪ A communication error occurred between the servo amplifier and a personal computer/controller. ▪ An error occurred in USB communication, serial communication (Mitsubishi general-purpose AC servo protocol), or Modbus-RTU communication.					
Detail No.	Detail name	Cause		Check method	Check result	Action	Target
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.	[A] [B] [WB] [RJ010]
					The transmitted character is within specifications.	Check (2).	
		(2)	The communication protocol is failure.	Check if transmission data supports 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, etc. is incorrect.	Check the setting of the personal computer, etc.	It is incorrect.	Review the settings.	
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 supports 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, etc. is incorrect.	Check the setting of the personal computer, etc.	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 out of specifications.	Correct the transmission data.	[A] [B] [WB] [RJ010]
					The transmitted data number is within specifications.	Check (2).	
		(2)	The communication protocol is failure.	Check if transmission data supports 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, etc. is incorrect.	Check the setting of the personal computer, etc.	It is incorrect.	Review the settings.	

Alarm No.: 8E		Name: USB communication error/serial communication error/Modbus-RTU communication error					
Alarm content		・A communication error occurred between the servo amplifier and a personal computer/controller. ・An error occurred in USB communication, serial communication (Mitsubishi general-purpose AC servo protocol), or Modbus-RTU communication.					
Detail No.	Detail name	Cause		Check method	Check result	Action	Target
8E.6	Modbus-RTU communication receive error	(1)	The setting of the controller, servo amplifier, etc. is incorrect.	Check the setting of the controller, servo amplifier, etc. (such as communication protocol selection, baud rate, parity).	It is incorrect.	Review the settings.	[A]
					It is correct.	Check (2).	
		(2)	A communication cable is malfunctioning.	Check 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.	
8E.7	Modbus-RTU communication message frame error	(1)	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 (2).	
		(2)	The setting of the controller, servo amplifier, etc. is incorrect.	Check the setting of the controller, servo amplifier, etc. (such as communication protocol selection, baud rate, parity).	It is incorrect.	Review the settings.	
8E.8	Modbus-RTU communication CRC error	Check it with the check method for [AL. 8E.7].					

Alarm No.: 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 is occurring.	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]

1.5 Remedies for warnings

⚠CAUTION

●If [AL. E3 Absolute position counter warning] occurs, remove the cause of the warning, and 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 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 (except [AL. F0 Tough drive warning]) are not recorded in the alarm history.

If [AL. E6], [AL. E7], [AL. E9], [AL. EA], or [AL. EB] occurs, the amplifier will be the servo-off status. 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 the cause of warning occurrence.

Alarm No.: 90		Name: Home position return incomplete warning					
Alarm content		・A home position return did not complete normally with the positioning function.					
Detail No.	Detail name	Cause		Check method	Check result	Action	Target
90.1	Home position return incomplete	(1)	An automatic operation was executed at home position return incompletion.	Check if the home position return was not executed (ZP (Home position return completion) is off.).	A home position return was not executed.	Execute a home position return.	[A]
					A home position return was executed.	Check (2).	
		(2)	A positioning operation was executed without home position setting with absolute position after [AL. 25 Absolute position erased] occurred.	Check if [AL. 25 Absolute position erased] occurred using alarm history.	[AL. 25 Absolute position erased] occurred.	Check the battery voltage and battery cable if they have a failure and execute a home position return after remove the failure.	
					[AL. 25 Absolute position erased] did not occur.	Check (3).	
		(3)	With the indexer method, [AL. E3 Absolute position counter warning] occurred simultaneously with the alarm.	Check if [AL. 90.1] occurred simultaneously with start of the positioning operation.	[AL. 90.1] did not occur simultaneously with start of the positioning operation but occurred during positioning operation.	Remove the cause of [AL. E3], and perform home position return. (Check it with the check method for [AL. E3].)	
					[AL. 90.1] occurred simultaneously with start of the positioning operation.	Check (4).	
		(4)	ZP (Home position return completion) turned off after the home position return was executed.	Check if ZP (Home position return completion) is off.	ZP (Home position return completion) is off.	Check the conditions if ZP (Home position return completion) can be off. (Refer to section 2.3 of "MR-J4-_A_-RJ Servo Amplifier Instruction Manual (Positioning Mode)")	

Alarm No.: 90		Name: Home position return incomplete warning						
Alarm content		▪ A home position return did not complete normally with the positioning function.						
Detail No.	Detail name	Cause		Check method	Check result	Action	Target
90.2	Home position return abnormal termination	(1)	A home position return speed did not decelerate to a creep speed.	Check if the proximity dog turned off before a home position return completed deceleration to a creep speed.	The proximity dog turned off before the deceleration to a creep speed.	Review the dog position. Or review the parameter values of the home position return speed, creep speed, and travel distance after proximity dog.	[A]
		(2)	Deceleration from the home position return speed/creep speed to the home position failed at the indexer method.	Check if the home position was turned on before the deceleration from the home position return speed/creep speed to the home position was complete.	It was not turned on before the deceleration was complete.	Review the positional relationship of the stroke limit and home position. Or review the parameter values of the home position return speed, creep speed, deceleration time constant, and home position shift distance.	
90.5	Z-phase unpassed	(1)	The Z-phase signal was not detected normally.	Check if the Z-phase signal of the servo motor/linear servo motor was detected normally.	The Z-phase signal was not detected.	Review the Z-phase signal and wirings.	[A]
					The Z-phase signal was detected.	Check (2).	
		(2)	A home position return was executed while the servo motor did not pass the Z-phase.	Check if the motor passed the Z-phase signal until the proximity dog turned off after the home position return started.	The Z-phase was not turned on.	Review the setting position of the home position return start and proximity dog.	

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] [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.	

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(-A) 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)	A battery cable was 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.	

Alarm No.: 93		Name: ABS data transfer warning					
Alarm content		・ABS data were 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		・STO input signal turns off while the servo motor stops. ・A diagnosis of input devices was not executed. ・The safety observation function was enabled in the test mode.					
Detail No.	Detail name	Cause		Check method	Check result	Action	Target
95.1	STO1 off detection	(1)	STO1 is not inputted correctly.	Check if the STO1 of CN8 connector is wired correctly.	It is not wired correctly.	Wire it correctly. (When not using the STO function, attach the short-circuit connector came with the servo amplifier to CN8.)	[A] [B] [WB] [RJ010]
					It is wired correctly.	Check (2).	
		(2)	STO1 was turned off (enabled) 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 (enabled).	It is off (enabled).	Turn on STO1 (disabled).	
95.2	STO2 off detection	(1)	STO2 is not inputted correctly.	Check if the STO2 of CN8 connector is wired correctly.	It is not wired correctly.	Wire it correctly. (When not using the STO function, attach the short-circuit connector came with the servo amplifier to CN8.)	
					It is wired correctly.	Check (2).	
		(2)	STO2 was turned off (enabled) 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 (enabled).	It is off (enabled).	Turn on STO2.	
95.3	STO warning 1 (safety observation function)	(1)	"Input device - Fixing-diagnosis execution selection at start-up" was not executed.	Check if "Input device - Fixing-diagnosis execution selection at start-up" was executed.	It was not executed.	Execute it.	[B]
					It was executed.	Check (2).	
		(2)	Set "Input device - Fixing-diagnosis execution selection at start-up" correctly using parameters.	Check if [Pr.PSD27] and [Pr. PSD28] are set correctly.	It is not set correctly.	Review the parameter.	
					It is set correctly.	Check (3).	
		(3)	The wiring is incorrect.	Check if the wiring has a failure.	It has a failure.	Review the wiring.	
					It has no failure.	Check (4).	
		(4)	The functional safety unit is malfunctioning.	Replace the functional safety unit, and then check the repeatability.	It is not repeatable.	Replace the functional safety unit.	
					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.	

Alarm No.: 95		Name: STO warning					
Alarm content		・STO input signal turns off while the servo motor stops. ・A diagnosis of input devices was not executed. ・The safety observation function was enabled in the test mode.					
Detail No.	Detail name	Cause		Check method	Check result	Action	Target
95.4	STO warning 2 (safety observation function)	(1)	The test operation mode was not set correctly.	Check if the servo amplifier and functional safety unit are set to the test operation mode.	It is not set.	Set it correctly.	[B]
					It is set.	Check (2).	
		(2)	An error occurred in SSCNET III/H communication.	Check the description "The display shows "Ab"." of the section 1.6.	It is not repeatable.	Take countermeasures against its cause.	
					It is repeatable.	Check (3).	
		(3)	"Input mode selection" in [Pr. PSA02 Functional safety unit setting] is not set correctly.	Set [Pr. PSA02] correctly and check the repeatability.	It is not repeatable.	Review the parameter.	
					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 functional safety unit is malfunctioning.	Replace the functional safety unit, and then check the repeatability.	It is not repeatable.	Replace the functional safety unit.	
					It is repeatable.	Check (6).	
		(6)	Something near the device caused it.	Check the noise, ambient temperature, etc.	It has a failure.	Take countermeasures against its cause.	
95.5	STO warning 3 (safety observation function)	(1)	STO command/SS1 command of the functional safety unit was turned off (enabled) 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 STO command/SS1 command of the functional safety unit is off (enabled).	It is off (enabled).	Turn on (disabled) STO command/SS1 command of the functional safety unit.	

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, and make home position setting.	[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.	Set it after home positioning.	
					A command is not inputted.	Check (2).	
		(2)	Creep speed is high.	Decrease the creep speed, and then check the repeatability.	It is not repeatable.	Decelerate the creep speed, and make home position setting.	
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.	[A]
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, and make home position setting.	

Alarm No.: 97		Name: Program operation disabled/next station position warning					
Alarm content		・How to specify a positioning is incorrect for the positioning function.					
Detail No.	Detail name	Cause		Check method	Check result	Action	Target
97.1	Program operation disabled warning	(1)	When using the positioning function, start a program with the program operation disabled.	Check if the power of the servo amplifier was cycled after the program was changed.	The power of the servo amplifier was not cycled.	Cycle the power of the servo amplifier.	[A]
97.2	Next station position warning	(1)	An abnormal value was specified to a signal input of the next station position specification and automatic operation was started.	Check if a number of stations per rotation ([Pr. PT28]) or more value was not specified to the next station position.	The number of stations per rotation ([Pr. PT28]) or more value was specified.	Review the parameter setting or next station position input signal.	[A]
					The number of stations per rotation ([Pr. PT28]) or more value was not specified.	Check (2).	
		(2)	The power of the servo amplifier was not cycled after the number of stations per rotation ([Pr. PT28]) was changed.	Check if the power of the servo amplifier was cycled after the number of stations per rotation ([Pr. PT28]) was changed.	The power was not cycled.	Cycle the power of the servo amplifier.	

Alarm No.: 98		Name: Software limit warning						
Alarm content		・A software limit set with the parameter was reached for the positioning function.						
Detail No.	Detail name	Cause		Check method	Check result	Action	Target
98.1	Forward rotation-side software stroke limit reached	(1)	A software limit was set within the actual operation range.	Check if the parameter settings ([Pr. PT15] to [Pr. PT18]) to the operation range are correct.	The setting was out of operation range.	Set [Pr. PT15] to [Pr. PT18] correctly.	[A]
					The setting was within operation range.	Check (2).	
		(2)	A point table of the position data which exceeds the software limit was executed.	Check if the target position of the point data to the operation range was correct.	The setting was out of operation range.	Set the point table correctly.	
					The setting was within operation range.	Check (3).	
		(3)	A software limit was reached by using the JOG operation or manual pulse generator operation.	Check if the JOG operation or manual pulse generator operation was executed properly to the operation range.	It reached to the out of operation range.	Operate within the software limit. Adjust properly the parameters such as JOG speed and multiplication of the manual pulse as necessary.	
98.2	Reverse rotation-side software stroke limit reached	Check it with the check method for [AL. 98.1].						[A]

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 stroke limit switch for forward rotation is connected to LSP.	Check if the limit switch is connected correctly.	It is not connected.	Connect it correctly.	[A]
					It is connected.	Check (2).	
		(2)	The forward rotation stroke end was exceeded during driving.	Check if the stroke limit switch for forward rotation turned off.	It turned off.	Check operation pattern.	
99.2	Reverse rotation stroke end off	(1)	The stroke limit switch for reverse rotation is connected to LSN.	Check if the limit switch is connected correctly.	It is not connected.	Connect it correctly.	
					It is connected.	Check (2).	
		(2)	The reverse rotation stroke end was exceeded during driving.	Check if the stroke limit switch for reverse rotation turned off.	It turned off.	Check operation pattern.	

Alarm No.: 9A		Name: Optional unit input data error warning					
Alarm content		▪ The BCD input data setting is incorrect when MR-D01 extension IO unit is connected.					
Detail No.	Detail name	Cause		Check method	Check result	Action	Target
9A.1	Optional unit input data sign error	(1)	The MR-D01 extension IO unit is not connected.	Check if MR-D01 is connected correctly.	It is not connected.	Connect it correctly.	[A]
					It is connected.	Check (2).	
		(2)	Both of + and - signs are on or off.	Check the sign of the optional unit input data.	Both are on or both are off.	Turn on one of the signs only.	
					Only one of the signs is on.	Check (3).	
		(3)	The - sign is set at incremental value command.	Check the sign of the optional unit input data.	The - sign is set.	Set it to +.	
					The + sign is set.	Check (4).	
		(4)	The MR-D01 extension IO unit is malfunctioning.	Replace the MR-D01, and then check the repeatability.	It is not repeatable.	Replace the MR-D01.	
9A.2	Optional unit BCD input data error	(1)	Other than "0" to "9" is set in a digit.	Check the BCD input data.	A value out of range is set.	Set a value from "0" to "9".	

Alarm No.: 9B		Name: Error excessive warning					
Alarm content		▪ Droop pulses have exceeded the warning occurrence level.					
Detail No.	Detail name	Cause		Check method	Check result	Action	Target
9B.1	Excess droop pulse 1 warning	(1)	The servo motor power cable was disconnected.	Check the servo motor power cable.	It is disconnected.	Repair or replace the servo motor power cable.	[A] [B] [WB]
					It is not disconnected.	Check (2).	
		(2)	The connection of the servo motor is incorrect.	Check the wiring of U, V, and W.	It is incorrect.	Connect it correctly.	
					It is correct.	Check (3).	
		(3)	The connection of the encoder cable is incorrect.	Check if the encoder cable is connected correctly.	It is incorrect.	Connect it correctly.	
					It is correct.	Check (4).	
		(4)	The torque limit has been enabled.	Check if the limiting torque is in progress.	The limiting torque is in progress.	Increase the torque limit value.	
					The limiting torque is not in progress.	Check (5).	
		(5)	A moving part collided against the machine.	Check if it collided.	It collided.	Check operation pattern.	
					It did not collide.	Check (6).	
		(6)	The torque is insufficient.	Check the peak load ratio.	The torque is saturated.	Reduce the load or review the operation pattern. Or use a larger capacity motor.	
					The torque is not saturated.	Check (7).	
		(7)	Power supply voltage dropped.	Check the bus voltage value.	The bus voltage is low.	Check the power supply voltage and power supply capacity.	
					The bus voltage is high.	Check (8).	
		(8)	Acceleration/deceleration time constant is too short.	Set a longer deceleration time constant, and then check the repeatability.	It is not repeatable.	Increase the acceleration/deceleration time constant.	
					It is repeatable.	Check (9).	

Alarm No.: 9B		Name: Error excessive warning					
Alarm content		・Droop pulses have exceeded the warning occurrence level.					
Detail No.	Detail name	Cause		Check method	Check result	Action	Target
9B.1	Excess droop pulse 1 warning	(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]).	[A] [B] [WB]
					It is repeatable.	Check (10).	
		(10)	Servo motor shaft was rotated by external force./The moving part of the linear servo motor was moved by external force.	Measure the actual position under the servo-lock status.	It is rotated by external force./It was moved by external force.	Review the machine.	
					It is not rotated by external force./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.	
9B.3	Excess droop pulse 2 warning	Check it with the check method for [AL. 9B.1].					
9B.4	Error excessive warning 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]

Alarm No.: 9C		Name: Converter warning					
Alarm content		・A warning occurred in the converter unit during the servo-on.					
Detail No.	Detail name	Cause		Check method	Check result	Action	Target
9C.1	Converter unit warning	(1)	A warning occurred in the converter unit during the servo-on.	Check the warning of the converter unit, and take the action following the remedies for warnings of the converter unit.			[A] [B]

Alarm No.: 9D		Name: CC-Link IE warning 1					
Alarm content		・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		・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.	

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.	Connect it correctly.	[A] [B] [WB] [RJ010]
					It is connected.	Check (2).	
		(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 it is not being used.	[A] [B] [WB] [RJ010]

Alarm No.: E1		Name: Overload warning 1					
Alarm content		・[AL.50 Overload 1] or [AL.51 Overload 2] can 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].			
E1.5	Thermal overload error 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 error 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 error 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 error 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] can 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. ・An update cycle is short for writing multi-revolution counter value of the absolute position encoder to EEP-ROM.					
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 is 32768 rev or more in the absolute position system.	Check the value of the multi-revolution counter.	It is 32768 rev or more.	Review operation range. Execute the home position return again. After the power is surely cycled, perform 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. After the power is surely cycled, perform home position return again.	[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.	
E3.4	Absolute positioning counter EEP-ROM writing frequency warning	(1)	A home position was renewed (EEP-ROM write) twice or more in 10 minutes in the servo amplifier due to rotation to the same direction in short time in the point table method of the positioning mode, degree setting with the program method, or the indexer method.	Check if the operation was within the following conditions between the number of gear teeth on machine side ([Pr. PA06] CMX) and servo motor speed (N). ・When CMX ≤ 2000, N < 3076.7 r/min ・When CMX > 2000, N < 3276.7 - (CMX × 0.1) r/min ・When (CMX/CDV) is reduced to its lowest terms, CMX ≤ 15900	The operation was out of conditions.	Set the command speed within the conditions. Set the number of gear teeth on machine side within the conditions. After the power is surely cycled, perform home position return again.	[A]
E3.5	Encoder absolute positioning counter warning	Check it with the check method for [AL. E3.2].					

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)	A parameter was set to out of range with the servo system controller.	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		・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]
					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.	
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. ・SS1 command was inputted.					
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]
					It is on.	Check (2).	
		(2)	An external 24 V DC power supply have not inputted.	Check if the external 24 V DC power supply is inputted.	It is not inputted.	Input the 24 V DC power supply.	
					It is inputted.	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.	
E6.2	SS1 forced stop warning 1 (safety observation function)	(1)	The SS1 command is off (enabled).	Check if the SS1 command is off (enabled).	The SS1 command is off (enabled).	Turn on the SS1 input (disabled).	[B]
		(2)	An external 24 V DC is not inputted to the functional safety unit.	Check if an external 24 V DC is inputted to the functional safety unit.	It is not inputted.	Input the 24 V DC power supply.	
					It is inputted.	Check (3).	
		(3)	The functional safety unit is malfunctioning.	Replace the functional safety unit, and then check the repeatability.	It is not repeatable.	Replace the functional safety unit.	
E6.3	SS1 forced stop warning 2 (safety observation function)	(1)	An error occurred in SSCNET III/H communication.	Check the description "The display shows "Ab"." of the section 1.6.	It is not repeatable.	Take countermeasures against its cause.	

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]
		(2)	The forced stop signal of the controller was inputted with Modbus-RTU communication.	Check if the controller is in a forced stop status.	It is the forced stop status.	Ensure safety and cancel the forced stop signal of the controller.	[A]

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 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 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. For the drive unit, the power supply of the converter unit is off.	Check if the main circuit power supply is inputted. Check if the power supply of the converter unit is inputted.	It is not inputted.	Turn on the main circuit power.	[A] [B] [WB] [RJ010]
					It is inputted.	Check (2).	
		(2)	The wiring between P3 and P4 was disconnected. For the drive unit, the wiring between P1 and P2 of the converter unit was disconnected.	Check the wiring between P3 and P4. Check the wiring between P1 and P2 of the converter unit.	It is disconnected.	Connect it correctly.	
					It is connected.	Check (3).	
		(3)	The main circuit power supply wiring was disconnected. For the drive unit, the main circuit power supply wiring of the converter unit was disconnected.	Check the main circuit power supply wiring. Check the main circuit power supply wiring of the converter unit.	It is disconnected.	Connect it correctly.	
					It has no failure.	Check (4).	
		(4)	For the drive unit, the magnetic contactor control connector of the converter unit was disconnected.	Check the magnetic contactor control connector of the converter unit.	It is disconnected.	Connect it correctly.	
					It has no failure.	Check (5).	
		(5)	For the drive unit, the bus bar between the converter unit and drive unit was disconnected.	Check the bus bar between the converter unit and drive unit.	It is disconnected.	Connect it correctly.	
					It has no failure.	Check (6).	

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	(6)	The setting value of [Pr. PA02 Magnetic contactor drive output selection] contradicts the wiring constitution.	Check the [Pr. PA02] setting and the wiring constitution.	The setting or wiring is incorrect.	Review the setting of [Pr. PA02].	[A] [B] [WB] [RJ010]
					The setting and wiring are correct.	Check (7).	
		(7)	For the MR-J4-03A6(-RJ) or MR-J4W2-0303B6 servo amplifier, 24 V DC input is not selected even though 24 V DC input is used.	Check the parameter setting. MR-J4-03A6(-RJ): [Pr. PC27] MR-J4W2-0303B6: [Pr. PC05]	The setting is incorrect.	Set it correctly.	
					The setting is correct.	Check (8).	
		(8)	The bus voltage is low.	Check if the bus voltage is lower than the prescribed value. 200 V class: 215 V DC 400 V class: 430 V DC 100 V class: 215 V DC 48 V DC setting: 38 V DC 24 V DC setting: 18 V DC	The voltage is lower than the prescribed value.	Review the wiring. Check the power supply capacity.	
					The voltage is equal to or higher than the prescribed value.	Check (9).	
		(9)	The servo amplifier is malfunctioning.	Replace the servo amplifier, and then check the repeatability.	It is not repeatable.	(10) Replace the servo amplifier.	
		(10)	For the drive unit, the converter unit is malfunctioning.	Replace the converter unit, and then check the repeatability.	It is not repeatable.	Replace the converter unit.	
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 class: 200 V DC 400 V class: 430 V DC 100 V class: 200 V DC 48 V DC setting: 35 V DC 24 V DC setting: 15 V DC	Review the power supply capacity. Increase the acceleration time constant.	
E9.3	Ready-on signal on during main circuit off	Check it with the check method for [AL. E9.1].					
E9.4	Converter unit forced stop	(1)	The forced stop of the converter unit is enabled during the servo-on command.	Check if the forced stop of the converter unit is enabled.	It is enabled.	Deactivate the forced stop of the converter unit.	[A] [B]
					It is not enabled.	Check (2).	
		(2)	The protection coordination cable is not correctly connected.	Check the protection coordination cable.	It is not connected.	Connect the protection coordination cable correctly.	

Alarm No.: EA		Name: ABS servo-on warning					
Alarm content		・The servo-on was not enabled 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.	

Alarm No.: EB		Name: The other axis error warning					
Alarm content		・An alarm, which stops all axes, such as [AL. 24 Main circuit error] or [AL. 32 Overcurrent] occurred in other axis. ・"All alarms" 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" of "Target alarm selection of the other axis error warning" is selected in [Pr. PF02].	Check the [Pr. PF02] setting.	"All alarms" is selected.	Remove the cause of the occurring alarm at other axis.	

Alarm No.: EC		Name: Overload warning 2					
Alarm content		・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		・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		・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 [AL. 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.	

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 for 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 canceled.	Replace the servo amplifier.	

Alarm No.: F3		Name: Oscillation detection warning					
Alarm content		・[AL. 54 Oscillation detection] can 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]

Alarm No.: F5		Name: Simple cam function - Cam data miswriting warning					
Alarm content		・The cam data written by MR Configurator2 is not written to a Flash-ROM.					
Detail No.	Detail name	Cause		Check method	Check result	Action	Target
F5.1	Cam data - Area writing time-out warning	(1)	The Flash-ROM is malfunctioning.	Disconnect the cables except for the control circuit power supply, and then check the repeatability.	It is repeatable.	Replace the servo amplifier.	[A]
F5.2	Cam data - Miswriting warning	(1)	The cam data was not written.	After the power is cycled, perform writing, and check the repeatability again. When the cam data is initialized, perform writing, and check the repeatability again.	It is repeatable.	Replace the servo amplifier.	

Alarm No.: F5		Name: Simple cam function - Cam data miswriting warning					
Alarm content		・The cam data written by MR Configurator2 is not written to a Flash-ROM.					
Detail No.	Detail name	Cause		Check method	Check result	Action	Target
F5.3	Cam data checksum error	(1)	When the power is switched on after the cam data is written, a checksum of the cam data does not match. (Error occurred in cam data.)	Check if an error occurred (such as entered noise, power-off) at cam data write.	It has a failure.	After writing the cam data again, cycle the power.	[A]
					It has no failure.	Check (2).	
		(2)	When the cam control command is turned on after the temporal writing of cam data, a checksum of the cam data does not match. (Error occurred in cam data.)	Check if an error occurred (such as entered noise) at temporal writing of cam data.	It has a failure.	After performing the temporal writing of cam data again, turn on the cam control command.	
					It has no failure.	Check (3).	
		(3)	The Flash-ROM is malfunctioning.	Replace the servo amplifier, and then check the repeatability.	It is not repeatable.	Replace the servo amplifier.	

Alarm No.: F6		Name: Simple cam function - Cam control warning					
Alarm content		・The cam axis position restoration at a time of cam control start was a failure. ・The cam control is not normal.					
Detail No.	Detail name	Cause		Check method	Check result	Action	Target
F6.1	Cam axis one cycle current value restoration failed	(1)	The cam axis one cycle current value corresponding to the feed current value at cam control start cannot be restored. (It occurs in a reciprocating motion pattern of the cam.)	Check if the feed current value is within the stroke in a reciprocating motion pattern of the cam.	The feed current value is the outside of the stroke.	Move the feed current value to within the stroke in a reciprocating motion pattern of the cam. Or set the cam standard position within the stroke in a reciprocating motion pattern of the cam.	[A]
F6.2	Cam axis feed current value restoration failed	(1)	The difference (command unit) between the restored cam axis feed current value and the command position at cam control start is bigger than "in-position range".	Check if the difference (command unit) between the restored cam axis feed current value and the command position at cam control start is in the "in-position range".	The difference of the command position (command unit) is not within "in-position range".	Calculate the cam axis feed current value to be restored, move the command position to the position, and then start the cam control. (For the calculation method, refer to section 12.1.3 of "MR-J4-_A_-RJ Servo Amplifier Instruction Manual (Positioning Mode)".) Or set a larger setting value to "in-position range" when the setting value is extremely small, such as 0.	

Alarm No.: F6		Name: Simple cam function - Cam control warning					
Alarm content		・The cam axis position restoration at a time of cam control start was a failure. ・The cam control is not normal.					
Detail No.	Detail name	Cause		Check method	Check result	Action	Target
F6.3	Cam unregistered error	(1)	Cam data has never been written.	Check if the cam data was written.	It was not written.	Write the cam data.	[A]
					It was written.	Check (2).	
		(2)	The cam data of the specified cam No. was not written.	Check if the cam data of the specified cam No. was written.	It was not written.	Write the cam data of the specified cam No.	
					It was written.	Check (3).	
		(3)	Cam data 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.	
F6.4	Cam control data setting range error	(1)	An out of range value is set to the cam control data.	Check the setting of the cam control data.	The setting is incorrect.	Set it correctly.	
F6.5	Cam No. external error	(1)	An out of range value is set to the cam No.	Check the setting of the cam No.	The setting is incorrect.	Set it correctly.	
F6.6	Cam control inactive	(1)	After cam data was written, the cam control command was turned on without cycling the power.	Check if the power was cycled after the cam data was written.	The power was not cycled.	Cycle the power.	
					The power was cycled.	Check (2).	
		(2)	After the cam control command was turned on, the servo-on was turned on.	Check if the cam control command was turned on during servo-on.	The cam control command was not turned on during servo-on.	Turn on the cam control command during servo-on.	
					The cam control command was turned on during servo-on.	Check (3).	
		(3)	The cam control command was turned on during servo motor driving, and the servo motor stopped.	Check if the cam control command was turned on while the travel completion was on.	The cam control command was not turned on while the travel completion was on.	Turn on the cam control command while the travel completion was on.	
					The cam control command was turned on while the travel completion was on.	Check (4).	
		(4)	The cam control command was turned on at the time of incompletion of home position return.	Check if the home position return completion is on.	The home position return completion is off.	Make a home position return, and turn on the cam control command.	
					The home position return completion is on.	Check (5).	
		(5)	It became servo-off during cam control.	Check if it is servo-off.	It is servo-off.	After servo-on, turn on the cam control command again.	
					It is servo-on.	Check (6).	
		(6)	A home position is erased during cam control.	Check if the home position return completion is off.	The home position return completion is off.	After the home position return completion, turn on the cam control command again.	
					The home position return completion is on.	Check (7).	

Alarm No.: F6		Name: Simple cam function - Cam control warning					
Alarm content		・The cam axis position restoration at a time of cam control start was a failure. ・The cam control is not normal.					
Detail No.	Detail name	Cause		Check method	Check result	Action	Target
F6.6	Cam control inactive	(7)	It is stopped at a software limit during cam control.	Check if a software limit is reached.	A software limit is reached.	After it is retracted from the position of a software limit, turn on the cam control command again.	[A]
					A software limit is not reached.	Check (8).	
		(8)	It is stopped at a stroke limit during cam control.	Check if a stroke limit is reached.	A stroke limit is reached.	After it is retracted from the position of a stroke limit, turn on the cam control command again.	
					A stroke limit is not reached.	Check (9).	

1.6 Trouble which does not trigger alarm/warning

POINT

●When the servo amplifier, servo motor, or encoder malfunctions, the following status may occur.

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 control circuit power of the previous axis 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.	

Description	Possible cause	Check result	Action	Target
The display shows "Ab".	A controller, which is not compatible with the servo amplifier, has been connected.	Check if a controller, which is not compatible with the servo amplifier, is connected.	Connect a compatible controller.	[B] [WB]
	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.	
	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 (CNIA, CNIB) are unplugged.	Connect it correctly.	
	The control circuit power supply of the previous axis servo amplifier is 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.	

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 "dEF".	Initializing point table/program is in progress.	Initializing of point table/ program was set in the parameter ([Pr. PT34] = 5001) and the power was cycled.	It takes about 20 s for startup the servo amplifier at initializing. Please wait until the display changes.	[A]
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 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.	
	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.

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.	
	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 in the position control mode.	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 in the position control mode.	Check the cumulative command pulses 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 in the position control mode.	Check that the pulse train form outputted with the controller and the setting of [Pr. PA13] are matched.	Review the [Pr. PA13] setting.	
	Both of ST1 (Forward rotation start) and ST2 (Reverse rotation start) are on or off in the speed control mode or the positioning mode.	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 in the torque control mode.	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 value selected in the speed control mode or the torque control mode is low.	Check SP1 (Speed selection 1), SP2 (Speed selection 2), and SP3 (Speed selection 3), and then check if the selected internal speed is correct.	Review the selections of SP1 (Speed selection 1), SP2 (Speed selection 2), SP3 (Speed selection 3), and setting of internal speed.	
	The value selected in the positioning mode (point table method) with BCD input is low.	Check SPD1 (Speed selection 1), SPD2 (Speed selection 2), SPD3 (Speed selection 3) and SPD4 (Speed selection 4), and then check if the selected internal speed is correct.	Review the wiring. Review the selections of SPD1 (Speed selection 1), SPD2 (Speed selection 2), SPD3 (Speed selection 3), SPD4 (Speed selection 4), and setting of internal speed.	
	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.	

Description	Possible cause	Check result	Action	Target
The servo motor does not operate.	The ABS transfer mode is selected when the absolute position detection system is used.	Check if ABSM is on.	Turn off ABSM.	[A]
	The settings of the electronic gear are incorrect.	Check the setting value of the electronic gear.	Set a proper value of the electronic gear.	
	The setting of point tables is incorrect.	Check the point table setting.	Review the point table setting.	
	Wiring or the command pulse multiplication setting is incorrect.	When using an MR-HDP01 manual pulse generator, check the wiring and the command pulse multiplication setting (assignment of TP0, TP1 and [Pr. PT03] setting).	Review the wiring and the command pulse multiplication setting.	
	Power is not supplied to the MR-HDP01 manual pulse generator.	A power supply is not connected between +5 V to 12 V and 0 V of MR-HDP01.	Connect a power supply between +5 V to 12 V and 0 V of MR-HDP01.	
	Power is not supplied to OPC (power input for open-collector sink interface).	Between DICOM and OPC of the CN1 connector of the servo amplifier is not connected.	Connect between DICOM and OPC.	
	Power is not supplied to OPC (power input for open-collector sink interface).	Between DICOM and OPC of the CN1 connector of the servo amplifier is not connected.	Connect between DICOM and OPC.	
	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 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.	

Description	Possible cause	Check result	Action	Target
The speed of the servo motor or linear servo motor is not increased. Or the speed is increased too much.	The selection of SP1 (Speed selection 1), SP2 (Speed selection 2), or SP3 (Speed selection 3) is incorrect in the speed control mode or the torque control mode.	Check SP1 (Speed selection 1), SP2 (Speed selection 2), and SP3 (Speed selection 3), and then check if the selected internal speed is correct.	Review the settings of SP1 (Speed selection 1), SP2 (Speed selection 2), SP3 (Speed selection 3), and setting of internal speed.	[A]
	An analog signal is not input correctly in the speed control mode or the torque control mode.	Check the values of the analog speed command and the analog torque command using the status display or MR Configurator2.	Input the analog signal correctly.	
	The selection of SPD1 (Speed selection 1), SPD2 (Speed selection 2), SPD3 (Speed selection 3), or SPD4 (Speed selection 4) is incorrect in the positioning mode (point table method) with BCD input.	Check SPD1 (Speed selection 1), SPD2 (Speed selection 2), SPD3 (Speed selection 3) and SPD4 (Speed selection 4), and then check if the selected internal speed is correct.	Review the wiring. Review the settings of SPD1 (Speed selection 1), SPD2 (Speed selection 2), SPD3 (Speed selection 3), SPD4 (Speed selection 4), and setting of internal speed.	
	An analog signal is not input correctly in the positioning mode (point table method and program method).	Check the value of VC (Analog override) using the status display or MR Configurator2.	Set the VC (Analog override) and input the analog signal correctly.	
	The selection of OV0 (Digital override selection 1), OV1 (Digital override selection 2), OV2 (Digital override selection 3), or OV3 (Digital override selection 4) is incorrect in the positioning mode (indexer method).	Check OV0 (Digital override selection 1), OV1 (Digital override selection 2), OV2 (Digital override selection 3) and OV3 (Digital override selection 4), and then check if the selected override level ([%]) is correct.	Review the wiring. Review the settings of OV0 (Digital override selection 1), OV1 (Digital override selection 2), OV2 (Digital override selection 3), and OV3 (Digital override selection 4).	
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.	

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.	

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.	

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.	The position command and actual machine position are different.	Check that "cumulative feedback pulses × travel distance per pulse" matches the actual machine position. Check if "cumulative feedback pulses × feed length multiplication" matches the actual machine position.	Review the position command and electronic gear setting.	[A] [B] [WB] [RJ010]
	The position command and actual machine position are different.	Check that "cumulative feedback pulses × travel distance per pulse" matches the actual machine position. Check if "cumulative feedback pulses × feed length multiplication" matches the actual machine position.	Review the position command and electronic gear setting.	
	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 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.	
	The command pulses were miscounted due to noise.	Check that the command value of the controller and the number of cumulative command pulses are matched.	Please take countermeasures against noise for the command cable. Review the shield procedure of the command cable.	[A]
	The cable for a command is connected loosely or disconnected.	Check that the command value of the controller and the number of cumulative command pulses are matched.	Repair the cable for a command.	

Description	Possible cause	Check result	Action	Target
The position deviates during operation after home position return.	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]
	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.	
	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.	
	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.	
	The setting of point tables and start timing is incorrect.	Check if a time period from after switching timings of point table setting value and point table No. until a start timing is 3 ms or more.	Review the point table setting. Review the start timing.	
	An input signal to the MR-D01 extension IO unit is incorrect.	Check the selection of the point table No. selection 1 to point table No. selection 8 and check the wiring.	Check the input signal switch to the MR-D01 extension IO unit and check the wiring.	
	The program, start timing, etc. are incorrect.	Check if a time period from after switching timings of BCD input program and point table No. until a start timing is 3 ms or more, etc.	Review the controller programs.	
	The setting of MR-DS60 digital switch is incorrect.	Check the [Pr. Po10] setting.	Review the [Pr. Po10] setting.	
	The wiring between MR-DS60 digital switch and MR-D01 extension IO unit is incorrect.	Check the wiring between MR-DS60 digital switch and MR-D01 extension IO unit.	Review the wiring between MR-DS60 digital switch and MR-D01 extension IO unit.	
	Wiring of the MR-HDP01 manual pulse generator or setting of "manual pulse generator multiplication" ([Pr. PT03], TP0 (manual pulse generator multiplication 1), TP1 (manual pulse generator multiplication 2)) is incorrect.	The input value from the MR-HDP01 manual pulse generator and the command position do not match.	Review the wiring. Set the multiplication setting correctly.	
	A mechanical slip occurred. Or the backlash of the machine part is large.	Check if there is a slip or backlash on the machine part.	Adjust the machine part.	[A] [B] [WB] [RJ010]

Description	Possible cause	Check result	Action	Target
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]
	The setting of [Pr. PB06 Load to motor inertia ratio/ load to motor mass ratio] is incorrect.	Check that the setting value of [Pr. PB06 Load to motor inertia ratio/load to motor mass ratio] and the actual load moment of inertia or load mass are matched.	Set it correctly.	
	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.	
A communication with servo amplifier fails using MR Configurator2. (For details, refer to Help of MR Configurator2.)	The communication setting is incorrect.	Check the communication setting such as baud rate and ports.	Set the communication setting correctly.	[A] [B] [WB] [RJ010]
	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.	
	They are off-line status.	Check if they are off-line.	Set them to on-line.	
	A communication cable is malfunctioning.	Check if the communication cable is malfunctioning.	Replace the communication cable.	

Description	Possible cause	Check result	Action	Target
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.	
	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.	
The program operation is not in progress.	The command speed of the positioning operation is low.	An abnormal value such as 0 [r/min] was set for specifying the servo motor speed.	Review the program.	[A]
	The program stops at the state of waiting for external signal on.	A program input number set with SYNC command does not match with the actual inputted signal.	Review the program or signal to use.	
A point table was executed but the operation did not start.	A positioning to the same position is repeated.	Multiple operation starts which have the same specified number of point table are in progress.	Review the setting of the point table or procedures of the operation.	
		Positioning to a same point was endlessly repeated with automatic continuous operation "8, 9, 10, 11" was selected in sub functions of the point table operation.	Review the setting of the point table or procedures of the operation.	
The electromagnetic brake cannot be canceled.	The wiring is incorrect.	Check the SBC output signal.	Review the output signals.	[B]
	A signal of output device is not outputted correctly.	Check if the output device cable is wired correctly. Or check if a load of output device is over specifications.	Review the wiring or load.	
	The functional safety unit is malfunctioning.	Replace the functional safety unit, and then check the repeatability.	Replace the functional safety unit.	
A vertical axis falls while the SBC output is used.	The STO function is used during servo-on.	Check if the SS1 function is enabled.	Enable the SS1 function.	
	A signal of output device is not outputted correctly.	Check if the output device cable is wired correctly. Or check if a load of output device is over specifications.	Review the wiring or load.	
	The functional safety unit is malfunctioning.	Replace the functional safety unit, and then check the repeatability.	Replace the functional safety unit.	
	The setting of a waiting time of the electromagnetic brake sequence output is incorrect.	Check if [Pr. PC02 Electromagnetic brake sequence output] and [Pr. PSA03 SS1 monitoring deceleration time] are set correctly.	Set it correctly.	

Description	Possible cause	Check result	Action	Target
Modbus-RTU communication is not established.	The servo amplifier is not set to Modbus-RTU communication protocol.	Check if "communication protocol selection" in [Pr. PC71] is correctly set.	Select Modbus-RTU protocol.	[A]
	The communication setting is not set correctly.	Check if [Pr. PC70 Modbus-RTU communication station number setting] is set correctly.	Check [Pr. PC70 Modbus-RTU communication station number setting] and the station No. specified in a Query message from the controller if they are matched together.	
		Check if "Modbus-RTU communication baud rate selection" in [Pr. PC71] is set correctly.	Check "Modbus-RTU communication baud rate selection" and the communication baud rate setting of the controller if they are matched together.	
		Check if "Modbus-RTU communication parity selection" in [Pr. PF45] is set correctly.	Check "Modbus-RTU communication parity selection" and the parity setting of the controller if they are matched together.	
	The servo amplifier is not compatible with Modbus-RTU communication.	For MR-J4-_A_-RJ 100 W or more servo amplifier, check that the servo amplifier was manufactured in January 2015 or later. Check if MR-J4-_A_ servo amplifier or MR-J4-03A6(-RJ) servo amplifier is being used.	For MR-J4-_A_-RJ 100 W or more servo amplifier, use the one manufactured in January 2015 or later. (MR-J4-_A_ servo amplifier or MR-J4-03A6(-RJ) servo amplifier is not compatible with Modbus-RTU communication.)	
	A communication cable is malfunctioning.	Check if the communication cable has any failure such as damage.	Replace the communication cable.	
RS-422 communication (Mitsubishi general-purpose AC servo protocol) is not established.	The servo amplifier is not set to RS-422 communication protocol.	Check if "communication protocol selection" in [Pr. PC71] is correctly set.	Select RS-422/RS-485 communication (Mitsubishi general-purpose AC servo protocol).	[A]
	The communication setting is not set correctly.	Check if [Pr. PC20 Station number setting] is set correctly.	Check [Pr. PC20 Station number setting] and the station No. specified by the controller if they are matched together.	
		Check if "RS-422 communication baud rate selection" in [Pr. PC21] is set correctly.	Check "RS-422 communication baud rate selection" and the communication baud rate setting of the controller if they are matched together.	
	A communication cable is malfunctioning.	Check if the communication cable has any failure such as damage.	Replace the communication cable.	

2. TROUBLESHOOTING FOR MR-CR55K(4) CONVERTER UNIT

POINT
●[AL. 37 Parameter error] and warnings are not recorded in the alarm history.

When an error occurs during operation, the corresponding alarm or warning is displayed. If any alarm has occurred, refer to section 2.3 and take the appropriate action. When an alarm occurs, ALM will turn off.
If any warning has occurred, refer to section 2.4 and take the appropriate action.

2.1 Explanation for the lists

(1) No./Name
Indicates each No./Name of alarms or warnings.

(2) Alarm deactivation
After its cause has been removed, the alarm can be deactivated in any of the methods marked ○ in the alarm deactivation column. Warnings are automatically canceled after the cause of occurrence is removed. Alarms are deactivated with alarm reset or cycling the power.

Alarm deactivation	Explanation
Alarm reset	Push the "SET" button on the current alarm screen of the display.
Cycling the power	Turning off the power and on again

2.2 Alarm/warning list

	Display	Name	Alarm deactivation	
			Alarm reset	Cycling the power
Alarm	A.10	Undervoltage	○	○
	A.12	Memory error 1 (RAM)		○
	A.15	Memory error 2 (EEP-ROM)		○
	A.17	Board error		○
	A.19	Memory error 3 (Flash-ROM)		○
	A.30	Regenerative error	(Note) ○	(Note) ○
	A.33	Overvoltage	○	○
	A.37	Parameter error		○
	A.38	MC drive circuit error		○
	A.39	Open phase		○
	A.3A	Inrush current suppression circuit error		○
	A.45	Main circuit device overheat	(Note) ○	(Note) ○
	A.47	Cooling fan error		○
	A.50	Overload 1	(Note) ○	(Note) ○
	A.51	Overload 2	(Note) ○	(Note) ○
	888	Watchdog		○

	Display	Name
Warning	A.91	Converter overheat warning
	A.E0	Excessive regeneration warning
	A.E1	Overload warning 1
	A.E6	Converter forced stop warning
	A.E8	Cooling fan speed reduction warning

Note. Leave for about 30 minutes of cooling time after removing the cause of occurrence.

2.3 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.

> POINT
>
> ●When any of the following alarms has occurred, do not deactivate the alarm repeatedly to restart. Otherwise, the converter unit may malfunction. 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. 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.

2. TROUBLESHOOTING FOR MR-CR55K(4) CONVERTER UNIT

No.	Name/Description	Cause		Check method	Check result	Action
10	Undervoltage ・The voltage of the control circuit power supply has dropped.	(1)	The control circuit power supply wiring is incorrect.	Check the control circuit power supply wiring.	It has a failure.	Wire it correctly.
					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 class: 160 V AC 400 V class: 280 V AC	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)	An instantaneous power failure has occurred for more than 60 ms.	Check if the power has a problem.	It has a problem.	Review the power.
					It does not have a problem.	Check (4).
		(4)	Failure of the part in the converter unit.	Disconnect the cables except for the control circuit power supply, and then check the repeatability.	It is repeatable.	Replace the converter unit.
12	Memory error 1 (RAM) ・Failure of the part (RAM) in the converter unit.	(1)	Failure of the part in the converter unit.	Disconnect the cables except for the control circuit power supply, and then check the repeatability.	It is repeatable.	Replace the converter unit.
					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.
15	Memory error 2 (EEP-ROM) ・Failure of the part (EEP-ROM) in the converter unit.	(1)	EEP-ROM is malfunctioning at power on.	Disconnect the cables except for the control circuit power supply, and then check the repeatability.	It is repeatable.	Replace the converter unit.
					It is not repeatable.	Check (2).
		(2)	The number of write times to EEP-ROM exceeded 100,000.	Check if parameters have been used very frequently.	It was changed.	Replace the converter unit. Change the process to use parameters less frequently after replacement.
					It was not changed.	Check (3).
		(3)	EEP-ROM is malfunctioning during normal operation.	Check if the error occurs when you change parameters during normal operation.	It occurs.	Replace the converter unit.
					It does not occur.	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.
17	Board error ・A part in the converter unit is malfunctioning.	(1)	The converter unit recognition signal was not read properly.	Disconnect the cables except for the control circuit power supply, and then check the repeatability.	It is repeatable.	Replace the converter unit.
					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.

No.	Name/Description	Cause		Check method	Check result	Action
19	Memory error 3 (Flash-ROM) ・A part (Flash-ROM) in the converter unit is failure.	(1)	The Flash-ROM is malfunctioning.	Disconnect the cables except for the control circuit power supply, and then check the repeatability.	It is repeatable.	Replace the converter unit.
					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.
30	Regenerative error ・Permissible regenerative power of the regenerative resistor (regenerative option) is exceeded. ・The regenerative resistor is malfunctioning. ・A regenerative transistor in the converter unit is malfunctioning.	(1)	The setting of the regenerative resistor (regenerative option) is incorrect.	Check the regenerative resistor (regenerative option) and [Pr. PA01] setting value.	The setting value is incorrect.	Set it correctly.
					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 if the voltage of the input power supply is over the prescribed value. 200 V class: 260 V AC 400 V class: 520 V AC	It is higher than the prescribed value.	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.	When the regenerative option is used. ・Reduce the frequency of positioning. ・Reduce the load. ・Review the regenerative option capacity. When the regenerative option is not used. ・Use the regenerative option.
					It is less than 100%.	Check (5).
		(5)	Wire breakage of the regenerative resistor (regenerative option)	Measure the resistance of the regenerative resistor (regenerative option).	The resistance is abnormal.	Replace the regenerative resistor (regenerative option).
					The resistance is normal.	Check (6).
		(6)	Failure of the detection circuit in the converter unit.	Check if the regenerative resistor (regenerative option) is overheating.	It is overheating abnormally.	Replace the converter unit.
					It is not overheating abnormally.	Check (7).
		(7)	A regenerative transistor in the converter unit is malfunctioning.	Remove the regenerative resistor (regenerative option) and then check if the alarm occurs at power on.	The alarm occurs.	Replace the converter unit.
					The alarm does not occur.	Check (8).
		(8)	Something near the device caused it.	Check the noise, ground fault, ambient temperature, etc.	It has a failure.	Take countermeasures against its cause.

No.	Name/Description	Cause		Check method	Check result	Action
33	Overvoltage ・The value of the bus voltage exceeded the prescribed value. 200 V class: 400 V DC or more 400 V class: 800 V DC or more	(1)	The regenerative resistor (regenerative option) is not used.	Check if the regenerative resistor (regenerative option) is used.	It is not used.	Use the regenerative resistor (regenerative option).
					It is used.	Check (2).
		(2)	The setting of the regenerative resistor (regenerative option) is incorrect.	Check the regenerative resistor (regenerative option) and [Pr. PA01] setting value.	The setting value is incorrect.	Set it correctly.
					It is set correctly.	Check (3).
		(3)	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 (4).
		(4)	Wire breakage of the regenerative resistor (regenerative option)	Measure the resistance of the regenerative resistor (regenerative option).	The resistance is abnormal.	Replace the regenerative resistor (regenerative option).
					The resistance is normal.	Check (5).
		(5)	The regeneration capacity is insufficient.	Set a longer deceleration time constant, and then check the repeatability.	It is not repeatable.	Use the regenerative resistor (regenerative option) with larger capacity.
					It is repeatable.	Check (6).
		(6)	Power supply voltage high.	Check if the voltage of the input power supply is over the prescribed value. 200 V class: 264 V AC 400 V class: 528 V AC	It is higher than the prescribed value.	Reduce the power supply voltage.
					It is the prescribed value or lower.	Check (7).
		(7)	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 (8).
		(8)	Something near the device caused it.	Check the noise, ambient temperature, etc.	It has a failure.	Take countermeasures against its cause.
		(9)	Impedance at wirings of L1, L2, and L3 is high, and leak current from servo motor power cable is large.	Check the impedance at wirings of L1, L2, and L3 and leak current from servo motor power cable.	Impedance at wirings of L1, L2, and L3 is high, and leak current from servo motor power cable is large.	Use the regenerative resistor (regenerative option).

No.	Name/Description	Cause		Check method	Check result	Action
37	Parameter error ・Parameter setting value is incorrect.	(1)	A parameter was set out of setting range.	Check the parameter setting.	It is out of setting range.	Set it within the range.
					It is within the setting range.	Check (2).
		(2)	Regenerative resistor (regenerative option) not used with converter unit was set in [Pr. PA01].	Check the regenerative resistor (regenerative option) and [Pr. PA01] setting value.	The setting value is incorrect.	Set it correctly.
					It is set correctly.	Check (3).
		(3)	The number of write times to EEP-ROM exceeded 100,000 due to parameter write, etc.	Check if parameters have been used very frequently.	It was changed.	Replace the converter unit. Change the process to use parameters less frequently after replacement.
					It was not changed.	Check (4).
		(4)	The parameter setting value has changed due to a converter unit malfunction.	Replace the converter unit, and then check the repeatability.	It is not repeatable.	Replace the converter unit.
38	MC drive circuit error ・Magnetic contactor drive circuit is malfunctioning. The main circuit power supply is not supplied even if the magnetic contactor output is turned on. The main circuit power supply is supplied even if the magnetic contactor output is turned off.	(1)	The connection to the magnetic contactor connector (CNP1) is incorrect.	Check the output of magnetic contactor control connector (CNP1). (Power supply voltage is applied to this connector. Take care to avoid an electric shock at connecting.)	It is not correct.	Connect it correctly.
					It is correct.	Check (2).
		(2)	The setting value of [Pr.PA02 Magnetic contactor drive output selection] contradicts the wiring constitution.	Check the [Pr.PA02] setting and the wiring constitution.	The setting or wiring is incorrect.	Review the [Pr.PA02] setting.
					The setting and wiring are correct.	Check (3).
		(3)	The voltage of the main circuit power supply is low.	Check if the bus voltage is lower than the prescribed value. 200 V class: 215 V DC 400 V class: 430 V DC	The bus voltage is lower than the prescribed value.	Increase the voltage of the main circuit power supply.
					The bus voltage is the prescribed value or higher.	Check (4).
		(4)	Magnetic contactor failed.	Replace the magnetic contactor, and then check the repeatability.	It is not repeatable.	Replace the magnetic contactor.
					It is repeatable.	Check (5).
		(5)	Magnetic contactor drive circuit is malfunctioning.	Replace the converter unit, and then check the repeatability.	It is not repeatable.	Replace the converter unit.
		(6)	A part in the converter unit is failure.	Replace the converter unit, and then check the repeatability.	It is not repeatable.	Replace the converter unit.
39	Open phase ・The wirings of L1, L2, and L3 are incorrect.	(1)	Any of the wirings L1, L2, and L3 is disconnected. Or, disconnected.	Check if the wirings of L1, L2, and L3 are incorrect.	It has a failure.	Review the wiring.
					It has no failure.	Check (2).
		(2)	A part in the converter unit is failure.	Replace the converter unit, and then check the repeatability.	It is not repeatable.	Replace the converter unit.

2. TROUBLESHOOTING FOR MR-CR55K(4) CONVERTER UNIT

No.	Name/Description	Cause		Check method	Check result	Action
3A	Inrush current suppression circuit error ・The inrush current suppression circuit error was detected.	(1)	Turning on and off of the inrush relay were repeated very frequently.	Check if the inrush relay is turned on and off very frequently.	It is turned on and off.	Check operation pattern.
					It is not turned on and off.	Check (2).
		(2)	Inrush current suppressor circuit is malfunctioning.	Replace the converter unit, and then check the repeatability.	It is not repeatable.	Replace the converter unit.
45	Main circuit device overheat ・The inside of the converter unit overheated.	(1)	Ambient temperature has exceeded 55 ˚C.	Check the ambient temperature.	It is over 55 ˚C.	Lower the ambient temperature.
					It is less than 55 ˚C.	Check (2).
		(2)	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 (3).
		(3)	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 (4).
		(4)	The converter unit is malfunctioning.	Replace the converter unit, and then check the repeatability.	It is not repeatable.	Replace the converter unit.
47	Cooling fan error ・The speed of the converter unit cooling fan decreased. Or the fan speed decreased to the alarm occurrence level or less.	(1)	Foreign matter was caught in the cooling fan.	Check if a foreign matter is caught in the cooling fan.	Something has been caught.	Remove the foreign matter.
					Nothing has been caught.	Check (2).
		(2)	Cooling fan life expired.	Check the cooling fan speed.	The fan speed is less than the alarm occurrence level.	Replace the cooling fan of the converter unit.
					The fan speed is above the alarm occurrence level.	Check (3).
		(3)	The power supply of the cooling fan is malfunctioning.	Check if the cooling fan is stopping.	It is stopping.	Replace the converter unit.
50	Overload 1 ・Load exceeded overload protection characteristic of converter unit.	(1)	A current was applied to the converter unit in excess of its continuous output current.	Check the effective load ratio.	The effective load ratio is high.	Reduce the load. Check operation pattern.
51	Overload 2 ・Load exceeded overload protection characteristic of converter unit.	(1)	A current was applied to the converter unit in excess of its output current for a short time.	Check the effective load ratio or peak load ratio.	The effective load ratio is high.	Check operation pattern.
888	Watchdog ・A part such as CPU is malfunctioning.	(1)	Failure of the part in the converter unit.	Replace the converter unit, and then check the repeatability.	It is not repeatable.	Replace the converter unit.

2.4 Remedies for warnings

POINT

●When any of the following warnings has occurred, do not cycle the power of the converter unit repeatedly to restart. Doing so will cause a malfunction of the converter unit, drive unit and servo motor. If the power of the converter unit/drive unit is switched off/on during the warnings, allow more than 30 minutes for cooling before resuming operation.
- [AL. 91 Converter overheat warning]
- [AL. E0 Excessive regeneration warning]
- [AL. E1 Overload warning 1]

●The warnings are not recorded in the alarm history.

If [AL. E6] occurs, the amplifier will be the servo-off status. If any other warning occurs, operation can be continued but an alarm may take place and proper operation may not be performed.
Remove the cause of warning according to this section.

No.	Name/Description	Cause		Check method	Check result	Action
91	Converter overheat warning ・The temperature of the converter unit heat sink reached a warning level.	(1)	Operated in the overloaded status.	Check the effective load ratio.	The effective load ratio is high.	Check operation pattern.
					The effective load ratio is small.	Check (2).
		(2)	Ambient temperature of converter unit is over 55 ˚C.	Check the ambient temperature.	It is over 55 ˚C.	Lower the ambient temperature.
					It is less than 55 ˚C.	Check (3).
		(3)	The converter unit is malfunctioning.	Replace the converter unit, and then check the repeatability.	It is not repeatable.	Replace the converter unit.
E0	Excessive regeneration warning ・There is a possibility that regenerative power may exceed permissible regenerative power of regenerative resistor (regenerative option).	(1)	The regenerative power exceeded 85% of the permissible regenerative power of the regenerative resistor (regenerative option).	Check the effective load ratio.	It is 85% or more.	When the regenerative option is used. ・Reduce the frequency of positioning. ・Reduce the load. ・Review the regenerative option capacity. When the regenerative option is not used. ・Use the regenerative option.
E1	Overload warning 1 ・[A. 50 Overload 1] or [A. 51 Overload 2] can occur.	(1)	Load increased to 85% or more alarm level of [A. 50 Overload 1] or [A. 51 Overload 2].	Check it with the check method for [A.50] and [A.51].		
E6	Converter forced stop warning ・The EM1 (forced stop) of the converter unit was turned off.	(1)	The EM1 (forced stop) of the converter unit was turned off.	Check the status of the EM1 (forced stop) of the converter unit.	It is off.	Ensure safety and turn on the EM1 (forced stop) of the converter unit.
					It is on.	Check (2).
		(2)	An external 24 V DC power supply have not inputted.	Check if the external 24 V DC power supply is inputted.	It is not inputted.	Input the 24 V DC power supply.
					It is inputted.	Check (3).
		(3)	The converter unit is malfunctioning.	Replace the converter unit, and then check the repeatability.	It is not repeatable.	Replace the converter unit.
E8	Cooling fan speed reduction warning ・The cooling fan speed decreased to the warning level or less.	(1)	Foreign matter was caught in the cooling fan.	Check if a foreign matter is caught in the cooling fan.	Something has been caught.	Remove the foreign matter.
					Nothing has been caught.	Check (2).
		(2)	Cooling fan life expired.	Check the total of power on time of the converter unit.	It exceeds the cooling fan life.	Replace the converter unit.

MEMO

3. DRIVE RECORDER

3.1 How to use drive recorder

POINT

●When you use the J3 extension function, replace the following left parameters to the right parameters.
[Pr. PF21] → [Pr. PX30]
[Pr. PA23] → [Pr. PX29]

●The drive recorder will not operate on the following conditions.
- 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.
- [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 "Drive recorder arbitrary alarm trigger setting" ([Pr. PA23]). For settings, refer to explanation for [Pr. PA23] of each instruction manual.
When the setting value is "0 0 0 0" (initial value) in "Drive recorder arbitrary alarm trigger setting" ([Pr. PA23]), the drive recorder will operate at alarm occurrences other than alarms described in above POINT.

(2) Recordable data by drive recorder
When the setting value is "0 0 0 0" (initial value) in "Drive recorder arbitrary alarm trigger setting" ([Pr. PA23]), the drive recorder will record data of standard column in table 3.1 or 3.2 for all alarms. When you set an alarm in table 3.1 or 3.2 to [Pr. PA23], each data described in alarm column will be recorded. When you set an alarm other than in table 3.1 and 3.2, data described in standard column will be recorded. Refer to table 3.3 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]

Table 3.1 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]	Measure-ment 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	Regene-rative 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	Regene-rative 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 tempera-ture of encoder	Tempera-ture 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		

		Data 1	Data 2	Data 3	Data 4	Data 5	Data 6	Data 7	Data 8	Sampling time [ms]	Measure-ment 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.

Table 3.2 MR-J4-_A_(-RJ)

		Data 1	Data 2	Data 3	Data 4	Data 5	Data 6	Data 7	Data 8	Sampling time [ms]	Measure-ment 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	Regene-rative 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	Regene-rative 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 tempera-ture of encoder	Tempera-ture 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		

		Data 1	Data 2	Data 3	Data 4	Data 5	Data 6	Data 7	Data 8	Sampling time [ms]	Measure-ment 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		

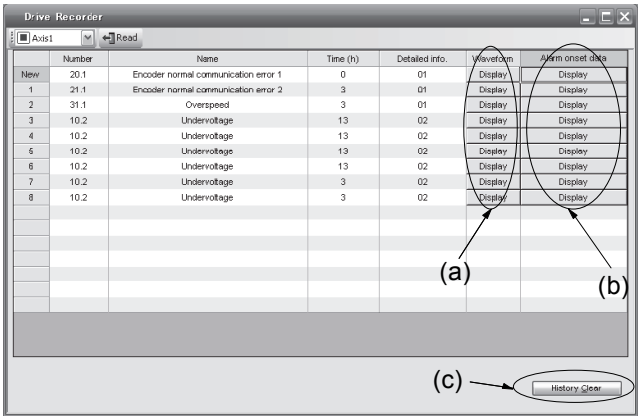
Table 3.3 Signal explanations

	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 absolution position encoder in the absolution 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 kpps]
	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]

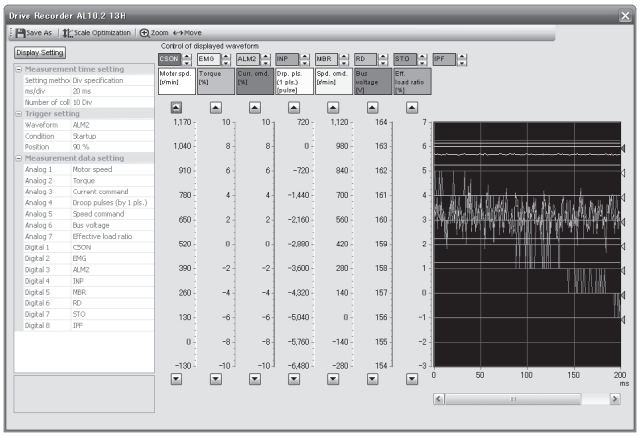
	Signal name	Description	Unit
Digital	CSON	This indicates status of the servo-on signal from the controller.	
	SON	This Indicates the SON status of the external input signal.	
	EMG	This indicates status of the emergency stop input.	
	EM2/EM1	This Indicates the EM2/EM1 status of the external input signal.	
	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.	

3.2 How to display drive recorder information

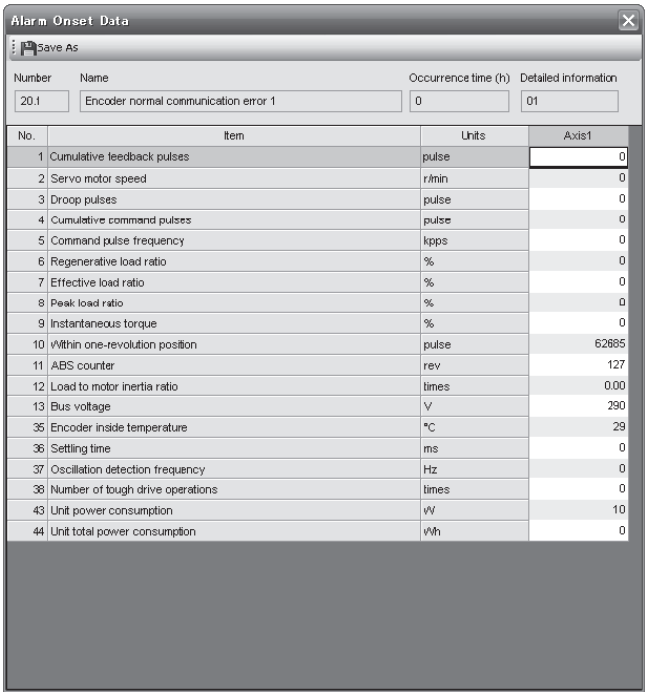
Select "Diagnosis" and "Drive Recorder" from the menu bar of MR Configurator2. The window shown in the right hand image will be displayed.



(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.

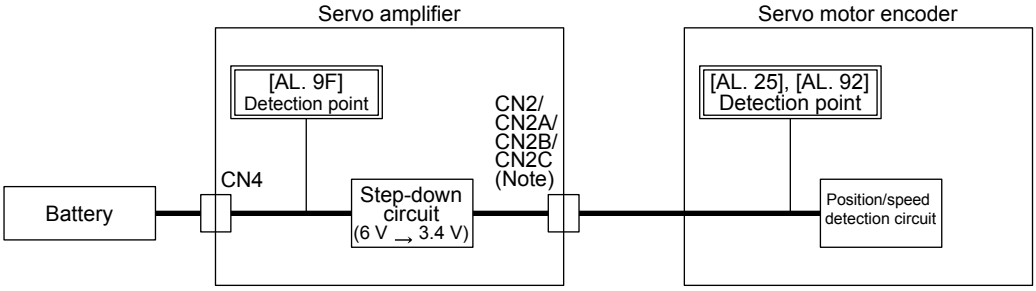


(c) Click the History Clear button to delete all data at alarm occurrence recorded in the servo amplifier. After clicking the History Clear button, cycle the power of the servo amplifier. Note that the time to restart will be longer than usual due to the deletion of the data.

MEMO

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].



Note. CN2A, CN2B, and CN2C are for the 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.
			The part of table is changed.
		Section 1.3	[AL. 93] is added.
			[AL. 96.4] is added.
			[AL. 9D] is added.
			[AL. 9E] is added.
			The part of table is changed.
		Section 1.4	Addition
		Chapter 2	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	The part of table is changed.
		Section 2.1	The part of table is changed.

Print Data	*Manual Number	Revision	
Oct. 2013	SH(NA)030109-E	Section 1.2	[AL. 25.1] The part of table is changed.
			[AL. 25.2] The part of table is changed.
		Section 1.3	[AL. 92.1] The part of table is changed.
			[AL. 9F.1] The part of table is changed.
Mar. 2014	SH(NA)030109-F	100 V class MR-J4 series servo amplifiers are added.	
		Section 1.2	[AL. 10] The part of table is changed.
			[AL. 1A.1] The part of table is changed.
			[AL. 27.3] The part of table is changed.
			[AL. 30.1] The part of table is changed.
			[AL. 33.1] The part of table is changed.
		Section 1.3	[AL. E9] The part of table is changed.
		Appendix 1	The diagram is changed.
Apr. 2014	SH(NA)030109-G	MR-J4-_A_-RJ servo amplifier positioning mode and MR-D30 are added.	
		Section 1.1	Added.
		Section 1.2	Stop system/Alarm deactivation/Alarm code are added.
			[AL. 15.4] Newly added.
			[AL. 1A.4] Newly added.
			[AL. 34.5] [AL. 34.6] Newly added.
			[AL. 36.2] Newly added.
			[AL. 3E.6] Newly added.
			[AL. 45.2] Newly added.
			[AL. 46.4] Newly added.
			[AL. 63.5] Newly added.
			[AL. 64.1] to [AL. 64.3] Newly added.
			[AL. 65.1] to [AL. 65.9] Newly added.
			[AL. 79.1] to [AL. 79.8] Newly added.
			[AL. 7A.1] to [AL. 7A.4] Newly added.
			[AL. 7C.1] [AL. 7C.2] Newly added.
			[AL. 7D.2] Newly added.
		Section 1.3	[AL. 95.3] to [AL. 95.5] Newly added.
			[AL. E6.2] [AL. E6.3] Newly added.
		Section 1.4	[AL. 10.1] Newly added.
			[AL. 15.4] Newly added.
			[AL. 1A.4] Newly added.
			[AL. 34.5] [AL. 34.6] Newly added.
			[AL. 36.2] Newly added.
			[AL. 3E.6] Newly added.
			[AL. 45.2] Newly added.
			[AL. 46.4] Newly added.
			[AL. 63.5] Newly added.
			[AL. 64.1] to [AL. 64.3] Newly added.
			[AL. 65.1] to [AL. 65.9] Newly added.
			[AL. 79.1] to [AL. 79.8] Newly added.
			[AL. 7A.1] to [AL. 7A.4] Newly added.
			[AL. 7C.1] [AL. 7C.2] Newly added.
			[AL. 7D.2] Newly added.
		Section 1.5	[AL. 95.3] to [AL. 95.5] Newly added.
			[AL. E6.2] [AL. E6.3] Newly added.
		Section 1.6	Partially added.
Sep. 2014	SH(NA)030109-H	MR-J4-DU_(-RJ) and MR-CR55K_ are added.	
		Section 1.2	Alarm is added.
		Section 1.3	Warning is added.
		Section 1.4	[AL. 10.1] is partially changed.
			[AL. 10.2] is partially changed.
			[AL. 14.2] is partially changed.
			[AL. 17.7] is added.
			[AL. 1B.1] is added.
			[AL. 20.1] is partially changed.
			[AL. 20.5] is partially changed.
			[AL. 20.6] is partially changed.

Print Data	*Manual Number	Revision	
Sep. 2014	SH(NA)030109-H	Section 1.4	[AL. 21.1] is partially changed. [AL. 21.2] is partially changed. [AL. 21.4] is partially changed. [AL. 2A.1] is partially changed. [AL. 2B.1] is partially changed. [AL. 31.1] is partially changed. [AL. 71.1] is partially changed. [AL. 9C.1] is added. [AL. E9.1] is partially changed. [AL. E9.4] is added.
		Chapter 2	Added.
		Section 3.1	POINT is added.
Apr. 2015	SH(NA)030109-J	Contents of MR-D30, MR-J4-03A6(-RJ), MR-J4W2-0303B6, Modbus, and simple cam are added.	
		4. Additional instructions	Model names are added.
		Section 1.1 (4), (5)	Added.
		Section 1.2	Partially added.
		Section 1.3	Partially added.
		Section 1.4	[AL. 10] is partially changed. [AL. 16.3] is partially changed. [AL. 1A.2] is partially changed. [AL. 20.1] is partially changed. [AL. 24.2] is partially changed. [AL. 27.2] is partially added. [AL. 30] is partially changed. [AL. 31.1] is partially changed. [AL. 32] is partially changed. [AL. 33.1] is partially changed. [AL. 37.1] is partially changed. [AL. 50.1] is partially changed. [AL. 52.1] is partially changed. [AL. 64] is partially changed. [AL. 65] is partially changed. [AL. 66] is added. [AL. 67] is added. [AL. 70.3] is added. [AL. 71.1] is added. [AL. 79] is added. [AL. 7A.3] is partially changed. [AL. 7B] is added. [AL. 7C] is partially changed. [AL. 7D.1] is added. [AL. 7D.2] is partially changed. [AL. 8A.1] is partially changed. [AL. 8A.2] is added. [AL. 8E.1] to [AL. 8E.5] are partially changed. [AL. 8E.6], [AL. 8E.7], and [AL. 8E.8] are added. [AL. 95] is partially changed. [AL. 96.1], [AL. 96.2], and [AL. 96.4] are partially changed. [AL. 99] is partially changed. [AL. 9A] is added. [AL. E3.1] is partially changed. [AL. E7.1] is partially added. [AL.E9] is partially changed. [AL. F5] is added. [AL. F6] is added.
		Section 1.6	Partially changed.
Sep. 2015	SH(NA)030109-K	The alarm is added.	
		Section 1.2	[AL. 3E.1] is partially changed, and [AL. 68] is added.
		Section 1.4	[AL. 68] is added. [AL. F6] is partially changed.

Print Data	*Manual Number	Revision	
Sep. 2015	SH(NA)030109-K	Section 1.5	[AL. 90.1] is partially changed. [AL.E3] is partially changed.
		Section 1.6	Partially added.

MEMO

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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

MITSUBISHI ELECTRIC CORPORATION

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