

Mitsubishi Electric Industrial Robot

CR800 Series Controller Instruction Manual Troubleshooting

CR800-D
CR800-R
CR800-Q

SAFETY PRECAUTIONS

Always read the following precautions and the separate "Collaborative Robot Safety Manual" before starting use of the robot to learn the required measures to be taken.

 DANGER	Precaution indicating cases where there is a risk of operator fatality or serious injury if handling is mistaken. Always observe these precautions to safely use the robot.
 WARNING	Precaution indicating cases where the operator could be subject to fatalities or serious injuries if handling is mistaken. Always observe these precautions to safely use the robot.
 CAUTION	Precaution indicating cases where operator could be subject to injury or physical damage could occur if handling is mistaken. Always observe these precautions to safely use the robot.

DANGER

- Provide a fence or enclosure during operation to prevent contact of the operator and robot.
Installation of safety fence

WARNING

- Prepare a device that allows operation to be stopped immediately during teaching work. (This also applies to maintenance work with the power source turned ON.)
Setting of emergency stop switch

CAUTION

- All teaching work must be carried out by an operator who has received special training. (This also applies to maintenance work with the power source turned ON.)
Enforcement of safety training
 - For teaching work, prepare a work plan related to the methods and procedures of operating the robot, and to the measures to be taken when an error occurs or when restarting. Carry out work following this plan. (This also applies to maintenance work with the power source turned ON.)
Preparation of work plan
 - During teaching work, place a sign indicating that teaching work is in progress on the start switch, etc. (This also applies to maintenance work with the power source turned ON.)
Indication of teaching work in progress
 - Establish a set signaling method to the related operators for starting work, and follow this method.
Signaling of operation start
 - As a principle turn the power OFF during maintenance work. Place a sign indicating that maintenance work is in progress on the start switch, etc.
Indication of maintenance work in progress
 - Before starting work, inspect the robot, emergency stop switch and other related devices, etc., and confirm that there are no errors.
Inspection before starting work
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The points of the precautions given in the separate "Collaborative Robot Safety Manual" are given below.

Refer to the actual "Collaborative Robot Safety Manual" for details.

DANGER

- When automatic operation of the robot is performed using multiple control devices (GOT, programmable controller, push-button switch), the interlocking of operation rights of the devices, etc. must be designed by the customer.
- Do not connect the Handy GOT when using the GOT direct connection function of this product. Failure to observe this may result in property damage or bodily injury because the Handy GOT can automatically operate the robot regardless of whether the operation rights are enabled or not.
- Do not connect the Handy GOT to a programmable controller when using an iQ Platform compatible product with the CR800-R/Q series. Failure to observe this may result in property damage or bodily injury because the Handy GOT can automatically operate the robot regardless of whether the operation rights are enabled or not.
- Do not remove the SSCNET III cable while power is supplied to the multiple CPU system or the servo amplifier. Do not look directly at light emitted from the tip of SSCNET III connectors or SSCNET III cables of the Motion CPU or the servo amplifier. Eye discomfort may be felt if exposed to the light. (Reference: SSCNET III employs a Class 1 or equivalent light source as specified in JIS C 6802 and IEC60825-1 (domestic standards in Japan).)
- Do not remove the SSCNET III cable while power is supplied to the controller. Do not look directly at light emitted from the tip of SSCNET III connectors or SSCNET III cables. Eye discomfort may be felt if exposed to the light. (Reference: SSCNET III employs a Class 1 or equivalent light source as specified in JIS C 6802 and IEC60825-1 (domestic standards in Japan).)
- Attach the cap to the SSCNET III connector after disconnecting the SSCNET III cable. If the cap is not attached, dirt or dust may adhere to the connector pins, resulting in deterioration connector properties, and leading to malfunction.

WARNING

- Securely install the hand and tool, and securely grasp the workpiece. Failure to observe this could lead to personal injuries or damage if the object comes off or flies off during operation.
 - Securely ground the robot and controller. Failure to observe this could lead to malfunctioning by noise or to electric shock accidents.
 - When carrying out teaching work in the robot's movement range, always secure the priority right for the robot control. Failure to observe this could lead to personal injuries or damage if the robot is started with external commands.
 - When the robot arm has to be moved by hand from an external area, do not place hands or fingers in the openings. Failure to observe this could lead to hands or fingers catching depending on the posture.
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CAUTION

- Use the robot within the environment given in the specifications. Failure to do so could lead to a drop or reliability or faults. (Temperature, humidity, atmosphere, noise environment, etc.)
 - Transport the robot with the designated transportation posture. Transporting the robot in a non-designated posture could lead to personal injuries or faults from dropping.
 - Always use the robot installed on a secure table. Use in an instable posture could lead to positional deviation and vibration.
 - Wire the cable as far away from noise sources as possible. If placed near a noise source, positional deviation or malfunction could occur.
 - Do not apply excessive force on the connector or excessively bend the cable. Failure to observe this could lead to contact defects or wire breakage.
 - Make sure that the workpiece weight, including the hand, does not exceed the rated load or tolerable torque. Exceeding these values could lead to errors or faults.
 - Indicate the operation state during robot operation. Failure to indicate the state could lead to operators approaching the robot or to incorrect operation.
 - Keep the jog speed as low as possible, and always watch the robot. Failure to do so could lead to interference with the workpiece or peripheral devices.
 - After editing the program, always confirm the operation with step operation before starting automatic operation. Failure to do so could lead to interference with peripheral devices because of programming mistakes, etc.
 - Make sure that if the safety fence entrance door is opened during automatic operation, the door is locked or that the robot will automatically stop. Failure to do so could lead to personal injuries.
 - Never carry out modifications based on personal judgments, or use non-designated maintenance parts.
Failure to observe this could lead to faults or failures.
 - Do not stop the robot or apply emergency stop by turning the robot controller's main power OFF. If the robot controller main power is turned OFF during automatic operation, the robot accuracy could be adversely affected. Moreover, it may interfere with the peripheral device by drop or move by inertia of the arm.
 - Do not turn off the main power to the robot controller while rewriting the internal information of the robot controller such as the program or parameters.
If the main power to the robot controller is turned off while in automatic operation or rewriting the program or parameters, the internal information of the robot controller may be damaged.
 - Make sure there are no mistakes in the wiring. Connecting differently to the way specified in the manual can result in errors, such as the emergency stop not being released. In order to prevent errors occurring, please be sure to check that all functions (such as the teaching box emergency stop, customer emergency stop, and door switch) are working properly after the wiring setup is completed.
 - Use the network equipments (personal computer, USB hub, LAN hub, etc) confirmed by manufacturer. The thing unsuitable for the FA environment (related with conformity, temperature or noise) exists in the equipments connected to USB. When using network equipment, measures against the noise, such as measures against EMI and the addition of the ferrite core, may be necessary. Please fully confirm the operation by customer. Guarantee and maintenance of the equipment on the market (usual office automation equipment) cannot be performed.
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CAUTION

- To maintain the security (confidentiality, integrity, and availability) of the robot and the system against unauthorized access, DoS^{*1} attacks, computer viruses, and other cyberattacks from unreliable networks and devices via network, take appropriate measures such as firewalls, virtual private networks (VPNs), and antivirus solutions.

Mitsubishi Electric shall have no responsibility or liability for any problems involving robot trouble and system trouble by unauthorized access, DoS attacks, computer viruses, and other cyberattacks.

^{*1} DoS: A denial-of-service (DoS) attack disrupts services by overloading systems or exploiting vulnerabilities, resulting in a denial-of-service (DoS) state.

INTRODUCTION

Thank you for purchasing the Mitsubishi industrial robot. This instruction manual describes the causes and measures for errors that may occur while using the robot.

If an error should occur, refer to this manual and take appropriate measures.

This manual is applicable to both the iQ Platform-compatible CR800-R/Q series and the standalone CR800-D series. Note that the errors that occur for each series are described as "CR800-R only", "CR800-D only", "CR860-R only", and "CR860-D only".

Notice

*ONLY QUALIFIED SERVICE PERSONNEL MAY INSTALL OR SERVICE THE ROBOT SYSTEM.

*ANY PERSON WHO PROGRAM, TEACHES, OPERATE, MAINTENANCE OR REPAIRS THE ROBOT SYSTEM IS TRAINED AND DEMONSTRATES COMPETENCE TO SAFELY PERFORM THE ASSIGNED TASK.

*ENSURE COMPLIANCE WITH ALL LOCAL AND NATIONAL SAFETY AND ELECTRICAL CODES FOR THE INSTALLATION AND OPERATION OF THE ROBOT SYSTEM.

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1 Error list

1.1 Error No.

When an error occurs, ERROR LED at the front of the controller will turn on or blink.

ERROR LED status	Details
On	Low-level error, or warning occurred.
Flashing	High-level error occurred.
Off	Normal operation.

The four-digit error number (number except the one character of the head.) is displayed on LCD of T/B. Example: In the case of C0010, display the display and the error message for "0010."

In addition, the alarm rings at 0.5-second intervals while an error is occurring. When resetting the power supply, if the interval between turn-on and turn-off of a controller is too short, the alarm rings at 0.1-second intervals.

The following shows messages, causes, and measures corresponding to error Nos.

☞ Page 22 Cause and measures against the error

A detailed message will be displayed on the Error History screen of the T/B depending on the No. of the error occurred. Check the message by displaying the Error History screen after resetting the error.

If the error recurs even after the measures in the table are taken, contact your service provider.

Meaning of error Nos.

The meaning of error Nos. is shown below.

☐ 0000 *

- An error marked with a * reset by turning the power OFF and ON.
Take the measures given.
- The error type is indicated with a 4-digit number. *1
- Three types of error classes are indicated.
H: High level errorThe servo turns OFF.
L: Low level errorThe operation will stop.
C: WarningThe operation will continue.

*1 The axis No. may be indicated at the last digit of the error No.
Example) H0931 No. 1 axis motor overcurrent.

1.2 Cause and measures against the error

The following shows details, causes, and measures corresponding to error Nos.

Note) The contents of the error caused with option products are written in the instruction manual of the option.

Refer to each instruction manual.

H0001

Error message	Fail safe error (SRVOFF)
Cause	The system may be abnormal.
Measures	Turn the power OFF and ON once. If it comes back, contact to your service provider.

H0002

Error message	Fail safe error (STOP)
Cause	The system may be abnormal.
Measures	Turn the power OFF and ON once. If it comes back, contact to your service provider.

H0003

Error message	The system is abnormal.
Cause	The problem of the system is the cause.
Measures	If it comes back, contact to your service provider.

H0004 *

Error message	CPU Watch dog error
Cause	CPU was not normally treatable
Measures	It is necessary to change some parts when not improvement. If it comes back, contact to your service provider. * The "CPU" part in each message varies according to the CPU in which an error is detected. RCPU_main, CCPU_main, RCPU_sub, CCPU_sub, CPU_main, CPU_sub, FPGA, RCPU_PLD, CCPU_PLD

H0006 *

Error message	CPU process error
Cause	CPU was not normally treatable
Measures	It is necessary to change some parts when not improvement. * The "CPU" part in each message varies according to the CPU in which an error is detected. RCPU_main, CCPU_main, RCPU_sub, CCPU_sub, CPU_main, CPU_sub, FPGA

H0008 *

Error message	CPU synchronization error
Cause	CPU synchronization was failed
Measures	Turn the power OFF and ON once.

H0009 *

One of the errors below is detected.

Please take measures corresponding to an error message.

Error message	Version UP (ALL)
Cause	Version UP (ALL)
Measures	Turn the power OFF and power ON once
Error message	Version UP (MAIN)
Cause	Version UP (MAIN)
Measures	Turn the power OFF and power ON once
Error message	Version UP (SERVO)
Cause	Version UP (SERVO)
Measures	Turn the power OFF and power ON once
Error message	The servo s/w was written
Cause	The servo s/w was written
Measures	Please release an error by reset operation * This error can be reset without turning on the power supply again.
Error message	Rewriting failed servo(Er.*)
Cause	Servo S/W couldn't be read.
Measures	When it occurs, contact your service provider * The number (1 to 7) which indicates the cause of the error is shown in "*" in the error message.

C0010

Error message	Illegal Version (file)
Cause	The version is inconsistent.
Measures	The file has been automatically initialized. The program is being deleted.

C0011

Error message	Illegal Version (system data)
Cause	The version is inconsistent.
Measures	The file has been automatically initialized. Turn the power OFF and ON once.

C0012

Error message	Initialize (error log)
Cause	The error log has been initialized because of version mismatch or the error log file is abnormal.
Measures	Reset the alarm, and continue the operation.

C0013 *

One of the errors below is detected.

Please take measures corresponding to an error message.

Error message	Illegal file
Cause	Data including programs may have been damaged.
Measures	Contact your service provider as the initialization operation is required.
Error message	Illegal system SD card
Cause	File Crash
Measures	File Initial operation

H0014 *

Error message	System error (illegal MECHA)
Cause	A character string cannot exceed 14 characters.
Measures	Re-input the correct name.

H0015 *

Error message	Illegal Version (file)
Cause	Illegal Version (file)
Measures	Contact the maker.

L0016

Error message	The backup of program external variables has failed.
Cause	Due to the configuration of the sequencer's power unit and other units, there is not enough time for saving program external variables saving during power-off.
Measures	Review the settings for saving program external variables. For further information, refer to the following page:  Page 143 Solutions when error L0016 occurs

C0018

Error message	The robot model was selected.
Cause	The robot model was selected.
Measures	Reset the error.

H0020 *

Error message	System Error (same name is Backup data.)
Cause	The data of the system backup area is abnormal.
Measures	Please consult your service provider.

H0021 *

Error message	System Error (Backup data is Count over.)
Cause	The control region is overflowing.
Measures	Please consult your service provider.

H0022 *

Error message	System Error (Backup data is no area.)
Cause	The region is too small.
Measures	Please consult your service provider.

C0023

Error message	Variables save failure (Program)
Cause	Power was shutdown before saving program external variables.
Measures	It is necessary to change some parts when not improvement.

C0024

Error message	Variables save failure (User)
Cause	Power was shutdown before saving user-defined external variables.
Measures	The power supply unit might be deteriorated.

H0028 *

Error message	Memory error (ECC)
Cause	2bit error of ECC was detected (***)
Measures	Turn the power OFF and ON once * The part where an error is detected is shown in "****" in the message. nvSRAM, FROM, RCPUR_DRAM, RCPUR_L2C, CCPUR_DRAM, CCPUR_L2C, R_nvSRAM, R_DRAM, R_L2C

C0029

Error message	Memory error (ECC)
Cause	1bit error of ECC was detected (***)
Measures	When it frequently occurs, contact your service provider * The part where an error is detected is shown in "****" in the message. nvSRAM, FROM, RCPUR_DRAM, RCPUR_L2C, CCPUR_DRAM, CCPUR_L2C, R_nvSRAM, R_DRAM, R_L2C

L0030

Error message	Hand error. LS release
Cause	This is a user setting error.
Measures	Reset the error after removing the cause.

L0031

Error message	Air pressure error
Cause	This is a user setting error.
Measures	Reset the error after releasing the cause.

C0032

Error message	HIOTYPE parameter not set
Cause	HIOTYPE parameter needs to be changed
Measures	Please set the HIOTYPE parameter (-1: Not set/0: Source/1: Sink)

H0035 *

Error message	Hand 24V line error
Cause	The hand 24V line is cut off due to overload or overvoltage
Measures	The hand may be faulty. Turn off the power supply, and check that a short or ground fault has not occurred with the 24 V power supply wire of the electric hand connector (HND), which exits the robot flange.

H0039

Error message	Door Switch Signal line is faulty.
Cause	The one point of contact in 2 points of contact of the door switch has broken. Or wiring is not the double lines.
Measures	Confirm whether there is any problem in wiring of the switch. And, please confirm whether it is wiring of the double line. The door switch is wired for redundancy so check that both contacts are functioning in the same manner. Refer to the "Examples of safety measures" given in separate "Standard Specifications Manual" for door switch wiring.

H0040

Error message	Door Switch Signal is Input
Cause	The door switch is open.
Measures	Confirm whether the door switch input signal is connected correctly. And close the door connected to the input signal of door switch.

H0041 *

One of the errors below is detected.

Please take measures corresponding to an error message.

Error message	Comm. error (Remote I/O #1).
Cause	Communication line is illegal.
Measures	For the CR800-R/Q series, check that the remote I/O communication cable between the CPU and the controller is grounded and connected correctly. When using the electric operated hand or the multi-function hand, check the wiring and ground condition around the hand.
Error message	The CRC error of remote I/O channel 1 occurs
Cause	An error was found in the communication line for remote I/O channel 1.
Measures	For the CR800-R/Q series, check that the remote I/O communication cable between the CPU and the controller is grounded and connected correctly. When using the electric operated hand or the multi-function hand, check the wiring and ground condition around the hand.

H0042 *

Error message	Comm. error (Remote I/O #2).
Cause	Communication line is illegal.
Measures	Checks the remote I/O cable connection in the CR750-Q/CR751-Q controller.

H0044 *

Error message	Comm. error (Remote I/O #4)
Cause	Communication line is illegal.
Measures	Check the cable or power supply

H0045 *

Error message	Comm. error (Remote I/O #5)
Cause	Communication line is illegal.
Measures	Check the cable or power supply

H0046

Error message	Faulty wiring (Mode sel. switch).
Cause	The state of doubled wiring is not matching (Mode sel. switch).
Measures	Turn off the power and confirm whether wiring of the switch is right. Wiring needs to be doubled. Refer to the separate manual, "Standard Specifications Manual" for wiring of the mode selector switch.

H0047

Error message	OCL detect
Cause	OCL detect
Measures	Please check the line (O/P Emergency Stop)

H0049

Error message	Faulty Line ([T/B ENABLE] switch)
Cause	The state of doubled line is not matching ([T/B ENABLE] switch)
Measures	If it comes back, contact your service provider.

H0050

Error message	EMG signal is input. (external)
Cause	The external emergency stop is being input. If the emergency stop of T/B or O/P turns on with CR860-D/R/Q controller, this error may occur simultaneously.
Measures	Clear the command of external emergency stop, teaching pendant emergency stop, or operation panel emergency stop. If the error persists, check the wiring of the external emergency stop line. If it comes back, contact your service provider. Refer to "Examples of safety measures" in the "Standard Specifications Manual" for external emergency stop switch wiring.

H0051

Error message	Wiring of the external emergency stop is abnormal.
Cause	If the emergency stop of T/B turns on, this error may occur simultaneously.
Measures	Turn OFF the power supply. Confirm whether there is any problem in wiring of the external emergency stop switch. And, please confirm whether it is wiring of the dual line. Refer to the "Examples of safety measures" given in separate "Standard Specifications Manual" for external emergency stop switch wiring. Turn on the power supply again after checking.

H0053

Error message	EMG signal is input.(Add.Axis2)
Cause	The external emergency stop to addition axis amplifier is inputting.
Measures	Check the emergency stop of Additional Axis servo amp. Or the EM1 (forced outage) line of the addition axis may be open. Please confirm connection. In addition, the External Emergency Stop 1 and 2 are separated. The "External Emergency Stop 1" is for I/F card, and the "External Emergency Stop 2" is for main device of the amplifier

H0054

Error message	Faulty wiring (External EMG power)
Cause	The state of doubled wiring is not matching (External EMG)
Measures	Please check the wiring (External Emergency Stop)

H0059

Error message	Faulty wiring (Enabling Device)
Cause	The state of doubled wiring is not matching (Enabling Device)
Measures	The state of duplex enabling device wiring is not consistent. Check the wiring.

H0060

Error message	EMG signal is input. (O.Panel)
Cause	EMG signal is input. (O.Panel)
Measures	Clear the command of operation panel emergency stop.

H0061 *

Error message	Faulty line (O/P EMG)
Cause	The state of doubled line is not matching (O/P Emergency Stop)
Measures	If it comes back, contact your service provider.

H0070

Error message	EMG signal is input. (T.Box)
Cause	EMG signal is input. (T.Box) Or when using the UL specification, the brake release switch is turning ON.
Measures	Cancel the T/B emergency stop. Check the emergency stop switch of teaching pendant.. Or when using the UL specification, turn OFF the brake release switch. If the alarm cannot be canceled, check the fuse of the safe unit (TZ348). If the fuse broke off, exchange new fuse.

H0071

Error message	EMG line is faulty.(T.Box)
Cause	The emergency stop line isn't stable.
Measures	Confirm whether there is any problem in wiring of the external emergency stop switch. And, please confirm whether it is wiring of the double line. Refer to the "Examples of safety measures" given in separate "Standard Specifications Manual" for external emergency stop switch wiring. Turn on the power supply again after checking.

H0074

Error message	Faulty line ([T/B ENABLE] switch).
Cause	The state of doubled line is not matching ([T/B ENABLE] switch).
Measures	Confirm whether T/B is connected correctly. If it comes back, contact to your service provider.

H0075

Error message	TB communication error
Cause	Communication between the RC and TB was cut off.
Measures	If it comes back, contact your service provider.

H0076 *

Error message	TB connection error
Cause	Cannot detect TB connection.
Measures	Contact the manufacturer if this error reoccurs.

H0077 *

Error message	Electric double layer overvolt.
Cause	A power supply of a substrate in the robot is broken
Measures	Turn the power OFF and contact your service provider

H0083 *

Error message	Fuse is blown (hand)
Cause	The pneumatic hand's power fuse has broken. Possibly the power supply line of the hand input/output signal short-circuited.
Measures	<p>Confirm that the hand input/output cables shown below are connected correctly with no short circuit caused by biting of the cables.</p> <ul style="list-style-type: none"> • Hand input cables (HC1 to HC8) and cables connected to them. • Hand output cables (GR1 to GR8) and cables connected to them. <p>Exchange the fuse. For further information, refer to the following page:</p> <p> Page 136 Place where hand fuse replacement is required</p> <p>If the error recurs after replacing the fuse, contact the manufacturer.</p>

H0086

Error message	Hand module overcurrent
Cause	The motorized hand's motor or circuit board has broken.
Measures	Exchange the motorized hand's motor or circuit board.

H0090

One of the errors below is detected.

Please take measures corresponding to an error message.

Error message	Fuse is blown (brake)
Cause	A brake failure or a ground fault of brake cable may have caused the error.
Measures	<p>Investigate and correct the ground fault or short circuit portion in the wiring made by the customer.</p> <p>If no improvement is made after carrying out the above measures, the brake fuse or the circuit board will need to be replaced.</p> <p>Contact the manufacturer.</p>
Error message	Fuse is blown (T/B)
Cause	The cable may be disconnected or ground fault.
Measures	<p>Confirm whether there is any problem in cable. Turn on the power supply again after checking.</p> <p>If it comes back, contact to your dealer.</p>

L0091

Error message	Can't access the Special signal
Cause	The dedicated output signal is assigned to the specified signal. This signal cannot be used in duplicate.
Measures	Confirm whether the same dedicated output number is assigned to the separate dedicated output signal. Change the output No., or change the dedicated output assignment parameter.

H0095

Error message	Brake release switch is turning on.
Cause	Cannot execute while brake release switch is turning on.
Measures	Please check the brake release switch and turn it off.

H0097 *

Error message	Abnormal MC status
Cause	The duplex magnetic contactor status signal status is not consistent.
Measures	The status of the duplex system for the magnetic contactor (MC) is not consistent. After turning OFF the power, turn ON the power again to reset the error. If the same error recurs, contact the manufacturer.

H0098 *

Error message	Abnormal SR status
Cause	The duplex safety relay status signal status is not consistent.
Measures	The status of the duplex system for the safety relay (SR) is not consistent. After turning OFF the power, turn ON the power again to reset the error. If the same error recurs, contact the manufacturer.

H0099 *

Error message	S/W ver. is illegal (***)
Cause	Servo software with an old version is installed.
Measures	Change to the correct version of software is necessary. Contact your service provider. * The correct version of servo software is shown in (***). * The error message and "software" of the cause are changed as follows according to the software in which an error occurs. CCPU main system, OS, RCPU sub system, CCPU sub system, servo S/W, FPGA OS, sub system, FPGA system, boot

C0099

Error message	R/C ver. is illegal (***)
Cause	R/C with an old version is installed.
Measures	Change to the correct version of software is necessary. Contact your service provider. * The correct version of software is shown in (***).

H0100 *

Error message	Temperature in RC is too high
Cause	The cooling fan is not operating, or the air filter is clogged.
Measures	Check the operation of the intake fan, or clean or replace the fan filter if necessary. Confirms that the environmental temperature is the specification range. When it comes back, contact to the dealer.

L0101

Error message	Temperature in RC is too high
Cause	The cooling fan is not operating, or the air filter is clogged.
Measures	Check the operation of the intake fan, or clean or replace the fan filter if necessary. Confirms that the environmental temperature is the specification range. When it comes back, contact to the dealer.

C0102

Error message	Temperature in RC is too high
Cause	The cooling fan is not operating, or the air filter is clogged.
Measures	Check the operation of the intake fan, or clean or replace the fan filter if necessary. Confirms that the environmental temperature is the specification range. When it comes back, contact to the dealer.

H0103 *

Error message	Temp. in robot CPU is too high
Cause	Ambient temperature of robot CPU becomes high
Measures	Please lower ambient temperature to the specification range

L0104

Error message	Temp. in robot CPU is too high
Cause	Ambient temperature of robot CPU becomes high
Measures	Please lower ambient temperature to the specification range

C0105

Error message	Temp. in robot CPU is too high
Cause	Ambient temperature of robot CPU becomes high
Measures	Please lower ambient temperature to the specification range

H0117 *

Error message	12V power supply error (brake)
Cause	The output of the power supply deviated from the specified range
Measures	Turn the power OFF and contact your service provider. This error may have been triggered by the following errors. If this is the case, follow the solutions to each error. H0216: Current sensor failure H221n: STR (ROBOT torque error 2)

H0118 *

Error message	Break overcurrent
Cause	An excessive current flowed to the power supply
Measures	Shut off the robot power, and contact the manufacturer.

H0119 *

Error message	Power supply overcurrent (hand)
Cause	An overcurrent was detected in the hand power supply
Measures	Check that the following cables are connected correctly (for example, there is no short circuit due to pinching). • Hand input cables and cables connected to them. • Hand output cables and cables connected to them.

C0120 *

Error message	Instantaneous power failure
Cause	The power was OFF for 20msec or more
Measures	Check the power supply connection and power supply state

H0130 *

Error message	The initialization connection error of system remote I/O.
Cause	Communication line of System Remote I/O is illegal
Measures	Check that the communication cable is grounded and connected correctly. For the CR800-R/Q series, power on the robot controller and then the robot CPU.

C0150

Error message	Undefined robot serial number
Cause	Undefined robot serial number
Measures	Input the robot serial number. Refer to the following manuals for information on how to set the serial number. For the RV-5AS, refer to "CR800-05VD Controller Instruction Manual Controller Setup and Maintenance". For robots other than the RV-5AS, refer to "CR800 Series Controller Instruction Manual Controller setup, basic operation, and maintenance".

C0151

Error message	Undefined robot serial number
Cause	Undefined robot serial number
Measures	Input the robot serial number

C0152

Error message	Unmatched robot serial number
Cause	Robot arm that connection was replaced
Measures	<p>Please confirm the connected robot body is not replaced. If replaced, correct the combination.</p> <p>If this error occurs after purchasing the robot arm or changing robot arm and controller combination, please input the serial number. Refer to the following manuals for information on how to set the serial number.</p> <p>For the RV-5AS, refer to the section "Input the serial number" in "CR800-05VD Controller Instruction Manual Controller Setup and Maintenance".</p> <p>For robots other than the RV-5AS, refer to the section "Input the serial number" in "CR800 Series Controller Instruction Manual Controller setup, basic operation, and maintenance".</p> <p>After correcting the combination, please confirm that the programs and parameters you use are set to the robot controller before starting robot operation.</p>

H016m

m=1 to 3

Error message	Cannot use PIO I/F and Unit
Cause	The I/O Channel number of PIO interface and PIO unit overlaps.
Measures	Select either of Parallel I/O interface or Parallel I/O unit.

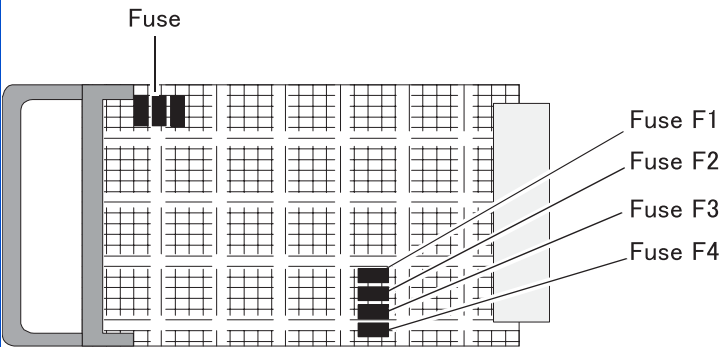
H017m

m=1 to 2

Error message	Parallel I/O interface H/W error.
Cause	The parallel-input/output card broke or the external power source for the parallel input/outputs was cut off.
Measures	If it comes back, exchange the Parallel I/O interface card.

H018m

m=1 to 2

Error message	Fuse is blown.(PIO) (Slot m-Fn)
Cause	Fuse is blown.(Parallel I/O interface)
Measures	Change fuse (Parallel I/O interface)
Details	<p>The electric fuse Fn (n= 1-4) of the parallel input output interface installed to the option slot m (m= 1-2) is open.</p> <p>Removes the cause by which the fuse open and replaces the fuse.</p> 

H0210 *

Error message	Power supply error (***)
Cause	The power supply output voltage is out of the specified range.
Measures	<p>The output voltage of the power supply in the robot controller is the specified value or higher/lower. After turning OFF the power, turn ON the power again to reset the error. If the same error recurs, contact the manufacturer.</p> <p>* The part where an error is detected is shown in "****" in the message.</p> <p>24V, 5V, 3.3V, 2.5V, 1.8V, RCPU 1.5V, CCPU 1.5V, 1.2V, RCPU 1.15V, CCPU 1.15V, 1.1V, Ether 1V, ServoM 1V, ServoS 1V</p>

H0211 *

Error message	Power supply error (***)
Cause	The power supply output voltage is out of the specified range.
Measures	The output voltage of the power supply in the robot CPU is the specified value or higher/lower. After turning OFF the power, turn ON the power again to reset the error. If the same error recurs, contact the manufacturer. * The part where an error is detected is shown in "****" in the message. 5V, 3.3V, 2.5V, 1.8V, 1.5V, 1.3V, 1.15V, 1V, FPGA

H0212 *

Error message	Power supply error
Cause	The output of the power supply deviated from the specified range.
Measures	Turn the power OFF and ON once. After turning OFF the power, turn ON the power again to reset the error. If the same error recurs, contact the manufacturer.

H0213 *

Error message	Power supply error
Cause	The output of the power supply deviated from the specified range.
Measures	Turn the power OFF and ON once. After turning OFF the power, turn ON the power again to reset the error. If the same error recurs, contact the manufacturer.

H0214 *

One of the errors below is detected.

Please take measures corresponding to an error message.

Error message	Set the power supply to 100V
Cause	The parameter is different from detected voltage
Measures	The detected power supply voltage is 100V, but the power supply voltage set in the parameter is 200V. Set the voltage to 100V, then cycle the power. The power must be cycled for the change to take effect.
Error message	Set the power supply to 200V
Cause	The parameter is different from detected voltage
Measures	The detected power supply voltage is 200V, but the power supply voltage set in the parameter is 100V. Set the voltage to 200V, then cycle the power. The power must be cycled for the change to take effect.

C0215

One of the errors below is detected.

Please take measures corresponding to an error message.

Error message	Changed the power supply to 100V
Cause	The parameter is changed for 100V power supply
Measures	The power supply voltage set in this parameter has been changed to 100V. Reset the error.
Error message	Changed the power supply to 200V
Cause	The parameter is changed for 200V power supply
Measures	The power supply voltage set in this parameter has been changed to 200V. Reset the error.

H0216 *

Error message	Current sensor failure (**) Note) "****" represents Jn (n: axis number).
Cause	The current sensor has output an abnormal value An error has been detected in the current sensor of the axis shown in the error message.
Measures	Ensure the robot is functioning properly before using it, i.e., it is not vibrating or making strange noises. If there is a fault or error H0216 re-occurs, it may not be possible to use the robot safely. Stop using the robot and contact the manufacturer. If there is no fault, check if it is false detection using the following step. If it is false detection, decrease the speed or change the motion path. If it not false detection, stop using the robot and contact the manufacturer. <How to check for false detection> Run the error detected axis at an override speed of 10% or more for at least 10 seconds. If this error does not occur, it is false detection. The following errors may also occur in conjunction with this error. Follow the solutions to the errors noted below. H081n: Voltage error at accel/decel (n: axis number) H0117: 12V power supply error (brake) H096n: Excessive error 1

C0217

Error message	Current sensor failure (**) Note) "****" represents Jn (n: axis number).
Cause	The current sensor failure was detected during previous use
Measures	An error was previously detected with the current sensor. Ensure that the robot is functioning properly before using it. If an error occurs, stop using the robot and contact the manufacturer. If there is no fault, check if it is false detection using the following step. If it is false detection, decrease the speed or change the motion path. If it not false detection, stop using the robot and contact the manufacturer. <How to check for false detection> Run the error detected axis at an override speed of 10% or more for at least 10 seconds. If this error does not occur, it is false detection.

H0220 *

Error message	Memory fault (main CPU)
Cause	A memory fault is detected.
Measures	A fault (inconsistent data between writing/reading, broken retention data) is detected for the memory (DRAM) to which the main CPU has access. After turning OFF the power, turn ON the power again to reset the error. If the same error recurs, contact the manufacturer.

H0230 *

Error message	Safety parameter error (***)
Cause	Detect errors in safety parameter value
Measures	The safety parameter setting is not correct. Check the parameter setting shown in the "(***)" part of the error message, and set an appropriate value. For further information refer to the separate "Robot Safety Option Instruction Manual" or "Safety Communication Function Instruction Manual".

H0231 *

Error message	Parameter CRC error (***)
Cause	Detect CRC errors in safety parameter value
Measures	Check the parameter setting shown in the "(***)" part of the error message, and set an appropriate value. For further information refer to the separate "Robot Safety Option Instruction Manual" or "Safety Communication Function Instruction Manual".

C0240

Error message	Setting mismatch of safety function
Cause	The safety function is disabled.
Measures	Safety logic settings is set but safety function is disabled. Delete Safety Logic settings or Enable Safety Function. For further information refer to the separate "Robot Safety Option Instruction Manual" or "Safety Communication Function Instruction Manual".

H0241 *

Error message	Fault in Safety Communication
Cause	Detect a fault in safety communication.
Measures	Turn the power OFF and ON once If the same error recurs, contact the manufacturer. This error also occurs when the machine lock or the controller CPU drive mode is enabled. Disable these functions and turn the power off and then on again. For further information refer to the separate "Robot Safety Option Instruction Manual" or "Safety Communication Function Instruction Manual".

H0242 *

Error message	Fault in Safety Data
Cause	Detect a fault in safety data.
Measures	Turn the power OFF and ON once If the same error recurs, contact the manufacturer. The occurrence of "Fault in safety data (S_CMD)" and "Fault in safety data (S_ALM)" may have triggered the following error. If this is the case, follow the solution to this error. H221n: STR (ROBOT torque error) For further information refer to the separate "Robot Safety Option Instruction Manual" or "Safety Communication Function Instruction Manual".

H0243 *

Error message	*** function is not available
Cause	The Safety Function is not supported by this robot
Measures	"(***)" indicates the safety function. Disable the safety function. For further information refer to the separate "Robot Safety Option Instruction Manual" or "Safety Communication Function Instruction Manual".

C0244

Error message	Setting mismatch of safety IO
Cause	Safety IO logic is set, but the safety IO is disabled.
Measures	Delete the safety IO logic settings or enable safety IO. For further information refer to the separate "Robot Safety Option Instruction Manual".

C0245

Error message	Setting mismatch of Safety Comm.
Cause	Safety comm. logic is set, but safety comm. function is disabled.
Measures	Delete the safety communication logic settings or enable safety communication. For further information refer to the separate "Safety Communication Function Instruction Manual".

H0246 *

Error message	Safety comm. unavailable
Cause	The safety communication (CC-Link IE TSN) function is not supported by this robot.
Measures	Disable the safety communication function. For further information refer to the separate "Safety Communication Function Instruction Manual".

H0247 *

Error message	Safety comm. unavailable
Cause	The safety communication (CC-Link IE TSN) is not supported by this robot.
Measures	Disable the settings of the safety communication function (CC-Link IE TSN). For further information refer to the separate "Safety Communication Function Instruction Manual".

H0248 *

Error message	Safety comm. N/W is not selected
Cause	The network of safety comm. function is not selected.
Measures	Configure the network selection settings. For further information refer to the separate "Safety Communication Function Instruction Manual".

H0249 *

Error message	Safety comm. N/W select error
Cause	Multiple networks for the safety communication function have been selected.
Measures	Check and correct the network selection settings of the safety parameter. For further information refer to the separate "Safety Communication Function Instruction Manual".

H0250 *

Error message	Illegal setting of safety IO I/F
Cause	Safety IO and Safety comm. are disabled.
Measures	To enable the safety function, enable either safety IO or safety communications. For further information refer to the separate "Robot Safety Option Instruction Manual" or "Safety Communication Function Instruction Manual".

H0251 *

Error message	Illegal setting of safety IO I/F
Cause	Both safety IO and safety communication are set to valid. Safety IO and safety communication cannot be used together.
Measures	Disable either safety IO or safety communications. For further information refer to the separate "Robot Safety Option Instruction Manual" or "Safety Communication Function Instruction Manual".

H0252 *

Error message	N/W module slot error
Cause	There is no available module in the slot No. specified in the communication settings of the safety communication function (CC-Link IE TSN).
Measures	Use the RJ71GN11-T2 with the supported version or later as a network module. Check and correct the module No. settings for safety parameter communication settings, then cycle the power. For further information refer to the separate "Safety Communication Function Instruction Manual".

H0253 *

Error message	N/W module ver. error
Cause	The network module specified in the communication settings of the safety communication function (CC-Link IE TSN) does not support this function.
Measures	Check the network module version. Use the RJ71GN11-T2 with the supported version or later as a network module. For further information refer to the separate "Safety Communication Function Instruction Manual".

H0254 *

Error message	Safety comm. illegal IP address
Cause	The master station IP address of the communication destination of the safety communication function (CC-Link IE TSN) does not match the setting value of the network module.
Measures	Check and correct the IP address settings of the master station for safety parameter communication settings, then cycle the power. For further information refer to the separate "Safety Communication Function Instruction Manual".

H0255 *

Error message	Safety comm. illegal IP address
Cause	The IP address of the host station of the safety communication function (CC-Link IE TSN) does not match the setting value of the network module.
Measures	Check and correct the IP address settings of the host station for safety parameter communication settings, then cycle the power. For further information refer to the separate "Safety Communication Function Instruction Manual".

H0256 *

Error message	Safety comm. parameter error
Cause	A communication setting parameter error has occurred in the safety communication function (CC-Link IE TSN).
Measures	<ul style="list-style-type: none"> • Check and correct the IP addresses of the master and host stations. • Check that the transmission interval monitoring time satisfies the set conditions. For further information refer to the separate "Safety Communication Function Instruction Manual".

H0260 *

Error message	EMG circuit diagnosis error
Cause	Voltage diagnosis error
Measures	Turn off the power and then on again. If the error persists, check the wiring of the external emergency stop line. If it comes back, contact your service provider. Refer to "Examples of safety measures" in the "Standard Specifications Manual" for external emergency stop switch wiring.

H0270 *

Error message	Voltage diagnosis error
Cause	Voltage diagnosis error
Measures	Turn the power OFF and ON once

H0280 *

Error message	STO circuit diagnosis error
Cause	STO circuit error
Measures	Turn the power OFF and ON once

H0290 *

Error message	PLD control error
Cause	PLD control error
Measures	Turn the power OFF and ON once

H0310

One of the errors below is detected.

Please take measures corresponding to an error message.

Error message	Mecha board access error
Cause	Failed in access to a Mecha board
Measures	Please confirm the connection with Mecha board
Error message	Mecha board buffer access error
Cause	Cannot store more than 100 of the data to send/receive buffer
Measures	Please confirm the communication with Mecha board

H0311 *

Error message	Remotel/O unit config error
Cause	The multiple Remotel/O units which do not support are connected
Measures	Please confirm the constitution of Remotel/O unit When extended safety unit is connected, restart the unit. For further information refer to the separate "Robot Safety Option Instruction Manual".

H0315

Error message	Can't access the D-device area
Cause	This area cannot be used in duplicate
Measures	Please change the D-device start number in parameter DDEVVLn

H0316

Error message	The D-device area is out of range
Cause	An area corresponding to the variable type can't be allocated
Measures	Please change the D-device start number in parameter DDEVVLn

H0317

Error message	The D-device variable duplication
Cause	Cannot be doubly allotted to one variable
Measures	Please change the variable name in parameter DDEVVLn

C0330

Error message	Undefined hand condition
Cause	Hand conditions have not been changed from initial values.
Measures	Set the parameter HNDDATn (n = 0 to 8) or HNDCHK. Refer to "Functions set with parameters" in the CR800 Series Controller Instruction Manual: Detailed explanations of functions and operations.

C043n

n indicates the axis number (1 to 8).

Error message	Servo amplifier motor overheat
Cause	The motor or encoder's thermal protector activated.
Measures	Reduce the speed and acceleration of the robot.

C049n *

n indicates the fan number (1 to 8).

Error message	Alarm of fan in the robot
Cause	Fan in the robot might be out of order
Measures	Please exchange the fan in the robot

H050n *

n indicates the axis number (1 to 8).

Error message	Servo axis setting error
Cause	The setting of the axis number selection switch is illegal
Measures	Confirm the setting of the axis selection switch

H0510 *

Error message	The converter setting is illegal
Cause	The external emergency-stop input power was detected except external emergency-stop mode.
Measures	Setting is wrong. When it comes back, contact to the dealer.

H0520 *

Error message	Robot axis setting illegal
Cause	The setting of the servo axis used by the mechanism is duplicated with another mechanism's axis.
Measures	Correctly set.

H053n *

n indicates the axis number (1 to 8).

Error message	Servo sys. error (memory)
Cause	The servo amplifier memory IC's check sum is illegal.
Measures	Turn the power OFF and ON once. If it comes back, contact your service provider.

H054n *

n indicates the axis number (1 to 8).

Error message	Servo sys. error (over run)
Cause	The servo amplifier software data process did not end within the specified time.
Measures	Turn the power OFF and ON once. If it comes back, contact your service provider.

H055n *

n indicates the axis number (1 to 8).

Error message	Servo sys. error (mag. pole pos)
Cause	An error was detected in the magnetic pole position detection signal of the detector.
Measures	Turn the power OFF and ON once. If it comes back, contact your service provider.

H056n *

n indicates the axis number (1 to 8).

Error message	Servo sys. error (A/D)
Cause	1) An error was found in the servo amplifier's A/D converter during initialization. 2) The stop signal or servo OFF signal was input when the door switch signal or EMG signal was input.
Measures	1) Turn the power OFF and ON once. If it comes back, contact your service provider. 2) Do not input the door switch signal or EMG signal with another signal simultaneously.

H057n *

n indicates the axis number (1 to 8).

Error message	Encoder error (EEPROM)
Cause	An error was detected in EEPROM data of the serial pulse encoder.
Measures	Turn the power OFF and ON once. Also, carefully check whether there is no deviation in the operating position of the robot. If it is deviated, set the origin position (OP) again. For more information about the operating procedure, refer to the separate volume, "Instruction Manual/Robot Arm Setup to Maintenance." If it comes back, contact your service provider.

H058n *

n indicates the axis number (1 to 8).

Error message	Encoder error (LED)
Cause	The LED of the serial pulse encoder has been deteriorated.
Measures	Turn the power OFF and ON once. If it comes back, contact your service provider.

H059n *

n indicates the axis number (1 to 8).

Error message	Encoder error (position data)
Cause	An error was detected in the position data within a single rotation of the encoder.
Measures	Turn the power OFF and ON once. Also, carefully check whether there is no deviation in the operating position of the robot. If it is deviated, set the origin position (OP) again. For more information about the operating procedure, refer to the separate volume, "Instruction Manual/Robot Arm Setup to Maintenance." If it comes back, contact your service provider.

H060n *

n indicates the axis number (1 to 8).

Error message	Encoder no-signal detection 1
Cause	An error was detected in the operating input of the detector mounted on the edge of the motor.
Measures	Turn the power OFF and ON once. Also, carefully check whether there is no deviation in the operating position of the robot. If it is deviated, set the origin position (OP) again. For more information about the operating procedure, refer to the separate volume, "Instruction Manual/Robot Arm Setup to Maintenance." If it comes back, contact your service provider.

H061n *

n indicates the axis number (1 to 8).

Error message	Encoder no-signal detection 2
Cause	An error was detected in the operating input of the detector mounted on the edge of the machine.
Measures	Turn the power OFF and ON once. Also, carefully check whether there is no deviation in the operating position of the robot. If it is deviated, set the origin position (OP) again. For more information about the operating procedure, refer to the separate volume, "Instruction Manual/Robot Arm Setup to Maintenance." If it comes back, contact your service provider.

H062n *

n indicates the axis number (1 to 8).

Error message	Servo amplifier LSI error
Cause	An operation error was detected in the LSI of the servo amplifier.
Measures	Turn the power OFF and ON once. If it comes back, contact your service provider.

H063n *

n indicates the axis number (1 to 8).

Error message	Unused axis servo error
Cause	A power module error occurred in an axis which not use the movement control.
Measures	Turn the power OFF and ON once. If it comes back, contact your service provider.

H064n *

n indicates the axis number (1 to 8).

Error message	System error (ABS CPU)
Cause	An error in the CPU of the absolute position linear scale was detected.
Measures	Turn the power OFF and ON once. Also, carefully check whether there is no deviation in the operating position of the robot. If it is deviated, set the origin position (OP) again. For more information about the operating procedure, refer to the separate volume, "Instruction Manual/Robot Arm Setup to Maintenance." If it comes back, contact your service provider.

H065n *

n indicates the axis number (1 to 8).

Error message	Absolute position error
Cause	An error was detected in the absolute position detection circuit within the absolute position linear scale.
Measures	Turn the power OFF and ON once. Also, carefully check whether there is no deviation in the operating position of the robot. If it is deviated, set the origin position (OP) again. For more information about the operating procedure, refer to the separate volume, "Instruction Manual/Robot Arm Setup to Maintenance." If it comes back, contact your service provider.

H066n *

n indicates the axis number (1 to 8).

Error message	Incremental position error
Cause	An error was detected in the relative position detection circuit within the absolute position linear scale.
Measures	Turn the power OFF and ON once. Also, carefully check whether there is no deviation in the operating position of the robot. If it is deviated, set the origin position (OP) again. For more information about the operating procedure, refer to the separate volume, "Instruction Manual/Robot Arm Setup to Maintenance." If it comes back, contact your service provider.

H067n *

n indicates the axis number (1 to 8).

Error message	Encoder CPU error
Cause	An error was detected in the CPU of the position detector.
Measures	Turn the power OFF and ON once. Also, carefully check whether there is no deviation in the operating position of the robot. If it is deviated, set the origin position (OP) again. For more information about the operating procedure, refer to the separate volume, "Instruction Manual/Robot Arm Setup to Maintenance." If it comes back, contact your service provider.

H068n *

n indicates the axis number (1 to 8).

Error message	Encoder LED error
Cause	Deterioration of the position detector's LED was detected.
Measures	Turn the power OFF and ON once. If it comes back, contact your service provider.

H0690 *

Error message	Regeneration circuit error
Cause	A regenerative transistor or resistor error was detected. This error may also occur when the power supply voltage is high.
Measures	Turn the power OFF and ON once. If it comes back, contact your service provider.

H0700 *

Error message	P.S. external contactor fusing
Cause	The contactor was turned ON even though READY is OFF.
Measures	Turn the power OFF and ON once. If it comes back, contact your service provider.

H0710 *

Error message	Servo amp. relay error.
Cause	The relay on servo cpu card did not turn ON.
Measures	Turn the power OFF and ON once. If it comes back, contact your service provider.

H0711 *

Error message	Discharge resistance relay error
Cause	Discharge resistance circuit on converter is state-of-discharge
Measures	Turn the power OFF and ON once

H0712 *

Error message	Converter fuse fusing
Cause	Fuse of a converter fused for a ground fault or short circuit
Measures	Investigate and correct the ground fault or short circuit portion in the wiring made by the customer. If no improvement is made after carrying out the above measures, the converter fuse or the circuit board will need to be replaced. Contact the manufacturer.

H0713 *

Error message	Encoder power supply fuse trip
Cause	Encoder power supply fuse tripped by ground fault, short circuit
Measures	Turn the power OFF, wait a while, and then turn ON again

H0720 *

Error message	Power supply watch dog
Cause	The converter software process did not end within the specified time.
Measures	Turn the power OFF and ON once. If it comes back, contact your service provider.

H0730 *

Error message	Power supply rush relay fusing
Cause	The rush resistance short-circuit relay did not turn OFF.
Measures	Turn the power OFF and ON once. If it comes back, contact your service provider.

H0740 *

Error message	Power supply main circuit error
Cause	The charge operation of the main circuit capacitor is not normal. Connection of the external emergency stop has the mistake.
Measures	Turn the power OFF and ON once. Confirm that the power supply voltage is in the specification value and the connection of the external emergency stop is correct. If it comes back, confirm the time of occurrence of this error being "servo ON/OFF", or being "power supply OFF/ON", and contact your service provider

H0742

Error message	Power supply main circuit error
Cause	A main circuit voltage has decreased because of a failure of the Safety relay on a converter card.
Measures	Turn the power OFF and ON once. Confirm whether there is any problem in wiring of the external emergency stop switch. Refer to the "Examples of safety measures" given in separate "Standard Specifications Manual" for external emergency stop switch wiring. If it comes back, contact to your service provider.

H0743 *

Error message	Power supply main circuit error ³ .
Cause	A main circuit voltage has decreased because of contactor fail.
Measures	Turns off the power once and turns on on the power supply again. Confirm power supply voltage and the connection of the external emergency stop. When it comes back, contact to the dealer.

H0750 *

Error message	Power supply memory error
Cause	An error in the memory circuit of converter or AD converter was detected.
Measures	Turn the power OFF and ON once. If it comes back, contact your service provider.

H0760 *

Error message	Power supply error
Cause	An error was detected in the data comm. with the power supply
Measures	Turn the power OFF and ON once

H0770 *

Error message	Power supply process error
Cause	An error occurred in the process cycle of power supply
Measures	Turn the power OFF and ON once. Check that there is not a source of noise. If it comes back, contact your service provider.

H078n *

n indicates the axis number (1 to 8).

Error message	Servo amplifier watch dog
Cause	The servo amplifier software process is not operating correctly.
Measures	Turn the power OFF and ON once. If it comes back, contact your service provider.

H079n *

n indicates the axis number (1 to 8).

Error message	Servo amplifier board error
Cause	An error was detected in the servo amplifier's PCB.
Measures	Turn the power OFF and ON once. If it comes back, contact your service provider.

H080n *

n indicates the axis number (1 to 8).

Error message	Servo amplifier clock error
Cause	An error was detected in the servo amplifier's clock.
Measures	Turn the power OFF and ON once. If it comes back, contact your service provider.

H081n *

n indicates the axis number (1 to 8).

One of the errors below is detected.

Please take measures corresponding to an error message.

Error message	Power supply undervoltage
Cause	Insufficient bus voltage was detected in main circuit. An instantaneous power failure may have occurred.
Measures	Check the wiring and condition of the power supply. The primary power voltage may have dropped below the lower limit value of the input voltage range (with voltage fluctuation considered) due to voltage fluctuations or robot arm operations. If applicable, review the operation programs or the settings.
Error message	Voltage error at accel/decel
Cause	A motor control error was detected due to an input voltage drop
Measures	Turn off the power and then on again. Check the primary power voltage. The primary power voltage may have dropped below the lower limit value of the input voltage range (with voltage fluctuation considered) due to voltage fluctuations or robot arm operations. If applicable, review the operation programs or the settings. This error may have been triggered by the following errors. If this is the case, follow the solutions to each error. H0216: Current sensor failure H221n: STR (ROBOT torque error 2)

H0820 *, H082n *

n indicates the axis number (1 to 8).

Error message	Motor ground fault
Cause	A motor ground fault was detected. A connection or conductance error may have occurred in the motor cable.
Measures	Turn the power OFF and ON once. Check connection and continuity of motor cable.

H083n *

n indicates the axis number (1 to 8).

Error message	Servo amplifier overvoltage
Cause	The main circuit bus voltage exceeded the tolerable value.
Measures	Check the primary power supply voltage. Turn the power OFF and ON once.

H0840 *

Error message	Instantaneous power failure (SRV)
Cause	A power shutdown status of 50 msec or longer has occurred.
Measures	Check the power voltage. Turn the power OFF and ON once.

H0850 *

Error message	Power supply voltage incorrect
Cause	The input power (L1, L2, L3) has an open phase, the voltage is not within the specifications, or the 100V/200V specifications changeover setting is incorrect.
Measures	Check the power connection, power state or the setting. If it comes back, contact your service provider.

H0860

Error message	Power supply overvoltage
Cause	The main circuit bus voltage exceeded the tolerable value.
Measures	Check the power supply connection and power supply state.

H0870 *

Error message	Power module overheat (Fan Stop)
Cause	A cooling fan stopped, and overheat occurred
Measures	Check the rotation of fan, and the connector connected to a fan

H0880 *, H088n *

n indicates the axis number (1 to 8).

Error message	Power module overheat
Cause	Overheating of the power module regenerative resistor was detected.
Measures	Turn the controller power OFF, wait a while, and then turn ON again. If it comes back, contact your service provider.

H089n

n indicates the axis number (1 to 8).

Error message	Servo amplifier motor overheat
Cause	The position detector's thermal protector activated.
Measures	Turn the controller power OFF, wait a while, and then turn ON again. Decrease the acceleration/deceleration time of the operation speed, for instance. Refer to "Detailed explanation of command words"/"Accel (Accelerate)," "Ovrd (Override)" and "Spd (Speed)," or "Detailed explanation of Robot Status Variable"/"M_SetAdl," "M_LdfAct" and "Functions set with parameters"/"JADL (Optimum acceleration/deceleration adjustment rate)" of the Separate Volume, "INSTRUCTION MANUAL/Detailed Explanation of Functions and Operations."

H090n *

n indicates the axis number (1 to 8).

Error message	Absolute position overspeed
Cause	It moved 45 mm/sec or faster with the absolute position linear scale during initialization.
Measures	Turn the power OFF and ON once. If it comes back, contact your service provider.

H091n *

n indicates the axis number (1 to 8).

Error message	Servo amplifier overspeed
Cause	A speed exceeding the motor's tolerable speed was detected.
Measures	Turn the power OFF and ON once. If it comes back, contact your service provider.

H0920 *, H092n *

n indicates the axis number (1 to 8).

Error message	Power module overcurrent
Cause	A servo amplifier or power supply overcurrent was detected. An error was detected in the servo amplifier's gate circuit. A connection or conductance error may have occurred in the motor cable.
Measures	Confirms the connection of the machine cable and the locomotion-axis cable. If it comes back, contact your service provider.

H093n *

n indicates the axis number (1 to 8).

One of the errors below is detected.

Please take measures corresponding to an error message.

Error message	Motor overcurrent
Cause	An excessive current flowed to the motor, or the A/D converter output is abnormal. An abnormality may have occurred in the connection of the motor's power line.
Measures	Turn the power OFF and ON once. Confirms the connection of the machine cable and the locomotion-axis cable etc. If it comes back, contact your service provider.
Error message	Motor overcurrent (Grounding)
Cause	The motor power cable is in contact with ground
Measures	Turn the power OFF and ON once. Confirms the connection of the machine cable and the locomotion-axis cable etc. If it comes back, contact your service provider.

H094n

n indicates the axis number (1 to 8).

Error message	Overload (over weight 1)
Cause	Operation tight for a motor (operation with high duty) was performed more than fixed time.
Measures	Decrease the acceleration/deceleration time of the operation speed, for instance. Refer to "Detailed explanation of command words"/"Accel (Accelerate)," "Ovrd (Override)" and "Spd (Speed)," or "Detailed explanation of Robot Status Variable"/"M_SetAdl," "M_LdfAct" and "Functions set with parameters"/"JADL (Optimum acceleration/deceleration adjustment rate)" of the Separate Volume, "INSTRUCTION MANUAL/Detailed Explanation of Functions and Operations." Confirms that conveyance conditions (hand mass, work-piece mass) are less than specification values. When it comes back, contact to the dealer.

H095n

n indicates the axis number (1 to 8).

Error message	Overload (over weight 2)
Cause	The maximum output current continued for more than one second.
Measures	Check the load weight and the robot pressing, etc. Confirms that conveyance conditions (hand mass, work-piece mass) are less than specification values. When it comes back, contact to the dealer.

H096n

n indicates the axis number (1 to 8).

Error message	Excessive error 1
Cause	The position error exceeded at servo ON. Moreover, this error may occur during the emergency-stop deceleration.
Measures	<ul style="list-style-type: none">• Check the factors such as the load weight and the push force. Check the connection of motor power line (such as the machine cable and the locomotion-axis cable). If the surrounding temperature is low, or if the system is started after a long stop, perform a low-speed run-in or use the warm-up mode.• If this error occurs when acceleration and deceleration control is fixed for tracking operation, etc., reduce the acceleration/deceleration time (Accel command), movement speed (Ovrd command), etc. High hand offset (eccentricity) amounts are more likely to cause this error. Moreover, this error may occur during the emergency-stop deceleration. For further information on each command, refer to the "INSTRUCTION MANUAL/Detailed explanations of functions and operations".• If this error occurs when operating in the joint coordinate system compliance mode (Cmp Jnt command), increasing the value of the parameter CMPJCLL will reduce the occurrence of this error. Refer to "Detailed explanation of command words"/"Cmp Jnt (Compliance Joint)" and "Movement parameter"/"CMPJCLL (Current limit level for Cmp Jnt)" in the "INSTRUCTION MANUAL/Detailed explanations of functions and operations". This error may have been triggered by the following errors. If this is the case, follow the solutions to each error. H0216: Current sensor failure H221n: STR (ROBOT torque error 2)

H097n

n indicates the axis number (1 to 8).

Error message	Excessive error 2
Cause	The position error exceeded at servo OFF.
Measures	Check the moving robot arm by something power. When it comes back, contact to the dealer.

H098n

n indicates the axis number (1 to 8).

Error message	Excessive error 3
Cause	Abnormal motor power line connection.
Measures	Check the connection of motor power line. When the excessive error 1 was detected, the current of the motor is off.

H101n

n indicates the axis number (1 to 8).

Error message	Collision detection
Cause	A collision was detected.
Measures	<ol style="list-style-type: none">1) If the robot has stopped by interference with peripheral equipment, move the arm to part from peripheral equipment using jog operation. Depending on the level of collision, the collision detection error may occur again. In that case, turn on the servo power again and do jog operation. If it still recurs, release the brake and move the arm by hand.2) If this error occurs without having collided, please adjust the collision detection level. If collision is detected incorrectly during automatic operation, enlarge the setting value of the parameter (COLLVL) corresponding to axis. If collision is detected incorrectly during jog operation, enlarge the setting value of the parameter (COLLVLJG) corresponding to axis. However, since the detection level drops by enlarging the set value, don't enlarge too much. And, the incorrect detection can be reduced when setup value of parameter (HNDDATn, WRKDATn) is correct.3) If the speed excessive error has occurred at the same time, the torque alteration by rapid speed change may be detected as a collision state. Remove other causes of the error and confirm movement again.4) In case of operation under the environment of low temperature or after the long term stoppage, the collision detection error may occur by viscous transmutation of the grease used. In such a case, operate by accustoming at low speed (warm-up), or use the warm-up operation mode.

H102n

n indicates the axis number (1 to 8).

Error message	Servo AMP over-regeneration
Cause	The additional axis exceeded the regenerative performance limit.
Measures	Check the regenerative capacity and parameters for the additional axis. If it comes back, contact your service provider. Regeneration resistance may be disconnected.

H1030 *

Error message	Power supply over-regeneration
Cause	The converter's regenerative performance limit was exceeded.
Measures	Wait at least 15 minutes in the power ON state, and then turn the power OFF and ON. If it comes back, contact your service provider. Regeneration resistance may be disconnected.

H104n *

n indicates the axis number (1 to 8).

Error message	Encoder init communication error
Cause	An abnormality may have occurred in the position detector cable connection.
Measures	1) Turn the power OFF and ON once. If it comes back, contact your service provider. 2) When instantaneous power failure errors occur simultaneously, turn on the power supply again.

H105n *

n indicates the axis number (1 to 8).

Error message	Encoder init communication error
Cause	Initial communication with the encoder was not possible
Measures	Check the encoder cable connection

H106n *

n indicates the axis number (1 to 8).

Error message	Encoder communication error
Cause	Communication between the encoder and detector was cut off
Measures	Check the encoder cable connection

H107n *

n indicates the axis number (1 to 8).

Error message	Encoder communication error
Cause	Communication with the position detector was cut off.
Measures	Confirms the signal cable of the machine cable and the locomotion-axis cable etc. If it comes back, contact your service provider.

H108n *

n indicates the axis number (1 to 8).

Error message	Servo AMP communication error
Cause	An abnormality may have occurred in the communication cable connection.
Measures	Turn off the power and then on again. If it comes back, contact your service provider. CR800-R/Q series: Check the connection between the robot CPU system and the controller.

H1090 *, H109n *

n indicates the axis number (1 to 8).

Error message	Servo AMP initialization error
Cause	An abnormality may have occurred in the servo axis settings (parameters, rotary switches).
Measures	Turn off the power and then on again. If it comes back, contact your service provider. CR800-R/Q series: Check the connection between the robot CPU system and the robot controller, and power on the robot controller and then the robot CPU. Using the additional axis: Check the axis setting switch, cable connection with the robot controller, parameter settings, whether the power is supplied to the additional axis amplifier, the type of the amplifier, etc. When applying a power supply, turn on the additional axis amplifier first, then turn on the robot controller.

H110n *

Error message	Servo com. receive error
Cause	Abnormality occurred in data reception from a servo amplifier
Measures	Check the communication cable connection and conductivity

H1110 *

Error message	Servo communication timeout
Cause	Data from a servo amplifier is not received
Measures	Check the communication cable connection and conductivity

H111n

n indicates the axis number (1 to 8).

Error message	SRV-AMP comm. error
Cause	A communication error was detected between the servo amplifier and PC.
Measures	Check the communication cable connection and conductivity. If it comes back, contact your service provider.

H112n

n indicates the axis number (1 to 8).

Error message	Encoder ABS position data lost
Cause	The absolute position data in the position detector was lost. The voltage of the robot-arm or additional axis's backup battery may be dropping.
Measures	<p>If this error occurs while using the robot controller with the RV-8CRL or RV-5AS, there may be a problem with the encoder. Please contact the manufacturer.</p> <p>If the error occurs while using the controller with any other robot, replace the controller battery, then set the origin using the ABS method. Re-teaching is unnecessary since position data can be fully restored if the origin is set using the ABS method. Refer to separate "Instruction Manual/Robot Arm Setup and Maintenance" for ABS method.</p> <p>If the voltage of robot battery is low, reset the error, and set up the origin by ABS method. Then, the robot can be operated without replacing the battery. However, this error occurs again when the controller is re-turned on. It is recommended to replace the battery at the earliest opportunity.</p>

H113n *

n indicates the axis number (1 to 8).

One of the errors below is detected.

Please take measures corresponding to an error message.

Error message	Encoder per rotation data error
Cause	An error was detected in the position detector's one rotation data.
Measures	Turns off the power supply once and turns on again. If it comes back, contact your service provider.
Error message	Encoder data scattered
Cause	Position deviation by scattered encoder data occurred
Measures	Turns off the power supply once and turns on again. Check that there is not a source of excessive vibration. If it comes back, contact your service provider.

H114n *

n indicates the axis number (1 to 8).

Error message	SRV-AMP Comm. data error (CRC)
Cause	A CRC error was detected in the data from servo amplifier.
Measures	Turns off the power supply once and turns on again. If it comes back, contact your service provider.

H115n *

n indicates the axis number (1 to 8).

Error message	Large command position
Cause	The command position from the RC is abnormally large.
Measures	command is executed, execute Mov P_Fbc before Cmp Off. Or cycle the power. If the same error recurs, contact the manufacturer.

H116n *

n indicates the axis number (1 to 8).

Error message	SRV-AMP Comm. error (frame)
Cause	An error was detected in the communication frame from servo amplifier.
Measures	Turns off the power supply once and turns on again. If it comes back, contact your service provider.

H117n *

n indicates the axis number (1 to 8).

Error message	SRV-AMP Comm. error (info)
Cause	An error was detected in the communication information from the RC.
Measures	Check the communication cable connection and conductivity. If it comes back, contact your service provider.

H118n *

n indicates the axis number (1 to 8).

Error message	Servo amplifier feedback error 1
Cause	Pulses skipped in the position detector's feedback signal.
Measures	Check the detector cable connection and conductivity. If it comes back, contact your service provider.

H119n *

n indicates the axis number (1 to 8).

Error message	Servo amplifier feedback error 2
Cause	Displacement occurred in the feedback amounts between the detectors on the motor edge and on the machine edge.
Measures	Check the detector cable connection and conductivity. If it comes back, contact your service provider.

H1200 *

Error message	SRV-AMP Comm. data error (CRC)
Cause	A CRC error was detected in the communication data from the servo amplifier.
Measures	Turns off the power supply once and turns on again. If it comes back, contact your service provider.

H121n *

n indicates the axis number (1 to 8).

Error message	SRV-AMP Comm. data error (ID)
Cause	A data ID error was detected in the communication data from the servo amplifier.
Measures	Turns off the power supply once and turns on again. If it comes back, contact your service provider.

H122n *

n indicates the axis number (1 to 8).

Error message	SRV-AMP Comm. data error (axis No)
Cause	An axis No. error was detected in the communication data from the servo amplifier.
Measures	Turns off the power supply once and turns on again. If it comes back, contact your service provider.

H123n *

n indicates the axis number (1 to 8).

Error message	SRV-AMP Comm. data error (SubID)
Cause	A Sub ID error was detected in the communication data from the servo amplifier.
Measures	Turns off the power supply once and turns on again. If it comes back, contact your service provider.

H1240 *

Error message	SRV-AMP Comm. data error (frame)
Cause	An No. of received frames error was detected in the communication data from the servo amplifier.
Measures	Turns off the power supply once and turns on again. If it comes back, contact your service provider.

H125n *

n indicates the axis number (1 to 8).

Error message	Servo amplifier parameter error
Cause	An error was detected in the servo parameter.
Measures	Confirms whether the type displayed on the rated name plate of controller and T/B is the same. If different, restores the type data (backup data). If it comes back, contact your service provider.

C126n

n indicates the axis number (1 to 8).

Error message	Encoder communication error
Cause	Initial communication could not be established with the low-speed serial type absolute position linear scale.
Measures	Check the detector cable connection and conductivity. If it comes back, contact your service provider.

C127n

n indicates the axis number (1 to 8).

Error message	Encoder communication error
Cause	The serial data of absolute position was abnormally transmitted.
Measures	Check the detector cable connection and conductivity. Moreover, confirms carefully that the moving position of the robot has not deviated, and if it has deviated, sets up the origin again. Refer to separate "Instruction Manual/Robot Arm Setup and Maintenance" for operation method. If it comes back, contact your service provider.

C128n

n indicates the axis number (1 to 8).

Error message	Encoder serial format error
Cause	Absolute position serial data format was incorrect.
Measures	Check the detector cable connection and conductivity. Moreover, confirms carefully that the moving position of the robot has not deviated, and if it has deviated, sets up the origin again. Refer to separate "Instruction Manual/Robot Arm Setup and Maintenance" for operation method. If it comes back, contact your service provider.

C129n

n indicates the axis number (1 to 8).

Error message	Absolute position fluctuation
Cause	The absolute position data fluctuated when the power was turned ON.
Measures	Check whether the axis moved due to arm dropping or external force when the power was turned ON.

C130n

n indicates the axis number (1 to 8).

Error message	Servo AMP MP scale F/B error
Cause	Excessive displacement was detected in the feedback amounts between the detector and the MP scale.
Measures	Turn the power OFF and ON once. If it comes back, contact your service provider.

C131n

n indicates the axis number (1 to 8).

Error message	Servo AMP MP scale offset error
Cause	Excessive displacement was detected in the feedback amounts between the detector and the MP scale.
Measures	Turn the power OFF and ON once. If it comes back, contact your service provider.

C132n

n indicates the axis number (1 to 8).

Error message	Multi-rotation data error
Cause	An error was detected in the position detector's multi-rotation data.
Measures	<p>If this error occurs while using the robot controller with the RV-8CRL or RV-5AS, there may be a problem with the encoder. Please contact the manufacturer.</p> <p>If this error occurs while using the controller with any other robot, the origin position may be misaligned. Cycle the power of the controller, then set the origin using the ABS method. Refer to separate "Instruction Manual/Robot Arm Setup and Maintenance" for ABS method. (Even if this warning occurs, unless the controller is re-turned on, it can operate perfectly. However, when re-turning on the controller, the position gap may occur. Please be sure to set up the origin by ABS method after re-turning on the controller power supply. Current position data returns to the normal position before error occurrence.)</p> <p>When it comes back, contact to the dealer.</p>

C133n

n indicates the axis number (1 to 8).

Error message	Encoder battery voltage low
Cause	The battery voltage supplied to the position detector dropped.
Measures	<p>Replace the backup battery. For more information about the replacement procedure, refer to the separate volumes, "Instruction Manual/Robot Arm Setup to Maintenance".</p> <p>Even if this warning occurs, unless the controller is re-turned on, it can operate perfectly. However, if the battery consumption is intense, the Encoder ABS position data lost error (H112n) may occur when the controller is re-turned on. It is recommended to replace the battery at the earliest opportunity.</p>

C134n

n indicates the axis number (1 to 8).

Error message	Over-regeneration warning
Cause	The regenerative level of the additional axis has risen to 80% or more.
Measures	<p>Check the regenerative capacity and parameters for the additional axis.</p> <p>If it comes back, contact your service provider. Regeneration resistance may be disconnected.</p>

C135n

n indicates the axis number (1 to 8).

Error message	Overload warning
Cause	The overload level reached 95% or more.
Measures	Check the load weight and the robot for collisions, etc.

H136n *

n indicates the axis number (1 to 8).

Error message	Absolute position counter error
Cause	The counter of absolute position is illegal.
Measures	Confirm whether the connection of encoder cable and the battery voltage of arm is falling.

C137n

n indicates the axis number (1 to 8).

Error message	Illegal parameter (servo)
Cause	A parameter was set exceeding the setting range.
Measures	The parameter has not been changed. Reset the correct value. If it comes back, contact your service provider.

C138n

n indicates the axis number (1 to 8).

Error message	Removing control axis (servo)
Cause	An instruction to remove the axis was issued by the controller.
Measures	Cancel the instruction of removing axis.

H1390

Error message	Emergency stop (Servo amplifier)
Cause	The emergency stop command has been input from the RC
Measures	Release the emergency stop state

C1400

Error message	regeneration(AUX) frequency over
Cause	Regeneration at the limit has occurred frequently
Measures	Check the regeneration capacity

H1410 *

Error message	Instantaneous power interruption
Cause	The power was momentarily interrupted
Measures	Check power specification, and wiring of power and external emergency stop

C1420

Error message	Over-regeneration warning
Cause	The regeneration level reached 80% or more.
Measures	Lower the robot's movement speed. If it comes back, contact your service provider. Regeneration resistance may be disconnected.

C1430

Error message	Servo amplifier main circuit OFF
Cause	The servo turned ON while the main circuit power was OFF
Measures	Turn the main circuit power ON

H144n *

n indicates the axis number (1 to 8).

Error message	System error (servo 2)
Cause	Trouble occurred in the current processing processor.
Measures	Turn the power OFF and ON once. If it comes back, contact your service provider.

H1450 *

Error message	Instantaneous power interruption
Cause	The power was momentarily interrupted at the power supply
Measures	Check power specification, and wiring of power and external emergency stop

H1460 *

Error message	Power supply overcurrent
Cause	Overcurrent in the power module in the power supply.
Measures	Check the AC power line. If it comes back, contact your service provider.

H1470 *

Error message	Frequency error
Cause	AC frequency is out of range.
Measures	Check the AC power line frequency. If it comes back, contact your service provider.

H148n *

n indicates the axis number (1 to 8).

Error message	Power supply parameter error
Cause	Illegal at the power supply parameter
Measures	Turn the power OFF and ON once. If it comes back, contact your service provider.

H1490 *

Error message	Power supply overheat
Cause	Overheating of the power module or regenerative resistance
Measures	For the CR800 controller, replace or clean the air filter. For the CR860 controller, check the rotation of the fan on the back of the converter. If it comes back, contact your service provider.

H1491

Error message	Illegal converter thermal servo AMP.
Cause	Overheating of servo AMP converter.
Measures	Turn the power OFF, wait a while, and then turn ON again.

H1492 *

Error message	Power supply converter overheat
Cause	Overheating of the converter was detected
Measures	Turn the power OFF, wait a while, and then turn ON again

H1493 *

Error message	Rush resistance overheat
Cause	Overheating of the rush resistance was detected
Measures	Turn the power OFF, wait a while, and then turn ON again

H1494 *

Error message	Discharge resistance overheat
Cause	Overheating of the discharge resistance was detected
Measures	Turn the power OFF, wait a while, and then turn ON again

H1495 *

Error message	motor power line error
Cause	The motor power line conductivity is illegal
Measures	Check the connection of the power line. Check that the machine cable is connected properly without disconnection.

H150n *

n indicates the axis number (1 to 8).

Error message	Motor combination error
Cause	The servo motor which does not correspond to addition axis servo amplifier is connected.
Measures	Confirm the specifications of servo amplifier and the motor.

H151n *

n indicates the axis number (1 to 8).

Error message	SRV-AMP USB comm. error
Cause	A communication error was detected between the servo amp and PC
Measures	Check the communication cable connection and conductivity

H152n *

n indicates the axis number (1 to 8).

Error message	Servo motor output watt over
Cause	The output wattage of the servo motor exceeded ratings
Measures	Lower the rotation speed of the servo motor

H154n *

n indicates the axis number (1 to 8).

Error message	Communication error between units
Cause	The transmission data between servo amplifier units is illegal
Measures	Check the communication cable connection and conductivity

H1550 *

Error message	Emergency stop is a breakdown
Cause	The external emergency stop input is illegal
Measures	Turn the power OFF and ON once. When it comes back, contact to the dealer.

H156n

n indicates the axis number (1 to 8).

Error message	Excessive error 4
Cause	The axis moved while executing servo ON processing.
Measures	If it comes back, contact your service provider.

H157n

n indicates the axis number (1 to 8).

Error message	Non-registered servo error. (This error may be caused by the error on the amplifier for additional axis.)
Cause	A non-registered servo alarm occurred.
Measures	Confirms the code by LED of servo additional axis amplifier, and refer to the instruction manual of servo amplifier. If the alarm cannot be reset, turn the power OFF and ON. If it comes back, contact your service provider.

C158n

n indicates the axis number (1 to 8).

Error message	Non-registered servo warning. (This caution may be caused by the warning on the amplifier for additional axis.)
Cause	A non-registered servo warning occurred.
Measures	Confirms the code by LED of servo additional axis amplifier, and refer to the instruction manual of servo amplifier. If the alarm cannot be reset, turn the power OFF and ON. If it comes back, contact your service provider.

H1600 *

Error message	Mechanism un-setting.
Cause	The mechanism is not set up.
Measures	Set up one or more of mechanism. If this alarm occur after the restoring the data of controller check the restored data. If it comes back, contact your service provider.

H1601 *

Error message	Unmatched robot model
Cause	Robot arm that connection is not correct
Measures	Please confirm the connected robot arm. If the robot has been replaced with RH-3CRH, RH-6CRH6020, or RH-6CRH7020, refer to "Connecting with the controller" in the separate manual "INSTRUCTION MANUAL/Robot Arm Setup and Maintenance".

H1610 *

Error message	System error (illegal MEMECH)
Cause	The mechanism module name is illegal or not registered.
Measures	Correctly set. If it comes back, contact your service provider. If it comes back, contact your service provider.

C1620

Error message	Illegal robot No.
Cause	When specifying the mechanism number by the external communications protocol, the mechanism number not existing was specified.
Measures	Specify the existing mechanism number.

C1630

Error message	Cannot servo ON (during error)
Cause	The servo cannot be turned ON during a servo error.
Measures	Reset the servo error before turning the servo ON.

C1640

Error message	Cannot servo ON (DEADMAN OFF)
Cause	The servo cannot be turned ON while the 3-position enable switch is OFF.
Measures	Turn the 3-position enable switch ON before turning the servo ON.

C1650

Error message	Cannot servo ON (brake OFF)
Cause	The servo cannot be turned ON when there is an axis with the brakes released.
Measures	Lock the brakes for all axes before turning the servo ON.

C1660

Error message	Cannot servo ON (SRVON process)
Cause	The servo cannot be turned ON during the servo ON process.
Measures	Operate it after servo ON process is finished.

C1670

Error message	Cannot servo ON (SRVOFF process)
Cause	The servo OFF process is being carried out.
Measures	Operate it after servo OFF process is finished.

H1680

Error message	Cannot servo ON (timeout)
Cause	The servo did not turn ON within the specified time.
Measures	Turn the power supply OFF and ON once. If it comes back, confirm that power supply voltage is in the specification value, and connection of the external emergency stop is correct. And, when using the addition axis, confirm that the power supply voltage to the servo amplifier of addition axes is in the specification value and connection of AXMC is correct. If it comes back, contact your service provider.

H1681

Error message	Unexpected servo OFF
Cause	The servo turned OFF unexpectedly.
Measures	Confirm that primary power supply voltage is in the specification value and wiring of the external emergency stop line is correct. When using the additional axis, confirms whether the alarm occur on the additional axis. If it comes back, contact your service provider.

H1682

Error message	Servo ON Timeout (Safety relay).
Cause	A main circuit voltage did not rise because of a failure of the Safety relay on a converter card.
Measures	Turn the power OFF and ON once. Confirm that wiring of the external emergency stop line is correct. Confirm whether there is any problem in wiring of the external emergency stop switch. Refer to the "Examples of safety measures" given in separate "Standard Specifications Manual" for external emergency stop switch wiring. Please confirm whether in use of addition axis, there is any failure in the servo amplifier for addition axes. If it comes back, contact to your service provider.

H1683

Error message	Servo ON Timeout. (Contactor)
Cause	A main circuit voltage did not rise because of contactor welded.
Measures	Turns off the power supply once and turns on again. Confirm that primary power supply voltage is in the specification value and wiring of the external emergency stop line is correct. When it comes back, contact to the dealer.

C1690

Error message	Cannot brake operation (DEADMAN)
Cause	The servo cannot be turned ON while the 3-position enable switch is OFF.
Measures	Turn the 3-position enable switch ON before turning the servo ON.

C1700

Error message	Cannot brake operation (EMG)
Cause	The brakes cannot be released while the emergency stop is input.
Measures	Release the emergency stop state before operating.

C1710

Error message	Cannot brake operation (SRVON)
Cause	The brakes cannot be operated during servo ON.
Measures	Turn the servo OFF before operating.

C1720

Error message	Cannot brake operation (BRK OFF)
Cause	The brakes cannot be released during the brake release process.
Measures	Operate it after brake is released.

C1730

Error message	Cannot brake operation (BRK ON)
Cause	The brakes cannot be locked during the brake lock process.
Measures	Operate it after brake is locked.

C1740

Error message	Servo parameter change failure
Cause	Other parameters cannot be changed during the parameter change process.
Measures	Carry out the parameter change process again.

C1750

Error message	Servo parameter change failure
Cause	Changes of the servo parameter failed.
Measures	Carry out the parameter change process again.

C1760

Error message	Illegal origin data
Cause	The origin setting data is not correct.
Measures	Set the correct origin setting data. Confirm mistakes such as "1(one)" and "l(alphabet)", or "O(alphabet)" and "0(zero)", etc.

C1761

Error message	Illegal origin data in robot arm
Cause	The origin data is illegal in robot arm
Measures	Setting the origin

C1770

Error message	Origin setting incomplete
Cause	The origin is not set.
Measures	Re-execute after setting the origin.

C1780

Error message	Cannot set origin (illegal axis)
Cause	The origin was not set simultaneously for the interference axis.
Measures	Set the origin simultaneously for the interference axis. For example, the J3 axis and the J4 axis of the RH type robot. Please refer to the section of origin setting of separate manual: "Robot Arm Setup and Maintenance" for details.

C1781

Error message	Cannot set origin (SRVON)
Cause	The origin was set during servo ON.
Measures	Turn the servo OFF before setting the origin.

H179n *

n indicates the axis number (1 to 8).

Error message	Illegal parameter (MEJAR)
Cause	The parameter (MEAJAR) setting is illegal. Or the setting value of the parameter related to addition axis control have exceeded the controllable operating range.
Measures	The useful range of the operating range setting parameter (MEAJAR) is -131072.00 to +131072.00. Correct, if the set value is over the range. Or confirm the setting value of the parameter related to addition axis control.

H1800 *

Error message	Illegal parameter (MEMAR)
Cause	The ABS operation range setting parameter MEMAR setting is incorrect. (Minus side value is larger than "0", or plus side value is smaller than "0")
Measures	Set the value of the parameter "MEMAR" within the limits.

H1810 *

Error message	Illegal parameter (USERORG)
Cause	The user origin setting parameter USERORG setting is incorrect.
Measures	Correct the parameter USERORG.

L182n

n indicates the axis number (1 to 8).

Error message	Pos. data disagree.Check origin
Cause	Position data changed during power off.
Measures	Check the origin, re-install if shifting. Re-set up the origin only for the axis which deviated by the ABS method. Refer to separate "Instruction Manual/Robot Arm Setup and Maintenance" for ABS method.

L1830

Error message	JRC. Exceeds the Pos. limit
Cause	The JRC instruction exceeding the operation range was executed.
Measures	Check the current position and the operating range.

L184n

n indicates the axis number (1 to 8).

Error message	JRC Qtt. Setting Too Large
Cause	The movement amount setting of the JRC is excessive.
Measures	Correct the JRCQTT parameter.

C1850

Error message	Instantaneous power failure
Cause	There was the momentary power failure.
Measures	Check the power supply connection and power supply state.

L1860

Error message	Illegal parameter (TLC)
Cause	The setting of the TLC parameter that sets the approach direction was incorrect.
Measures	Correct the TLC parameter. (=X/Y/Z)

L1864

Error message	FTP parameter setting error (***) Note) "****" is substituted with the "parameter name".
Cause	The FTP communication parameter setting lies outside the range.
Measures	Check the setting and correct.

C1870

Error message	Cooling fan stopped
Cause	Cooling fan in the controller might be out of order.
Measures	Contact the manufacturer if this error reoccurs.

H188n *

n indicates the axis number (1 to 8).

Error message	Jn addition axis amplifier cooling fan stop.
Cause	The cooling fan of the addition axis amplifier of Jn axis may be out of order.
Measures	Please replace the cooling fan of addition axis amplifier. * Please also refer to the instruction manual of the servo amplifier of usage.

C189n *

n indicates the axis number (1 to 8).

Error message	Jn addition axis amplifier cooling fan rev fall.
Cause	The cooling fan of the addition axis amplifier of Jn axis may be out of order.
Measures	Please replace the cooling fan of addition axis amplifier. * Please also refer to the instruction manual of the servo amplifier of usage.

C1940

Error message	Agitating fan stopped
Cause	The fan for agitating inside the robot controller has stopped.
Measures	If it comes back, contact your service provider.

H195n

Error message	Additional axis AMP error ***
Cause	Alarm of the addition axis servo amplifier was detected.
Measures	Refer to the instruction manuals of addition axis servo amplifier for the details of alarm. "****" of the error message corresponds to the alarm number of addition axis servo amplifier (MR-J4-□B). (The error reset methods differ for each alarm number of addition axis servo amplifier.)

C196n

Error message	Additional axis AMP Warning ***
Cause	Warning of the addition axis servo amplifier was detected.
Measures	Refer to the instruction manuals of addition axis servo amplifier for the details of warning. "****" of the error message corresponds to the warning number of addition axis servo amplifier (MR-J4-□B).

C1970

Error message	Agitating fan stopped (robot)
Cause	The agitating fan in the robot stopped
Measures	Confirm the rotation of the agitating fan * According to the type of the stopped fan, "inside the robot arm" and "inside the robot base" are shown separately.

C198n

n indicates the axis number (1 to 8).

Error message	Encoder LED diagnostic warning 1
Error message	Encoder LED diagnostic warning 2
Error message	Encoder LED diagnostic warning 3
Cause	Encoder LED may have deteriorated.
Measures	If the same warning recurs, contact the manufacturer. Once a warning occurs, it will not recur until the power is cycled or 720 hours (30 days) have elapsed after the occurrence.

L2000

Error message	The servo is OFF
Cause	Because servo is turned off, the robot can't move.
Measures	Turn the servo ON and then restart.

L2010

Error message	Pulse output was not possible
Cause	There is an error in the pulse output designation.
Measures	Correct the program.

L2020

Error message	Reading external position data
Cause	A command that cannot be executed while reading the external commands was executed.
Measures	Correct the program.

L2030

Error message	JOG operation cannot be accepted
Cause	The JOG operation request was issued when the JOG operation request could not be accepted.
Measures	Changes the JOG mode after the JOG operation.

H2031 *

Error message	"Illegal parameter(JOGTSJ,JOGJSP)"
Cause	The parameter JOGTSJ, JOGJSP settings are not correct. [JOGPSP], [JOGJSP] = (element 1, element 2) = (constant high, constant low)
Measures	Set the set dimension to 5 or less.

H2040

Error message	Teaching position is not correct.
Cause	Change the teaching position.
Measures	The work coordinates were not able to be calculated from the teaching position. The cause is the following content. 1. Two points are the same position. 2. Three points line up on the straight line. Confirm and correct the teaching position

L2041

Error message	Can't calculate frame transformation coordinates.
Cause	The position data that defines the coordinate system used with frame transformation are on the same point or arranged on a straight line so the coordinate system could not be calculated.
Measures	Change the position data to appropriate positions so the coordinate system can be calculated.

L2042

Error message	Frame transformation coordinates are not set
Cause	Frame transformation was attempted even though the coordinate system for frame transformation was not set.
Measures	Set the coordinate system or cancel frame transformation. Check that the MvSpl command argument <Frame transformation> designation is correct.

L2050

Error message	CPU processing time exceeds
Cause	Because the function made effective is many at the same time
Measures	The CPU processing time exceeded the limiting value. Please take measures of either of following. 1. If interference avoidance function is activated, changes some cylinder models into the sphere model, or reduces the number of the models for checking . 2. Invalidate some functions of following. Interference avoidance, User definition area, Free plane limit, Collision detection, Compliance, Tracking, Force sense 3. Reduces the Interrupt definition function currently used by the program.

H2090

Error message	In interference zone n. (n indicates the zone number (1 to 32).)
Cause	Movement outside the user-defined area "n" range was attempted.
Measures	Adjust the position.

H211n

n indicates the plane number (1 to 8).

Error message	Free plane n overrun
Cause	Movement outside the plane defined with free plane "n" was attempted.
Measures	Adjust the position.

H212n

n indicates the plane number (1 to 8).

Error message	Free plane n overrun
Cause	Movement outside the plane defined with free plane "n" was attempted.
Measures	Adjust the position.

H2129

Error message	Free plane limit data illegal
Cause	The free plane data setting value is illegal.
Measures	The two points are the same in the three points of parameter: SFCnp. The value of parameter: SFCnAT is except "0, 1, -1".

H213n

n indicates the axis number (1 to 8).

Error message	Jn Speed is excessive (command)
Cause	The speed instruction value of n axis exceeded the permissible value. When moving by the linear interpolation (or circle interpolation), needs to rotate the motor at the big speed depending on the pose. If the specified speed is large, the speed instruction value to the motor may exceed the permissible value.
Measures	Please lower moving speed by the Ovrd command and Spd command or change the movement position.

H214n

n indicates the axis number (1 to 8).

Error message	Jn +ABS limit over
Cause	The axis "n" + ABS limit was exceeded.
Measures	Referring to "Operation to Temporarily Reset an Error that Cannot Be Canceled" in the separate volume, "Instruction Manual/Detailed Explanation of Functions and Operations", reset the error and move the axis "n" within the operation range using JOG operation.

H215n

n indicates the axis number (1 to 8).

Error message	Jn -ABS limit over
Cause	The axis "n" - ABS limit was exceeded.
Measures	Referring to "Operation to Temporarily Reset an Error that Cannot Be Canceled" in the separate volume, "Instruction Manual/Detailed Explanation of Functions and Operations", reset the error and move the axis "n" within the operation range using JOG operation.

H216n

n indicates the axis number (1 to 8).

Error message	Jn (+) angle exceeds the limit
Cause	The axis "n" + Joint limit was exceeded. When the teach mode, numerical "0" is set to n.
Measures	Adjust the position.

H217n

n indicates the axis number (1 to 8).

Error message	Jn (-) angle exceeds the limit
Cause	The axis "n" - Joint limit was exceeded. When the teach mode, numerical "0" is set to n.
Measures	Adjust the position.

H2181

Error message	X(+) data exceeds the limit
Cause	The X axis + XYZ limit was exceeded.
Measures	Adjust the position.

H2182

Error message	Y(+) data exceeds the limit
Cause	The Yaxis + XYZ limit was exceeded.
Measures	Adjust the position.

H2183

Error message	Z(+) data exceeds the limit
Cause	The Z axis + XYZ limit was exceeded.
Measures	Adjust the position.

H2191

Error message	X(-) data exceeds the limit
Cause	X(-) data exceeds the limit
Measures	Adjust the position.

H2192

Error message	Y(-) data exceeds the limit
Cause	Y(-) data exceeds the limit
Measures	Adjust the position.

H2193

Error message	Z(-) data exceeds the limit
Cause	Z(-) data exceeds the limit
Measures	Adjust the position.

H220m

m: monitoring plane, area, or axis number (1 to 8)

One of the errors below is detected.

Please take measures corresponding to an error message.

Error message	SLP (Position error:CMD Plane)
Cause	SLP function detects position command exceeded the limit value.
Measures	Please confirm the robot movement or related parameter setting. For further information refer to the separate "Robot Safety Option Instruction Manual" or "Safety Communication Function Instruction Manual".
Error message	SLP (Position error:FB Plane)
Cause	SLP function detects position feedback exceeded the limit value.
Measures	Please confirm the robot movement or related parameter setting. For further information refer to the separate "Robot Safety Option Instruction Manual" or "Safety Communication Function Instruction Manual".
Error message	SLP (Position error:CMD Area)
Cause	SLP function detects position command exceeded the limit value.
Measures	Please confirm the robot movement or related parameter setting. For further information refer to the separate "Robot Safety Option Instruction Manual" or "Safety Communication Function Instruction Manual".
Error message	SLP (Position error:FB Area)
Cause	SLP function detects position feedback exceeded the limit value.
Measures	Please confirm the robot movement or related parameter setting. For further information refer to the separate "Robot Safety Option Instruction Manual" or "Safety Communication Function Instruction Manual".
Error message	SLP (Joint error:CMD)
Cause	SLP function detects joint command exceeded the limit value.
Measures	Please confirm the robot movement or related parameter setting.
Error message	SLP (Joint error:FB)
Cause	SLP function detects joint feedback exceeded the limit value.
Measures	Please confirm the robot movement or related parameter setting.

H221n

n indicates the axis number (1 to 8).

Error message	STR (ROBOT torque error)
Cause	Safety Torque Range monitoring detected over the torque limit
Measures	<p>The STR function has detected feedback torque that exceeds the fixed, permissible torque range. Remove the cause of the collision. Then check that it is safe to restart the operation before doing so. If the error still occurs, review the operation of the robot and settings such as hand and workpiece settings.</p> <p>The STR function may not detect changes in torque accurately at low temperatures, causing the error "H221n" to occur. To clear this error, warm up the robot using the warm-up operation while the robot is in high-speed operation mode. Warming up an affected joint by releasing its brake and moving it around will also clear this error.</p> <p>The following errors may be triggered if the torque level is close to the limits of the permissible torque range. If any of these errors occur, cycle the controller power and check the robot operation.</p> <p>H0242: Fault in Safety Data (S_CMD) H0242: Fault in Safety Data (S_ALM)</p>

H221n *

n indicates the axis number (1 to 8).

Error message	STR (ROBOT torque error 2)
Cause	Excessive torque was detected during stop operation.
Measures	<p>Torque exceeding the permissible torque was detected while the robot decelerated. Remove the cause of the collision. Then check that it is safe to restart the operation before doing so. If the error still occurs, review the operation of the robot and settings such as the permissible torque and hand load settings.</p> <p>The following errors may also occur in conjunction with this error. Follow the solutions to the errors noted below.</p> <p>H081n: Voltage error at accel/decel (n: axis number) H0117: 12V power supply error (brake) H096n: Excessive error 1</p> <p>This error cannot be reset even in recovery mode.</p>

H222m *

m indicates the DSI number (1 to 8).

Error message	DSI inconsistency
Cause	The duplex DSI status is not consistent.
Measures	<p>The duplex DSI signal ON/OFF status is not consistent. Check the following for the DSI.</p> <ul style="list-style-type: none">• DSI wiring• Duplex signal ON/OFF status• ON/OFF status switching timing (The error occurs when the ON/OFF status remains inconsistent between the duplex signals for about 0.1 seconds or more.) <p>For further information refer to the separate "Robot Safety Option Instruction Manual".</p>

H2230 *

Error message	Mismatch of Dual Safety Output
Cause	State of the redundant wiring do not match (Dual Safety Output)
Measures	<p>Turn the power OFF and ON once.</p> <p>If the same error recurs, contact the manufacturer.</p> <p>Refer to the separate "Robot Safety Option Instruction Manual".</p>

H2231 *

Error message	Mismatch of Dual Safety Output Feedback
Cause	State of Dual Safety Output and the feedback do not match
Measures	<p>Turn the power OFF and ON once.</p> <p>If the same error recurs, contact the manufacturer.</p> <p>Refer to the separate "Robot Safety Option Instruction Manual".</p>

H2240 *

Error message	Origin data change
Cause	The origin data is changed during execution of the position monitoring function.
Measures	The error occurs when the origin data is changed by setting the origin during execution of the position monitoring function. After turning OFF the power, turn ON the power again to reset the error. For further information refer to the separate "Robot Safety Option Instruction Manual" or "Safety Communication Function Instruction Manual".

C2250

Error message	Safety function execution disabled (No origin setting)
Cause	The safety function cannot be executed because the origin is not set.
Measures	The safety monitoring function is not activated when the origin is not set. Set the origin. For further information refer to the separate "Robot Safety Option Instruction Manual" or "Safety Communication Function Instruction Manual".

H2260 *

Error message	Safety Unit communication error
Cause	Extended Safety Unit communication failed
Measures	To use the safety monitoring function, it is necessary to connect the extended safety unit of the robot safety option to the controller. Connect the extended safety unit. If the error occurs even when the Safety extension unit is connected, check that the Safety extension unit is powered on. Or check whether pseudo-input mode has been enabled. For further information refer to the separate "Robot Safety Option Instruction Manual". If none of these solutions rectify the problem, the Safety extension unit may be faulty. Contact Mitsubishi Electric.

H2261 *

Error message	Extended safety unit's No. error
Cause	The extended safety unit's station No. is illegal.
Measures	Set the extended safety unit's station No. to 2. For further information refer to the separate "Robot Safety Option Instruction Manual".

H2270

Error message	Cannot servo ON (SS1/STO active)
Cause	The servo cannot be turned ON while SS1/STO is active.
Measures	Disable SS1 before turning the servo ON. For further information refer to the separate "Robot Safety Option Instruction Manual" or "Safety Communication Function Instruction Manual".

H2280

Error message	SS1 deceleration time exceeded
Cause	The robot didn't stop within deceleration time from SS1 enabled.
Measures	Please confirm the robot movement and the load, stop speed parameter (SFSPZERO) setting. For further information refer to the separate "Robot Safety Option Instruction Manual" or "Safety Communication Function Instruction Manual".

H2281

Error message	SS2 deceleration time exceeded
Cause	The robot didn't stop within deceleration time from SS2 enabled.
Measures	Please confirm the robot movement and the load, stop speed parameter (SFSPZERO) setting. For further information refer to the separate "Robot Safety Option Instruction Manual" or "Safety Communication Function Instruction Manual".

H2282

One of the errors below is detected.

Please take measures corresponding to an error message.

Error message	SOS (Position error)
Cause	Detect the change of position FB on SOS
Measures	An error that the position FB has changed on SOS due to external force was detected. Eliminate the cause of the external force or perform the risk assessment. Then modify the value of the parameter "SOSTLRNC" to extend the acceptable range of SOS. For further information refer to the separate "Robot Safety Option Instruction Manual" or "Safety Communication Function Instruction Manual".
Error message	SOS (Speed error)
Cause	Detect FB speed over on SOS.
Measures	Please check external force or related parameter settings. For further information refer to the separate "Robot Safety Option Instruction Manual" or "Safety Communication Function Instruction Manual".
Error message	SOS (Position command error)
Cause	Detect the change of position CMD on SOS.
Measures	Please confirm the robot movement or related parameter setting. For further information refer to the separate "Robot Safety Option Instruction Manual" or "Safety Communication Function Instruction Manual".
Error message	SOS (Speed command error)
Cause	Detect CMD speed over on SOS.
Measures	Please confirm the robot movement or related parameter setting. For further information refer to the separate "Robot Safety Option Instruction Manual" or "Safety Communication Function Instruction Manual".

H230n

n indicates the axis number (1 to 8).

Error message	SLS (Joint Speed Error)
Cause	Speed monitor detected the speed over.
Measures	A speed feedback exceeding the limit speed is detected by the speed monitoring function. Check the robot movement or the monitoring speed setting. Or else, check the delay time (parameterSLSDLY) setting. For further information refer to the separate "Robot Safety Option Instruction Manual" or "Safety Communication Function Instruction Manual".

H231n

n indicates the direction in which an error is detected,

1: Composite speed, 2: X+, 3: X-, 4: Y+, 5: Y-, 6: Z+, 7: Z-

Error message	SLS (XYZ Speed Error)				
Cause	Speed monitor detected the speed over.				
Measures	<p>A speed feedback exceeding the limit speed is detected by the speed monitoring function.</p> <p>Check the following.</p> <ol style="list-style-type: none">1) Robot movement and monitoring speed setting2) Deceleration monitoring period (if it is too short) (A deceleration monitoring period is the waiting time from when the SLS command is enabled until when monitoring starts.)3) Execution line (if it is the Tool command or M_Tool variable) of the program in the error state <p>For details on 1) and 2), refer to the "Robot Safety Option Instruction Manual" or "Safety Communication Function Instruction Manual".</p> <p>Since 3) occurs when the Tool command or M_Tool variable is executed before the robot's movement is completed (the feedback speed becomes zero), take one of the following countermeasures. For further information, refer to the "Instruction Manual/Detailed explanations of functions and operations".</p> <ul style="list-style-type: none">• Create position data including tool conversion data using relative operations without using the Tool command or M_Tool variable. <p>Program examples</p> <table><tr><th>Before</th><th>After</th></tr><tr><td>Mov P1 Tool Ptool1 Mov P2</td><td>Mov P1 Mov P2 * Inv(Ptool1) * P_tool</td></tr></table> <ul style="list-style-type: none">• Add the Dly command before the Tool command or M_Tool variable. Alternatively, specify a positioning completion condition for the immediately preceding operation command using a Fine command so that the Tool command or M_Tool variable will be executed after the robot's movement is completed (the feedback speed becomes zero).• Decrease the movement speed so that the Tool command or M_Tool variable will be executed after the robot's movement is completed (the feedback speed becomes zero).	Before	After	Mov P1 Tool Ptool1 Mov P2	Mov P1 Mov P2 * Inv(Ptool1) * P_tool
Before	After				
Mov P1 Tool Ptool1 Mov P2	Mov P1 Mov P2 * Inv(Ptool1) * P_tool				

H2320

Error message	SF robot control error
Cause	The robot motion command and the feedback are inconsistent.
Measures	<p>The robot position command and the feedback position are inconsistent. Check the details of the robot movement, the terminal load setting, or interference with the peripheral equipment.</p> <p>For further information refer to the separate "Robot Safety Option Instruction Manual" or "Safety Communication Function Instruction Manual".</p>

H2370 *

One of the errors below is detected.

Please take measures corresponding to an error message.

Error message	SF (Process error)
Cause	The Safety Function is not normally executed.
Measures	<p>Turn the power OFF and ON once.</p> <p>If the same error recurs, contact the manufacturer.</p> <p>Refer to the separate "Robot Safety Option Instruction Manual" or "Safety Communication Function Instruction Manual".</p>
Error message	SF (Process Counter error)
Cause	The Safety Function of servo CPU is not normally executed.
Measures	<p>Turn the power OFF and ON once.</p> <p>If the same error recurs, contact the manufacturer.</p> <p>Refer to the separate "Robot Safety Option Instruction Manual" or "Safety Communication Function Instruction Manual".</p>

L240n

n: Robot CPU No.

Error message	The "***" the interference avoidance function detected interference with. Note) "(*)": shows the detected model.Examples of when the interference avoidance function detects interference are as follows: "A1" indicates interference with arm No.1 "H2" indicates interference with hand No.2 "W3" indicates interference with workpiece No.3
Cause	The interference avoidance function detected interference during automatic operation.
Measures	Release the collision avoidance state

L241n

n: Robot CPU No.

Error message	The "***" the interference avoidance function detected interference with. Note) "(*)": shows the detected model.Examples of when the interference avoidance function detects interference are as follows: "A1" indicates interference with arm No.1 "H2" indicates interference with hand No.2 "W3" indicates interference with workpiece No.3
Cause	The interference avoidance function detected interference during Jog operation.
Measures	Release the collision avoidance state

L2420

Error message	Collision avoidance comm. error
Cause	Collision avoidance comm. error
Measures	Check the robot controller

L2421

Error message	A lot of colli. avoidance models
Cause	A lot of collision avoidance models
Measures	Reduce the collision avoidance models

L2430

Error message	Collision avoidance re-detect
Cause	Collision avoidance was already detected
Measures	Move the robot arm from the interference area and resume the operation.

L2500

Error message	Tracking encoder data error
Cause	An error was detected in the data of tracking encoder.
Measures	1) The conveyor rotates at the fixed velocity. 2) The connection of the encoder. 3) The earth of the earth wire.

L2510

Error message	Tracking parameter reverses
Cause	Tracking parameter[EXCRGM*] Setting value reverses
Measures	Check the parameter[EXCRGM*] value.

L2520

Error message	Tracking parameter is range over
Cause	Tracking parameter[TRBUF] Setting value is range over. Setting range: element 1=1-8, element 2=1-64
Measures	Check the parameter[TRUBF] value.

L2530

Error message	There is no area where data is written.
Cause	There is no area where data is written.
Measures	Please read the data by using TrRd

L2540

Error message	There is no read data.
Cause	There is no read data.
Measures	Please use TrRd after executing TrWrt.

L2560

Error message	Illegal parameter of Tracking.
Cause	The value of the parameter: EXTENC is outside the range. setting range: 1-8.
Measures	Please check the value of parameter.

L2580

Error message	No workpiece in the tracking area.
Cause	There is no workpiece in the tracking buffer or "TrkMv On" command is executed. Before the workpiece enters to the tracking area.
Measures	Execute "TrkMv On" command when the workpiece is in the tracking area.

L2601

Error message	Start pos. exceeds the limit
Cause	The start position is outside the operation range.
Measures	Adjust the position.

L2602

Error message	DSTN pos. exceeds the limit
Cause	The target position is outside the operation range.
Measures	Adjust the position.

L2603

Error message	Med pos. data exceeds the limit
Cause	The intermediate position is outside the operation range.
Measures	Adjust the position.

L2610

One of the errors below is detected.

Please take measures corresponding to an error message.

Error message	Spline interpolation error (Spline file)
Cause	An error related to the spline file occurred.
Measures	Refer to the error details No. and check the details of the occurring error. Then take actions for those error details.
Error message	Can't open spline file
Cause	The spline file corresponding to the spline No. designated with the MvSpl command could not be opened.
Measures	Check that the spline No. designation is correct, and that the target spline file is saved in the controller.
Error message	Spline file is broken
Cause	The spline file contents did not match the checksum.
Measures	Open the target spline file and check the contents. Then, save the file again to recreate the spline file. Write the new file to the controller again.
Error message	Spline file is not supported.
Cause	The designated spline file cannot be used with the current controller.
Measures	Check the spline file and controller versions. It may be necessary to upgrade the software version.
Error message	Can't change spline file.
Cause	The target spline file is currently being used for spline interpolation (file is open).
Measures	A spline file currently being used for spline interpolation (file is open) cannot be exported to the controller, deleted or renamed. Carry these out after spline interpolation ends.
Error message	Can't get data.
Cause	The spline file is closed so the data cannot be retrieved.
Measures	Reset the program, and then execute the MvSpl command again.
Error message	The setting of Ex-T is illegal
Cause	The setting of Ex-T is illegal
Measures	Please confirm the number and the content of the file
Error message	Cannot make the spline file
Cause	The specified spline file is opened already
Measures	Please confirm the specified number

L2611

One of the errors below is detected.

Please take measures corresponding to an error message.

The four digits displayed after the error message indicate the path point number at error occurrence.

Error message	Spline interpolation error (path point)
Cause	An error related to the path point registered in the spline file has occurred.
Measures	Refer to the error details No. and check the details of the occurring error. Then take actions for those error details.
Error message	Path points are too close (nnnn)
Cause	The distance between path points is too short, or the speed command in respect to the path point distance is too high.
Measures	"nnnn" in the error message indicates the path point No. causing the error. Review this path point's position, or review the spline interpolation command speed. * The high speed spline interpolation command has been added to the software version A3a. With this function enabled, a command speed higher than what was previously possible can be specified for the distance between the respective path points. Refer to the separate manual "Instruction Manual/Detailed Explanation of Functions and Operations" in details.
Error message	The posture variation is too large (nnnn)
Cause	The variation in posture between path points is too large. (The posture variation angle exceeds 150 degrees.)
Measures	"nnnn" in the error message indicates the path point No. causing the error. Review the posture so that the posture variation amount for this path point is smaller, or add a path point to reduce the posture variation amount in the single block.
Error message	Path point's configuration flag is incorrect (nnnn)
Cause	A different path point is registered for the configuration flag value.
Measures	"nnnn" in the error message indicates the path point No. causing the error. Review this path point's position, and change it so it is the same configuration flag as the other path points.
Error message	Path point is not registered
Cause	The Specified path point is not registered
Measures	Please confirm the number and the content of the file
Error message	Cannot open the path point file
Cause	The specified path point file does not exist
Measures	Please confirm the file name and existence of the file
Error message	The format of file is different
Cause	The format of file is different
Measures	Please confirm the format of the file
Error message	The number of point is illegal
Cause	The number of path point is illegal
Measures	Please confirm the file and the content of the file

L2612

One of the errors below is detected.

Please take measures corresponding to an error message.

Error message	Spline interpolation error (Execution error)
Cause	An error related to the spline interpolation execution conditions occurred.
Measures	Refer to the error details No. and check the details of the occurring error. Then take actions for those error details.
Error message	This robot does not support spline interpolation.
Cause	Spline interpolation was attempted with a robot that does not support spline interpolation.
Measures	Use a different movement command than spline interpolation.
Error message	Can't execute with these start conditions.
Cause	Spline interpolation was attempted with a robot program in a slot having the start conditions ALWAYS•ERROR.
Measures	Spline interpolation cannot be executed with a slot having the start conditions ALWAYS•ERROR. Delete spline interpolation or change the start conditions to START.
Error message	Another spline interpolation is being executed
Cause	Multiple spline interpolations cannot be executed simultaneously.
Measures	Check whether spline interpolation was attempted with a different robot during spline interpolation, or whether spline interpolation was directly attempted while spline interpolation was halted.
Error message	Can't execute step return
Cause	Step return was attempted in respect to spline interpolation.
Measures	Spline interpolation does not support the step return operation. Do not attempt step return.

One of the errors below is detected.

Please take measures corresponding to an error message.

Error message	Spline interpolation error (interpolation process)
Cause	An error occurred during the spline interpolation process.
Measures	Refer to the error details No. and check the details of the occurring error. Then take actions for those error details.
Error message	Not enough path points
Cause	There are less than four path points registered in the spline file.
Measures	At least four path points are required to execute spline interpolation. Use a spline file in which four or more path points are registered.
Error message	Not enough arc designated points (nnnn)
Cause	Three consecutive path points are not designated for the spline interpolation arc.
Measures	The number of points in the arc containing the path point No. "nnnn" displayed in the error message is insufficient. To generate an arc, an arc for three consecutive path points must be designated. This error occurs if there are only two consecutive points. Add another path point in the arc designation to move with an arc path.
Error message	Block data calculation error (sssssss)
Cause	An error occurred in the process to calculate the data related to the spline interpolation block.
Measures	<p>The details of the error differ according to "sssssss" in the error message.</p> <ul style="list-style-type: none"> • Reg.Pt.: The information on the number of path points saved in the spline file does not match the number of path points actually registered. Open the spline file in the Spline File Edit screen once, save it again and export it to the controller. • Cir.Arc: The arc could not be generated. Check that the path points for the arc designation are not arranged on a straight line. • Frm.Cnv.: The frame transformation calculation failed. Review the path point positions. • Blk.Stp.: Generation of the data for the block stopped, and spline interpolation could not be executed. Reset the program. • PtoJ.: The joint angle cannot be calculated at the position. Review the path point positions.
Error message	Block data does not exist
Cause	The load in the process for the controller during spline interpolation was large, and the data for the spline interpolation block could not be generated in time.
Measures	<p>Check whether the load in the spline interpolation execution process can be reduced in the following ways.</p> <ul style="list-style-type: none"> • Stop simultaneous execution of functions related to movement such as the collision detection function or visual control function. • Review the multi-tasks and reduce the number of slots executed simultaneously. • Reduce the dedicated output signal assignments. • Reduce the spline interpolation command speed.
Error message	Spline interpolation command calculation error (nnnn)
Cause	An error occurred in the process for calculating the spline interpolation position commands.
Measures	<p>Review the position of path point No. "nnnn" indicated in the error message or the MvSpl command argument's setting value.</p> <p>Check that the cancel angle is set correctly. (Does the spline curve bend suddenly?)</p>

L2614

One of the errors below is detected.

Please take measures corresponding to an error message.

Error message	Spline interpolation error (other functions)
Cause	A function that cannot be used with the spline interpolation was executed.
Measures	Refer to the error details No. and check the details of the occurring error. Then take actions for those error details.
Error message	Tracking function is enabled
Cause	The tracking function was enabled when attempting spline interpolation.
Measures	Spline interpolation and tracking function cannot be executed simultaneously. Disable the tracking function before executing spline interpolation.
Error message	Can't change tool/base setting
Cause	The tool/base setting was changed during spline interpolation execution.
Measures	The tool/base setting cannot be changed during spline interpolation (including when halted). Change the settings after spline interpolation ends.
Error message	Can't execute Jrc command
Cause	The Jrc command was executed during spline interpolation.
Measures	The Jrc command cannot be executed during spline interpolation (including when halted). Execute the command after spline interpolation ends.

L2615

One of the errors below is detected.

Please take measures corresponding to an error message.

Error message	Spline interpolation error (exceeds setting range)
Cause	A setting value related to spline interpolation exceeds the setting range.
Measures	Refer to the error details No. and check the details of the occurring error. Then take actions for those error details.
Error message	M_SplVar setting value exceeds setting range
Cause	A value exceeding the range was substituted into M_SplVar.
Measures	Substitute a value within the setting range (0 to 32767).
Error message	M_SplVar setting range exceeds setting range (nnnn)
Cause	A value exceeding the setting range is set in the spline file.
Measures	Change the setting for the path point No. "nnnn" indicated in the error message so it is within the range (–1 to 32767).
Error message	Tolerance setting value exceeds range (nnnn)
Cause	The tolerance designation in the spline file exceeds the range.
Measures	Change the tolerance designation for the path point No. "nnnn" indicated in the error message so it is within the range (0 to 100).
Error message	Output signal exceeds range (nnnn)
Cause	The head No. for the signal output in the spline file exceeds the range.
Measures	Change the head No. of the signal output for the path point No. "nnnn" indicated in the error message so it is within the range (–1 to 32767).
Error message	Interpolation setting information exceeds range
Cause	Data with value exceeding the range was found in the spline file interpolation setting information.
Measures	Open the target spline file and check the contents. Then, save the file again to recreate the spline file. Write the new file to the controller again.
Error message	Header information exceeds range
Cause	Data with value exceeding the range was found in the spline file header information.
Measures	Open the target spline file and check the contents. Then, save the file again to recreate the spline file. Write the new file to the controller again.

L2621

Error message	Tracking function is enabled.
Cause	The tracking function and Ex-T control function cannot be enabled simultaneously.
Measures	When using the Ex-T control function, disable the tracking function.

L2622

Error message	Singular point passage function is enabled.
Cause	The singular point passage function and Ex-T control function cannot be enabled simultaneously.
Measures	When using the Ex-T control function, disable the singular point passage function.

H264n

n indicates the axis number (1 to 8)

Error message	Add axis FLS signal is input
Cause	Add axis FLS signal is input
Measures	Release the brake and move the arm by hand. Or, referring to "Operation to Temporarily Reset an Error that Cannot Be Canceled" in the separate volume "Instruction Manual/Detailed Explanation of Functions and Operations", reset the error and move the axis "n" within the operation range using JOG operation.

H265n

n indicates the axis number (1 to 8)

Error message	Add axis RLS signal is input
Cause	Add axis RLS signal is input
Measures	Release the brake and move the arm by hand. Or, referring to "Operation to Temporarily Reset an Error that Cannot Be Canceled" in the separate volume "Instruction Manual/Detailed Explanation of Functions and Operations", reset the error and move the axis "n" within the operation range using JOG operation.

L2660

One of the errors below is detected.

Please take measures corresponding to an error message.

Error message	Error concerning axis coop
Cause	The error concerning the axis coop occurred
Measures	Please Confirm the content by a detail number of the error
Error message	Illegal robot No.(axis trk)
Cause	The designated robot No. is illegal
Measures	Set the correct robot No.
Error message	Illegal axis No.(axis trk)
Cause	The designated axis No. is illegal
Measures	Set the correct axis No.
Error message	Illegal unit system (axis trk)
Cause	A rotary axis is designated
Measures	Please designate a linear drive axis
Error message	Origin unsetting (axis trk)
Cause	Axis tracking cannot be executed because of origin unsetting
Measures	Please set the origin and turn the power OFF and ON
Error message	Illegal robot No.(base coop)
Cause	The designated robot No. is illegal
Measures	Set the correct robot No.
Error message	Illegal axis No.(base coop)
Cause	The designated axis No. is illegal
Measures	Set the correct axis No.
Error message	Illegal unit system (base coop)
Cause	A rotary axis is designated
Measures	Please designate a linear drive axis
Error message	Origin unsetting (base coop)
Cause	Base coop cannot be executed because of origin unsetting
Measures	Please set the origin and turn the power OFF and ON

L2661

One of the errors below is detected.

Please take measures corresponding to an error message.

Error message	Error concerning axis coop (combi.)
Cause	The function cannot be used at the same time with the axis coop
Measures	Please confirm the content by a detailed number of the error
Error message	Cannot be used (axis trk)
Cause	A synchronous addition axis control is effective
Measures	Invalidate a synchronous addition axis control
Error message	Cannot be used (base coop)
Cause	Tracking function is effective
Measures	Invalidate the tracking function
Error message	Cannot be used (base coop)
Cause	A synchronous addition axis control is effective
Measures	Invalidate a synchronous addition axis control
Error message	Jrc cannot be executed
Cause	The base coop is executing
Measures	Please do not use Jrc command
Error message	Interpolation cannot be executed
Cause	An addition axis is going to move
Measures	Please do not move an addition axis
Error message	Cannot be used (base coop)
Cause	Interference avoidance function is effective
Measures	Invalidate the interference avoidance function

L2662

One of the errors below is detected.

Please take measures corresponding to an error message.

Error message	Work setting cannot be changed
Cause	The additional axis tracking is executing
Measures	Please change after the work coop is invalid
Error message	This work cannot use
Cause	The setting is not done(axis trk)
Measures	Please confirm a set valuse and then execute

H2663

Error message	Origin data was changed
Cause	Origin data was changed about the base cooperation target axis
Measures	Turn the power OFF and ON once

L2700

Error message	Cmp error (different mode)
Cause	The designated mode is different from the current mode.
Measures	Execute Cmp Off and then designate.

C2710

Error message	Cmp error (displacement)
Cause	The displacement magnitude of the compliance operation exceeded the specified value.
Measures	Correct the program, position or other item so that the displacement magnitude can be reduced.

H2720

Error message	Cmp error (joint angle)
Cause	Cmp Command exceeds the limit of a joint angle.
Measures	Adjust the position data or reduce the displacement.

C272n

n indicates the axis number (1 to 8).

Error message	Cmp error (Jn joint angle)
Cause	Cmp Command exceeds the limit of joint angle of joint "n" axis
Measures	Change the position data or reduce displacement.

C273n

n indicates the axis number (1 to 8).

Error message	Cmp error (Jn axis speed)
Cause	Cmp Command exceeds the limit of speed of joint "n" axis.
Measures	Change the position data or slow down.

C2740

Error message	Cmp error (coordinates conv.)
Cause	An error was detected in the coordinates conversion of Cmp command.
Measures	Adjust the position data.

L2750

One of the errors below is detected.

Please take measures corresponding to an error message.

Error message	Cannot execute while tracking
Cause	Cannot execute while tracking
Measures	Execute Trk Off and then execute
Error message	Cannot invalidate F.Ctrl (Trk)
Cause	Force control cannot be invalidated while executing tracking
Measures	Please invalidate the tracking function
Error message	Unable to disable force sense control. (Tracking being performed)
Cause	Unable to disable force sense control while tracking function being executed.
Measures	Try again after disabling the tracking function.

H2760

Error message	The force sense control offset limit was reached.
Cause	The robot attempted to move beyond the force sense control offset limit. The maximum value for the offset limit is limited by the parameter FSCORMX. This error will occur when current position coordinate data exceeds the maximum offset from the start position set with FSCORMX.
Measures	Change the value of parameter FSCORMX or change the position so that the robot operates within the limits of the force sense control conditions.

H2770

Error message	Outside offset position movement range (**) Note) "****" is substituted with "±Jn" (n is axis No.)
Cause	The position after force sense control offset lies outside the range. The robot may have been moved near the movement range limit.
Measures	Review the movement position or force sense control settings, and ensure that the offset position does not exceed the movement range.

H2780

Error message	Offset position speed over (**) Note) "****" is substituted with "Jn" (n is axis No.)
Cause	The speed of movement to the position after offsetting with force sense control exceeded the speed limit. The movement speed may be too fast, or the robot may have been moved at the singular point adjacent.
Measures	Review the movement speed and movement position, or the force sense control settings.

L2800

Error message	Illegal position data
Cause	This may occur for a position to which the robot cannot reach.
Measures	Adjust the position.

L2801

Error message	Illegal position data (start)
Cause	This may occur for a starting position to which the robot cannot reach.
Measures	Adjust the position.

L2802

Error message	Illegal position data (dstn)
Cause	This may occur for a ending position to which the robot cannot reach.
Measures	Adjust the position.

L2803

Error message	Illegal assisting position data (intmed)
Cause	The intermediate path at the straight line interpolation and the route at circle interpolation are the position which the robot cannot move.
Measures	Confirm the error occurrence line and confirm that there is no position which the robot cannot move. And please correct the data of starting position, midway position, or ending position .

L2804

Error message	SPDOPT can't be operated
Cause	A singular point area exists on the locus.
Measures	Change a interpolation type or destination position.

L2810

Error message	Posture flag is disagree
Cause	The structure flag of the start point and end point don't match.
Measures	Adjust the position data. The start points and destination points (end points) of the structure flags FL1 and FL2 must be the same when specifying the trajectory with commands such as the Mvs command. Operate the robot with the Mov command or make sure the start and end points of the structure flags match. The operation path will change when switching to operating the robot with the Mov command. Ensure that the robot does not interfere with peripherals. For further information on structure flags, refer to "Configuration flag" in the CR800 Series Controller Instruction Manual: Detailed explanations of functions and operations.

H2820

Error message	Illegal Accel ratio
Cause	This occurs when the acceleration/deceleration ratio is too small.
Measures	Adjust the acceleration/deceleration ratio to a larger value.

H2830

Error message	System error (ipol posture type)
Cause	The Type argument of the Mov instruction was set to -1 or a similar value.
Measures	Change the Type argument of the Mov instruction to a correct value (0, 1, etc).

H2840

Error message	System error (ipol parameters)
Cause	The parameter may have been damaged.
Measures	If it comes back, contact your service provider.

H2850

Error message	System error (ipol norm)
Cause	The norm is illegal. A problem occurred in internal computation processing.
Measures	If it comes back, contact your service provider.

H2860

Error message	System error (ipol type)
Cause	An illegal interpolation process method is being used. A problem occurred in internal computation processing.
Measures	If it comes back, contact your service provider.

H2870

Error message	System error (ipol data undef)
Cause	The interpolation position data has not been defined. A problem occurred in internal computation processing.
Measures	If it comes back, contact your service provider.

H2880 *

Error message	System error (ipol data area)
Cause	The memory is insufficient for the inside operation.
Measures	If it comes back, contact your service provider.

H2890

Error message	System error (undefined err)
Cause	An undefined error number was generated in internal computation processing.
Measures	If it comes back, contact your service provider.

L2900

Error message	System ERROR M00 to M04
Cause	An error occurred in the internal processing.
Measures	If it comes back, contact your service provider.

L2920

Error message	Direct teaching is disable
Cause	Direct teaching is disable in Manual mode
Measures	Reset the error. After switching the mode to AUTOMATIC, teach the robot directly.

L2921

Error message	Can't execute program
Cause	Can't execute program during direct teaching
Measures	Reset the error. After teaching the robot directly, check safety before running a robot program.

L2922

Error message	Can't operate in this posture
Cause	Can't operate in singular point
Measures	If the robot is taught directly in Translational motion or Rotational motion mode, the arm cannot avoid passing a singularity (where the rotational axes of J4 and J6 align). To continue direct teaching, start the direct teaching function, and operate the robot in Joint free mode. Prevent the arm from passing a singularity using Joint jog operation.

C2923

Error message	Parameter can't be changed
Cause	Parameter can't be changed during direct teaching
Measures	Parameters cannot be changed during direct teaching. After resetting the error, check that the direct teaching function is OFF, and change parameters again.

L2924

One of the errors below is detected.

Please take measures corresponding to an error message.

Error message	Direct teaching is disable
Cause	Direct teaching is disable during force control
Measures	Force sense control and the direct teaching function cannot be used together. To teach the robot directly, use direct run command "Fsc Off" to disable force sense control and then start the direct teaching function.
Error message	Direct teaching is disable
Cause	Direct teaching is disable during compliance control
Measures	Compliance control and the direct teaching function cannot be used together. To teach the robot directly, use direct run command "Cmp Off" to disable compliance control and then start the direct teaching function.
Error message	Direct teaching is disable
Cause	Direct teaching is disable during stop input
Measures	The direct teaching function cannot be started while a stop command is being input. Clear the command.
Error message	Direct teaching is disable
Cause	Direct teaching is disable during High Speed Operation
Measures	Direct teaching is disabled during high speed operation. Please change the mode to collaborative operation mode.
Error message	Direct teaching is disable
Cause	Direct teaching is disable during SS2 enabled
Measures	Direct teaching is not available while SS2 is being input. Disable SS2.
Error message	Direct teaching is disable
Cause	Direct teaching is disable during Vibration suppression mode
Measures	Direct teaching is not available while vibration suppression mode (MvTune 4) is activated. Exit or reset the robot program that is currently running.

H2925 *

Error message	Direct teaching System fault
Cause	Failed in start or end processing
Measures	The direct teaching function has failed to start or switch off. Turn on the power again. If it comes back, contact your service provider.

H2930

Error message	MELFA High Drive not supported
Cause	This robot does not support MELFA High Drive.
Measures	Disable the function by changing the setting of parameter HIGHDRV to "0" then cycle the controller power.

L3100

One of the errors below is detected.

Please take measures corresponding to an error message.

Error message	Processor Call Stack over
Cause	Too many function calls or local variables.
Measures	Correct the program and re-execute.
Error message	System ERROR (Call Stack)
Cause	Processor Call Stack defect
Measures	Possible problem with execution sequence of Function command.

L3110

One of the errors below is detected.

Please take measures corresponding to an error message.

Refer to the separate manual, "Instruction Manual/Detailed Explanation of Functions and Operations" or "Instruction Manual/Force Sensor Function" in details.

Error message	Arg. value range over
Cause	Arg. value is outside range. For the PtoJ function, a position which the robot cannot reach or a singular point was set as the arg. value.
Measures	Please confirm the range of the argument and set a correct value
Error message	The force sense control command argument lies outside the range.
Cause	A value outside the range was set for the force sense control command argument.
Measures	Check the argument range and set a correct value.
Error message	The force sense control status variable argument lies outside the range.
Cause	A value outside the range was set for the force sense control status variable argument.
Measures	Check the argument range and set a correct value.
Error message	The force sense control related argument lies outside the range.
Cause	A value outside the range was set for the force sense control related argument.
Measures	Check the argument range and set a correct value.
Error message	The Mo trigger No. lies outside the range.
Cause	A value outside the range was set for the Mo trigger No.
Measures	Check the setting range and set a correct value.
Error message	Def MoTrg command argument error
Cause	An unusable variable or different mechanical No. was set.
Measures	Set a usable variable or same mechanical No.
Error message	Arg. value range over (MVA2)
Cause	Argument value range is over (MVA2)
Measures	Check the argument range and reinput

L3120

Error message	No. of arg. is over
Cause	No. of argument is over
Measures	Please confirm the range of the argument and set a correct value

L3130

Error message	COM file is already opened
Cause	Opening of a file already opened was attempted.
Measures	Check the file No. and re-execute.

L3140

Error message	Can't open COM file
Cause	The file cannot be opened.
Measures	Check the file No. and re-execute.

L3141

Error message	The NVOpen command is not executed.
Cause	No NVOpen command was executed before execution of a command communicating with the vision sensor.
Measures	Revise the robot program so that the NVOpen command executes before the controller starts to communicate with the vision sensor. To operate the robot using Step operation, NVOpen must be executed in Automatic mode first and then temporarily stopped. This is because the NVOpen command will not process in Step operation.

L3142

Error message	The communication line can not be opened.
Cause	The line for communication with the vision sensor can not be opened.
Measures	Check the communication cable or the communications parameters.

L3150

Error message	Cannot Print (INPUT mode)
Cause	The file open mode is INPUT, so writing is not possible.
Measures	Check the file No. and open mode, and re-execute.

L3170

Error message	Cannot Input (OUTPUT mode)
Cause	The file open mode is OUTPUT, so writing is not possible.
Measures	Check the file No. and open mode, and re-execute.

L3180

Error message	System error (array range over)
Cause	System error (array range over)
Measures	If it comes back, contact your service provider

L3200

Error message	This file is read only
Cause	The file cannot be read.
Measures	Check the contents of the file.

L3210

Error message	This variable is write protected
Cause	Writing of this variable is prohibited.
Measures	Check the variable protection setting.

L3220

Error message	Nesting over
Cause	A nest-over error occurred in If of the If instruction or For of the For instruction.
Measures	Correct the program and re-execute.

L3230

Error message	For Next statements unmatched
Cause	The No. of For and Next statements do not match.
Measures	Correct the program and re-execute.

L3240

Error message	Nesting over (For, While)
Cause	Nesting over (For, While)
Measures	Correct the program and re-execute.

L3250

Error message	While WEnd statements unmatched
Cause	The No. of While and WEnd statements do not match.
Measures	Correct the program and re-execute.

L3251

Error message	Number of jump destination exceeds 32
Cause	The number of branches defined exceeded 32.
Measures	Correct the program and re-execute.

L3252

Error message	If EndIf statements unmatched
Cause	If EndIf statements unmatched.
Measures	Correct the program and re-execute.

L3253

Error message	Nesting over (If, EndIf)
Cause	Nesting over (If, EndIf)
Measures	Correct the program and re-execute.

L3254

Error message	Select - End Select statements unmatched
Cause	Select - End Select statements unmatched.
Measures	Correct the program and re-execute.

L3255

Error message	If Else statements unmatched
Cause	If Else statements unmatched.
Measures	Correct the program and re-execute.

L3256

One of the errors below is detected.

Please take measures corresponding to an error message.

Error message	Function definition error
Cause	The error concerning the function definition occurred.
Measures	Please confirm the content by a detailed number of the error.
Error message	Function definitions exceeds max.
Cause	The number of function definitions exceeds 256.
Measures	Correct the program and re-execute.
Error message	Function statement is incorrect
Cause	Function statement position is incorrect.
Measures	Correct the program and re-execute.
Error message	Function FEnd statemets unmatched
Cause	Function FEnd statemets unmatched.
Measures	Correct the program and re-execute.
Error message	Undefined function
Cause	The called function or the assigned function is undefined.
Measures	Please confirm the function procedure name. Change parameter FUNCSPEC to "1" when combining the Function procedure with other program read commands (CallP, XLoad, XRun, #Include).
Error message	Function Main called
Cause	Function Main called.
Measures	Function Main cannot be called.
Error message	Function Main does not exist
Cause	Programs that there is no Function Main cannot be executed.
Measures	Please add Function Main (parameterless) to the program.
Error message	Local var. in function was used
Cause	A local variable in the function procedure was used.
Measures	Local variables in a function procedure cannot be used.

L3257

One of the errors below is detected.

Please take measures corresponding to an error message.

Error message	Include declaration error
Cause	The error concerning the include declaration occurred.
Measures	Please confirm the content by a detailed number of the error.
Error message	Include declaration exceeds max.
Cause	The number of include declarations exceeds 64.
Measures	Correct the program and re-execute.
Error message	Include statement is incorrect
Cause	Include statement position is incorrect.
Measures	Correct the program and re-execute.

L3258

One of the errors below is detected.

Please take measures corresponding to an error message.

Error message	Preprocessor error
Cause	The error concerning the preprocessor occurred.
Measures	Please confirm the content by a detailed number of the error.
Error message	Preprocessor run line exceeds max.
Cause	Preprocessor execution line exceeds 1000 lines.
Measures	Correct the program and re-execute.
Error message	Preprocessor run error
Cause	Commands that can not execute by the preprocessor are included.
Measures	Correct the program and re-execute.

L3260

Error message	Cannot exec for all slots
Cause	Execution with all slots designated is not possible.
Measures	Designate an individual slot and try again.

L3270

Error message	The command size is exceeded
Cause	The command size is exceeded.
Measures	Specify within single-byte 256 characters.

L3280

Error message	Cannot execute without GetM
Cause	The command you attempted to execute cannot be executed without GetM. Or, a non-existing mechanical number was specified.
Measures	Execute it after executing the RelM and GetM commands in another task slot.

L3281

Error message	Cannot execute during RUN
Cause	Cannot execute during operation.
Measures	Cannot execute during operation.

L3282

Error message	"Can't RUN (not select, attribute)"
Cause	The program is not selected or the attribute is illegal.
Measures	Load the program into the specified task slot. Or, change the program attributes.

L3285

Error message	Cannot execute (RUN or WAI)
Cause	can't execute in the state of stopping or executing.
Measures	Reset the program (cancel the abort status).

L3286

Error message	Program is empty
Cause	Execution of an empty program was attempted.
Measures	Make the program or select the correct program.

L3287

Error message	Cannot execute (ERROR ALWAYS)
Cause	This command cannot be used when the start conditions are ERROR and ALWAYS.
Measures	Correct the program.

L3288

Error message	Cannot execute while editing
Cause	That program cannot be executed because it is being edited.
Measures	Finish editing the program first, and then start it.

L3289

Error message	Program does not exist (SLT*)
Cause	The program designated in the slot table does not exist.
Measures	Correct the slot parameter.

L3290

Error message	System slot cannot be executed
Cause	The system slot cannot be executed.
Measures	Check whether another slot (user slot) is being operated.

L3300

Error message	User slot cannot be executed
Cause	A user slot cannot be executed.
Measures	Check whether the system slot is being operated.

L3310

Error message	Cannot execute XRun (Runing)
Cause	XRun is not possible as the designated slot is operating.
Measures	Stop the specification slot, and execute.

L3320

Error message	Cannot execute XRun (empty)
Cause	XRun is not possible as the program has not been selected.
Measures	Specify program name to the argument or execute XLoad.

L3330

Error message	Cannot execute XStp (empty)
Cause	XStp is not possible as the program has not been selected.
Measures	correct the program, and execute.

L3340

Error message	Cannot execute XRst (empty)
Cause	XRst is not possible as the program has not been selected.
Measures	Resetting is possible in the state of waiting only.

L3350

Error message	Cannot execute XRst (Running)
Cause	Xrst is not possible as the program is executing.
Measures	Stop execution, and do it.

L3360

Error message	Cannot execute XLoad (not PSA)
Cause	XLoad cannot be executed when the program cannot be selected.
Measures	Execute XRst, and do it.

L3361

Error message	Can not load the program (SLT*)
Cause	A non-existing program was specified in the slot parameter (SLTn).
Measures	A non-existing program was specified in the slot parameter (SLTn).

L3370

Error message	Cannot execute XClr (empty)
Cause	XClr is not possible as the program has not been selected.
Measures	XClr can only be executed to enable program selection.

L3380

Error message	Cannot execute XClr (not PSA)
Cause	Program selection is not enabled.
Measures	Execute XClr after resetting the program (canceling the abort status).

L3390

Error message	Cannot use arc pallet
Cause	Cannot use arc pallet.
Measures	Change to another method.

L3391

Error message	Cannot use MVA2
Cause	Cannot use MVA2
Measures	Change to another method

L3400

Error message	System error (PROC stack over)
Cause	System error. (Processor stack overflow)
Measures	If it comes back, contact your service provider

L3500

Error message	Illegal format input (Input)
Cause	The type of the variable specified by Input and the type of the received data do not match.
Measures	Check the format.

L3501

Error message	Illegal Receive data (EBREAD)
Cause	Type is different (receive data and specified variable)
Measures	Please confirm specified tag data of the vision.

L3510

Error message	Failed to receive data
Cause	Unprocessed received data size has exceeded receive buffer limit.
Measures	Check data sending / receiving timing, and processing procedure.

L3600

Error message	Jump destination does not exist
Cause	No jump destination was found for the Def Act, On Com and On GoTo commands.
Measures	Check the jump destination.

L3601

Error message	Jump destination is incorrect
Cause	Jumping into program control block is prohibited.
Measures	Correct the program and re-execute.

L3700

Error message	Undefined variable
Cause	It was attempted to reference a variable that has not been initialized.
Measures	Define a variable, enter an initial value, and then use it.

L3710

Error message	Nesting over (CallP)
Cause	Program Call is used more than the limitation.
Measures	Reduce the call count of CallP (nesting).

L3720

Error message	RC NX statements unmatched
Cause	RC NX statements unmatched
Measures	Match the numbers of RC and NX.

L3750

Error message	Illegal positions (Def Plt)
Cause	Multi rotation flag (FL2 J1/J4 axis) is different
Measures	Specify position to become the same multi rotation flag.

L3760

Error message	Illegal positions (Def Plt)
Cause	J1 or J4 axis is greatly changed (Def Plt)
Measures	Specify positions to be not different greatly

L3770

Error message	This is an undefined Mo trigger.
Cause	An attempt was made to use an undefined Mo trigger.
Measures	Define the specified Mo trigger before use.

L3780 *

One of the errors below is detected.

Please take measures corresponding to an error message.

Error message	Cannot use the MELFA Smart Plus.
Cause	The MELFA Smart Plus card or MELFA Smart Plus card pack is not installed in the controller. When the MELFA Smart Plus card is installed, the setting of the parameter SMART+1 may be set incorrectly.
Measures	Install the MELFA Smart Plus card or MELFA Smart Plus card pack. Set the parameter SMART+1 correctly.
Error message	Cannot use the MELFA Smart Plus
Cause	This robot does not correspond to this function
Measures	MELFA Smart Plus functions are not available. Inserting a MELFA Smart Plus card will trigger an error. Remove the MELFA Smart Plus card.

L3781

Error message	Cannot use the MELFA Smart Plus.
Cause	The MELFA Smart Plus card or MELFA Smart Plus card pack is not installed in the controller. When the MELFA Smart Plus card is installed, the setting of the parameter SMART+1 may be set incorrectly.
Measures	Install the MELFA Smart Plus card or MELFA Smart Plus card pack. Set the parameter SMART+1 correctly.

L3810

Error message	Different argument type
Cause	The type of an argument in an arithmetic operation, monadic operation, comparison operation or each function is different.
Measures	Designate the correct argument.

L3820

Error message	Undefined intermediate code
Cause	A program or system status variable may have been damaged.
Measures	Restore using the backup data. If the backup data is not available, it is necessary to create a program again.

L3821

Error message	A compilation error occurred
Cause	There is an error in the input syntax.
Measures	Check the error number in the error message.

L3830

Error message	Cannot execute GetM
Cause	GET of the mechanisms is not possible.
Measures	Check whether the designated mechanisms are being used with a different slot.

L3840

Error message	Return without GoSub
Cause	Return was executed without using GoSub.
Measures	Check the program.

L3850

Error message	Undefined PLT
Cause	The Def Plt command was not executed.
Measures	Use it after defining a pallet with the Def Plt command.

L3860

Error message	Illegal position data defined
Cause	There is an error in the position data.
Measures	Check the position data definition.

L3870

One of the errors below is detected.

Please take measures corresponding to an error message.

Error message	Illegal mecha No. (***) Note) "****" is substituted with the "robot status variable".
Cause	The designated mecha No. is an invalid value
Measures	Please set a correct mecha No.
Error message	The force sense control status variable mechanical No. is an invalid value.
Cause	An invalid variable was set for the force sense control status variable mechanical No.
Measures	Set a correct mechanical No.
Error message	The mechanical No. specified with the Def MoTrg command is an invalid value.
Cause	The mechanical No. specified with the Def MoTrg command is an invalid value.
Measures	Set a correct mechanical No.

L3880

Error message	Illegal slot No.
Cause	The task slot number specified in the argument of the system status variables was invalid.
Measures	Input the correct slot No.
Error message	Invalid SCNI number in M_SCNI
Cause	Invalid SCNI number is input in M_SCNI.
Measures	Enter any value of 1 to 8. For further information refer to the separate "Safety Communication Function Instruction Manual".
Error message	Invalid LOGIC no. in M_SCNILogic
Cause	Invalid LOGIC number is input in M_SCNILogic.
Measures	Enter any value of 1 to 3. For further information refer to the separate "Safety Communication Function Instruction Manual".
Error message	Invalid SCNO number in M_SCNO
Cause	Invalid SCNO number is input in M_SCNO.
Measures	Enter any value of 1 to 4. For further information refer to the separate "Safety Communication Function Instruction Manual".

L3890

Error message	System error (make MCODE)
Cause	An error has occurred when creating an operation instruction. The program may have been damaged.
Measures	Restore using the backup data. If the backup data is not available, it is necessary to create a program again.

L3900

Error message	JRC Command is disable
Cause	The JRCEXE parameter is disabled, so it cannot be used.
Measures	Change the JRCEXE parameter, and then execute.

L3910

Error message	Cannot execute (JRC 0)
Cause	JRC 0 can not execute for robot arm axis.
Measures	Correctly set.

L3930

Error message	This command cannot be executed
Cause	Collision detection is effective
Measures	Repeal collision detection (execute ColChk Off)

L3940

Error message	ColChk cannot be executed
Cause	An exclusive function is performing with ColChk
Measures	Repeal the corresponding function

L3950

Error message	NOERR cannot be executed
Cause	Interruption using M_ColSts is invalid
Measures	Define interruption using M_ColSts and confirm it

L3960

Error message	This Act No. cannot be repealed
Cause	NOERR of collision detection is performed
Measures	Repeal this interruption after canceling NOERR

L3970

Error message	ColChk cannot be performed
Cause	Collision detection serves as prohibition of use
Measures	Change parameter COL into use permission

L3980

Error message	Load mode cannot be specified.
Cause	Prec command is executed
Measures	Repeal high accuracy mode (execute Prec Off)

L3982

Error message	Cannot be used (singular point)
Cause 1	This robot does not correspond to the singular point function
Measures 1	Check the argument of Type specification
Cause 2	Cmp command is executed
Measures 2	Invalidate a compliance mode (execute Cmp Off)
Cause 3	A synchronous addition axis control is effective
Measures 3	Invalidate a synchronous addition axis control
Cause 4	Tracking mode is effective
Measures 4	Invalidate a tracking mode (execute Trk Off)
Cause 5	Pre-fetch execution is effective
Measures 5	Invalidate a pre-fetch execution
Cause 6	This robot is a setting of the multi mechanism
Measures 6	Do not use the function of passage singular point
Cause 7	ColChk On command is executed
Measures 7	Invalidate a collision detection (execute ColChk Off)

H3983

Error message	Cannot execute Cnt movement
Cause	A structural flag or the angle of the joint is not corresponding
Measures	It surely positions it by Dly command etc

L3984

Error message	Cannot be passed (singularity)
Cause	Robot passes position which is very near the singular point
Measures	Adjust the teaching position

H3985

Error message	Cannot be passed (singularity)
Cause	Robot passes position which is very near the singular point
Measures	Adjust the teaching position

One of the errors below is detected. Please take measures corresponding to an error message.

Error message	Unable to enable force sense control. (Sensor)
Cause	Unable to execute because the force sensor is not connected.
Measures	Connect the force sensor, or delete the command that cause the error.
Error message	Unable to enable force sense control. (Cmp command)
Cause	It is not possible to enable force sense control function while the compliance control function is enabled.
Measures	The force sense control function and compliance control function cannot be enabled simultaneously. If using the force sense control function, disable the compliance control function.
Error message	Unable to execute the Cmp command. (Force sense control)
Cause	It is not possible to enable the compliance control function while the force sense control function is enabled.
Measures	The force sense control function and compliance control function cannot be enabled simultaneously. If using the compliance control function, disable the force sense control function.
Error message	Unable to enable the collision detection function. (Force sense control)
Cause	It is not possible to enable the collision detection function while force sense control function is enabled.
Measures	The force sense control function and collision detection function cannot be enabled simultaneously. If using the collision detection function, disable the force sense control function.
Error message	Unable to enable force sense control. (Initialization)
Cause	It is not possible to perform initialization when starting force sense control.
Measures	Check the parameter settings.
Error message	This is the singular point adjacent area. (Force sense control)
Cause	It is not possible to move the singular point adjacent area while the force sense control function is enabled.
Measures	If moving the singular point adjacent area, disable the force sense control function.
Error message	The force sense control status is different.
Cause	The force sense control enabled/disabled status when resuming program operation differs from that during program operation.
Measures	Set the force sense control enabled/disabled status to the correct status. (This occurs only once when resuming program operation.)
Error message	This function cannot be used.
Cause	This model is not compatible with the executed force sense control function.
Measures	Do not use this force sense control function. Contact the maker for details on the latest compatibility status.
Error message	Unable to change tool conversion data. (Force sense control)
Cause	It is not possible to change tool conversion data while the force sense control function is enabled.
Measures	If changing tool conversion data, disable the force sense control function.
Error message	Unable to change base conversion data. (Force sense control)
Cause	It is not possible to change base conversion data while the force sense control function is enabled.
Measures	If changing base conversion data, disable the force sense control function.
Error message	Unable to execute the Jrc command. (Force sense control)
Cause	It is not possible to execute the Jrc command while the force sense control function is enabled.
Measures	To execute the Jrc command, disable the force sense control function.
Error message	Disable force sense control.
Cause	JOG operation cannot be performed on your model while the force sense control function is enabled.
Measures	Disable the force sense control function.
Error message	Unable to perform offset cancel. (Force sense control)
Cause	It is not possible to perform offset cancel while the force sense control function is enabled.
Measures	If performing offset cancel, disable the force sense control function.

L3987

One of the errors below is detected. Please take measures corresponding to an error message.

Error message	Force sense control is disabled.
Cause	Force sense control is disabled, and so unable to execute the command.
Measures	Enable the force sense control function.
Error message	Force sense control is enabled.
Cause	It is not possible to enable force sense control again while already enabled.
Measures	First disable the force sense control function, and then enable again.
Error message	Unable to execute the FsGChg command.
Cause	It is not possible to execute the FsGChg command when force control gain change is not complete.
Measures	Review the program so that the FsGChg command is executed after force control gain change is complete.
Error message	Unable to output log file.
Cause	FTP processing was not properly performed.
Measures	Check the FTP related parameter setting. Check the Ethernet cable connection. Check the FTP server settings at the computer.
Error message	The specified log file does not exist.
Cause	The log file for the No. specified with the FsOutLog command does not exist.
Measures	Check whether the log file No. is incorrect.
Error message	Unable to change the force sense status variable.
Cause	The status variable setting is currently being used by the force sense control function and so cannot be changed.
Measures	If changing the setting, disable the force sense control function.
Error message	Force sense log commands executed simultaneously.
Cause	It is not possible to create/output another file while creating (FsLog Off command) or outputting (FsOutLog command) a force sense log file.
Measures	Process after force sense log file creation/output is complete.
Error message	Unable to create log file.
Cause	Unable to create a force sense log file.
Measures	Check the amount of available record space in the robot controller.
Error message	Unable to execute the Fsc ON command.
Cause	It is not possible to execute the Fsc On command while changing the force control gain.
Measures	Execute the Fsc On command after force control gain change is complete.
Error message	Unable to perform log data related processing.
Cause	It is not possible to execute FsLog On command file while recording force sense control log data.
Measures	Execute the FsLog On command after log data recording is complete.
Error message	Force sense control is enabled.
Cause	The parameter setting is currently being used by the force sense control function and so cannot be changed.
Measures	If changing the parameter, disable the force sense control function once.
Error message	Unable to enable the Mo trigger.
Cause	The Mo trigger for the FsCTrg command executed first is enabled.
Measures	Execute after changing the control characteristics.
Error message	Mo trigger timeout
Cause	The Mo trigger did not turn ON within the specified time.
Measures	Review the Mo trigger conditions and robot program.
Error message	Unable to execute the FsCTrg command.
Cause	The control characteristics is currently being changed. The Mo trigger for the FsCTrg command executed first is enabled.
Measures	Execute after changing the control characteristics.
Error message	Unable to specify the control characteristics change.
Cause	The control characteristics change has been set with another command.
Measures	Change the program so that the command is not executed at the same time as another command.

H3988

Error message	Unable to create a position command.
Cause	It is not possible to convert linear position data to joint angle after offsetting with force control. The position after offsetting lies outside the movement range or is a singular point.
Measures	Review the movement and, settings so that adjacents outside the movement range and singular point adjacents are avoided.

L3990

Error message	ColChk cannot be used
Cause	This robot is a setting of the multi mechanism
Measures	Change parameter COL into use prohibition

L3991

Error message	Mainte.Forecast cannot be used
Cause	This robot is a setting of the multi mechanism
Measures	Invalidate the maintenance forecast

L3995

Error message	Can't use SQ Direct and ALWENA
Cause	SQ Direct function (parameter: IQMEM valid setting) can't be used Xrun, Xload, Xstp, Xrst, Servo and Reset Error command with always running program (parameter: ALWENA=1).
Measures	Change ALWENA parameter to 0

L4000

Error message	System error (time out)
Cause	There is a problem in the program's exclusive process.
Measures	If it comes back, contact your service provider.

L4100

Error message	No. of registered file is full
Cause	The No. of program has been exceeded.
Measures	Delete any unnecessary programs.

L4110

Error message	Memory area is full
Cause	The program and data have exceeded the capacity. Capacity of a program execution area is insufficient.
Measures	Delete any unnecessary programs or data.

L4120

Error message	Too long program name
Cause	The program name is a maximum of 12 characters with 3 extension characters.
Measures	Set the program name to within 12 characters and 3 extension characters.

L4130

Error message	Illegal program name
Cause	An illegal character was used in the program name.
Measures	Only numbers and alphabetic characters can be used.

L4140

Error message	The program was not found
Cause	The designated program was not found.
Measures	Designate a different program, or create the designated program.

L4150

Error message	Program is faulty
Cause	Power shutdown may have occurred during the write operation.
Measures	The file may have been damaged. Delete the file.

L4160

Error message	Not a robot program
Cause	The designated program is not a robot program.
Measures	Designate a different program.

L4170

Error message	The program is being edited
Cause	The program is being edited.
Measures	Close the program being edited.

L4180

Error message	Program is running
Cause	The program is running.
Measures	Stop the program.

L4190

Error message	The program is selected
Cause	The program is preparing to execute.
Measures	Reset the program. The user base program is selected. Or the program to be executed is used with a different slot.

L4200

Error message	Cannot write to file
Cause	Write operation is prohibited, or the file capacity is insufficient.
Measures	1. Enable file writing. 2. Delete unnecessary files.

L4210

Error message	Too long statement
Cause	The command statement length is limited to 240 characters.
Measures	Delete the No. of characters in the command statement to within 240 characters.

L4220

Error message	Syntax error
Cause	There is an error in the syntax of the input command statement.
Measures	Re-input in the correct syntax after checking the contents.

L4230

Error message	The line No. does not exist
Cause	There is no specified line number.
Measures	Check the contents, and reinput the correct line No.

L4240

Error message	The statement is write protected
Cause	The command statement is write protected.
Measures	Cancel the write protection.

L4250

Error message	No more lines or variables
Cause	Reading of lines and variables exceeding the registered ones.
Measures	Check the programs.

L4300

One of the errors below is detected.

Please take measures corresponding to an error message.

Error message	Too long variable name
Cause	The variable name length is limited to 16 characters
Measures	Shorten the variable name to within 16 characters
Error message	Too long variable/function name
Cause	The variable/function name length is limited to 32 characters.
Measures	Shorten the variable/function name to within 32 characters.

L4310

Error message	Illegal character is used
Cause	A character other than A to Z or 0 to 9 was used.
Measures	Use the character which can be used.

L4320

Error message	The variable is write protected
Cause	The variable is write protected.
Measures	1. Use a writable variable. 2. Cancel the write protection.

L4330

Error message	The variable is read protected
Cause	The variable is read protected.
Measures	1. Use a writable variable. 2. Cancel the write protection.

L4340

Error message	The variable is not defined
Cause	The variable has not been defined.
Measures	Define the variable.

L4341

Error message	The user external variable is not defined.
Cause	The user external variable has not been defined
Measures	Define the user external variable

L4350

Error message	Duplicate definition (Val.)
Cause	Variables already defined cannot be redefined with the Dim or Def statements.
Measures	1. Change the variable name and define. 2. Delete the defined variable.

L4360

Error message	Same variable used (65535 times)
Cause	Example: 1 P1=P1+P2 references P1 twice and P2 once.
Measures	Change the program to reduce the No. of times the same variable is used.

L4370

Error message	Error in the array element
Cause	1. The array elements exceeds the define range. 2. The specified variable is not an array.
Measures	1. Correct the number of array elements within one to the maximum elements. 2. Do not specify array elements.

L4380

Error message	Cannot delete variables (used)
Cause	Variables used in a command statement cannot be deleted.
Measures	Delete the command statement using the variable.

L4390

Error message	Variable type combination error
Cause	The type of the user-defined external variable is different.
Measures	Match the variable types.

L4400

Error message	Program is faulty.
Cause	The content of the program is abnormal.
Measures	Delete the program.

L4420

Error message	Line No exceeds 32767
Cause	The new line No. or line gap is large.
Measures	Do not use line No. exceeding 32767.

L4430

Error message	Not found the string searched
Cause	The character string searched for was not found.
Measures	Check the program.

L4440

Error message	Duplicate definition (label)
Cause	A label already defined cannot be redefined.
Measures	1. Change the label name. 2. Delete the defined label line.

L4460

Error message	Argument value range over
Cause	Argument value range over.
Measures	Confirm the argument range, and correct the value.

L4470

Error message	Line No can't be used
Cause	Line No can't be used
Measures	Please use the label

L4800

Error message	System error (System base prog)
Cause	The base program for the system could not be opened. Or, the system base program name was not specified correctly in the parameter.
Measures	If it comes back, contact your service provider.

L4810

Error message	The global variable defined by user is not available
Cause	The parameter "PRGUSR" is not correct.
Measures	To use user-defined external variables, it is necessary to set the name of the program describing only variable definitions in the PRGUSR parameter.

L4811 *

Error message	The global variable redefined
Cause	A system global variable is defined in user global.
Measures	Correct the program.

L4820

Error message	No editing program
Cause	The program was closed while editing. For example, the program being edited is closed when a key switch enable/disable operation is performed via the T/B during online editing on a PC.
Measures	Try editing the program again.

L4900

Error message	System error (Prog Hndl)
Cause	The program name used by internal processing is not normal.
Measures	If it comes back, contact your service provider.

L4910

Error message	Robot Language is mismatched
Cause	The parameter RLNG is mismatched. (2:MELFA-BASIC V, 3:MELFA-BASIC VI)
Measures	Re-set RLNG or select an other program.

L4920

Error message	There is no backup data in ROM
Cause	There is no backup data in ROM.
Measures	Please operate after backup.

L4922

Error message	Unsupported program version
Cause	This program was created with the new version.
Measures	This program cannot be opened with this robot.

L4930

One of the errors below is detected. Please take measures corresponding to an error message.

Error message	CavChk cannot be executed (*)
Cause	Collision avoidance serves as prohibition of use
Measures	Change parameter CAV into use permission
Error message	CavChk cannot be used
Cause	This robot does not correspond to collision avoidance
Measures	Delete CavChk command

L4931

Error message	Cmp command cannot be executed
Cause	Collision avoidance is effective
Measures	Repeal collision avoidance (execute CavChk Off)

L4932

Error message	Trk command cannot be executed
Cause	Collision avoidance is effective
Measures	Repeal collision avoidance (execute CavChk Off)

L4933

Error message	CavChk cannot be executed
Cause	Cmp command is executed
Measures	Repeal compliance mode (execute Cnp Off)

L4934

Error message	CavChk cannot be executed
Cause	Trk command is executed
Measures	Repeal tracking mode (execute Trk Off)

L4935

Error message	NOERR cannot be executed
Cause	Interruption using M_CavSts is invalid
Measures	Define interruption using M_CavSts and confirm it

L4936

Error message	This ACT No. cannot be repealed
Cause	NoErr of collision avoidance is performed
Measures	Repeal this interruption after canceling NoErr

L4937 *

Error message	A user free area size is lack
Cause	The size of a user free area is smaller than that of 2K
Measures	Please set 2K or more to the size of a user free area. (The value of the parameter QMLTCPUn (n=1 to 4)) If the lower bits of parameter IQMEM are 10001, the user free area must be set to a total of 2.0K (user area 0.5K + expansion area 0.5K + interference area 1.0K) because the CPU buffer memory expansion function and the interference avoidance function are enabled.

L4938

Error message	This robot does not correspond to collision avoidance.
Cause	This robot does not correspond to collision avoidance.
Measures	Parameter CAV returns disapproval.

L4939

Error message	CAV version of Robot No.n is old
Cause	Software version of Robot No.n is old
Measures	Interference avoidance function cannot be used because the software version of interference avoidance of the robot-n is old. Software version upgrade is required. Contact the maker.

L4941

Error message	MvSpl command cannot be executed
Cause	Collision avoidance is effective
Measures	The spline interpolation function and collision avoidance function cannot be enabled simultaneously. If using the spline interpolation function, disable the collision avoidance function.

L4950

One of the errors below is detected.

Please take measures corresponding to an error message.

Error message	Error in a function syntax
Cause	Error in the definition of a function procedure.
Measures	Correct the definition of the function procedure.
Error message	Error in a parameter
Cause	Error in a parameter of the function.
Measures	Correct the parameter of the function.
Error message	Error in a parameter
Cause	The elements exceeds the range.
Measures	Correct the array element.

H5000

Error message	TB Enable key is ON
Cause	The TB Enable key is ON in AUTOMATIC mode.
Measures	OFF the TB Enable key, or enter the TEACH mode

L5010

Error message	AUTOENA signal is OFF
Cause	The automatic operation possible signal is OFF.
Measures	Turn the automatic operation possible signal ON, or enter the teach mode.

L5100

Error message	No program is selected
Cause	A program is not selected for the designated slot.
Measures	Select a program for the designated slot.

L5110

Error message	Continuous RUN is not possible
Cause	A different program name has been designated.
Measures	Designate the correct program name.

L5120

Error message	Cannot select program (not PSA)
Cause	The specified slot is not in the program selection state.
Measures	Reset the program.

L5130

Error message	Cannot execute servo on
Cause	A servo OFF process is taking place.
Measures	Wait for the servo to turn OFF before turning the servo ON.

L5140

Error message	Cannot read the file
Cause	Reading is being carried out, or editing is being carried out.
Measures	Close the file being edited, or read after the reading is completed.

L5150

Error message	The origin has not been set
Cause	The origin has not been set.
Measures	Refer to the chapters of "Setting the origin" and "Resetting the origin" which are described in the separate volumes "Robot Arm Setup and Maintenance". And set the origin.

L5200 *

Error message	Parameter error (TASKMAX)
Cause	The TASKMAX parameter setting value has been exceeded (initial value: 8, maximum value: 32).
Measures	Reduce the number of multi tasks, or change the TASKMAX parameter.

L5210 *

Error message	Parameter error (MECHAMAX)
Cause	The No. of multi mechanisms has exceeded the limit.
Measures	Reduce the No. of multi mechanisms.

L5400

Error message	All robot cannot be designated
Cause	All mechanisms cannot be specified.
Measures	Specify an independent mechanism number.

L5410

Error message	Non-existent mode
Cause	It has been changed to a mode other than Auto/Teach.
Measures	Contact the maker.

L5420

Error message	Illegal slot No.
Cause	A task slot number other than 1 through TASKMAX (parameter) is specified.
Measures	Designate the correct task slot.

L5430

Error message	Illegal robot No.
Cause	The mechanism designation is illegal.
Measures	Designate the correct mechanism.

L5600

Error message	Cannot execute during an error
Cause	Cannot execute during an error.
Measures	Reset the error.

C5610

Error message	Cannot execute during STOP ON
Cause	Cannot execute during stop signal input.
Measures	Turn the stop signal OFF and execute.

L5620

Error message	Cannot execute during CSTOP ON
Cause	Cannot execute during cycle stop signal input.
Measures	Turn the cycle stop signal OFF.

L5630

Error message	Cannot execute during SRVOFF ON
Cause	Cannot execute during servo OFF signal input.
Measures	Turn the servo OFF signal OFF.

L5640

Error message	Cannot execute during RUN
Cause	Cannot execute during operation.
Measures	Stop the operation, and then execute.

L5650

Error message	Cannot execute during STOP
Cause	Cannot execute during stop operation.
Measures	Complete the stop, and then execute.

L5660

Error message	Edit during RUN (include ALWAYS)
Cause	Editing cannot be performed while in operation (including continuous execution).
Measures	Stop the program, and then execute.

C5670

Error message	Cannot execute during wait
Cause	Cannot execute during wait
Measures	Execute Program Reset

L5990

Error message	System error (Illegal command)
Cause	Not exist command was executed.
Measures	Execute the correct command.

L6010

Error message	Illegal command
Cause	This may have occurred because data was sent before the communication line was opened via a data link, or an unregistered communication command was sent due to the mismatch between the versions of the controller and support software.
Measures	Send after the communication line is opened. Or, match the versions.

L6011

Error message	Cannot connect to controller
Cause	Cannot connect to controller
Measures	Please connect to CPU unit

L6020

Error message	The Operation is disable
Cause	The operation rights have not been acquired.
Measures	Acquire the operation rights.

L6030

Error message	The editing operation is disable
Cause	The editing operation rights have not been acquired.
Measures	Acquire the editing operation rights.

L6040

Error message	System error (illegal device No)
Cause	A non-registered device No. was set.
Measures	Set a valid device.

C6050

Error message	The file cannot be opened
Cause	The block file cannot be opened.
Measures	Check the file, and designate the correct file.

C6060

Error message	The mode is not TEACH
Cause	Carry out parameter writing in the teach mode.
Measures	Change to the teaching mode, and then execute.

C6070

Error message	The time cannot be set
Cause	The time setting can only be executed when the program is stopped and the servo is OFF.
Measures	Stop the program and turn the servo OFF, and then set the time.

C6080

Error message	Com mesg is too long
Cause	The character string of a communication text exceeded the maximum number allowed.
Measures	Verify the number of characters in a comment in various settings such as parameters.

C6090

Error message	Can not power reset of robot
Cause	Can not power reset of robot
Measures	Can not power reset of robot

H6100

Error message	Module is not mounted.
Cause	A module board by HMS must be mounted in the network base card. A module board is not mounted in the network base card.
Measures	Mount a module suitable for the network base card.

H6101

Error message	Unsupported module mounted error
Cause	An unsupported HMS module board is mounted in the network base card.
Measures	Replace the module.

H6110

Error message	Multiple network base cards are mounted.
Cause	Only one network base card can be mounted. Two or more are currently mounted in the option slot.
Measures	Mount only one network base card.

H6111

Error message	Another fieldbus card is mounted.
Cause	Only one fieldbus card can be mounted. A CC-Link card, PROFIBUS card or DeviceNet card is mounted.
Measures	Mount only one fieldbus card.

H6120

Error message	Network base card error n. (n is a number between 1 and 4.)
Cause	A network base card error has been detected. n=1: A watch dog timeout has occurred with the communication module. n=2: An unsupported object, instance or command has been issued. n=3: The received form is incorrect. n=4: The I/O offset amount is incorrect. n=5: IP address is incorrect. n=6: Subnet mask IP address is incorrect. n=7: Gateway IP address is incorrect.
Measures	Replace the network base card. Contact the manufacturer when replacing the card.

L6130

Error message	Network communication error n. (n is a number between 1 and 2.)
Cause	The network base card cable is not connected, a line error has occurred, or parameters are set incorrectly. If communication is lost after connection has been established, the error will occur under the following conditions: 1) When the robot program has started 2) When the program is executed directly from RT ToolBox3 3) When an error causes the program to be executed n=1: Ethernet cable is disconnected. n=2: IP address is not established.
Measures	Check the network base card cable and parameters.

H6140

Error message	Parameter error (parameter name)
Cause	The parameter setting is invalid. The parameter value is not within range, or the data is invalid and cannot be read.
Measures	Check the parameter setting value.

H6190

Error message	Network error occurrence (error code)
Cause	A network error has occurred. (Error code) indicates an error code which occurs between the Anybus-CC Module.
Measures	Check the details of the network error.

C6201

Error message	MELFA Support is enabled
Cause	MELFA Support function is enabled.
Measures	Perform error reset before use.

C6202

Error message	Takeover is completed
Cause	MELFA Support takeover is completed.
Measures	Perform error reset before use.

L6203

Error message	Used SD card is invalid
Cause	Used SD card is invalid.
Measures	Use a new iQ Care MELFA Support SD card.

L6204

Error message	MELFA Support takeover is failed
Cause	MELFA Support takeover is failed (ID is unmatched).
Measures	Start with the correct combination of the robot, robot controller, and iQ Care MELFA Support SD card registered for the iQ Care MELFA Support service.

L6205

Error message	Failed to activate MELFA Support
Cause	MELFA Support activation is failed (ID is unmatched).
Measures	Start with the correct combination of the robot, robot controller, and iQ Care MELFA Support SD card registered for the iQ Care MELFA Support service.

H6206 *

Error message	Takeover file is abnormal
Cause	Takeover file is saved in SD card abnormally.
Measures	Remove the file for takeover (HISTORY.ser) in the iQ Care MELFA Support SD card. Then, perform the takeover operation again.

H6207 *

Error message	Identification is failed
Cause	MELFA Support identification is failed.
Measures	Contact the manufacturer.

L6208

Error message	Incompatible service package
Cause	Warranty expansion service package is disabled to sign up.
Measures	Receive inspection service beforehand. If the inspection results are acceptable, you can sign up for additional warranty.

L6209

Error message	Time configuration is abnormal
Cause	Time configuration is abnormal.
Measures	Set the correct time. Make sure that the clock is set to the time after the latest power off time (MSTPOF).

L6210

Error message	Warranty period will be expired
Cause	Warranty period will be expired soon.
Measures	To continue the warranty extension, take over to the additional warranty package.

C6211

Error message	Warranty period was expired
Cause	Warranty period was expired.
Measures	Have an inspection service when you sign up with the warranty extension service again.

C6212

Error message	Warranty expansion expired soon
Cause	Warranty expansion service will be expired soon.
Measures	When you extend the warranty, take over the service to the additional warranty package.

C6213

Error message	Predictive maintenance expired
Cause	Predictive maintenance function was expired.
Measures	When using the predictive maintenance function continuously, select a package to take over the service.

C6214

Error message	Please enable predictive maintenance function (PMENA)
Cause	Predictive maintenance function is disabled.
Measures	Enable the iQ Care MELFA Support predictive maintenance function. For details, refer to "Enabling the predictive maintenance function" in the separate manual "Industrial Robot Supporting Service iQ Care MELFA Support Instruction Manual".

C6216

Error message	MELFA Support is deactivated (MELFA Support SD card not found)
Cause	MELFA Support SD card communication error.
Measures	Check that the iQ Care MELFA Support SD card is connected and restart the robot controller.

C6219

Error message	Cannot execute during RUN
Cause	Cannot execute during operation
Measures	Stop the operation, then try again.

C6220

Error message	Another data is being processed
Cause	It is invalid for another data processing.
Measures	The operation can be performed after other data processing is complete.

C6221

Error message	SD card was not found
Cause	SD card was not found.
Measures	Check the SD card connection.

C6222

Error message	Insufficient SD card memory
Cause	SD card memory is insufficient.
Measures	Back up the data on the SD card and delete the data, or use a new SD card.

C6225

Error message	Restoration error
Cause	Unable to restore the backup data
Measures	Use the backup data of the robot controller of the same model and the robot arm of the same model.

H6226 *

Error message	Restoration is completed
Cause	Restoration is completed.
Measures	Restart the robot controller.

C6227

Error message	Backup data is abnormal
Cause	Backup data is abnormal. Backup may have failed in the middle of operation.
Measures	Check that the backup data has been successfully acquired.

C6228

Error message	Maximum number of files exceeded
Cause	The maximum number of files was saved already in the SD card.
Measures	Back up the data on the iQ Care MELFA Support SD card and delete the data, or use a new SD card.

C6229

Error message	MELFA Support is deactivated (ID is unmatched)
Cause	MELFA Support is deactivated (ID is unmatched).
Measures	Start with the correct combination of the robot, robot controller, and iQ Care MELFA Support SD card registered for the iQ Care MELFA Support service.

C6230

Error message	No MELFA Support SD card
Cause	MELFA Support SD card is not inserted.
Measures	Insert a valid iQ Care MELFA Support SD card.

C6231

Error message	Failed to open file
Cause	Failed to open file because target file not found.
Measures	Check that the SD card is installed properly, and restart the robot controller. If it recurs, contact the manufacturer.

C6232

Error message	Failed to write file
Cause	Failed to write file
Measures	Check that the media is installed properly, and restart the robot controller. Data of the file to be written to the media may be changed at the time of file writing. If a program including commands, such as PrmWrite, is running, reset the saving time so that the timing of file writing is set in the period during which the program is not running.

C6236

Error message	RAM is insufficient
Cause	RAM is insufficient
Measures	The robot controller RAM disk storage space was insufficient when saving the automatic backup data using the recovery function. Reduce the program size to reduce the capacity of the backup data, or change the setting of BKPRG so that program saving is not performed. Alternatively, restart the robot controller to delete temporary data inside the robot controller.

C6238

Error message	Maximum data size is exceeded
Cause	Maximum data size of oscillograph data is exceeded.
Measures	Check the parameter (MSOSL) for setting the time for the oscillograph data.

C6239

Error message	Maximum data size is exceeded
Cause	Maximum data size of predictive maintenance data is exceeded.
Measures	After backing up the predictive maintenance data, delete the file of iQ Care MELFA Support or reduce the number of saved data in the target file. When deleting the file, also delete the backup data (ppmdat_backup.ser) in the system folder.

C6240

Error message	Maximum data size is exceeded
Cause	Maximum data size of maintenance data is exceeded.
Measures	After backing up the maintenance data, delete the file in the iQ Care MELFA Support SD card or reduce the number of saved data in the target file. When deleting the file, also delete the backup data (mntdat_backup.ser) in the system folder.

C6241

Error message	Maximum data size is exceeded
Cause	Maximum data size of inspection data is exceeded.
Measures	The size of the inspection data file to be saved exceeds the upper limit of the storage memory. Reduce the data size of the inspection data.

C6242

Error message	Maximum data size is exceeded
Cause	Maximum data size of history data is exceeded
Measures	The size of the history data file to be saved exceeds the upper limit of the storage memory. Reduce the data size of the history data.

H6243 *

Error message	MELFA Support is reset
Cause	MELFA Support information of controller is reset.
Measures	Remove the iQ Care MELFA Support SD card and restart the robot controller. When replacing the robot arm or the robot controller, refer to "Changing the combination of the robot arm and the robot controller" in the separate manual "Industrial Robot Supporting Service iQ Care MELFA Support Instruction Manual".

C6244

Error message	MELFA Support is deactivated
Cause	MELFA Support is deactivated due to dead battery.
Measures	Replace the battery of the robot arm.

C6245

Error message	Failed to open history file
Cause	Failed to open history file.
Measures	If the history file does not exist, the iQ Care MELFA Support history information cannot be displayed. When the history file "HISTORY.ser" exists on the iQ Care MELFA Support SD card, delete the file. * Since the contents of the history file will be lost, it is recommended to back up the file.

C6246

Error message	Receive timeout
Cause	PC is not responding.
Measures	Check the cable connection to the computer and the communication status.

C6247

Error message	File for takeover is abnormal
Cause	File for takeover is abnormal.
Measures	Contact the manufacturer.

C6248

Error message	Creating the file name list
Cause	Cannot be executed because the file name list is being created
Measures	The file name list is updated immediately after startup of the controller. Wait for a while, then try again.

C6500

Error message	Not opened COM line
Cause	Open was not executed by the program.
Measures	Execute Open, and then send PRN.

H6530 *

Error message	COMDEV parameter is illegal
Cause	Illegal parameter (COMDEV).
Measures	Correct COMDEV parameter.

L6600

Error message	Signal number is out of range.
Cause	The designated signal No. has not been defined.
Measures	Change the signal No. to the correct No.

L6610

Error message	Cannot output (hand input)
Cause	The hand input signal cannot be written.
Measures	Use the correct output signal.

L6620

Error message	Cannot write (special Input)
Cause	The input signal cannot be written into the robot dedicated area.
Measures	Use an actual signal.

L6630

Error message	Input signal cannot be written
Cause	This is the actual signal input mode.
Measures	Set a pseudo-input signal.

H6640 *

One of the errors below is detected.

Please take measures corresponding to an error message.

Error message	Illegal param (special signal)
Cause	The parameter setting is illegal.
Measures	Correct the changed parameter.
Error message	Illegal setting of the dedicated signal parameter SFMODE
Cause	The setting of the dedicated signal parameter SFMODE (safety mode output) is illegal.
Measures	An error (output bit width of the output signal is less than 3 bits) exists in the dedicated output SFMODE setting. Correct the parameter setting.

L6641

Error message	Duplicate setting (special IN)
Cause	The parameter setting is illegal. When using the robot safety option, the DSI and DSO signals use the dedicated I/O signals 128 to 191. Consequently, this error may occur if other I/O signals are set to signals 128 to 191 while the safety function is enabled.
Measures	Correct the parameter of the dedicated input signal you changed.

H6642 *

Error message	STOP is fixed signal No. 0
Cause	The parameter setting is illegal.
Measures	Set the parameter STOP(input) to 0.

L6643

Error message	Illegal parameter (special Sig.)
Cause	The parameter setting is illegal.
Measures	Make the ending number larger than the starting number.

L6650 *

Error message	Duplicate setting (special OUT)
Cause	The parameter setting is illegal.
Measures	Correct the parameters. When using the robot safety option, the DSI and DSO signals use the dedicated I/O signals 128 to 191. Consequently, this error may occur if other I/O signals are set to signals 128 to 191 while the safety function is enabled.

L6651 *

Error message	Duplicate setting (HANDTYPE)
Cause	The parameter setting is illegal.
Measures	Correct the parameter.

L6660

Error message	Cannot output (SPECIAL OUT)
Cause	The program setting is illegal.
Measures	Correct the program.

L6670

Error message	Illegal OUT reset pattern
Cause	The parameters are not defined in sets of 8 characters.
Measures	Correct the parameters.

L6800 *

Error message	"Cancel pseudo-input mode, PW OFF"
Cause	If pseudo input was canceled, it is necessary to turn the power ON again in order to prevent the erroneous operation of the robot by external input signals.
Measures	Turn the power OFF and then ON once. It switches to an external input signal.

C6900

Error message	Pseudo-input signal mode
Cause	Set with the parameters.
Measures	To set a real signal, set parameter [RIOMODE] (input mode setting) to "0" and then turn the power ON again.

C7000

Error message	Copy source file was not found
Cause	The copy source file was not found.
Measures	Input the correct file name.

C7010

Error message	Delete target file was not found
Cause	The delete target file was not found.
Measures	Input the correct file name.

C7020

Error message	Rename target file was not found
Cause	The rename target file was not found.
Measures	Input the correct file name.

H7030 *

Error message	System error (param size over)
Cause	The change capacity is too large.
Measures	Contact the maker.

C7040

Error message	Parameter changes prohibited
Cause	Changing this parameter is prohibited as it is a dangerous parameter.
Measures	Contact the maker.

H7050

Error message	File is illegal
Cause	This file is damaged.
Measures	Contact to the dealer.

H7060 *

Error message	System error (RAM area full)
Cause	The capacity has been exceeded.
Measures	Contact the maker.

C7070

Error message	Memory area is full
Cause	The program and data have already exceeded the capacity.
Measures	Delete any unnecessary programs or data.

L7071

Error message	Not enough memory area for CTN
Cause	Continue function needs more than 100Kbytes memory area.
Measures	Delete any unnecessary programs.

C7080

Error message	Can not read parameter
Cause	Non-existent parameter or illegal password.
Measures	1. Input the correct parameter name. 2. Input the correct password

C7081

One of the errors below is detected.

Please take measures corresponding to an error message.

Error message	Can not write parameter
Cause	Non-existent parameter or illegal password.
Measures	1. Input the correct parameter name. 2. Input the correct password
Error message	Illegal CRC during parameter writing
Cause	The parameter CRC value is illegal.
Measures	An error is detected in the CRC check in the writing process of a parameter related to the safety monitoring function. Check the communication environment between the robot controller and the personal computer, and perform the writing operation again.

C7090

Error message	Parameter comment illegal
Cause	The number of parameter comment characters exceeded the limit.
Measures	Operation will not be affected, so continue the operation.

C7091

Error message	Parameter save failure
Cause	Failed to save parameter when executing instruction.
Measures	Check if Tool, Base, M_Tool, etc. are running continuously.

L7099

Error message	Can not read parameter "****". Note) "****" is substituted with the "parameter name".
Cause	The parameter doesn't exist.
Measures	Please confirm the parameter name.

H7100

Error message	Robot arm serial number mismatch
Cause	Robot arm that connection was replaced
Measures	Restore or reset the preventive maintenance data or predictive maintenance data. For further information, refer to the "Preventive Maintenance Function User's Instruction Manual" or the "Predictive Maintenance Function User's Instruction Manual".

H7300 *

Error message	Loading the parameter file.
Cause	It is necessary to turn the power ON again to reflect the parameters.
Measures	Turn the power OFF and ON once.

C7310

Error message	Changed variables weren't saved
Cause	The power was OFF during program execution.
Measures	Don't turn the power OFF during program execution.

L7311

Error message	The power was OFF during file saving
Cause	The power was OFF during file saving.
Measures	Don't turn the power OFF during file saving.

L7332

Error message	Can't change to RAM mode in CTN mode
Cause	Can't change to RAM mode in continue mode.
Measures	Please change to RAM mode and perform again.

L7340

Error message	Contine function cannot be used in DRAM mode
Cause	Contine function cannot be used in DRAM mode
Measures	Please change to RAM mode and perform again

L7341

Error message	Can't change to DRAM mode in CTN mode
Cause	Can't change to DRAM mode in CTN mode
Measures	Please change to RAM mode and perform again

L7342

Error message	Global extension cannot be used in DRAM mode
Cause	Global extension cannot be used in DRAM mode
Measures	Please change to RAM mode and perform again

L7343

Error message	Can't change to DRAM mode in PRGGBL mode
Cause	Can't change to DRAM mode in PRGGBL mode
Measures	Please change to RAM mode and perform again

L7350

Error message	CallP execution interval error.
Cause	Subprogram call interval using the CallP command is too short. The execution interval for the CallP command is shorter than the standard value stored in the non-volatile memory. * Error L7350 only occurs on the CR800-D series and CR800-R series.
Measures	<p>Correct the program and re-execute.</p> <p>When using the program without editing it, implement one of the actions shown below.</p> <p>Implementing "(1)" or "(2)" is strongly recommended to prevent the non-volatile memory inside the controller from malfunctioning.</p> <p>1) Edit the program so that the program is not executed repeatedly.</p> <p>Do not call CallP continuously or use programs that end quickly.</p> <p>2) Set the AUTOSAVE parameter (automatically saves the program during automatic operation) to 0 (Not saved).</p> <p>The number of times the non-volatile memory is accessed will decrease thus errors will be less likely to occur.</p> <p>Local variables will no longer be automatically saved after the program has run. If there is a need to save local variables, execute the Save command once before the program ends.</p> <p>3) Set the NVMEMCHK (non-volatile memory access interval check) parameter to 0 (disable).</p> <div style="display: flex; align-items: center;"> <div style="text-align: center; margin-right: 10px;">  CAUTION </div> <div> <p>If this parameter is disabled, errors will not occur but the number of writes to the non-volatile inside the controller will increase which may cause the non-volatile memory to malfunction.</p> <p>Only use (3) as a temporary measure.</p> </div> </div>

L7370

Error message	The password is 8 to 32 char.
Cause	The password is 8 to 32 characters
Measures	Please input the password 8 to 32 characters

L7371

Error message	Only alphanumeric character
Cause	It input it excluding the alphanumeric character
Measures	Please input the password in the alphanumeric character

L7372

Error message	The password is unmatched
Cause	The password is unmatched
Measures	Please input the password again

L7373

Error message	Password lock to the programs
Cause	Password lock to the programs
Measures	Please release password

L7374

Error message	Password lock to the parameter
Cause	Password lock to the parameter
Measures	Please release password

L7375

Error message	Password lock to the files
Cause	Password lock to the files
Measures	Please release password

L7378

Error message	Change password
Cause	The password has not been changed from the initial value.
Measures	The password to change functional safety related parameters has not been changed from the initial value. Change the password to new one, and perform parameter setting. The factory default password is "MELFASafetyPSWD".

C7450

Error message	No battery voltage (robot CPU)
Cause	The battery is spent.
Measures	The battery voltage of the robot CPU dropped to 2.5V or less. Replace the battery, and then restore the robot program and parameters. For more information about the replacement procedure, refer to the separate volumes, "Controller setup, basic operation, and maintenance".

C7451

Error message	Battery voltage low (robot CPU)
Cause	The battery will be spent soon.
Measures	The battery voltage of the robot CPU dropped to 2.7V or less. Back up the robot program and the parameters, and replace the battery immediately. Otherwise, they may be lost due to low voltage. For more information about the replacement procedure, refer to the separate volumes, "Controller setup, basic operation, and maintenance".

C7500

Error message	No battery voltage (robot)
Cause	The battery is spent.
Measures	Replace the battery and set the origin. The origin does not need to be set for the RV-8CRL-D, RV-12CRL-D, RH-10CRH-D, RH-20CRH-D, and RV-5AS-D. If the robot is stored in an ambient temperature of 0°C or lower, this error may occur on startup. Leave the robot in an ambient temperature within the range stipulated in the specifications for a while then turn ON the power. If the same error recurs, contact the manufacturer. For more information about the replacement procedure, refer to the separate volumes, "Instruction Manual/Robot Arm Setup to Maintenance".

C7510

Error message	Battery voltage low (robot)
Cause	The battery will be spent soon.
Measures	Replace the battery. For more information about the replacement procedure, refer to the separate volumes, "Instruction Manual/Robot Arm Setup to Maintenance".

C753n

n indicates the axis number (1 to 6).

Error message	Replenishment time of grease
Cause	It seems that grease reached longevity
Measures	Replenish grease

C754n

n indicates the axis number (1 to 6).

Error message	Exchange time of the belt
Cause	It seems that the belt reached longevity
Measures	Execute the check and the exchange of the belt

H7600 *

Error message	Mechanism number of additional axis is illegal.
Cause	The value of AXMENO (mechanism No. used) parameter is illegal.
Measures	On the mechanical additional axis, change "0" to a value which is smaller than set to AXUNUM (number of mechanisms used).

H7601 *

Error message	Axis number of additional axis is illegal.
Cause	The value of AXJNO (setting axis No.) is illegal.
Measures	Change the value of this parameter from 1 to 3. Change the value of this parameter to a order from 1.

H7602 *

Error message	Axis numbers of additional axis are overlap.
Cause	As the parameter value of AXJNO (setting axis No.), the same value is set at two or more elements.
Measures	Change the values of the element Nos. which set the same values at this pa-rameter AXMENO, to all different values.

H7603 *

Error message	Unit of additional axis is illegal.
Cause	The value of AXUNT (unit axis) parameter is illegal.
Measures	Change the values of all elements of this parameter to "0" or "1".

H7604 *

Error message	Acceleration time of additional axis is illegal.
Cause	The value of AXACC (acceleration time) parameter is illegal.
Measures	Change the values of all elements of this parameter to positive real numbers.

H7605 *

Error message	Deceleration time of additional axis is illegal.
Cause	The value of AXDEC (deceleration time) parameter is illegal.
Measures	Change the values of all elements of this parameter to positive real numbers.

H7606 *

Error message	Gear ratio numerator of additional axis is illegal.
Cause	The value of AXGRTN (total speed ratio numerator) parameter is illegal.
Measures	Change the values of all elements of this parameter to positive integers.

H7607 *

Error message	Gear ratio denominator of additional axis is illegal.
Cause	The value of AXGRTD (total speed ratio denominator) parameter is illegal.
Measures	Change the values of all elements of this parameter to positive integers.

H7609 *

Error message	Motor rated speed of additional axis is illegal.
Cause	The value of AXMREV (rated speed) parameter is illegal.
Measures	Change the values of all elements of this parameter to positive integers.

H7610 *

Error message	Motor maximum speed of additional axis is illegal.
Cause	The value of AXJMX (maximum speed) parameter is illegal.
Measures	Change the values of all elements of this parameter to positive integers.

H7611 *

Error message	Encoder pulse of additional axis is illegal.
Cause	The value of AXENCR (encoder resolution) parameter is illegal.
Measures	Change the values of all elements of this parameter to positive integers.

H7612 *

Error message	JOG smoothening time constant of additional axis is illegal.
Cause	The value of AXJOGTS (JOG smoothening time constant) parameter is illegal.
Measures	Change the values of all elements of this parameter to 0 or positive real number.

H7613 *

Error message	Turn OFF the power supply once, and turn ON it again.
Cause	It is necessary to turn OFF the power supply once.
Measures	Turn OFF the power supply of the controller, and turn it ON again.

H7650

Error message	The force sensor quantity setting is incorrect.
Cause	Only 1 force sensor can be used for a single robot.
Measures	Check the parameter (AXJNO, AXMENO) settings to see whether multiple force sensors have been set.

H7651 *

Error message	Force sense I/F unit initialization error
Cause	The force sense I/F unit was not recognized, and therefore it was not possible to successfully complete initialization.
Measures	Check the force sense I/F unit wiring and whether the power supply is ON.

H7652 *

Error message	Force sense I/F unit revision illegal
Cause	This force sense I/F unit revision is not supported.
Measures	Contact the maker.

H766n

n indicates the sensor axis.

Error message	The force sensor data exceeded the tolerance value.
Cause	The force acting on the force sensor exceeded the set tolerance value.
Measures	The permissible force sense value set in parameter FSLMTMX has been exceeded. Check that the value set in parameter FSLMTMX is suitable for the operation. The weight of the hand and force sensor will cause this error to occur when the force sensor is enabled. This is because the permissible values for the force sensor in parameter FSLMTMX are all set to "0" in the initial settings. Refer to the section "Force Sensor Tolerance" in separate manual, "Instruction Manual/Force Sense Function" for details on the error recovery method.

H7700 *

Error message	CC-Link card is illegal (Error Code).
Cause	CC-Link card is illegal.
Measures	Please exchange the CC-Link card. When it comes back, contact to the dealer.

H7710 *

Error message	Cannot set a CC-Link master station.
Cause	A master station is already set by the rotary switch.
Measures	Set the rotary switch to other than 0.

H7720 *

Error message	Two CC-Link interface cards are mounted.
Cause	Mount one card in slot 2.
Measures	It is not allowed to install two cards. Install only one card.

L7730

Error message	CC-Link data link error (local station connection error)
Cause	There is a line error or the master station's parameter settings are invalid.
Measures	Review the line and parameters.

L7750

Error message	A (CC-Link) cable is not connected or parameters do not match.
Cause	A cable is not connected or parameters do not match.
Measures	Reset the power and start again.

H7760 *

Error message	CC-Link initialization error
Cause	The master station's parameters do not match.
Measures	Correct the parameters, and then start again.

L7780

Error message	A CC-Link register number is outside the range.
Cause	A register number entered is outside the allowable range.
Measures	Enter the correct value.

L7781

Error message	A signal number for CC-Link was specified.
Cause	A signal number for CC-Link was specified.
Measures	Install a CC-Link interface card.

H7810

One of the errors below is detected.

Please take measures corresponding to an error message.

Error message	Ethernet *** parameter ERR Note) "****" is substituted with the "parameter name".
Cause	Illegal parameter (***).
Measures	Correct parameter ***.
Error message	NETPORT/MONPORT parameter error
Cause	The element of NETPORT(1) and MONPORT(1/2) overlap.
Measures	Please set not to overlap to another port number.
Error message	MONPORT/SLMPPORT parameter error
Cause	The element of MONPORT(1/2) and SLMPPORT overlap.
Measures	Please set not to overlap to another port number.
Error message	MONPORT parameter error
Cause	Overlap to the CC-Link IEF Basic Port Number.
Measures	Please set not to overlap to another port number.
Error message	The setting of IP address filter start/end parameter is illegal
Cause	IP address start and end are not on the same network or the range is reversed.
Measures	Correct NETIPFLS and NETIPFLE parameters.

H7820

Error message	Mxt Scomcommand timeout
Cause	The setting time of the MXTTOUT parameter has been exceeded.
Measures	Make the MXTTOUT parameter value larger.

H7830

Error message	"Ethernet card is not installed, or command disable"
Cause	Ethernet card is not installed, or command disable.
Measures	Install Ethernet interface card.

H7840

Error message	Mxt command Illegal received data
Cause	The command argument and the data type do not match.
Measures	Check the command and the data you are sending.

H7860

Error message	SLMP error
Cause	An error related to SLMP has occurred.
Measures	Please confirm the content by a detailed number of the error.

H7861

One of the errors below is detected.

Please take measures corresponding to an error message.

Error message	SLMP parameter error
Cause	Illegal parameter.
Measures	Correct parameter.
Error message	SLMP SLMPPORT parameter error
Cause	Overlap with server port number of NETPORT.
Measures	Please set not to overlap to another port number.
Error message	SLMP SLMPPORT parameter error
Cause	Overlap with element of NETPORT(1) or MONPORT(1/2).
Measures	Please set not to overlap to another port number.

C7880

Error message	Ethernet communication error
Cause	Ethernet cable is disconnected.
Measures	Check the Ethernet connection between the robot CPU and the robot controller. If the Ethernet cable is connected and disconnected many times, wait for a while, then check the connection again. If the error frequently occurs in environments susceptible to noise, take preventive measures such as installing a ferrite core to the Ethernet cable.

C7881

Error message	Ethernet communication error
Cause	CPU unit - controller Ethernet communication is invalid.
Measures	Check the setting of the parameter [RCDUETH].

C7882

Error message	IP address is abnormal
Cause	NETIP and RCDUIP are duplicated or are not in same subnet.
Measures	Check the setting of the parameter [NETIP] or [RCDUIP].

H8250

Error message	Safety comm. Received error info
Cause	Error information was received from the master station with which the safety communication function (CC-Link IE TSN) is communicating.
Measures	Check the master station error. For further information refer to the separate "Safety Communication Function Instruction Manual".

H8252

Error message	Safety comm. timeout
Cause	A timeout error occurred in the safety communication function (CC-Link IE TSN).
Measures	<ul style="list-style-type: none"> Check that the parameter "safety refresh monitoring time" set on the master station is an appropriate value. Check if measures against noise in the transmission path are taken and wiring and devices have no problems. Check that no online operation is being performed from a peripheral such as the engineering tool, or no program or parameter is being written to the master station. <p>For further information refer to the separate "Safety Communication Function Instruction Manual". If the same error occurs again, the possible cause is a hardware failure. Contact the manufacturer.</p>

H8253

Error message	Safety comm. timeout
Cause	A timeout error (unacceptable delay) has occurred in the safety communication function (CC-Link IE TSN).
Measures	<ul style="list-style-type: none">• Check that the parameter "safety refresh monitoring time" set on the master station is an appropriate value.• Check that the parameter "transmission interval monitoring time" set on the robot controller is an appropriate value.• Check if measures against noise in the transmission path are taken and wiring and devices have no problems.• Check that no online operation is being performed from a peripheral such as the engineering tool, or no program or parameter is being written to the master station. <p>For further information refer to the separate "Safety Communication Function Instruction Manual". If the same error occurs again, the possible cause is a hardware failure. Contact the manufacturer.</p>

H8254

Error message	Safety comm. timeout
Cause	A transmission interval error (communication destination) of the safety communication function (CC-Link IE TSN) has occurred.
Measures	<ul style="list-style-type: none">• Check that the parameter "transmission interval monitoring time" set on the master station (communication destination) is an appropriate value.• Check if measures against noise in the transmission path are taken and wiring and devices have no problems.• Check that no online operation is being performed from a peripheral such as the engineering tool, or no program or parameter is being written to the master station. <p>For further information refer to the separate "Safety Communication Function Instruction Manual". If the same error occurs again, the possible cause is a hardware failure. Contact the manufacturer.</p>

H8257

Error message	Safety comm. data error
Cause	A data error has occurred in the safety communication function (CC-Link IE TSN).
Measures	<p>If the same error occurs again, the possible cause is a hardware failure. Contact the manufacturer. For further information refer to the separate "Safety Communication Function Instruction Manual".</p>

H8270 *

Error message	System bus error
Cause	A system bus error was detected.
Measures	<ul style="list-style-type: none">• Check the extension cable connection.• Check the mounting status of the module.• Take measures to reduce noise.• If the error occurs again, the possible cause is a hardware failure of the CPU module, I/O module, master/local module, base unit, or extension cable. Contact the manufacturer.

H8290

Error message	Safety connection error
Cause	A safety connection has not been established with the master station of the communication destination.
Measures	<p>Perform operation after safety connection has been established. For further information refer to the separate "Safety Communication Function Instruction Manual".</p>

H8291

Error message	Safety connection timeout
Cause	Failed to establish the safety connection.
Measures	<p>Check the conditions of the master station (communication destination), network devices in the communication path, and wiring. To change the timeout time settings, use the parameter "SCESTTM". For further information refer to the separate "Safety Communication Function Instruction Manual".</p>

H8292 *

Error message	Out of range (Parameter: SCESTTM)
Cause	Safety connection timer value is out of range.
Measures	<p>Check and correct the parameter "SCESTTM" for the safety connection establishment timer. For further information refer to the separate "Safety Communication Function Instruction Manual".</p>

L8300

Error message	There are a lot of GETPOS define
Cause	GETPOS function are up to 8.
Measures	Please use the same Act No. or reset an unnecessary program.

L8310

Error message	GETPOS undefined
Cause	GETPOS undefined.
Measures	Please define GETPOS.

H8320

Error message	System Error (GETPOS)
Cause	Internal data of GETPOS is illegal.
Measures	Turn the power OFF and ON once.

H8400

Error message	CTN data is illegal (Prec)
Cause	CTN data is illegal. It changed to Prec Off.
Measures	Try to set be a Prec mode again.

H8410 *

Error message	DEVICENET Card failure
Cause	Abnormality of the DEVICENET card is detected.
Measures	Please exchange the DEVICENET card. When replacing the card, contact its manufacturer for advice.

H8420 *

Error message	DEVICENET [T/B ENABLE] switch is outside
Cause	The [T/B ENABLE] switch is outside.
Measures	Please correct the [T/B ENABLE] switch.

H8421 *

Error message	DEVICENET Unit number switch is outside
Cause	The unit number switch is outside.
Measures	Please correct the unit number switch.

H8430

Error message	DEVICENET Communication error
Cause	Network fail or Master setting is illegal.
Measures	Please confirm the network (speed, cable, terminator) or the master unit.

H8440

Error message	DEVICENET Unit number overlaps
Cause	There are more than one unit with the same unit number on the network.
Measures	Please confirm the other unit number.

H8441

Error message	DEVICENET Network power failure
Cause	Network power is turned off.
Measures	Please turn on network power.

H8442

Error message	DEVICENET Other units not found
Cause	Other units are not connected on the network.
Measures	Please confirm the other units.

H8450

Error message	DEVICENET Install more than one
Cause	Only one 2D-TZ571 card can be installed.
Measures	Please install only one 2D-TZ571 card.

H8451

Error message	DEVICENET Set other fieldbus
Cause	Only one. fieldbus card can be installed.
Measures	Only one fieldbus card is installed

L8460

Error message	DEVICENET Timeout
Cause	The I/O communication was can not be done in time.
Measures	Please confirm the other units or power supply of network.

H8470 *

Error message	DEVICENET Param load write error
Cause	Parameter can not be load and written.
Measures	Turn the power OFF and ON once

H8471 *

Error message	DEVICENET Send byte is outside
Cause	Send byte number setting of is out of range
Measures	Please correct the send byte number setting

H8472 *

Error message	DEVICENET Receive byte outside
Cause	Receive byte number setting is outside
Measures	Please correct the receive byte number setting

H8473 *

Error message	DEVICENET Send-receive are 0
Cause	Both receive and send byte number setting are 0.
Measures	Please change receive or send byte number setting.

C8490

Error message	DEVICENET Communication test mode
Cause	It is communication test mode.
Measures	Please change the [T/B ENABLE] switch to 3-5 after the test ends.

H8491 *

Error message	DEVICENET Comm-test unit number
Cause	Unit numbers overlap is detected by communication test.
Measures	Please confirm the other units number.

H8492 *

Error message	DEVICENET Comm-test busoff
Cause	Busoff is detected by communication test.
Measures	Please confirm communication speed, cable, terminator.

H8493 *

Error message	DEVICENET Comm-test net power
Cause	Network power off is detected by communication test.
Measures	Please turn on network power.

H8494 *

Error message	DEVICENET Comm-test send-receive
Cause	Data can not send and receive normal by communication test
Measures	Please confirm connection situation of others, communication speed, cable and terminator

H8500

Error message	PROFIBUS Initial error
Cause	An error was detected in the hardware. The hardware may be at fault.
Measures	Replace the 2D-TZ577 Card. When replacing the card, contact its manufacturer for advice.

H8501

Error message	PROFIBUS watch dog timer error
Cause	An error was detected in the hardware. The hardware may be at fault.
Measures	Replace the 2D-TZ577 Card. When replacing the card, contact its manufacturer for advice.

H8502 *

Error message	Plural PROFIBUS cards are set.
Cause	Only one card is accepted at any one time.
Measures	Install only one card.

H8503 *

Error message	PROFIBUS/CC-Link cards are set.
Cause	Either PROFIBUS or CC-Link card is accepted at any one time.
Measures	Install either a PROFIBUS card or a CC-Link card.

H8504

Error message	Either of the following messages is displayed: (1) PROFIBUS self-check error n (n = 1~7). (2) PROFIBUS cannot self-check.
Cause	An error was detected in the hardware. The hardware may be at fault.
Measures	Replace the 2D-TZ577 Card. When replacing the card, contact its manufacturer for advice.

H8505

Error message	Illegal param (PBMODE)
Cause	PBMODE parameters are not defined validly.
Measures	Correct PBMODE parameters. (0 - normal, 2 - self-diagnosis)

H8506

Error message	Exchange number cannot be set.
Cause	Power the system off and on again.
Measures	If the error recurs, contact the manufacturer for advice.

H8507

Error message	Illegal param (PBMC)
Cause	PBMC parameters are not defined validly.
Measures	Correct PBMODE parameters. (1 - Class 1, 2 - Class 2)

H8510

Error message	PROFIBUS exchange No. is wrong.
Cause	Either of the following causes may be responsible: (1) Station numbers stored in the flash memory are outside the prescribed range. (2) An attempt was made to change to a station number being outside the prescribed range.
Measures	Specify PBNUM parameter with numbers in the range of 1 to 125.

H8520

Error message	PROFIBUS St.number write error.
Cause	An attempt was made to change station numbers when rewriting was disabled.
Measures	Enter "-1" in the "station number" box (robot parameter "PBNUM = -1") so that the existing station numbers are cleared.
Details	An attempt was made to change station numbers when "No_Add_Chg" had been specified with "true" during station number setting from Class 2 Master Station.

H8530

Error message	PROFIBUS St.number write error.
Cause	More than 60 consecutive rewrite attempts were made on the flash ROM.
Measures	Replace the 2D-TZ577 Card. When replacing the card, contact its manufacturer for advice.

H8540

Error message	PROFIBUS flash ROM access error.
Cause	An anomaly in the hardware.
Measures	Replace the 2D-TZ577 Card. When replacing the card, contact its manufacturer for advice.

H8550

Error message	PROFIBUS master bureau's parameter is illegal
Cause	Any one of the following causes may be responsible: (1) Parameters established at the Master Station are incorrect. (2) Set value for communication WDT is too long. (3) Value specified for minimum response time Min_Tsdr is outside the prescribed range.
Measures	Check the slave parameter settings on the Master Station. (Refer to the instruction manual for Master Station.)

H8560

Error message	PROFIBUS communication chip ERR
Cause	An anomaly in the hardware.
Measures	Replace the 2D-TZ577 Card. When replacing the card, contact its manufacturer for advice.

H8570

Error message	PROFIBUS communication Time-out
Cause	Timeout occurred in the communications with the Master Station.
Measures	Check Master Station state and cable connections, and choose a longer communication WDT setting.

H8580

Error message	PROFIBUS I/O composition error.
Cause	Any one of the following causes may be responsible: (1) Data module is not of word type. (2) Swap set value is outside the prescribed range. (3) Data alignment mode set value is outside the prescribed range. (4) Number-of-data modules set value is outside the prescribed range. (5) Data module settings are outside the prescribed range. (6) Parameter setting station numbers are invalid.
Measures	Check the slave parameter settings on the Master Station. (Refer to the instruction manual for Master Station.)

L8600

Error message	The vision is a unconnection
Cause	The vision is a unconnection
Measures	Please check Com No. and Parameter

L8601

Error message	The vision can't be logged on
Cause	The parameter of the user-name or the password is abnormal
Measures	Please set the parameter correctly

L8602

Error message	Password is abnormal
Cause	The password of the user-name is not corresponding
Measures	Please set the password correctly

L8603

Error message	Parameter is abnormal
Cause	The parameter of the user-name or the password is abnormal
Measures	Please set the parameter correctly

L8610

Error message	The communication is abnormal
Cause	The communication was cut
Measures	Please check the communications cable

L8620

Error message	The vision number is abnormal
Cause	The number is not designated by NVOpen
Measures	Please check NVOpen command

L8621

Error message	Vision program name is abnormal
Cause	The vision program name has exceeded 15 characters
Measures	Please make the program name within 15 characters

L8622

Error message	There is no vision program
Cause	There is no specified vision program
Measures	Please check the vision program name Check whether "Job Server" has been enabled. If "Job Server" is enabled, disable it.

L8623

Error message	SKIP number is already used
Cause	SKIP number is already used
Measures	Please confirm the SKIP number

L8630

Error message	The recognition cell is illegal
Cause	There is no value on the cell
Measures	Please check the recognition cell

L8631

Error message	The cell is outside the range
Cause	The range of the cell is exceeded
Measures	Please check the range of the cell

L8632

Error message	The vision is a time-out
Cause	There is no response from the vision
Measures	Please check the time-out time

L8633

Error message	The vision is a time-out (NVTRG)
Cause	There is no response from the vision (NVTRG)
Measures	Please decrease the load of the network

L8634

Error message	There is a comma within the range of the cell
Cause	There is a comma within the range of the cell
Measures	Please check the range of the cell

L8635

Error message	There is no comma within the range of the cell
Cause	There is no comma within the range of the cell
Measures	Please check the range of the cell

L8636

Error message	Vision Tag name is abnormal
Cause	There is no specified vision tag in the vision program
Measures	<p>Please correct the vision tag name.</p> <p>The specified vision tag does not exist in the active vision program, check if the name of the symbolic tag in Easy Builder and the tag name specified in the robot program are the same, and correct the tag name.</p> <p>Please check the tag name, the data type, and the value.</p> <p>In In-Sight Explorer, any of the following conditions may exist.</p> <ul style="list-style-type: none">• The specified tag name does not exist.• "Use English Symbolic Tags for EasyBuilder" is not selected. <p>To check whether the above item is selected, use the following procedure.</p> <p>Click "System" in the menu bar, and then click "Options" to open the Options window. Click "User Interface".</p> <p>Select "Use English Symbolic Tags for EasyBuilder" if necessary, click "Apply" and then "OK".</p> <p>Recreate the vision program (job).</p> <p>If the same error still occurs after checking "Use English Symbolic Tags for EasyBuilder", read the job data of the vision sensor and save it again.</p> <p>Error H8636 occurs when executing the EBRead instruction and error H8637 occurs when executing the EBWrite instruction. The contents are the same.</p>

L8637

Error message	Failure in writing data(EBWrite)
Cause	Specified tag name, data type, or value is illegal.
Measures	<p>Please check the tag name, the data type, and the value.</p> <p>In In-Sight Explorer, any of the following conditions may exist.</p> <ul style="list-style-type: none">• The specified tag name does not exist.• "Use English Symbolic Tags for EasyBuilder" is not selected. <p>To check whether the above item is selected, use the following procedure.</p> <p>Click "System" in the menu bar, and then click "Options" to open the Options window. Click "User Interface".</p> <p>Select "Use English Symbolic Tags for EasyBuilder" if necessary, click "Apply" and then "OK".</p> <p>Recreate the vision program (job).</p> <p>If the same error still occurs after checking "Use English Symbolic Tags for EasyBuilder", read the job data of the vision sensor and save it again.</p> <p>Error H8636 occurs when executing the EBRead instruction and error H8637 occurs when executing the EBWrite instruction. The contents are the same.</p>

L8640

Error message	The image trigger is abnormal
Cause	In the Application Steps of In-Sight Explorer, "Trigger" is set to a setting other than "Camera", "External", or "Manual" under Edit Acquisition Settings in the Set Up Image screen. ("Trigger" is set to "Continuous" or "Network".)
Measures	Please check the trigger setting

L8650

Error message	Please make the vision online
Cause	The vision sensor is off-line
Measures	Please make vision sensor online

L8660

Error message	There is no authority
Cause	The authority of the user-name is not a full access
Measures	Please check user name

L8670

Error message	Can not restart
Cause	It started without resetting it
Measures	Please reset the program

L8680

Error message	Unknown code was received (code no.)
Cause	Status code of unregistration was received from vision sensor. (Status cord which is not registered with robot controller was received.)
Measures	The status code received from vision sensor is displayed to the code no.. When the code no. is not the numerical value, there is a possibility which received abnormal data. Please check the communication state, the communication setting, and the command argument.

L8700

CR800-R/Q series only

Error message	Multi CPU system self-check error
Cause	Illegal parameter of multi CPU system and CPU is abnormal,etc.
Measures	Confirm details and measures of the error with GX Developer etc.

L8710

Error message	PC I/O module parameter(m) error. (m): Target parameter numbers 1-4. (correspond to QXYUNIT 1-4)
Cause	An illegal setting of the PC I/O module was detected.
Measures	Please check the value of parameter.

L8720

Error message	Fuse is blown.(PC I/O module (m)). (m): Target parameter numbers 1-4. (correspond to QXYUNIT 1-4)
Cause	Fuse is blown.(PC I/O module)
Measures	Please refer to the manual of PC I/O module.

L873n

n: Parameter number

Error message	I/O module (m) remove error. (m): Target parameter numbers 1-4. (correspond to QXYUNIT 1-4)
Cause	PC I/O module was removed.
Measures	Please mount PC I/O module.

H8740

Error message	Controller init communication error
Cause	Initial communication with the controller was not possible
Measures	Check the communication cable connection

H8741

Error message	CPU unit init communication error
Cause	Initial communication with the CPU unit was not possible
Measures	Check the communication cable connection

H8751

Error message	Controller communication error
Cause	Communication from the controller was cut off
Measures	Check the communication cable connection

H8752

Error message	CPU unit communication error
Cause	Communication from the CPU unit was cut off
Measures	Check the communication cable connection

H8760

Error message	PLC CPU parameters are not set
Cause	Fixed Scan Communication Area is not set in the PLC CPU
Measures	Please set the Fixed Scan Communication Area in the PLC CPU

H8761

Error message	CPU number setting is illegal
Cause	The setting of CPU number is different
Measures	Please check PLC's multi CPU setting and QMLTCPUN parameter

H8762 *

Error message	Multi CPU parameter setting is illegal
Cause	The multi CPU parameter setting is incorrect.
Measures	Synchronization processing in the robot CPU was not properly performed due to the incorrect multi CPU parameter setting. Please check and correct the value of the multi CPU parameter setting, and then turn the power OFF and ON once.

H877n

n: Refer to "Cause"

Error message	Controller communication error
Cause	Communication error was detected from controller When n is any of 1 to 8: Axis number When n is 9: Force sensor When n is 0: Other than the above
Measures	Check the communication cable connection

H878n

n: Refer to "Cause"

Error message	CPU unit communication error
Cause	Communication error was detected from the CPU unit When n is any of 1 to 8: Axis number When n is 9: Force sensor When n is 0: Other than the above
Measures	Check the communication cable connection

H8790

Error message	Controller error reset error
Cause	Can not reset controller error
Measures	Check the communication cable connection

One of the errors below is detected. Please take measures corresponding to an error message.

Error message	ASIC communication error
Cause	<p>A failure was detected in the communication within the controller. The internal temperature of the controller may be high. For the CR800-R/Q series, the following conditions may also be the cause.</p> <ul style="list-style-type: none"> • The power on timing may be incorrect. • The cable between the controller and the robot CPU may have a fault.
Measures	<p>Check that the controller filter has no clogging and the ambient temperature is 40°C or less. If the error persists after taking above measures, contact the manufacturer. For the CR800-R/Q series, power on the robot controller and then the robot CPU. Check the cable connection between the robot CPU and the controller.</p>
Error message	ASIC CRC error
Cause	<p>A failure was detected in the communication within the controller. The internal temperature of the controller may be high. For the CR800-R/Q series, the following conditions may also be the cause.</p> <ul style="list-style-type: none"> • The power on timing may be incorrect. • The cable between the controller and the robot CPU may have a fault.
Measures	<p>Check that the controller filter has no clogging and the ambient temperature is 40°C or less. If the error persists after taking above measures, contact the manufacturer. For the CR800-R/Q series, power on the robot controller and then the robot CPU. Check the cable connection between the robot CPU and the controller.</p>
Error message	ASIC short frame error
Cause	<p>A failure was detected in the communication within the controller. The internal temperature of the controller may be high. For the CR800-R/Q series, the following conditions may also be the cause.</p> <ul style="list-style-type: none"> • The power on timing may be incorrect. • The cable between the controller and the robot CPU may have a fault.
Measures	<p>Check that the controller filter has no clogging and the ambient temperature is 40°C or less. If the error persists after taking above measures, contact the manufacturer. For the CR800-R/Q series, power on the robot controller and then the robot CPU. Check the cable connection between the robot CPU and the controller.</p>
Error message	ASIC overrunning error
Cause	<p>A failure was detected in the communication within the controller. The internal temperature of the controller may be high. For the CR800-R/Q series, the following conditions may also be the cause.</p> <ul style="list-style-type: none"> • The power on timing may be incorrect. • The cable between the controller and the robot CPU may have a fault.
Measures	<p>Check that the controller filter has no clogging and the ambient temperature is 40°C or less. If the error persists after taking above measures, contact the manufacturer. For the CR800-R/Q series, power on the robot controller and then the robot CPU. Check the cable connection between the robot CPU and the controller.</p>
Error message	ASIC connector connection error
Cause	<p>A failure was detected in the communication within the controller. The internal temperature of the controller may be high. For the CR800-R/Q series, the following conditions may also be the cause.</p> <ul style="list-style-type: none"> • The power on timing may be incorrect. • The cable between the controller and the robot CPU may have a fault.
Measures	<p>Check that the controller filter has no clogging and the ambient temperature is 40°C or less. If the error persists after taking above measures, contact the manufacturer. For the CR800-R/Q series, power on the robot controller and then the robot CPU. Check the cable connection between the robot CPU and the controller.</p>
Error message	ASIC 0byte transmission
Cause	<p>A failure was detected in the communication within the controller. The internal temperature of the controller may be high. For the CR800-R/Q series, the following conditions may also be the cause.</p> <ul style="list-style-type: none"> • The power on timing may be incorrect. • The cable between the controller and the robot CPU may have a fault.
Measures	<p>Check that the controller filter has no clogging and the ambient temperature is 40°C or less. If the error persists after taking above measures, contact the manufacturer. For the CR800-R/Q series, power on the robot controller and then the robot CPU. Check the cable connection between the robot CPU and the controller.</p>

H8810

One of the errors below is detected.

Please take measures corresponding to an error message.

Error message	Communication error
Cause	Error occurred by the data transmission to the servo
Measures	Check the communication cable connection. Check that there is not a source of noise.
Error message	Illegal ID
Cause	ID of the com. data with the servo is not corresponding
Measures	Turn the power OFF and ON once

H8820

Error message	Communication timeout
Cause	The communication with the servo became a timeout
Measures	Turn the power OFF and ON once

H8830

One of the errors below is detected.

Please take measures corresponding to an error message.

Error message	Amplifier unconnection
Cause	The servo amplifier cannot be detected
Measures	Check the cable connection and the power supply of amp.
Error message	Servo axis setting error
Cause	The axis setting is not correct
Measures	Check the servo axis settings (parameters, rotary switches)
Error message	Uncorrespondence amplifier
Cause	Uncorrespondence amplifier is connected
Measures	Remove the uncorrespondence amplifier
Error message	Uncorrespondence protocol
Cause	The communication protocol which does not correspond
Measures	Remove the uncorrespondence amplifier
Error message	Illegal motor ID
Cause	Uncorrespondence motor is connected
Measures	Remove the uncorrespondence motor
Error message	Parameter setting failure
Cause	A set value of the servo parameter is illegal
Measures	Change to a correct value
Error message	Illegal amp. number
Cause	The number of connected amplifiers is not suitable
Measures	Check the number of connected amplifiers

H887n

One of the errors below is detected. Please take measures corresponding to an error message.

Error message	Transient processing error
Cause	Illegal demand data was transmitted
Measures	Turn the power OFF and ON once. If it comes back, contact to your service provider.
Error message	Transient processing timeout
Cause	There is no response to the demand from servo
Measures	Turn the power OFF and ON once. If it comes back, contact to your service provider.

L8910

Error message	Function uncorrespondence
Cause	This robot cannot use this function.
Measures	Do not use this function.

H8920

Error message	Sensor I/F unit error (**) Note) "****" is substituted with the "sensor I/F unit error No." (2 hexadecimal digits)
Cause	An error occurred at the force sensor interface unit.
Measures	Refer to the following page based on the error No. in the Err. Message.  Page 141 Force sense interface unit errors

C8921

Error message	Sensor I/F unit warning (**) Note) "****" is substituted with the "sensor I/F unit warning No." (2 hexadecimal digits)
Cause	A warning occurred at the force sensor interface unit.
Measures	Refer to the following page based on the error No. in the Err. Message.  Page 141 Force sense interface unit errors

C8940

Error message	Inexecutable on configure state
Cause	Inexecutable during configuration operations
Measures	Finish the configuration operation and try again.

H9000 to H9099

Error message	User High level error
Cause	A high-level alarm was issued from the robot program.
Measures	Check the program.

L9100 to L9199

Error message	User Low level error
Cause	A low-level alarm was issued from the robot program.
Measures	Check the program.

C9200 to C9299

Error message	User Caution level error
Cause	A warning was issued from the robot program.
Measures	Check the program.

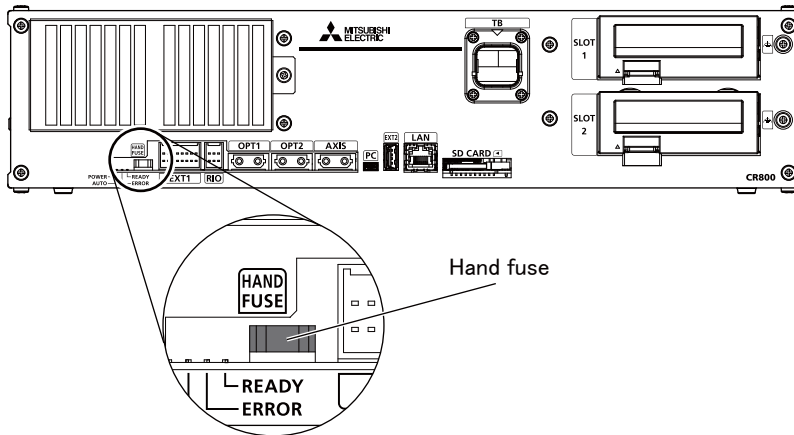
APPENDIX

Appendix 1 Place where fuse replacement is required

Place where hand fuse replacement is required

Replace the fuse (LM16) of HAND FUSE at the front of the controller.

Front of the controller



Appendix 2 Troubles and measures

No.	Category	Description
1	Issue	An unusual noise can be heard (from the robot arm).
	Cause	<ul style="list-style-type: none"> Unusual noises can be caused by friction between movable parts, deformed parts, foreign matters getting inside, and defects in belt tension. An unusual noise is also made from the fan and the cover bolts became loosened.
	Measures	<ul style="list-style-type: none"> Identify the particular point from where the unusual noise is being made, and where necessary treat the problem by replacing parts, etc. When operating at slow speeds, a rattling sound can be heard from the brakes, but this is not unusual. However, if the noise gets louder as the speed gets higher, contact the manufacturer.
2	Issue	An unusual noise can be heard (from RC)
	Cause	<ul style="list-style-type: none"> A noise is made as the internally mounted fan and its casing resonate. A noise is made by the fan catching internal wiring.
	Measures	<ul style="list-style-type: none"> Check the state of the cover fastening. Check to see whether or not the fan is interfering with cables, etc. If no improvement is made after carrying out the above measures, please contact the manufacturer.
3	Issue	The tip of the robot is vibrating.
	Cause	<ul style="list-style-type: none"> The load conditions exceed the specified values (mass, inertia) The load condition settings are not suitable (HNDDAT and WRKDAT settings are not consistent with the load) The tip is being used near a singular point. Acceleration or deceleration is too sudden. The installation stand is not rigid enough. Vibrations from nearby equipment are being felt.
	Measures	<ul style="list-style-type: none"> Check the load conditions and parameter settings. If needed, change the acceleration/deceleration time (command: Accel), speed (command: Ovr), or teaching positions. For further information, refer to CR800 Series Controller Instruction Manual: Detailed explanations of functions and operations. Check the condition of the unit's installation (including external vibrations). If no improvement is made after carrying out the above measures, please contact the manufacturer.
4	Issue	The servo-on cannot be performed
	Cause	<ul style="list-style-type: none"> A servo OFF signal (SRVOFF) is being input from an external source. The operating right is not given. (IOENA parameters settings/exclusive input and output). An error is occurring. TB operation error (3-position enable switch, activate/deactivate)
	Measures	<ul style="list-style-type: none"> Check for a servo OFF signal and check the operation rights. Check how to operate the TB. Check that the 3-position enable switch is set to the middle position. If an error message is occurring please cancel it. If no improvement is made after carrying out the above measures, please contact the manufacturer.
5	Issue	In automatic drive mode the system does not start up even if a startup signal is input. The robot stops during automatic drive.
	Cause	<ul style="list-style-type: none"> A stop signal (STOP/STOP2/SKIP) is being input from an external source. The operating right is not given. (IOENA parameters settings/exclusive input and output). An error is occurring. A start signal (START) has not been input. The slot attribute settings are not set to START. The program's operation commands have not been executed.
	Measures	<ul style="list-style-type: none"> Check for a stop/startup signals and check the operation rights. Check the attributes of the program. With the robot stopped, check the status of the operation program's execution. If an error message is occurring please cancel it. In no improvement is made after carrying out the above measures, please contact the manufacturer.

No.	Category	Description
6	Issue	The position becomes offset during automatic drive. The position becomes offset after moving the equipment.
	Cause	<ul style="list-style-type: none"> • Program error (arithmetic processing, etc.). • Teaching operation error. • Peripheral equipment is offset. • There is a setting error in the origin position data. • The origin position data has been lost (battery life, etc.). • Origin positions are offset (the arm was moved while the power supply was OFF, etc.) • Connecting parts have come loose. • Belt teeth have been skipped. • Increased backlash from the reduction gear.
	Measures	<ul style="list-style-type: none"> • Check the positioning data in the area where the positioning has become offset. • Check the peripheral equipment and the robot's connecting parts (hand, robot installation section, etc.) • Check the remaining time on the robot battery's life. • Check the position of the origin positions. • Check the condition of the belt. • Check whether there is any nearby interference, etc. <p>If no improvement is made after carrying out the above measures, please contact the manufacturer.</p>
7	Issue	The leakage current breaker trips when the controller's primary power switch is turned ON. The leakage current breaker trips when the servo is switched on.
	Cause	<ul style="list-style-type: none"> • Incorrect breaker selection (current capacity/drive purpose, etc.). • Leakage current due to electrically conductive foreign matters (oil/moisture) getting inside. • Earthing due to cable wear.
	Measures	<ul style="list-style-type: none"> • Check the specification of the breaker. • Check whether or not electrically conductive foreign matters have got inside the robot's body or inside the controller. • Check whether or not the cable is damaged.
8	Issue	Oil is leaking from the robot's body
	Cause	<ul style="list-style-type: none"> • Deterioration in the reducer oil seal. • Too much grease was applied. • A grease other than the specified grease was applied. • Excess grease left on the unit when grease was applied. • Foreign materials have stuck to the oil seal (dust, etc.). • Collision. • Insertion work. • Hand parameters are not set. • Lubrication performed without releasing the pressure.
	Measures	<ul style="list-style-type: none"> • Check the amount of grease that should be applied and the name and product number of the grease. • Take measures to make sure that dust, etc. does not adhere to joints. • After applying grease wipe off any grease that is protruding.
9	Issue	Breaker trips/overcurrent error occurs (cutting oil gets inside the robot body)
	Cause	<ul style="list-style-type: none"> • Deterioration in the packing. • Scaling on the packing. • Using a highly permeable cutting oil. • An environment that exceeds the IP functionality.
	Measures	<ul style="list-style-type: none"> • In a mist environment, pull off and replace the packing every time the cover is removed. • If a highly permeable cutting fluid is being used, or in an environment that exceeds the IP functionality, purge the air and take measures on the jacket. <p>* Cutting oil that has got inside the arm must be thoroughly cleaned away or the components inside the arm are at risk of rotting.</p>
10	Issue	The hand does not move properly (air hand)
	Cause	<ul style="list-style-type: none"> • An air leak/break in the piping. • The solenoid bulb has failed. • Wire breakage on the hand signal line. • Hand signal line short circuit • The hand IF card has failed or has been inserted incorrectly. • Sink/source setting error. • Hand connecting wire error • Insufficient air pressure. • A foreign material has got stuck in the air hose. • Faulty connection in the cables that run between devices.
	Measures	<ul style="list-style-type: none"> • Carry out a check on the air hose, joints, air pressure, and connecting wire. • Check the condition of the hand input/output signal. • Check whether or not the controller's sink/source settings and wiring are consistent with each other. • Check the condition of the connections on the cables that run between devices. <p>In the event that no improvement is made after carrying out the above measures, please contact the manufacturer.</p>

No.	Category	Description
11	Issue	The hand does not move properly The hand operation screen is not displayed on the TB (Electric operated hand)
	Cause	<ul style="list-style-type: none"> • Wire breakage on the hand signal line. • The electronic hand controller (manufactured by TAIYO Ltd.) has failed. • Faulty connection in the cables that run between devices. • The software version on the TB and robot controller is not compatible with the electric operated hand. • The user is trying to use the electric operated hand on a model that is not compatible with the electric operated hand.
	Measures	<ul style="list-style-type: none"> • Check the connections. • Check the condition of the hand input/output signal. • Check the mating condition of the cables that run between devices. • Check whether the software version is compatible or not. • Check the model compatibility. <p>If no improvement is made after carrying out the above measures, please contact the manufacturer.</p>
12	Issue	The hand does not move properly The hand operation screen is not displayed on the TB (Multi hand)
	Cause	<ul style="list-style-type: none"> • An air leak/break in the piping. • The solenoid valve has failed. • Wire breakage on the hand signal line. • The multi hand dedicated circuit has failed. • Insufficient air pressure. • A foreign material has got stuck in the air hose. • Faulty connection in the cables that run between devices. • Wire breakage on the hand signal line. • The software version on the TB and robot controller is not compatible with the multi hand. • The user is trying to use the multi hand on a model that is not compatible with the multi hand.
	Measures	<ul style="list-style-type: none"> • A check on the air hose, joints, air pressure, and connections. • Check the condition of the hand input/output signal. • Check the connections. • Check the mating condition of the cables that run between devices. • Check whether the software version is compatible or not. • Check the model compatibility. <p>If no improvement is made after carrying out the above measures, please contact the manufacturer.</p>
13	Issue	Brake is not working properly
	Cause	<p>[Occurs only when operating manually]</p> <ul style="list-style-type: none"> • T/B operation error. <p>[Occurs when operating manually and automatically]</p> <ul style="list-style-type: none"> • Faulty connection of the cables that run between devices. • Brake failure.
	Measures	<p>[Occurs only when operating manually]</p> <ul style="list-style-type: none"> • Check the T/B operation (operation buttons, 3-position enable switch, etc.). <p>[Occurs when operating manually and automatically]</p> <ul style="list-style-type: none"> • Check the mating of the cables that run between devices. <p>If no improvement is made after carrying out the above measures, please contact the manufacturer.</p>
14	Issue	The communication fault occurs by the equipment connected to the Ethernet cable inside the robot arm.
	Cause	<ul style="list-style-type: none"> • The Ethernet cable is not connected surely. • There are the device etc. which cause the noise and the noise has applied to the Ethernet cable.
	Measures	<ul style="list-style-type: none"> • Confirm that the Ethernet cable is connected surely. • If the effect by the noise can be considered, find out the noise source and remove the noise. Moreover, adds the grounding and ferrite core of the Ethernet cable if needed. <p>Recommendation ferrite core: E04SR301334 (SEIWA ELECTRIC MFG. Co.,Ltd.)</p>
15	Issue	The T/B does not display anything.
	Cause	<ul style="list-style-type: none"> • The fuse installed in the controller may have blown out. For the fuse blowout, there may be a ground fault or short circuit in the T/B cable. • The T/B might be out of order.
	Measures	<ul style="list-style-type: none"> • Investigate and correct the ground fault or short circuit portion in the wiring made by the customer. <p>If no improvement is made after carrying out the above measures, please contact the manufacturer.</p>

Appendix 3 Errors involving change in specification

The specification of the following errors changes when the safety monitoring function used in the robot safety option is enabled.

For the RV-5AS, safety monitoring functions are enabled.

To reset the following errors while the safety monitoring function is enabled, reset the power supply.

Error	Error message
H0039	Door Switch Signal line is faulty.
H0046	Faulty wiring (Mode sel. switch).
H0049	Faulty Line ([T/B ENABLE] switch)
H0051	Wiring of the external emergency stop is abnormal.
H0061	EMG line is faulty.(O.Panel)
H0071	EMG line is faulty.(T.Box)
H0074	Faulty line ([T/B ENABLE] switch).
H1680	Cannot servo ON (timeout)
H1681	Unexpected servo OFF
H1682	Servo ON Timeout (Safety relay).
H1683	Servo ON Timeout. (Contactor)

Appendix 4 Force sense interface unit errors

The errors of the force sense interface unit used in the force sense function option.

Error No. (Name)	Cause	Remedy	Detected sensor		
			1F-FS001-W200 1F-FS001-W1000	SINTOKOGIO, LTD.	Canon Inc.
12 (memory error)	Force sense interface unit internal part fault	Replace the unit.	●	●	●
13 (S/W processing error)			●	●	●
21 (sensor initial communication error)	1) The force sensor connection cable is disconnected. 2) The force sensor connection cable is damaged. 3) The connector set has not been prepared correctly (Canon Inc.). 4) Noise contamination occurred. 5) The fuse inside the force sensor interface unit has blown.	1) Check the cable connection. 2) Replace the cable. 3) Check how to prepare the connector set.*1 Wiring the connector set incorrectly may damage the sensor's internals. Contact the manufacturer if the problem cannot be resolved. 4) Perform noise countermeasures.*2 5) When the LED located on the front of the force sense interface unit is off, the fuse is blown. Replace the F2 or F3 fuse inside the force sensor interface unit (Model: LM03).*3	●	●	●
25 (sensor communication error)			●	●	●
28 (sensor error 1)			—	●	—
29 (sensor error 2)			—	●	●
2A (sensor error 3)			—	●	—
34 (communication data error)	1) The SSCNET III cable is disconnected. 2) The SSCNET III cable end face is dirty. 3) The SSCNET III cable is damaged. 4) Noise contamination occurred.	1) Power off the interface unit and check the connections. 2) Wipe any dirt from the end face. 3) Replace the cable. 4) Perform noise countermeasures.*2	●	●	●
36 (communication error)			●	●	●
37 (initial parameter error)			●	●	●
38 (communication frame error)			●	●	●
39 (communication axis information error)			●	●	●
46 (sensor temperature error)	A force sensor temperature was detected outside the operating temperature range.	Ensure the temperature of the force sensor is within the operating range. Contact the manufacturer if this error occurs repeatedly. Operating range: 0 to 50 [°C]	—	—	●
E5 (sensor alarm)	A problem may have occurred with the sensor.	Continued use is possible but consider the following: • Check the temperature of the environment the unit is being used in. • The sensor may have degraded.	—	—	●

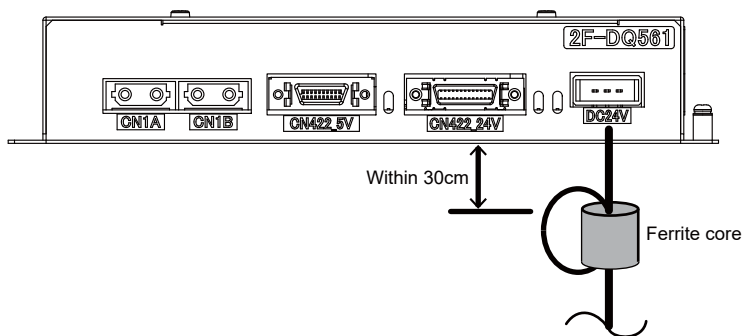
*1 Refer to the explanation for force sensors manufactured by Canon Inc. in the section "Serial Cable Specifications" of the separate "Force Sense Function Instruction Manual" for information on how to prepare the connector set.

*2 The noise suppression method is shown below. Take the measures against a noise by a method suitable for the environment (if necessary). All the measures are not necessarily required.

a) Install the noise filter to the power supply of the peripheral equipment.

b) Attach the ferrite core to the 24 VDC output cable.

When adding a ferrite core, ensure that it is placed in a suitable position that will not place an excessive load on the cable or connector.

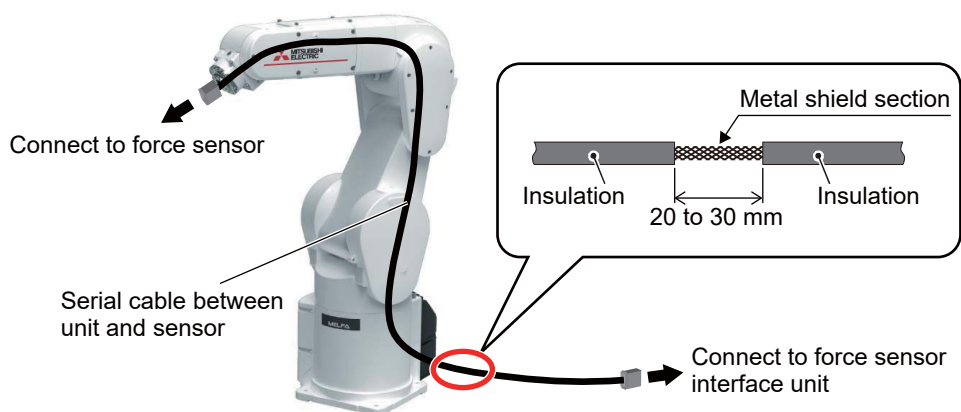


c) Earth clamp for the serial cable between unit and sensor

Strip the insulation from the cable near the base of the robot and ground the metal shield via an earth clamp (supplied by the customer) using the earth (ground) terminal.

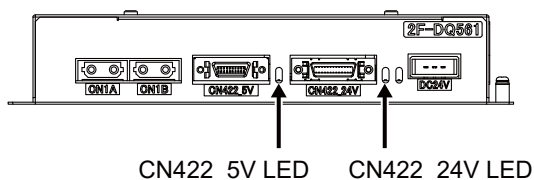
Do not damage the shielded wire when stripping the insulation.

Consider the movement of the robot then fix the cable in place ensuring that no load is placed on the cable.

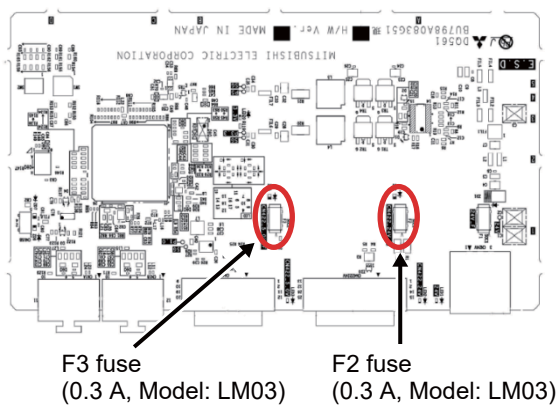


*3 The following diagrams indicate where the LEDs and fuses are on the force sensor interface unit.

Force sensor interface unit



Force sensor interface unit internal circuit board

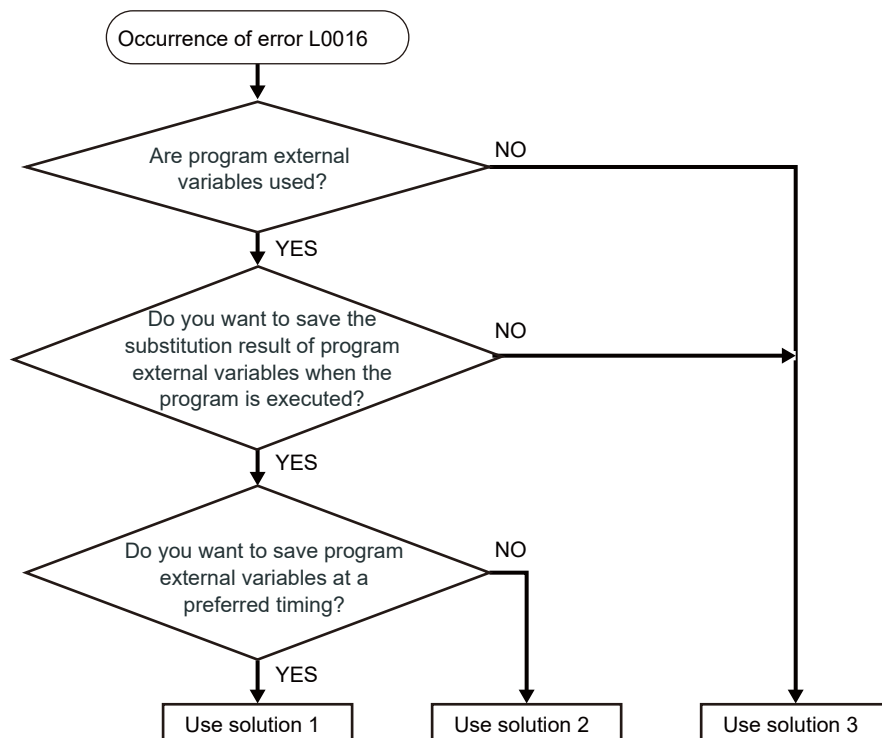


Appendix 5 Solutions when error L0016 occurs

.When error L0016 occurs, refer to the following flowchart to select the solutions to be taken.

* This flowchart is for software version E2 or later.

When using an earlier software version, contact the manufacturer if error L0016 persists even after the power is turned off and on.



Solution No.	Description	Steps
Solution 1	This is a solution for when you want to save program external variables at a preferred timing.	1 Set parameter [PWDNSAVE] to [3]. (Program external variables: Not saved / User-defined external variables: Saved)
		2 Turn on the power again.
		3 Execute the following command just before the next power off to save program external variables. [Save 3]: Save the system base program (program external variables).
Solution 2	This is a solution for when you want to continuously save program external variables.	1 Set parameter [PWDNSAVE] to [3]. (Program external variables: Not saved / User-defined external variables: Saved)
		2 Set parameter [ROMDRV] to [0] (RAM drive). (This may affect the tact time because external variables are continuously saved.)
		3 Turn on the power again.
Solution 3	This is a solution if you do not want to use program external variables, or if you want to use program external variables but do not need to save the substitution result after the program has been executed.	1 Set parameter [PWDNSAVE] to [3]. (Program external variables: Not saved / User-defined external variables: Saved)
		2 Turn on the power again.

A

REVISIONS

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

Revision date	*Manual number	Description
May 2017	BFP-A3480	• First print
June 2017	BFP-A3480-A	• Errors were added. H0315, H0316, H0317, L2660, L2661, L2662, H2663, L6011, H7860, H8740, H8741, H8751, H8752, H8760, H8761, H8770, H8780, H8790 • Measures of error H887n were changed.
September 2017	BFP-A3480-B	• Supplementary explanation were added to measures of error C0152 and H0083.
February 2018	BFP-A3480-C	• Descriptions about the CR800-Q controller were added.
September 2018	BFP-A3480-D	• Supplementary explanation were added to measures of error C0152.
October 2018	BFP-A3480-E	• Supplementary explanation were added to measures of error L2611.
December 2018	BFP-A3480-F	• Added further explanation of the ACIN cable.
April 2019	BFP-A3480-G	• Errors were added. L2804, H6100, H6101, H6110, H6111, H6120, H6130, H6140, H6190, H8410, H8420, H8421, H8430, H8440, H8441, H8442, H8450, H8451, L8460, H8470, H8471, H8472, H8473, C8490, H8491, H8492, H8493, H8494, H8500, H8501, H8502, H8503, H8504, H8505, H8506, H8507, H8510, H8520, H8530, H8540, H8550, H8560, H8570, H8580, L8637 • Corrected error No. L873n, L877n, L878n • Measures of error L8622 were changed.
January 2020	BFP-A3480-H	• Errors were added. C0023, C0024, L3510, C7091, L8910
April 2020	BFP-A3480-J	• Added information for the RV-5AS. • Deleted the cautions for the basic system structure. • Errors were added. H0035, H0214, C0215, H0216, C0217, L2920, L2921, L2922, C2923, L2924, H2925, H7100 • Revised "No.3" in section "2.3 Troubles and measures".
October 2020	BFP-A3480-K	• Amended the precautions regarding the prevention of unauthorized access. • Elaborated on and improved explanations. H0039, L240n, L241n, L2611, H2760, L2810, L3141, L4937, L6641, L6650, H766n, L8636, L8637 • Added error numbers H0076 and C1870. • Deleted error number H0048. • Revised error level. (H6130 → L6130) • Corrected other mistakes and changed some sections.
February 2021	BFP-A3480-M	• Added solution for error L3256.
April 2021	BFP-A3480-N	• Errors were added. C0244, C0245, H0246, H0247, H0248, H0249, H0250, H0251, H0252, H0253, H0254, H0255, H0256, L3880, H8290, H8291, H8292, H8250, H8252, H8253, H8254, H8257, H8270 • Revised error number H7810.
September 2021	BFP-A3480-P	• Corrected other mistakes and changed some sections.
February 2022	BFP-A3480-R	• Software version C2d supported. Added error number C0330. • Corrected other mistakes.
March 2022	BFP-A3480-S	• Added supplementary explanation to countermeasures for errors H0216, C0217, and H231n.
June 2022	BFP-A3480-T	• Added error number C198n.
November 2022	BFP-A3480-U	• Added the following error numbers. C6201, C6202, L6203, L6204, L6205, H6206, H6207, L6208, L6209, L6210, C6211, C6212, C6213, C6214, C6216, C6219, C6220, C6221, C6222, C6225, H6226, C6227, C6228, C6229, C6230, C6231, C6232, C6236, C6238, C6239, C6240, C6241, C6242, H6243, C6244, C6245, C6246, C6247, C6248, C7880, C7881, C7882 • Elaborated on the countermeasure for H1601. • Corrected other mistakes and changed some sections.
April 2023	BFP-A3480-V	• Corrected an error number. (H1100 → H110n) • Added countermeasures for error H115n.

Revision date	*Manual number	Description
September 2023	BFP-A3480-W	<ul style="list-style-type: none"> Added the CR860 controller. Edited SAFETY PRECAUTIONS and INTRODUCTION. Added the following error numbers. H0059, H0060, H0118, H0119, H1495, H8940 Corrected error messages and causes for the following error numbers. L6011, H8740, H8751, H877n, H8790 Corrected measures for the following error numbers. H0041, H0130, H096n, H108n, H1090, H109n, H1490 Added measures for errors H081n, H0850, and H0260. Corrected the cause of error C6090. Corrected causes and measures for errors H0050, H0061, and H8800. Corrected the explanation of error L8700. Corrected other mistakes and changed some sections.
February 2024	BFP-A3480-X	<ul style="list-style-type: none"> Corrected the cause of the following error numbers: H0100, L0101, and C0102. Corrected the measure for error C1940. Deleted "Appendix 2 Fan installation place of robot controller".
September 2024	BFP-A3480-Y	<ul style="list-style-type: none"> Supported software version E1. Added error H2930.
January 2025	BFP-A3480-Z	<ul style="list-style-type: none"> Added reasons for lubrication leakage to "Appendix 2 Troubles and measures". Corrected error H112n. Corrected error messages. L240n, L241n Corrected causes and measures. L6130, L8640 Corrected the measure for error C7500. Added error number L7350. Corrected mistakes and changed some sections.
March 2025	BFP-A3480-AA	<ul style="list-style-type: none"> Corrected measures for the following error numbers. H0090, H0712 Deleted "Place where a brake fuse replacement is required", "Place where fuse replacement is required", and "Place where a converter fuse replacement is required" in "Appendix 1 Place where fuse replacement is required".
July 2025	BFP-A3480-AB	<ul style="list-style-type: none"> Corrected error messages, causes, and solutions. L0016 Added "Appendix 6 Solutions when error L0016 occurs". Changed some sections.

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