# DENSO ROBOT

# ERROR CODE TABLES(T03)

Vertical articulated    V∗ SERIES

Horizontal articulated    H∗ SERIES

**Options**

Vision device  μVision Board

# Preface

Thank you for purchasing the DENSO robot. This book lists error codes to be displayed on the teach pendant if an error occurs in the robot series given below. Those error codes are followed by detailed explanation and recovery action to be taken.

If an error occurs, use this book together with the related instruction manuals.

**Robot series covered by this book**

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|---|---|
| **-G series robot with RC7 controller | - Vertical articulated, V∗-G SERIES<br>- Horizontal articulated, H∗-G SERIES |
| Options | - Vision device, µVision Board |

# CONTENTS

# 1 Guide to Using This Book

This book covers "controller error codes" that would appear on the teach pendant (TP) if an error occurs in the robot controller when the robot is in operation.

Those error codes will be followed by error messages.

Errors that could occur in the robot controller may be classified into five levels. Depending upon the error level, the controller's reaction to errors will differ as listed below. If Level 4 error occurs, for example, the controller will output *Robot Error* signal, stop the program in emergency, switch the motion mode from external to internal, and turn the motor power off. Note: Level 0 is displayed only for 600C (emergency stop ON).

**Error Level List**

| Error level | | The robot controller | | |
|---|---|---|---|---|
| | | **Outputs this error signal:** | **Makes the program come to:** | **Turns the motor power:** |
| **Level 1** [3] | | - | - | - |
| **Level 2** | Errors when using TP[1][3] | -[4] | - | - |
| | Other errors | *Robot Warning*[5] | Halt | - |
| **Level 3** | Errors when using TP[1][3] | - | - | - |
| | Other errors | *Robot Error* | Halt | Off[2] |
| **Level 4** | | *Robot Error* | Emergency stop | Off |
| **Level 5** | | *Robot Error* | Emergency stop | Off (Restart disabled) |

[1] If caused during operation with the teach pendant errors 6000s and run-time errors will be treated in the same way as for "Other errors" listed on the next line.

[2] If any of errors 6071 to 607B and 6671 to 667B (software motion limit over, out of motion space, or singular point), 607F (figure mismatch), 6081 to 6088 (Jx command speed limit over), and 6AF3 (Interference area detected by J1, 2, 3) occurs when the robot is in operation in Manual mode, then the robot controller will not cut off the motor power.

[3] External operation is accepted even when a level 1 error or a level 2 or 3 error in TP operation is displayed.

[4] In version 2.324 or later, if error 21F3 (Enable Auto OFF) in Level 2 occurs, the controller always issues the *Robot Warning* signal. Note that setting the parameter [65: Warning output (0: Enable, 1: Disable)] to 1 prevents the controller from issuing the signal during teach pendant (TP) operation. To access the parameter, use the function keys: [F4 I/O]—[F6 Aux.]—[F1 Set H/W] on the teach pendant screen.

[5] If any of "Other errors" in Level 2 occurs, the RC7 controller issues a *Robot Error* or *Robot Warning* signal depending upon the allocation mode.
*Robot Error* in the mini I/O dedicated mode; *Robot Warning* when using a DeviceNet, CC-Link, PROFIBUS, or Parallel I/O board in the compatible or standard mode, in I/O-box compatible or standard mode, or in compatible or standard mode (compatible with RC5).

# Definition of Terms Used in the Error Level List

| | | |
|---|---|---|
| **Error level** | Errors when using TP | Errors caused by misoperation of the teach pendant (TP). |
| | Other errors | Errors caused during program execution, dedicated I/O input operation, or servo operation. |
| **Outputs this error signal:** | *Robot Warning* | The robot controller will output the *Robot Warning* signal to the external equipment (e.g., PLC) to tell the occurrence of an insignificant error (Level 2 error). |
| | *Robot Error* | The robot controller will output the *Robot Error* signal to the external equipment (e.g., PLC) to tell the occurrence of a fatal error (Level 3 error or higher one). |
| **Makes the program come to:** | Halt (Instantaneous stop) | The robot stops if Level 2 or 3 error occurs. When decelerating the motor speeds for this stop, the robot traces the same motion path as in the normal motion. |
| | Emergency stop | The robot stops in emergency if Level 4 or 5 error occurs. Each axis motor decelerates at the maximum rate for this stop, so the motion path may be different from that in the normal motion, particularly in CP motion. |
| **Turns the motor power:** | Off | If the motor power is ON when an error occurs, the controller will turn the motor power OFF. |
| | Off (Restart disabled) | If the motor power is ON when an error occurs, the controller will turn the motor power OFF. To restart, you need to turn the controller power OFF and ON. Without it, if you attempt to turn the motor power ON, then error 27A6 "Not executable due to fatal error" will result. |

# 2 Controller Error Code Table

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 1201 | Prepare for communication (unconnected) | 4 | The DeviceNet module is operating normally, but I/O connection is not yet established, although the explicit connection with the master device is established. | Establish a connection from the master device.<br>If the network connection can be established even after this error that occurred during a power-on sequence, then increase the wait time for network error detection. |
| 1202 | Prepare for communication (unconnected) | 4 | DeviceNet module operation is normal and connection with the master device is explicitly established, however, the I/O connection is not established. | Establish connection from the master device. |
| 1203 | Prepare for communication (idle status) | 4 | The DeviceNet module is operating normally, but only empty data has been received from the master device within the specified time period. | Check the contents of the I/O data sent from the master device.<br>If the network connection can be established even after this error that occurred during a power-on sequence, then increase the wait time for network error detection. |
| 1204 | Prepare for communication (I/O timeout) | 4 | The DeviceNet module is operating normally, but no data has been received from the master device within the specified time period. | Check and ensure that (a) there is no broken wire in the network cable, (b) the connectors are properly inserted, (c) the cable length is within the limit, and (d) the termination resistor is properly installed at the right position.<br>If the network connection can be established even after this error that occurred during a power-on sequence, then increase the wait time for network error detection. |
| 1205 | Robot access failure in DPRAM | 4 | The robot cannot access the DPRAM on the DeviceNet or CC-Link board. | Power the controller off and on for restart. |
| 120A | Slave exclusive flag failure | 4 | Any exclusive flag of the DeviceNet slave station or the communications processor in the CC-Link remote device is not set normally. | Check that the DeviceNet slave board or CC-Link remote device board is correctly installed. If the error persists, the board may be damaged. |
| 120B | DeviceNet master exclusive flag failure | 4 | The exclusive flag of DeviceNet master communication processor is not working normally. | Check the connection of the DeviceNet master board. If the error persists, the board may be defective. |
| 120C | The network error cleared | 3 | An network error on the DeviceNet, PROFIBUS or CC-Link has been removed. | Carry out the error removal process with the teach pendant, operating panel, or external equipment. |
| 1210 | DeviceNet internal communication error | 4 | Communications data is abnormal due to noises. | Turn the robot controller power off and then on. Retry the operation. |
| 1213 | Disconnected/bus-off state | 4 | Network cable is disconnected or bus is OFF (network not connected). | Verify that the cable connector is securely plugged in at the robot side. If this error occurs after you change the DIP switch settings, verify that the network communication speed matches DIP switch settings. |
| 1215 | Prep. to communicate(initial set error) | 4 | DeviceNet communication process part did not receive initial setting from the controller. | Verify that the network communication speed matches the DIP switch settings. |
| 1216 | Transfer data length abnormal | 4 | The number of input/output slots for DeviceNet exceeds the specified range. | Change the input slot number for DeviceNet to one of 8-32, and that of output slot to one of 7-32, turn the control power OFF and then ON again. |

| Code | Message | Level | Description | Remedy |
|---|---|---|---|---|
| 1217 | Same node No. specified duplication | 4 | Controller node number is overlapped with another node in the online status. | Change the node number so that the node number of the controller does not overlap other nodes. |
| 1218 | FlashRom BCC error | 4 | A BCC error has occurred in the flash ROM on the DeviceNet board. | Power the controller off and on for restart. |
| 1219 | Parameter information area error | 4 | A data error has occurred in the parameter information area on the DeviceNet board. | Power the controller off and on for restart. |
| 121A | Robot control area error | 4 | A data error has occurred in the Robot Controller's control area on the DeviceNet board. | Power the controller off and on for restart.. |
| 121D | Scanlist data table error | 4 | A data error has occurred in the scan list data table on the DeviceNet board. | Power the controller off and on for restart. |
| 121E | Scanlist mapping information area error | 4 | A data error has occurred in the scan list mapping information area on the DeviceNet board. | Power the controller off and on for restart. |
| 121F | The reset service request received | 1 | The DeviceNet board received a reset service request. | The DeviceNet board resets itself and automatically starts communication. |
| 1221 | Busy time of Master exceeded setup value | 4 | DeviceNet master initialization did not end normally. | Turn off the power switch of the controller and then restart operation. |
| 1222 | Master failed in the scanlist formation | 4 | Scan list creation processing of the DeviceNet master failed. | Perform scan list creation processing again. |
| 1223 | Serial number is un-decision | 4 | No serial number is decided for the DeviceNet master. | Enter a serial number from the teach pendant. |
| 1224 | The setup of master board is unusual | 4 | Abnormal setting information is defined in the DeviceNet master. | Turn OFF the power switch of the controller once and restart operation. |
| 1225 | Serial number change failure | 4 | Serial number rewriting failed due to any factor in the DeviceNet master. | Perform serial number rewrite processing again. |
| 1226 | EPR change failure | 4 | EPR rewriting failed due to any factor. | Perform EPR rewrite processing again. |
| 1227 | ISD change failure | 4 | ISD rewriting failed due to any factor in the DeviceNet master. | Perform ISD rewrite processing again. |
| 1228 | Scanlist change failure | 4 | Scan list rewriting failed due to any factor in the DeviceNet master. | Perform scan list rewrite processing again. |
| 1229 | Master FlashROM failure (serial No) | 4 | A serial number could not be written normally in Flash ROM of the DeviceNet master. | Turn OFF the power switch of the controller, confirm whether the board is securely inserted, and perform the same processing again. |
| 122A | Master FlashROM failure (EPR) | 4 | EPR could not be written normally in Flash ROM of the DeviceNet master. | Turn OFF the power switch of the controller, confirm whether the board is securely inserted, and perform the same processing again. |
| 122B | Master FlashROM failure (ISD) | 4 | ISD could not be written normally in Flash ROM of the DeviceNet master. | Turn OFF the power switch of the controller, confirm whether the board is securely inserted, and perform the same processing again. |

| Code | Message | Level | Description | Remedy |
|---|---|---|---|---|
| 122C | Master FlashROM failure (scanlist) | 4 | A scan list could not be written normally in Flash ROM of the DeviceNet master. | Turn OFF the power switch of the controller, confirm whether the board is securely inserted, and perform the same processing again. |
| 122D | DeviceNet Master board doesn't exist | 2 | An attempt was made to change DeviceNet master board data to a controller without DeviceNet master board. | Install the DeviceNet master board to the controller and perform the same operation. |
| 122F | DeviceNet IDLE state | 4 | The DeviceNet board is not sending or receiving I/O data. | Turn the controller power off and then on. Retry the operation. |
| 1230 | Robot access failure in DPRAM(slave) | 4 | The robot controller cannot access the DPRAM in the DeviceNet slave module or on the CC-Link remote device board. | Restart the robot controller and then try the operation again. |
| 1232 | Reset command receiving state | 4 | A reset command was received from the master device. | Restart the robot controller and then try the operation again. |
| 1234 | DeviceNet internal RAM failure | 4 | A RAM error was detected in the self-check of the communications unit. | Restart the robot controller and then try the operation again. |
| 1236 | DeviceNet internal DPRAM failure | 4 | A DPRAM error was detected in the self-check of the communications unit. | Restart the robot controller and then try the operation again. |
| 1237 | DeviceNet internal EEPROM failure | 4 | An EEPROM error was detected in the self-check of the communications unit. | Restart the robot controller and then try the operation again. |
| 1238 | Slave board access failure in DPRAM | 4 | The communication software in the DeviceNet slave station or CC-Link remote device cannot access the DPRAM. | Restart the robot controller and then try the operation again. |
| 1239 | Out of set output range | 2 | Output address is out of the specified range, therefore, output is not available. | Check output address. |
| 123A | Out of set input range | 2 | Input address is out of the specified range, therefore, input is not available. | Check input address. |
| 1240 | Slave I/O area overlaps | 4 | An invalid node address is specified for the slave. | Specify a node address again so that the slave I/O area is not overlapped. |
| 1241 | I/O area range over | 4 | The slave I/O area exceeds the valid range. | Correct the node address so that the I/O area does not exceed the valid range. |
| 1242 | Non-registrable slave detection | 4 | The I/O size of one slave exceeds 64 bytes. | Specify the I/O size with 64 bytes or fewer again. |
| 1243 | Registered slave doesn't exist | 4 | No slave is registered in the scan list. | Register slave information into the scan list by teach pendant operation. |
| 1244 | Inconsistent IO slave size | 4 | The I/O size of the slave unmaches one registered in the scan list. | Rescan from pendant or return the I/O size of the lave to the registered one. |
| 1245 | No response from slave | 4 | No response was returned from the slave. | Normally operate the abnormal slave. |
| 1246 | MACID overlaps | 4 | The node address of this node is used by another node. | Change the node address of either node. |
| 1247 | BusOff condition is detected | 4 | Network entered communication disabled state. | Turn OFF the power switch of the controller and restart operation. |
| 1248 | No network power supply | 4 | No DeviceNet network power is supplied. | Confirm the network power supply line. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 1249 | CAN transmission time out | 4 | Transmission to the CAN chip failed on the DeviceNet master. | Locate and solve the problem occurring on the network. This error can happen when there is no other node in the network and the network is powered on. |
| 124A | DeviceNet RAM failure | 4 | The DeviceNet's communications software detected a hardware error of RAM. | Power the controller off and on for restart. |
| 124B | DeviceNet master ROM failure | 4 | DeviceNet master communication part software detected a ROM hardware error. | Turn OFF the power of the controller and restart operation. |
| 124C | DeviceNet master DPRAM failure | 4 | DeviceNet master communication part software detected a DPRAM hardware error. | Turn OFF the power of the controller and restart operation. |
| 124D | DeviceNet board access failure in DPRAM | 4 | The DeviceNet's communications software cannot access DPRAM. | Power the controller off and on for restart. |
| 124E | Robot side setup bit failure | 4 | The robot set an invalid bit in the DeviceNet master. | Turn OFF the power of the controller and restart operation. |
| 124F | Master communication start is unusual | 4 | An error occurred in network communication processing at initialization of the DeviceNet master. | Turn OFF the power of the controller and restart operation. |
| 126A | CIF board access error | 5 | Failed to access the CIF board. | Restart the controller. |
| 126B | CIF board DPRAM access error | 5 | Failed to access the DPRAM on the CIF board. | Restart the controller. If the error persists, the CIF board may be defective. |
| 126C | CIF board initialization error | 5 | Failed to initialize the CIF board. | Restart the controller. If the error persists, the CIF board may be defective. |
| 126D | CIF board watchdog error | 5 | An error has occurred in the watchdog timer on the CIF board. | Restart the controller. If the error persists, the CIF board may be defective. |
| 126E | Failed CIF board resetting | 5 | Failed to reset the CIF board. | Restart the controller. If the error persists, the CIF board may be defective. |
| 126F | Network is not established | 4 | On the CIF board, no network (e.g., PROFIBUS) has been established. | (1)Check the connection of the line. (2)Check the network settings (e.g., node address). (3)Check lines for breaks. |
| 127A | CIF board failure | 5 | A CIF board error has occurred. | Restart the controller. If the error persists, the CIF board may be defective. |
| 127B | CIF board message send time out | 5 | During message transmission from the CIF board, a timeout has occurred. | Restart the controller. If the error persists, the CIF board may be defective. |
| 127C | CIF board message received time out | 5 | During message reception on the CIF board, a timeout has occurred. | Restart the controller. If the error persists, the CIF board may be defective. |
| 127D | communication watchdog is invalid | 4 | The communications watchdog timer is set to "Disable." | Set the watchdog timer to "Enable"; otherwise, the system cannot check whether the network is established. |
| 127E | Network configuration mismatch | 4 | The configuration data sent from the master unit mismatches that preset in the slave unit. | Check the network settings (e.g., module type). |
| 127F | CIF board Initializing | 4 | You attempted to perform any operation that is not allowed during initialization of the CIF board. | Wait for approx. 20 seconds and then retry the operation. |

| Code | Message | Level | Description | Remedy |
|---|---|---|---|---|
| 128A | CC-Link board error at power on | 4 | When turned on, the robot controller has detected a hardware error on the CC-Link remote device board. | Restart the robot controller and then try the operation again. |
| 128B | CC-Link <- controller handshake error | 4 | An error has occurred in the process of exchanging the status information between the controller and CC-Link remote device board. | Restart the robot controller and then try the operation again. |
| 128C | CC-Link DPRAM data error | 4 | A data error has occurred in the DPRAM. on the CC-Link remote device board. | Restart the robot controller and then try the operation again. |
| 128D | CC-Link communication error | 4 | CC-Link does not operate. | 1.Check that the CC-Link settings made in the controller are not discrepant from those in the master station.<br>2.Check that the CC-Link cable is not broken or the connector is plugged in.<br>3.Check that there is no welding machines or machinery emitting electric noise near the robot unit or its controller.<br>In addition to the above check points, check the status of the LEDs on the front of the CC-Link remote device board. |
| 128E | CC-Link station number error | 2 | "Remote station address + (Number of local stations - 1)" is out of the range from 1 to 63. | Set it within the specified range. |
| 128F | CC-Link communication speed error | 2 | The transmission rate switch is set to any position other than 0 to 4. | Set the transmission rate switch to any of the 0 to 4 positions. |
| 129A | CC-Link occupied stations error | 4 | The number of local (occupied) stations is out of the range from 2 to 4. | Set it within the specified range. |
| 129B | CC-Link CRC error | 1 | The CC-Link board detected a CRC error. The data containing a CRC error will not be read into the controller; only data correctly received will be read. Therefore, no abnormal robot operation will result. | 1.Check that there is no welding machine or machinery emitting electric noise near the robot unit or its controller.<br>2.Check that the termination resistor is set in place.<br>3.Check that the cable length is proper. |
| 129C | CC-Link initialization error | 5 | Failed to initialize the CC-Link board. | Turn the controller power off and then on. Retry the operation. |
| 129D | CC-Link check sum error | 5 | A check-sum error has occurred in the flash ROM on the CC-Link Remote Device board. | Power the controller off and on for restart. |
| 129E | CC-Link board access failure in DPRAM | 4 | The robot cannot access the DPRAM on the CC-Link Remote Device board. | Power the controller off and on for restart. |
| 15A0 | Received data error | 3 | Received data includes an error. | 1.Check the communication settings.<br>2.Check the number of communication data.<br>3.Turn power OFF and then back ON. |
| 15A1 | Receiving timeout | 3 | Receiving timeout occurred. | 1.Change the receiving timeout time.<br>2.Check the communication cable.<br>3.Turn OFF the power and turn it ON. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 15A2 | Sending timeout | 3 | Sending timeout occurred. | 1.Change the receiving timeout time.<br>2.Check the communication cable.<br>3.Turn power OFF and then back ON. |
| 15A3 | Receiving buffer overflow | 3 | The number of receiving data exceeded available input number. | 1.Check the communication setting.<br>2.Check the number of communication data.<br>3.Turn power OFF and then back ON. |
| 15A4 | Received delimiter error | 3 | Received separate code (delimiter) is not correct. | 1.Check the delimiter.<br>2.Check the number of communication data.<br>3.Turn power OFF and then back ON. |
| 15A5 | Serial port communication error | 5 | Communication error occurred due to excess retry number. | 1.Change the number of communication retries.<br>2.Check the communication cable.<br>3.Turn the power OFF and then back ON. |
| 15A6 | Ethernet communication error | 5 | Communication error occurred due to excess retry number. | 1.Change the number of communication retries<br>2.Check the communication cable.<br>3.Turn power OFF and then back ON. |
| 15A8 | Packet failure | 1 | Communication packet failed. | 1.Check the communication setting.<br>2.Check the number of communication data.<br>3.Turn power OFF and then back ON. |
| 15A9 | Communication data error | 1 | Communication error occurred due to excess NAK retry number. | 1.Change the number of NAK communication retries.<br>2.Check the communication cable.<br>3.Turn power OFF and then back ON. |
| 15AA | Same IP address specified twice | 2 | IP address is overlapped. | Set IP address so that it does not overlap. |
| 2003 | Value out of range | 3 | A numeric value given as process parameter was out of range. | Designate a value in the designated range before executing the process again. |
| 2004 | CAL not executed | 2 | Attempt was made to execute a process executable after completion of CAL. | Execute CAL before executing the process again. |
| 2005 | Manual mode not selected | 3 | The specified command can be executed only in the manual mode. | Select the manual mode and retry. |
| 2006 | Turn ON the motor power | 2 | Attempt was made to execute a process executable with the motor power ON. | Turn ON the motor power before executing the process again. |
| 2008 | Robot stop is activated | 2 | Attempt was made to execute a process that is not available in the robot stop ON status. | Turn OFF the robot stop status before executing the process again. |
| 200A | Turn OFF the motor power | 2 | Attempt was made to execute a process that is not available in the motor power OFF status. | Turn OFF the motor power before executing the process again. |
| 200B | Robot is running | 2 | You attempted to perform any operation that is not allowed when the robot is in operation. | Wait for the robot to stop and then start the desired operation. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 2019 | Cannot turn on power during turn off | 3 | You attempted to turn the motor power ON while motor turning OFF sequence is in progress. | Wait for the motor turning OFF sequence to complete and then turn the motor power on. |
| 201E | Machine lock ON | 2 | You attempted to switch the motion mode in machine lock state by using the operating panel. | Use the teach pendant to release the machine lock. |
| 202E | mini I/O data error | 5 | Data error from the mini I/O occurred. | Check that there is no noise source (e.g., welding machine) near the robot unit or controller. And restart the controller. |
| 202F | Controller specifications error | 4 | The robot type does not match the controller type. | Make a suitable combination of the robot unit and controller. And restart the controller. |
| 2031 | Program not found | 2 | Object program for process execution was not found. | 1.Check if the wrong program number is designated.<br>2.Check if a program was loaded after it was transmitted or compiled.<br>3.Check if a transmit error occurs when the execution form file is sent from WINCAPSIII to the controller.<br>4.Check if an error has occurred during compiling by the controller.<br>5.Create the execution form file again by using WINCAPSIII or the controller. Disable the DATE INSPECTION option in WINCAPSIII at this time.<br>6.Check if the status of the command area and the data area are settled when the strobe signal rises in the standard mode.<br>7.Check if the program select signal status is settled when the program start signal rises in the compatible mode. |
| 2032 | Data area 1 remains undefined | 2 | The content of data area 1 is undefined by the program motion command in the standard I/O mode. | 1.Execute again after correcting the status of data area 1.<br>2.Check if the status of data area 1 is settled when the strobe signal rises. |
| 2033 | I/O parity error occurred | 3 | The parity bit status of system-I/O input only is not an odd parity. | Set the parity bit status so that the number of bits which are ON in the system input only I/O and the parity bits of the I/O parity calculation object are odd.<br>2.Set the parity parameter of I/O hardware setting to invalid if no parity bit is detected.<br>3.Check if the status of the command area and data area are settled when the strobe signal rises in the standard mode.<br>4.Check if the program select signal status is settled when the program start signal rises in the compatible mode. |
| 2034 | Internal I/O out of range | 2 | Attempt was made to read or write in an area other than the internal I/O using the standard I/O read and write commands. | Correct so that I/O read and write objects are in the internal I/O range. |
| 2035 | Data area remains undefined | 2 | The data area is not yet defined by I/O commands. | 1.Define the data area properly and then try again.<br>2.Make sure that the data area is properly defined before the strobe signal is turned on. |
| 203C | CPU overheated | 4 | The internal temperature inside the CPU has exceeded the predetermined value. | Wait for the internal temperature to decrease. |

| Code | Message | Level | Description | Remedy |
|---|---|---|---|---|
| 203D | Power supply error | 5 | Failed to start the power supply system. | If the error persists after rebooting the controller, you need to investigate or repair the controller. |
| 203E | Power supply A watchdog error | 5 | A watchdog error occurred in power supply A. | If the error persists after rebooting the controller, you need to investigate or repair the controller. |
| 203F | Power supply B watchdog error | 5 | A watchdog error occurred in power supply B. | If the error persists after rebooting the controller, you need to investigate or repair the controller. |
| 204D | Power supply communication time-out | 4 | Failed to communicate with the power supply system. | If the error persists after rebooting the controller, you need to investigate or repair the controller. |
| 207B | Cannot move to this position | 2 | The point read is a singular point. | Set the reading point to a point other than a singular point. |
| 20D3 | Internal task stopped | 5 | The overtravel release management task has not run. | Turn OFF the controller power switch and restart the operation. |
| 20D5 | Fail to write Over-Travel release queue | 3 | Failed to write an overtravel release queue. | Turn OFF the controller power switch and restart the operation. |
| 20D6 | Safety Parameter mismatch | 5 | Mismatch between the safety monitor parameters and the related parameters. | Correct the safety monitor parameter values and restart the robot controller. |
| 20F1 | Semaphore creation error | 5 | An error has occurred when the controller attempted to create the semaphore. | Turn the controller power off and then on. Retry the operation. |
| 20F2 | Semaphore taking error | 5 | An error has occurred when the controller attempted to get semaphore. | Turn the controller power off and then on. Retry the operation. |
| 2103 | Time to change controller backup battery | 1 | It is time to replace the backup battery in the controller. | Replace the controller backup battery and set the date for the next inspection of the battery. |
| 2106 | Backup battery low voltage | 4 | The voltage level of the backup battery for the memory containing manager files has dropped below the specified level. Therefore, those manager files may be defective.<br>It is impossible to turn the motor on or start programs until any recovery process is followed. | Contact your local Denso Wave representative. |
| 2107 | Backup memory failure | 4 | An error has occurred in the backup memory containing manager files. Therefore, those manager files may be defective.<br>It is impossible to turn the motor on or start programs until any recovery process is followed. | Contact your local Denso Wave representative. |
| 2108 | Controller initialization is unusual | 5 | Failed to initialize the robot safety controller RSC1 due to an Ethernet card failure. | Restart the controller. If the error persists, contact your local Denso Wave representative. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 217D | Internal processing delay | 3 | 1.A delay has occurred in message processing because one of PRINTMSG, HOLD, HALT or PRINTLBL commands have been executed sequentially in the PAC program. 2.A delay has occurred in message processing because "Clear Robot Error" commands of I/O commands have been sequentially executed. 3.A delay has occurred in message processing because "Clear Robot Error" commands from an ORiN application have been sequentially executed. | 1.Modify the PAC program (e.g. add DELAY commands) so that the corresponding commands are NOT executed sequentially. 2.Modify the PLC ladder so that "Clear Robot Error" commands of I/O commands are NOT executed sequentially. 3. Modify the program so that "Clear Robot Error" commands from an ORiN application are NOT executed sequentially. |
| 217E | Internal processing error | 5 | An error occurred in message processing. | Turn OFF the power switch on the controller and restart the operation. |
| 217F | Pendant mode switch is not Auto | 3 | An operation through an I/O device was attempted while the pendant switch is not in Auto mode. That is, you attempted to execute "Operation preparation start" or "Program start" in compatible mode or an I/O command in standard mode. | To execute an I/O operation other than error removal, set the pendant mode switch to Auto. |
| 2187 | Communication error with TP or OP or MP | 4 | A communication error has occurred between the teach pendant and the controller. Possible causes are: 1. Pendant cable broken, short-circuited, or loosely connected. 2. Teach pendant defective. | Check the following, reconnect the teach pendant, and restart the controller. If the error persists, contact your Denso Wave service representative. 1. The pendant cable is correctly connected, without damage or short-circuit. 2. The teach pendant is not broken or damaged. |
| 21B9 | Local variable editing | 2 | You attempted to carry out any operation not allowed during editing of local variables. | After completion of local variable editing, retry the operation. |
| 21BA | Interference check execution error | 4 | An error was detected during the execution of an interference check. | Check the interference check setting. Ensure also that the IO port number of the destination is set to general output or internal IO. |
| 21BB | Loading | 2 | This operation is not available during loading. | Execute this operation after loading is finished. |
| 21BC | Compiling | 2 | This operation is not available during compiling. | Execute this operation after compiling is finished. |
| 21BD | Program editing | 2 | This operation is not available during program editing. | Execute this operation after program editing is finished. |
| 21BE | Parameter editing | 2 | This operation is not available during parameter editing. | Execute this operation after parameter editing is finished. |
| 21BF | Not executable while robot is suspended | 2 | Variable cannot be moved during robot suspension. | Release the robot suspension status. |
| 21C0 | Subtraction error | 5 | Controller internal error. | Turn OFF the controller power switch and restart the operation. |
| 21C1 | Debug exception | 5 | Controller internal error. | Turn OFF the controller power switch and restart the operation. |
| 21C2 | NMI interruption | 5 | Controller internal error. | Turn OFF the controller power switch and restart the operation. |
| 21C3 | Break point | 5 | Controller internal error. | Turn OFF the controller power switch and restart the operation. |
| 21C4 | INTO command overflow | 5 | Controller internal error. | Turn OFF the controller power switch and restart the operation. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 21C5 | Boundary check fault | 5 | Controller internal error. | Turn OFF the controller power switch and restart the operation. |
| 21C6 | Illegal operation code | 5 | Controller internal error. | Turn OFF the controller power switch and restart the operation. |
| 21C7 | Device not usable | 5 | Controller internal error. | Turn OFF the controller power switch and restart the operation. |
| 21C8 | Double fault | 5 | Controller internal error. | Turn OFF the controller power switch and restart the operation. |
| 21C9 | Coprocessor segment over | 5 | Controller internal error. | Turn OFF the controller power switch and restart the operation. |
| 21CA | Illegal TSS | 5 | Controller internal error. | Turn OFF the controller power switch and restart the operation. |
| 21CB | Illegal segment | 5 | Controller internal error. | Turn OFF the controller power switch and restart the operation. |
| 21CC | Stack segment fault | 5 | Controller internal error. | Turn OFF the controller power switch and restart the operation. |
| 21CD | General protection exception | 5 | Controller internal error. | Turn OFF the controller power switch and restart the operation. |
| 21CE | Page exception | 5 | Controller internal error. | Turn OFF the controller power switch and restart the operation. |
| 21CF | (Intel reservation) | 5 | Controller internal error. | Turn OFF the controller power switch and restart the operation. |
| 21D0 | Coprocessor error (overflow) | 5 | 1. Digit overflow occurred in the program.<br>2. Controller internal error. | 1. Reboot the controller and correct the digit overflow.<br>2. Turn OFF the controller power switch and restart the operation. |
| 21D1 | Adjustment check | 5 | Controller internal error. | Turn OFF the controller power switch and restart the operation. |
| 21D2 | Only signal handler was called | 5 | Controller internal error. | Turn OFF the controller power switch and restart the operation. |
| 21D3 | Error occurred | 1 | Attempt was made to execute a process that is not allowed when another error occurs. | Clear the current error before executing the process again. |
| 21D4 | Cannot operate from TP | 1 | Attempt was made to execute a process not executable from the teach pendant, mini-pendant or operating panel. | Execute from a usable device (I/O device or personal computer). |
| 21D5 | Cannot operate from PC | 1 | Attempt was made to execute a process not executable from a personal computer. | Execute from a device (I/O device, teach pendant, mini-pendant or operating panel). |
| 21D6 | Cannot operate from external I/O | 1 | Attempt was made to execute a process not executable from the external I/O. | Execute from a usable device (personal computer, teach pendant, mini-pendant or operating panel). |
| 21D7 | Select dummy I/O mode | 1 | Attempt was made to execute a process executable only in the dummy I/O mode. | Select the dummy I/O mode before executing the process again. |
| 21D8 | Release dummy I/O mode | 1 | Attempt was made to execute a process not executable in the dummy I/O mode. | Release the dummy I/O mode before executing the process again. |
| 21D9 | Hand cable disconnected | 3 | With the "Hand IO. interruption" parameter being set to "1: Valid," the HAND I/O signal was turned from ON to OFF. (This error code is only for the RC5 controller.) | The "Hand IO. interruption" parameter is not usually used, so set it to "0: Invalid" (factory default).<br>Access: [F4 I/O]—[F6 Aux.]—[F1 Set H/W]—"5: Hand IO. interruption" |
| 21DB | Failure to allocate memory | 3 | An attempt to allocate process memory was made to stop a batch of programs, but the attempt failed. | Turn OFF the controller power switch and restart the operation. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 21DC | Internal task stopped | 5 | The internal process task failed and the stop status activated, therefore, processing was aborted. | Turn OFF the controller power switch and restart the operation. |
| 21DD | Undefined I/O device | 2 | Attempt was made to operate a device not defined as an I/O device. | Turn OFF the controller power switch and restart the operation. |
| 21DE | Release machine lock | 2 | Attempt was made to execute a process not executable in machine lock status. | Release machine lock before executing the process again. |
| 21DF | Activate machine lock | 2 | Attempt was made to execute a process executable only in machine lock status. | Select machine lock before executing the process again. |
| 21E0 | Program is running | 2 | Attempt was made to execute a process not executable during program running. | Terminate all the programs before executing the process. |
| 21E1 | All programs stopped | 2 | Attempt was made to execute a process executable only during program running. | Run the program before executing the process again after. |
| 21E2 | Cannot execute in manual mode | 2 | Attempt was made to execute a process not executable in the manual mode. | Select a mode other than the manual mode before executing the process again. |
| 21E3 | Select manual mode | 2 | Attempt was made to execute a process executable only in the manual mode. | Select the manual mode before executing the process again. |
| 21E4 | Cannot execute in teach check mode | 2 | Attempt was made to execute a process not executable in the teach check mode. | Select a mode other than the teach check mode before executing the process again. |
| 21E5 | Select teach check mode | 2 | Attempt was made to execute a process executable only in the teach check mode. | Execute again after selecting the teach check mode. |
| 21E6 | Cannot execute in automatic mode | 2 | Attempt was made to execute a process not executable in the automatic mode. | Select a mode other than the automatic mode before executing the process again. |
| 21E7 | Select automatic mode | 2 | Attempt was made to execute a process executable only in the automatic mode. | Select the automatic mode before executing the process again. |
| 21E8 | Cannot execute in external mode | 2 | Attempt was made to execute a process not executable in the external mode. | Select a mode other than the external mode before executing the process again. |
| 21E9 | Select external mode | 2 | Attempt was made to execute a process executable only in the external mode. | Select the external mode before executing the process again. |
| 21EA | CAL has been executed | 2 | Attempt was made to execute a process executable only before CAL processing. | Turn OFF the power switch and back ON and execute the process before executing CAL. |
| 21EB | Release the deadman switch | 2 | Attempt was made to execute a process not executable with the deadman switch ON. | Release the deadman switch before executing the process again. |
| 21EC | Press the deadman switch | 2 | Attempt was made to execute a process executable only with the deadman switch ON. | Press the deadman switch before executing the process again. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 21ED | Robot stop OFF | 2 | Attempt was made to execute a process not executable with the robot stop status OFF. | Turn ON the robot stop status before executing the process again. |
| 21EE | Halt ON | 2 | Attempt was made to execute a process not executable with the halt I/O input ON. | Turn OFF the halt I/O input before executing the process again. |
| 21EF | Halt OFF | 2 | Attempt was made to execute a process not executable with the halt I/O input OFF. | Turn ON the halt I/O input before executing the process again. |
| 21F0 | Step stop ON | 2 | Attempt was made to execute a process not executable with the step stop I/O input ON. | Turn OFF the step stop I/O input before executing the process again. |
| 21F1 | Step stop OFF | 2 | Attempt was made to execute a process executable with the step stop I/O input OFF. | Turn ON the step stop I/O input before executing the process again. |
| 21F2 | Enable Auto ON | 2 | Attempt was made to execute a process executable with the automatic enable I/O input ON. | Turn OFF the automatic enable I/O input before executing the process again. |
| 21F3 | Enable Auto OFF | 2 | Attempt was made to execute a process not executable with the automatic enable I/O input OFF. | Turn ON the automatic enable I/O input before executing the process again. |
| 21F4 | Undefined I/O command | 2 | The status of the command area was not defined using the standard mode I/O. | 1.Check if the status was defined as an I/O command.<br>2.When the strobe signal is input, Check if the I/O command area status is secured. |
| 21F5 | Same program is running | 2 | During program execution, Attempt was made to execute the same program again. | Reconsider the process so that the same program does not start during program execution. |
| 21F6 | Can't change speed while program running | 2 | During program execution, a speed change command was received from the external device. However, it failed. | Change after the motion is finished, because changing the speed from the external device is prohibited during program execution. |
| 21F7 | Cannot take arm semaphore | 4 | 1.A task having no arm semaphore tried to execute robot motion-related commands.<br>2.Attempt was made to take arm semaphore but another task already had the arm semaphore. | 1.Take the arm semaphore with the TAKEARM statement, and execute the robot motion related commands.<br>2.Change the programs so that multiple programs do not attempt to take the arm semaphore at the same time. |
| 21F8 | Cannot release arm semaphore | 4 | Attempt was made to release the arm semaphore although another task has already taken the arm semaphore. | Edit the program so that the task that took the arm semaphore with the TAKEARM statement also releases the arm semaphore. |
| 21F9 | Cannot take vision semaphore | 4 | 1.A task having no vision semaphore tried to execute vision related commands.<br>2.Attempt was made to take the vision semaphore although another task already took the vision semaphore. | 1.Execute vision-related commands after taking semaphore using the TAKEVIS statement.<br>2.Change so that multiple programs do not attempt to take the vision semaphore at the same time. |
| 21FA | Cannot release vision semaphore | 4 | Attempt was made to release the vision semaphore although another task has already taken the vision semaphore. | Edit the program so that the task that took the vision semaphore with the TAKEVIS statement also releases the vision semaphore. |
| 21FB | Reserved output area writing error | 3 | An attempt was made to access a write-inhibited system area. | Check the output address. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 21FC | Enable Auto signal OFF | 2 | In the internal and external mode, the external automatic enable signal turned OFF. | Match the select SW and the external automatic enable signal status and then determine the mode. |
| 21FD | Enable Auto signal ON | 2 | In the manual and teach check mode, the external automatic enable signal turned ON. | Match the select SW and the external automatic enable signal status and then determine the mode. |
| 21FE | Power OFF during compiling | 4 | The controller power supply turned OFF during compiling. | Compile again or transfer an execution file from WINCAPSIII. |
| 2200 | I/O execution fail | 4 | Failed to process I/Os. | Turn the controller power off and then on. Retry the operation. |
| 220F | I/O device changed | 5 | The status or configuration of I/O devices has been changed since the last operation. (Example: A new DeviceNet Slave board has been mounted.) | Update the I/O status and configuration settings and then restart the controller. |
| 2220 | Not available I/O option board set | 4 | The combination of the I/O devices is not suitable. Example: DeviceNet and CC-Link are not compatible in a controller. | Make a suitable combination of I/O devices. |
| 222E | Communication to restart failed (master) | 2 | Communication of the DeviceNet master restarted after parameter change, but it failed. | Confirm whether the cable connected to the DeviceNet master board is loosened, and restart communication by rescanning. |
| 2257 | Media read CRC error | 5 | Reading failed due to abnormal check sum in CRC of the read data. | 1 Check to see that the FG (frame ground) terminals of the robot body and controller are grounded.<br>2 Check to see that there is no noise-generating equipment (welder, etc.) near the robot body and controller.<br>3 Operate the robot again after turning the controller power off once.<br>4 If the same error occurs again, the data is destroyed. Manually input the setting data again. |
| 225B | DeviceNet master data is not found | 2 | The controller power was turned OFF during compilation. | Compile again or transfer an execution file from WINCAPSIII. |
| 2280 | Maximum connection of USB was exceeded | 1 | Connecting a USB device to the robot controller has exceeded the maximum number of USB device connection times allowed with the controller power turned on. | To access the USB device, reboot the robot controller and then connect the USB device again. |
| 2281 | USB cannot be recognized | 1 | The robot controller cannot find the USB device since the USB device has been removed without being released. | To access the USB device, reboot the robot controller and then connect the USB device again. |
| 2282 | USB cannot be connected at the same time | 1 | You attempted to connect such a USB device that cannot share the controller with one previously connected. | Do not connect more than one data storage USB device such as a USB FDD to the controller. |
| 2283 | USB was detached without release | 1 | The USB device has been disconnected without being released. The controller cannot access any USB device until you reboot the controller. (You should release the USB device first and then disconnect it.) | To access the USB device, reboot the robot controller and then connect the USB device again. |
| 22F0 | System failure in S-LinkV | 4 | A system error occurred in the S-LinkV board. | 1.Turn the controller power off and then on. Retry the operation.<br>2.If the error persists, contact the S-LinkV board manufacturer. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 22F1 | Shorted between 24V and D in S-LinkV | 4 | +24V and D in S-LinkV short-circuited. | Repair the short-circuited section (between +24V and D) of the communication line. (Refer to the S-LinkV instruction manual.) |
| 22F2 | Shorted between D and G in S-LinkV | 4 | Short circuit occurred between D and G in S-LinkV. | Repair the short-circuited section (between D and G) of the communication line. (Refer to the S-LinkV instruction manual.) |
| 22F3 | Error or Broken wire in S-LinkV | 4 | An error occurred in I/O unit or the PLC I/O connector recognition unit, or the communications wire was broken. | First, pinpoint the defective unit by pressing the [F8 Error search↓] or [F9 Error search ↑]on the I/O monitor screen of the teach pendant (TP). Then, check the related units and connectors. (Refer to the S-LinkV instruction manual.) |
| 22F4 | Added non-recognized unit in S-LinkV | 4 | An unrecognized unit was added to the S-LinkV. | Press the [F12 SLKV reset] on the I/O monitor screen of the teach pendant (TP) and carry out the system setting. If "SLINKV communication condition Good" appears, it means OK. |
| 22F5 | Power failure in S-LinkV | 4 | -Short circuit occurred in the output line of the S-LinkV output unit.<br>-I/O device drive power shut down. | Check the output unit and its drive power source. |
| 22F6 | System reset failure in S-LinkV | 4 | System settings abnormal. | Check the system settings.<br>1.Take measures for electric noise sources in the vicinity of the robot and controller.<br>2.Check the wiring rules including wire length again.<br>3.Check the wiring for weak contact.<br>(Refer to the S-LinkV instruction manual.) |
| 22F7 | S-LinkV H/W setting failure | 5 | Any of the I/O setting switches (SW3 and SW4) on the S-LinkV board is not set to "input." | Turn the controller power off. Set all of the I/O setting switches (SW3 and SW4) to "input." |
| 235A | Power off while receiving data | 2 | When high-speed transfer setting was valid, the power was turned OFF without saving data during transfer from WINCAPSIII to the controller or after transfer ended. | When this error occurred, the execution-format file gets undefined, and deleted.<br>After transfer ended, save the file or edit it with the teach pendant for compilation. |
| 235B | Power OFF during files saving | 5 | The power was turned OFF during file saving.  The program file may be destroyed. | Restart the system and then confirm the contents of the program file. Perform transfer, editing, and compilation as required. |
| 235C | Files saving | 2 | This operation is invalid because file saving is in progress. | Perform this operation after file saving ends. |
| 23E9 | Semaphore error | 5 | Access to I/O failed. | Turn OFF the controller power switch and restart the operation. |
| 2481 | End-effector is out of allowable area | 3 | In Continue-start operation the distance between the auto-adjustment position and the present position is out of allowable range. | Increase parameters of arm allowable range of auto position adjustment. |
| 2490 | The robot arm end enters inhibit area0 | 4 | Tool-end invaded forbidden area | Cancel area 0 during motor off and move out of area 0, then make area 0 effective.<br>Release machine-lock when machine-lock occurs. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 2491 | The robot arm end enters inhibit area1 | 4 | Tool-end invaded forbidden area | Cancel area 1 during motor off and move out of area 1 ,then make area 1 effective.<br>Release machine-lock when machine-lock occurs. |
| 2492 | The robot arm end enters inhibit area2 | 4 | Tool-end invaded forbidden area | Cancel area 2 during motor off and move out of area 2, then make area 2 effective.<br>Release machine-lock when machine-lock occurs. |
| 2493 | The robot arm end enters inhibit area3 | 4 | Tool-end invaded forbidden area | Cancel area 3 during motor off and move out of area 3, then make area 3 effective.<br>Release machine-lock when machine-lock occurs. |
| 2494 | The robot arm end enters inhibit area4 | 4 | Tool-end invaded forbidden area | Cancel area 4 during motor off and move out of area 4, then make area 4 effective.<br>Release machine-lock when machine-lock occurs. |
| 2495 | The robot arm end enters inhibit area5 | 4 | Tool-end invaded forbidden area | Cancel area 5 during motor off and move out of area 5, then make area 5 effective.<br>Release machine-lock when machine-lock occurs. |
| 2496 | The robot arm end enters inhibit area6 | 4 | Tool-end invaded forbidden area | Cancel area 6 during motor off and move out of area 6, then make area 6 effective.<br>Release machine-lock when machine-lock occurs. |
| 2497 | The robot arm end enters inhibit area7 | 4 | Tool-end invaded forbidden area | Cancel area 7 during motor off and move out of area 7, then make area 7 effective.<br>Release machine-lock when machine-lock occurs. |
| 2498 | The arm end enters inhibit area0(DIRECT) | 2 | In direct teaching mode, the tool end enters the prohibited area. | Move the tool end outside prohibited area 0. |
| 2499 | The arm end enters inhibit area1(DIRECT) | 2 | In direct teaching mode, the tool end enters the prohibited area. | Move the tool end outside prohibited area 1. |
| 249A | The arm end enters inhibit area2(DIRECT) | 2 | In direct teaching mode, the tool end enters the prohibited area. | Move the tool end outside prohibited area 2. |
| 249B | The arm end enters inhibit area3(DIRECT) | 2 | In direct teaching mode, the tool end enters the prohibited area. | Move the tool end outside prohibited area 3. |
| 249C | The arm end enters inhibit area4(DIRECT) | 2 | In direct teaching mode, the tool end enters the prohibited area. | Move the tool end outside prohibited area 4. |
| 249D | The arm end enters inhibit area5(DIRECT) | 2 | In direct teaching mode, the tool end enters the prohibited area. | Move the tool end outside prohibited area 5. |
| 249E | The arm end enters inhibit area6(DIRECT) | 2 | In direct teaching mode, the tool end enters the prohibited area. | Move the tool end outside prohibited area 6. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 249F | The arm end enters inhibit area7(DIRECT) | 2 | In direct teaching mode, the tool end enters the prohibited area. | Move the tool end outside prohibited area 7. |
| 24A0 | Time to change robot backup battery | 1 | It is time to replace the encoder backup battery (robot). | Replace the encoder backup battery (robot). |
| 25B2 | Program list displaying | 2 | This operation is not available during displaying the program list. | Execute this operation after the program list has been displayed. |
| 25B3 | Valiable values displaying | 2 | This operation is not available during displaying variable values. | Execute this operation after the variable values have been displayed. |
| 26B0 | The robot arm end enters inhibit area8 | 4 | The end-of-arm tooling has entered interference check area 8. | With motors OFF, make interference check area 8 inactive, move the end-of-arm tooling out of the area, and then make the area active. If the robot is machine-locked, release it once and follow the same procedure. |
| 26B1 | The robot arm end enters inhibit area9 | 4 | The end-of-arm tooling has entered interference check area 9. | With motors OFF, make interference check area 9 inactive, move the end-of-arm tooling out of the area, and then make the area active. If the robot is machine-locked, release it once and follow the same procedure. |
| 26B2 | The robot arm end enters inhibit area10 | 4 | The end-of-arm tooling has entered interference check area 10. | With motors OFF, make interference check area 10 inactive, move the end-of-arm tooling out of the area, and then make the area active. If the robot is machine-locked, release it once and follow the same procedure. |
| 26B3 | The robot arm end enters inhibit area11 | 4 | The end-of-arm tooling has entered interference check area 11. | With motors OFF, make interference check area 11 inactive, move the end-of-arm tooling out of the area, and then make the area active. If the robot is machine-locked, release it once and follow the same procedure. |
| 26B4 | The robot arm end enters inhibit area12 | 4 | The end-of-arm tooling has entered interference check area 12. | With motors OFF, make interference check area 12 inactive, move the end-of-arm tooling out of the area, and then make the area active. If the robot is machine-locked, release it once and follow the same procedure. |
| 26B5 | The robot arm end enters inhibit area13 | 4 | The end-of-arm tooling has entered interference check area 13. | With motors OFF, make interference check area 13 inactive, move the end-of-arm tooling out of the area, and then make the area active. If the robot is machine-locked, release it once and follow the same procedure. |
| 26B6 | The robot arm end enters inhibit area14 | 4 | The end-of-arm tooling has entered interference check area 14. | With motors OFF, make interference check area 14 inactive, move the end-of-arm tooling out of the area, and then make the area active. If the robot is machine-locked, release it once and follow the same procedure. |
| 26B7 | The robot arm end enters inhibit area15 | 4 | The end-of-arm tooling has entered interference check area 15. | With motors OFF, make interference check area 15 inactive, move the end-of-arm tooling out of the area, and then make the area active. If the robot is machine-locked, release it once and follow the same procedure. |
| 26B8 | The robot arm end enters inhibit area16 | 4 | The end-of-arm tooling has entered interference check area 16. | With motors OFF, make interference check area 16 inactive, move the end-of-arm tooling out of the area, and then make the area active. If the robot is machine-locked, release it once and follow the same procedure. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 26B9 | The robot arm end enters inhibit area17 | 4 | The end-of-arm tooling has entered interference check area 17. | With motors OFF, make interference check area 17 inactive, move the end-of-arm tooling out of the area, and then make the area active. If the robot is machine-locked, release it once and follow the same procedure. |
| 26BA | The robot arm end enters inhibit area18 | 4 | The end-of-arm tooling has entered interference check area 18. | With motors OFF, make interference check area 18 inactive, move the end-of-arm tooling out of the area, and then make the area active. If the robot is machine-locked, release it once and follow the same procedure. |
| 26BB | The robot arm end enters inhibit area19 | 4 | The end-of-arm tooling has entered interference check area 19. | With motors OFF, make interference check area 19 inactive, move the end-of-arm tooling out of the area, and then make the area active. If the robot is machine-locked, release it once and follow the same procedure. |
| 26BC | The robot arm end enters inhibit area20 | 4 | The end-of-arm tooling has entered interference check area 20. | With motors OFF, make interference check area 20 inactive, move the end-of-arm tooling out of the area, and then make the area active. If the robot is machine-locked, release it once and follow the same procedure. |
| 26BD | The robot arm end enters inhibit area21 | 4 | The end-of-arm tooling has entered interference check area 21. | With motors OFF, make interference check area 21 inactive, move the end-of-arm tooling out of the area, and then make the area active. If the robot is machine-locked, release it once and follow the same procedure. |
| 26BE | The robot arm end enters inhibit area22 | 4 | The end-of-arm tooling has entered interference check area 22. | With motors OFF, make interference check area 22 inactive, move the end-of-arm tooling out of the area, and then make the area active. If the robot is machine-locked, release it once and follow the same procedure. |
| 26BF | The robot arm end enters inhibit area23 | 4 | The end-of-arm tooling has entered interference check area 23. | With motors OFF, make interference check area 23 inactive, move the end-of-arm tooling out of the area, and then make the area active. If the robot is machine-locked, release it once and follow the same procedure. |
| 26C0 | The robot arm end enters inhibit area24 | 4 | The end-of-arm tooling has entered interference check area 24. | With motors OFF, make interference check area 24 inactive, move the end-of-arm tooling out of the area, and then make the area active. If the robot is machine-locked, release it once and follow the same procedure. |
| 26C1 | The robot arm end enters inhibit area25 | 4 | The end-of-arm tooling has entered interference check area 25. | With motors OFF, make interference check area 25 inactive, move the end-of-arm tooling out of the area, and then make the area active. If the robot is machine-locked, release it once and follow the same procedure. |
| 26C2 | The robot arm end enters inhibit area26 | 4 | The end-of-arm tooling has entered interference check area 26. | With motors OFF, make interference check area 26 inactive, move the end-of-arm tooling out of the area, and then make the area active. If the robot is machine-locked, release it once and follow the same procedure. |
| 26C3 | The robot arm end enters inhibit area27 | 4 | The end-of-arm tooling has entered interference check area 27. | With motors OFF, make interference check area 27 inactive, move the end-of-arm tooling out of the area, and then make the area active. If the robot is machine-locked, release it once and follow the same procedure. |
| 26C4 | The robot arm end enters inhibit area28 | 4 | The end-of-arm tooling has entered interference check area 28. | With motors OFF, make interference check area 28 inactive, move the end-of-arm tooling out of the area, and then make the area active. If the robot is machine-locked, release it once and follow the same procedure. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 26C5 | The robot arm end enters inhibit area29 | 4 | The end-of-arm tooling has entered interference check area 29. | With motors OFF, make interference check area 29 inactive, move the end-of-arm tooling out of the area, and then make the area active. If the robot is machine-locked, release it once and follow the same procedure. |
| 26C6 | The robot arm end enters inhibit area30 | 4 | The end-of-arm tooling has entered interference check area 30. | With motors OFF, make interference check area 30 inactive, move the end-of-arm tooling out of the area, and then make the area active. If the robot is machine-locked, release it once and follow the same procedure. |
| 26C7 | The robot arm end enters inhibit area31 | 4 | The end-of-arm tooling has entered interference check area 31. | With motors OFF, make interference check area 31 inactive, move the end-of-arm tooling out of the area, and then make the area active. If the robot is machine-locked, release it once and follow the same procedure. |
| 26E0 | The arm end enters inhibit area8:DIRECT | 2 | In Direct mode, the end-of-arm tooling has entered interference check area 8. | Move the end-of-arm tooling out of the area. |
| 26E1 | The arm end enters inhibit area9:DIRECT | 2 | In Direct mode, the end-of-arm tooling has entered interference check area 9. | Move the end-of-arm tooling out of the area. |
| 26E2 | The arm end enters inhibit area10:DIRECT | 2 | In Direct mode, the end-of-arm tooling has entered interference check area 10. | Move the end-of-arm tooling out of the area. |
| 26E3 | The arm end enters inhibit area11:DIRECT | 2 | In Direct mode, the end-of-arm tooling has entered interference check area 11. | Move the end-of-arm tooling out of the area. |
| 26E4 | The arm end enters inhibit area12:DIRECT | 2 | In Direct mode, the end-of-arm tooling has entered interference check area 12. | Move the end-of-arm tooling out of the area. |
| 26E5 | The arm end enters inhibit area13:DIRECT | 2 | In Direct mode, the end-of-arm tooling has entered interference check area 13. | Move the end-of-arm tooling out of the area. |
| 26E6 | The arm end enters inhibit area14:DIRECT | 2 | In Direct mode, the end-of-arm tooling has entered interference check area 14. | Move the end-of-arm tooling out of the area. |
| 26E7 | The arm end enters inhibit area15:DIRECT | 2 | In Direct mode, the end-of-arm tooling has entered interference check area 15. | Move the end-of-arm tooling out of the area. |
| 26E8 | The arm end enters inhibit area16:DIRECT | 2 | In Direct mode, the end-of-arm tooling has entered interference check area 16. | Move the end-of-arm tooling out of the area. |
| 26E9 | The arm end enters inhibit area17:DIRECT | 2 | In Direct mode, the end-of-arm tooling has entered interference check area 17. | Move the end-of-arm tooling out of the area. |
| 26EA | The arm end enters inhibit area18:DIRECT | 2 | In Direct mode, the end-of-arm tooling has entered interference check area 18. | Move the end-of-arm tooling out of the area. |
| 26EB | The arm end enters inhibit area19:DIRECT | 2 | In Direct mode, the end-of-arm tooling has entered interference check area 19. | Move the end-of-arm tooling out of the area. |
| 26EC | The arm end enters inhibit area20:DIRECT | 2 | In Direct mode, the end-of-arm tooling has entered interference check area 20. | Move the end-of-arm tooling out of the area. |

| Code | Message | Level | Description | Remedy |
|---|---|---|---|---|
| 26ED | The arm end enters inhibit area21:DIRECT | 2 | In Direct mode, the end-of-arm tooling has entered interference check area 21. | Move the end-of-arm tooling out of the area. |
| 26EE | The arm end enters inhibit area22:DIRECT | 2 | In Direct mode, the end-of-arm tooling has entered interference check area 22. | Move the end-of-arm tooling out of the area. |
| 26EF | The arm end enters inhibit area23:DIRECT | 2 | In Direct mode, the end-of-arm tooling has entered interference check area 23. | Move the end-of-arm tooling out of the area. |
| 26F0 | The arm end enters inhibit area24:DIRECT | 2 | In Direct mode, the end-of-arm tooling has entered interference check area 24. | Move the end-of-arm tooling out of the area. |
| 26F1 | The arm end enters inhibit area25:DIRECT | 2 | In Direct mode, the end-of-arm tooling has entered interference check area 25. | Move the end-of-arm tooling out of the area. |
| 26F2 | The arm end enters inhibit area26:DIRECT | 2 | In Direct mode, the end-of-arm tooling has entered interference check area 26. | Move the end-of-arm tooling out of the area. |
| 26F3 | The arm end enters inhibit area27:DIRECT | 2 | In Direct mode, the end-of-arm tooling has entered interference check area 27. | Move the end-of-arm tooling out of the area. |
| 26F4 | The arm end enters inhibit area28:DIRECT | 2 | In Direct mode, the end-of-arm tooling has entered interference check area 28. | Move the end-of-arm tooling out of the area. |
| 26F5 | The arm end enters inhibit area29:DIRECT | 2 | In Direct mode, the end-of-arm tooling has entered interference check area 29. | Move the end-of-arm tooling out of the area. |
| 26F6 | The arm end enters inhibit area30:DIRECT | 2 | In Direct mode, the end-of-arm tooling has entered interference check area 30. | Move the end-of-arm tooling out of the area. |
| 26F7 | The arm end enters inhibit area31:DIRECT | 2 | In Direct mode, the end-of-arm tooling has entered interference check area 31. | Move the end-of-arm tooling out of the area. |
| 279C | Can't set, when a DETECT is valid. | 2 | Hand I/O interrupt and DETECT are not enabled simultaneously. | Disable the DETECT. |
| 279D | Can't set.(HandIO Interruption is valid) | 2 | DETECT and Hand I/O interrupt are not enabled simultaneously. | Disable the hand I/O interrupt. |
| 279E | Inconsistent robot stop input | 3 | No input at one of two robot stop input lines. | Check the wiring of the robot stop circuit. |
| 27A0 | Initialized | 5 | The RAM drive was cleared due to a RAM drive initialization error. | Restart the controller and set each item again. |
| 27A1 | Deletion of program/variables completed | 5 | The ROM drive (programs and variables) was cleared by ROM drive initialization error. | Restart the controller and load programs and variables in the controller again. |
| 27A2 | Forbidden operation in backup processing | 2 | Forbidden operation was executed during FD (floppy disk) processing. | Execute the operation again after FD (floppy disk) process is finished. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 27A3 | Write-enable setting overlapped | 2 | Two or more ports are selected from COM2, COM3, COM4 and Ethernet as the read/write port in communication permission setting. | Select only one port from COM2, COM3, COM4, and Ethernet in communication permission setting. |
| 27A4 | Illegal character used in file name | 2 | File name has unusable characters. | Change the file name. |
| 27A5 | Backup processing failed(internal error) | 3 | Internal error occurred during FD (floppy disk) processing. | To retry FD processing, turn OFF the controller power switch and restart the operation. |
| 27A6 | Not executable due to fatal error | 2 | Although a serious error of Level 5 or higher one had occurred, you attempted to perform operation without recovery from the error. | Check the error log. Remove errors of Level 5 or higher and then restart the controller. |
| 27A7 | Initial communication error in TP/OP | 4 | A communications error occurred in the teach pendant (TP), mini-pendant (MP), or operating panel (OP) when the controller was started. | Turn OFF the power switch of the controller and restart the operation. If the error persists, replace the teach pendant, mini-pendant or operating panel. |
| 27A8 | Unable to Continue | 3 | Continue-start was executed when it was not permitted. | Execute Continue-start only when Continue-start permission signal is ON. |
| 27A9 | Continue-start failed | 4 | Executed operation was not permitted during Continue-start. | Do not execute such operations during Continue-start. |
| 27AA | Reset-program input is set | 2 | Program reset signal is ON. | Turn off the program reset signal and then start again. A program reset signal being on during Continue Start triggers this error. Before Continue Start, turn off the program reset signal. |
| 27AB | Failed automatic position restoration | 4 | Failed in auto position adjustment at Continue-start. | Robot moved to the position unrecoverable by auto position adjustment. |
| 27AC | Sending system data | 2 | The SYSTEM data is being sent. | Wait until the transmission of the SYSTEM data is completed. |
| 27AD | System update normal completed | 5 | System Update is completed. | Reboot the controller. |
| 27AE | System update failed | 5 | Failed in System Update. | Retry System Update.(The controller does not restart if power is shut down before System Update completion.) |
| 27AF | System update not permitted | 2 | System Update was executed from WINCAPSIII when not permitted by the controller. | Permit System Update from WINCAPSIII with the controller. |
| 27B0 | RobotType not defined | 2 | Robot type is undefined. | Robot type is not defined. Set the Robot type with the teach pendant or transfer the saved data. Robot type is set on the data transfer. Then reboot the controller. |
| 27B1 | RobotType not match | 2 | Robot type is not consistent. | Robot type saved in FD and the Robot type of the controller is inconsistent. Set the Robot type with the teach pendant and then reboot the controller. |
| 27B2 | Flash cannot be allocated | 2 | Could not allocate Flash area to save control logs. | Cannot allocate Flash area to save control logs. Collect control log data with WINCAPSIII before power shut down. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 27B9 | Error storage pointer out of range | 3 | The loading pointer of the error loading function is out of the specified range.<br>This occurs when the I type variable at the head of the error loading function buffer is rewritten. | Do not rewrite the I type variable of the error loading function buffer. (When an error is loaded after occurrence of this error, however, the pointer is automatically set to the beginning of the buffer.) |
| 27BA | Error storage function parameter error | 3 | The I type variable buffer for storing errors is wrongly set or the pointer value has been rewritten. | Check the buffer settings. If the settings are correct, check if the pointer value has been rewritten or not. |
| 27BB | Error storage function is not effective | 3 | The attempted operation needs to enable the function for storing errors in the I type variable buffer. | Enable the function or stop the operation. |
| 27BC | Not setting argument | 2 | You attempted to run a program involving arguments when the argument setting window could not be opened. | Restart the controller, check that the argument setting window can be opened, and then retry the operation. |
| 27BD | Controller initialization is unusual | 5 | In the powering-on sequence of the controller, initialization has failed. | Restart the controller. |
| 27BE | Can't start motion from here. | 2 | In easy teaching, you attempted to run a command not allowed in the current robot status. | Before starting robot motion under arc interpolation control and executing DEPART command, move the robot arm to the destination position defined in the immediately preceding motion command. |
| 27BF | Updating system | 2 | Updating the system. | Wait until updating is completed.<br>Do not turn the controller power off during updating. |
| 27C0 | Restore Finished. [CONTINUE] to restart. | 1 | The program is normally restored to the state upon power interruption. | Operation restarts from the state upon power interruption by [Conti-start]. |
| 27C1 | Restoration Failed. Abnormal Program No. | 3 | More than 32 program steps were running upon power interruption. | Power recovery failed. Since the program is executed from the start, restart operation after fully checking no influence on the equipment. |
| 27C2 | Restoration Failed. (Memory Over) | 3 | Failure in backup of the program information upon power interruption. | Power recovery failed. Since the program is executed from the start, restart operation after fully checking no influence on the equipment. |
| 27C3 | Restoration Failed. (Process Info) | 3 | Failure in backup of the program information upon power interruption. | Power recovery failed. Since the program is executed from the start, restart operation after fully checking no influence on the equipment. |
| 27C4 | Restoration Failed. (Status Info) | 3 | Failure in backup of the program information upon power interruption. | Power recovery failed. Since the program is executed from the start, restart operation after fully checking no influence on the equipment. |
| 27C5 | Restoration Failed. (Continue Info) | 3 | Failure in backup of the program information upon power interruption. | Power recovery failed. Since the program is executed from the start, restart operation after fully checking no influence on the equipment. |
| 27C6 | Restoration Failed. (Servo Info) | 3 | Failure in backup of the program information upon power interruption. | Power recovery failed. Since the program is executed from the start, restart operation after fully checking no influence on the equipment. |
| 27C7 | Restoration Failed. (Program Restart) | 3 | Failed in restoration to the state upon power interruption. | Power recovery failed. Since the program is executed from the start, restart operation after fully checking no influence on the equipment. |
| 27C8 | Restoration Failed. (Vision Command) | 3 | Power interruption occurred during execution of a visual instruction. | Power recovery failed. Since the program is executed from the start, restart operation after fully checking no influence on the equipment. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 27C9 | Restoration Failed. (INPUT/LINEINPUT) | 3 | Power interruption occurred during data receiving. | Power recovery failed. Since the program is executed from the start, restart operation after fully checking no influence on the equipment. |
| 27CA | Restoration Failed. (Semaphore) | 3 | Power interruption occurred during execution of a program using semaphore. | Power recovery failed. Since the program is executed from the start, restart operation after fully checking no influence on the equipment. |
| 27CB | Restore Failed. Robot stop is activated. | 2 | Robot stop instruction is ON upon returning to the automatic mode after power recovery. | Reset the robot stop instruction. Power recovery processing starts after resetting. |
| 27CC | Restore Failed. Save Err at Power Cut. | 3 | Failed in backup of the program information upon power interruption. | Power recovery failed. Since the program is executed from the start, restart operation after fully checking no influence on the equipment. |
| 27CD | Restore Finished. | 1 | The program is restored normally to the state upon power interruption. | Operation starts by [Conti-start] from the state upon power interruption. |
| 27CE | Restoration Failed. (Compliance) | 3 | A power failure occurred when the compliance control was in use. | The restoration function failed so that the program starts from the first step. Before restart the controller, therefore, thoroughly check that restarting does not affect the equipment. |
| 27CF | Restoration Failed. (Memory Read Error) | 3 | Failed in restoration of the program state upon power interruption. | Power recovery failed. Since the program is executed from the start, restart operation after fully checking no influence on the equipment. |
| 27D0 | Semaphore release error | 5 | An error has occurred when the controller attempted to release the semaphore. | Turn the controller power off and then on. Retry the operation. |
| 27D3 | Cannot take J1 semaphore | 4 | (1)A task, that had gotten no arm group containing J1, attempted to execute the J1 motion related command. (2)A task attempted to get an arm group containing J1, but any other task had already gotten it. | (1)Get an arm group containing J1 with the TAKEARM statement, and then execute J1 motion related command. (2)Correct the program so that more than one program will not attempt to get an arm group containing J1 at the same time. |
| 27D4 | Cannot take J2 semaphore | 4 | (1)A task, that had gotten no arm group containing J2, attempted to execute the J2 motion related command. (2)A task attempted to get an arm group containing J2, but any other task had already gotten it. | (1)Get an arm group containing J2 with the TAKEARM statement, and then execute J2 motion related command. (2)Correct the program so that more than one program will not attempt to get an arm group containing J2 at the same time. |
| 27D5 | Cannot take J3 semaphore | 4 | (1)A task, that had gotten no arm group containing J3, attempted to execute the J3 motion related command. (2)A task attempted to get an arm group containing J3, but any other task had already gotten it. | (1)Get an arm group containing J3 with the TAKEARM statement, and then execute J3 motion related command. (2)Correct the program so that more than one program will not attempt to get an arm group containing J3 at the same time. |
| 27D6 | Cannot take J4 semaphore | 4 | (1)A task, that had gotten no arm group containing J4, attempted to execute the J4 motion related command. (2)A task attempted to get an arm group containing J4, but any other task had already gotten it. | (1)Get an arm group containing J4 with the TAKEARM statement, and then execute J4 motion related command. (2)Correct the program so that more than one program will not attempt to get an arm group containing J4 at the same time. |
| 27D7 | Cannot take J5 semaphore | 4 | (1)A task, that had gotten no arm group containing J5, attempted to execute the J5 motion related command. (2)A task attempted to get an arm group containing J5, but any other task had already gotten it. | (1)Get an arm group containing J5 with the TAKEARM statement, and then execute J5 motion related command. (2)Correct the program so that more than one program will not attempt to get an arm group containing J5 at the same time. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 27D8 | Cannot take J6 semaphore | 4 | (1)A task, that had gotten no arm group containing J6, attempted to execute the J6 motion related command. (2)A task attempted to get an arm group containing J6, but any other task had already gotten it. | (1)Get an arm group containing J6 with the TAKEARM statement, and then execute J6 motion related command. (2)Correct the program so that more than one program will not attempt to get an arm group containing J6 at the same time. |
| 27D9 | Cannot take J7 semaphore | 4 | (1)A task, that had gotten no arm group containing J7, attempted to execute the J7 motion related command. (2)A task attempted to get an arm group containing J7, but any other task had already gotten it. | (1)Get an arm group containing J7 with the TAKEARM statement, and then execute J7 motion related command. (2)Correct the program so that more than one program will not attempt to get an arm group containing J7 at the same time. |
| 27DA | Cannot take J8 semaphore | 4 | (1)A task, that had gotten no arm group containing J8, attempted to execute the J8 motion related command. (2)A task attempted to get an arm group containing J8, but any other task had already gotten it. | (1)Get an arm group containing J8 with the TAKEARM statement, and then execute J8 motion related command. (2)Correct the program so that more than one program will not attempt to get an arm group containing J8 at the same time. |
| 27E3 | Not executable while joint is suspended | 2 | If suspended, the joint cannot be moved by variables. | Release the suspension of the joint. |
| 27F3 | The number of variable outside range | 3 | The number of variables for getting the current position has exceeded the declared ones at the execution time of DETECT command. | Increase the number of global variables concerned or specify smaller variable number in the DETECT command. |
| 27F4 | Largest acquisition quantity excess | 3 | Exceeded the maximum number that can be gotten at the execution time of DETECT command. | (1)Increase the maximum number to be specified in DETECT command. (2)Check that the FG wires of the robot unit and controller are grounded. (3)Check that there is no noise source (e.g., welding machine) near the robot unit or controller. |
| 27F5 | Vision operating | 2 | You attempted to perform any operation that is not allowed when the vision board is in operation. | Do not perform such operation when the vision board is in operation. |
| 28E1 | Restoration Failed. (Ex-Joint running) | 3 | Restoration failed since extended-joints had not been synchronized with the robot joints. (Only when extended-joints are synchronized with the robot joints, restoration of extended-joints takes effect.) | Programs execute from the first line, so carefully check that running programs will not affect the equipment before restarting. |
| 2930 | b-CAP Task create error | 5 | Failed to start b-CAP service. | Restart the controller. |
| 2931 | b-CAP Task initialize error | 5 | Failed to initialize b-CAP service. | Restart the controller. |
| 2932 | b-CAP Packet send error | 3 | Failed to send an error packet in b-CAP service. | Check the network status of the controller. |
| 2933 | b-CAP Recieved packet error | 3 | The received b-CAP packet contains an error. | Check whether the sent b-CAP packet contains any error. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 2AF1 | Encoder reference position error | 3 | 1. The robot type does not match the robot controller.<br>2. The encoder is normal, but the 2nd or 3rd axis (1st or 2nd axis for the VP series) was moved when the controller power was off.<br>3. The motor was replaced.<br>4. An encoder positional error has occurred in the 2nd or 3rd axis (1st or 2nd axis for the VP series).<br>In any of the above cases, a programmed operation is prohibited. | To clear the error caused by reason 1 or 2, send the arm data (including CALSET value) of the corresponding robot to the controller using WINCAPSIII.<br>To clear the error caused by reason 3, perform CALSET for the corresponding axis.<br>If the error persists after the above error recoveries, the possible cause can be an encoder error. Check whether a positional error has occurred on the 2nd or 3rd axis (1st or 2nd axis for the VP series) and perform CALSET for the problem axis.<br>Note: This error can be cleared also by transmitting the arm data (including CALSET value) of the corresponding robot to the controller from WINCAPSIII. |
| 2AF2 | During a software limit check release | 2 | When the software motion limits are temporarily invalid, you attempted to move joints using variables or get the current arm position into variables. | Make the software motion limits valid and then retry the operation. |
| 2AF4 | cooling fan error | 2 | The controller detects the built-in cooling fan being out of order. | First remove the error factor, move the robot arm to a safe area, and then replace the cooling fan. |
| 2AF5 | Couldn't get encoder data at power off | 2 | Failed to detect encoder data in the AC powering-off sequence. | 1.Check whether the AC power was shut down during robot operation.<br>2.Check the current position of the robot. |
| 2C07 | Interruption power detected | 5 | Interruption power detected in the AC power supply. | (1) Check the connection of the AC power supply cable.<br>(2) Check the AC power supply voltage. |
| 2C09 | DC-BUS over voltage | 5 | The DC-BUS voltage exceeded the permissible upper value in the power supply inside the controller. | If the error persists after rebooting the controller, you need to investigate or repair the controller. |
| 2C0A | DC-BUS under voltage | 5 | The DC-BUS voltage exceeded the permissible lower value in the power supply inside the controller. | If the error persists after rebooting the controller, you need to investigate or repair the controller. |
| 2C0B | Contactor circuit failure | 5 | The motor powering-ON sequence has terminated halfway since the bus voltage source was not charged normally. | If the error persists after rebooting the controller, you need to investigate or repair the controller. |
| 2C0C | DC-output over voltage | 5 | The DC-output voltage exceeded the permissible upper value in the power supply inside the controller. | If the error persists after rebooting the controller, you need to investigate or repair the controller. |
| 2C0E | IPM module over voltage | 5 | The voltage to the IPM module exceeded the permissible upper value in the power supply inside the controller. | If the error persists after rebooting the controller, you need to investigate or repair the controller. |
| 2C0F | IPM module under voltage | 5 | The voltage to the IPM module exceeded the permissible lower value in the power supply inside the controller. | If the error persists after rebooting the controller, you need to investigate or repair the controller. |
| 2C10 | DC5VH over voltage | 5 | The voltage of 5VH-line exceeded the permissible upper value in the power supply inside the controller. | If the error persists after rebooting the controller, you need to investigate or repair the controller. |
| 2C11 | DC5VH under voltage | 5 | The voltage of 5VH-line exceeded the permissible lower value in the power supply inside the controller. | If the error persists after rebooting the controller, you need to investigate or repair the controller. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 2C26 | Power board regenerative circuit failure | 5 | A regenerative resistor driver circuit failure was detected in the power supply inside the controller. | If the error persists after rebooting the controller, you need to investigate or repair the controller. |
| 2C29 | BUS-capacitor over voltage | 5 | The voltage of BUS-capacitor exceeded the permissible upper value in the power supply inside the controller. | If the error persists after rebooting the controller, you need to investigate or repair the controller. |
| 2C2A | DC-BUS-capacitor over voltage | 5 | The voltage of DC-BUS-capacitor exceeded the permissible upper value in the power supply inside the controller. | If the error persists after rebooting the controller, you need to investigate or repair the controller. |
| 2C2B | Regenerative-resistor overheated | 5 | The temperature of regenerated-resistor exceeded the permissible upper value in the power supply inside the controller. | Check the filter clogged or low rotation of the fan. If the error persists after checking, you need to investigate or repair the controller. |
| 2C2E | 11VH over voltage | 5 | The voltage of 11VH-line exceeded the permissible upper value in the power supply inside the controller. | If the error persists after rebooting the controller, you need to investigate or repair the controller. |
| 2C2F | 11VH under voltage | 5 | The voltage of 11VH-line exceeded the permissible lower value in the power supply inside the controller. | If the error persists after rebooting the controller, you need to investigate or repair the controller. |
| 2C30 | Power board overheated (A) | 5 | The temperature of board (A) exceeded the permissible upper value in the power supply inside the controller. | Check the filter clogged or low rotation of the fan. If the error persists after checking, you need to investigate or repair the controller. |
| 2C50 | DC5V of power board over voltage | 5 | The voltage of 5V-line exceeded the permissible upper value in the power supply inside the controller. | If the error persists after rebooting the controller, you need to investigate or repair the controller. |
| 2C51 | DC5V of power board under voltage | 5 | The voltage of 5V-line exceeded the permissible lower value in the power supply inside the controller. | If the error persists after rebooting the controller, you need to investigate or repair the controller. |
| 2C52 | DC12V of power board over voltage | 5 | The voltage of 12V-line exceeded the permissible upper value in the power supply inside the controller. | If the error persists after rebooting the controller, you need to investigate or repair the controller. |
| 2C53 | DC12V of power board under voltage | 5 | The voltage of 12V-line exceeded the permissible lower value in the power supply inside the controller. | If the error persists after rebooting the controller, you need to investigate or repair the controller. |
| 2C54 | DC24V of power board over voltage | 5 | The voltage of 24V-line exceeded the permissible upper value in the power supply inside the controller. | If the error persists after rebooting the controller, you need to investigate or repair the controller. |
| 2C55 | DC24V of power board under voltage | 5 | The voltage of 24V-line exceeded the permissible lower value in the power supply inside the controller. | If the error persists after rebooting the controller, you need to investigate or repair the controller. |
| 2C56 | DC24V of power board over voltage(IO) | 5 | The voltage of 24V-(I/O)-line exceeded the permissible upper value in the power supply inside the controller. | If the error persists after rebooting the controller, you need to investigate or repair the controller. |
| 2C57 | DC24V of power board under voltage(IO) | 5 | The voltage of 24V-(I/O)-line exceeded the permissible lower value in the power supply inside the controller. | If the error persists after rebooting the controller, you need to investigate or repair the controller. |
| 2C72 | Comm. error between power and engine | 5 | Comm. error between power and engine inside the controller. | If the error persists after rebooting the controller, you need to investigate or repair the controller. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 2C80 | Power board overheated (B-1) | 5 | The temperature of board (B-1) exceeded the permissible upper value in the power supply inside the controller. | Check the filter clogged or low rotation of the fan. If the error persists after checking, you need to investigate or repair the controller. |
| 2C81 | Power board overheated (B-2) | 5 | The temperature of board (B-2) exceeded the permissible upper value in the power supply inside the controller. | Check the filter clogged or low rotation of the fan. If the error persists after checking, you need to investigate or repair the controller. |
| 2C82 | IPM harness board overheated (B) | 5 | The temperature of IPM harness board (B) exceeded the permissible upper value in the power supply inside the controller. | Check the filter clogged or low rotation of the fan. If the error persists after checking, you need to investigate or repair the controller. |
| 2CA1 | Caution:Power board overheated(A) | 1 | The temperature of board (A) exceeded the warning value in the power supply inside the controller. | Check the filter clogged and cooling fan. |
| 2CB0 | cooling fan error | 2 | The cooling fan stop detected inside the controller. | Check the cooling fan. |
| 2CB1 | Caution:Fan speed dropped | 1 | The low rotation of cooling fan detected inside the controller. | Check the cooling fan. |
| 2CB2 | Caution:Power board overheated(B-1) | 1 | The temperature of board (B-1) exceeded the warning value in the power supply inside the controller. | Check the filter clogged and cooling fan. |
| 2CB3 | Caution:IPM Board overheated | 1 | The temperature of IPM harness board exceeded the warning value in the power supply inside the controller. | Check the filter clogged and cooling fan. |
| 2CB4 | Lamp disconnection | 2 | Disconnection of the motor-on detected lamp. | Check the wiring or connection. |
| 2CB5 | Caution:Power board overheated(B-2) | 1 | The temperature of board (B-2) exceeded the warning value in the power supply inside the controller. | Check the filter clogged and cooling fan. |
| 2D00 | Same program name is present | 3 | In reading the base program, more than one program file with the same number was found. | Delete unnecessary files. |
| 2D01 | Program not found | 3 | The specified base program does not exist. | Specify an existing file. |
| 2D02 | Step not found | 3 | The specified step does not exist. | Specify an existing step. |
| 2D03 | RUNPAC statement is not executable | 1 | During CHECK GO operation, RUN_PAC is not executable. | Check with CALL_PAC. |
| 2D04 | FN statement is not executable | 1 | When a function code is specified, CHECK GO or CHECK BACK cannot be executed. | After execution of a function code, perform CHECK GO or CHECK BACK. |
| 2D05 | Setting of a call statement is wrong | 3 | Nesting of call commands exceeds 8 levels. | Modify the program so that the nesting is within eight levels. |
| 2D06 | PAC program not found | 3 | The PAC program specified by CALL_PAC or RUN_PAC does not exist. | Specify an existing PAC program. |
| 2D07 | PLC board is nonimplement | 5 | The PLC board cannot be recognized at initialization of the board. | Inspect the PLC board. |

| Code | Message | Level | Description | Remedy |
|---|---|---|---|---|
| 2D08 | PLC board access error | 4 | The PLC board operation is stopped or is not ready to accept any command. | Run the PLC. |
| 2D09 | Motor on failure | 2 | The MOTOR ON process has been interrupted due to a communication timeout. | Execute MOTOR ON again. If the error recurs frequently, inspect or repair the controller. |
| 2D0A | Contacter on failure | 3 | The CONTACTOR ON signal could not be turned ON. | Execute MOTOR ON again. If the error recurs frequently, inspect or repair the controller. |
| 2D0B | Contacter off failure | 4 | The CONTACTOR ON signal could not be turned OFF. | Execute MOTOR ON again. If the error recurs frequently, inspect or repair the controller. |
| 2D0C | PLC board watchdog error | 4 | The watchdog signal from the PLC has stopped. | Run the PLC. If the error recurs frequently, inspect or repair the PLC board. |
| 2D0D | Pendant disconnect | 5 | The communication between the teach pendant and the controller has broken down. | Inspect the connectors and cable(s) between the teach pendant and the controller. If the error recurs frequently, repair them. |
| 2D0E | Detected that a deadman switch deposit | 4 | Contact melting of the deadman switch(es) on the teach pendant has been detected. | Inspect or repair the teach pendant. |
| 2D0F | Deadman SW signale mode inconsistency | 4 | Either one of a pair of signals from a deadman switch was not turned ON. | Hold down the deadman switch again. If the error recurs frequently, inspect or repair the teach pendant. |
| 2D10 | Master signal is off | 3 | Before the establishment of the MASTER ON state, MOTOR ON was executed. | Execute MASTER ON, wait for the MASTER ON state to be established, then execute MOTOR ON. |
| 2D11 | A message was displayed | 1 | Any message is displayed on the extended screen. | Check the message on the extended screen. |
| 2D15 | There is not a tmc_exec.pac program | 1 | The tmc_exec.pac program required for executing the base program does not exist. | Transfer the tmc_exec.pac program from WINCAPSIII. |
| 2D16 | Step number became the range outside | 2 | The addition of the new steps causes the total number of steps to exceed 999. | Limit the total number of steps within 999. |
| 2D17 | deadman switch input error | 4 | A deadman switch input synchronization error has occurred. | If the error recurs frequently, inspect or repair the controller. |
| 2D18 | deadman switch input error | 1 | A deadman switch input synchronization error has occurred. | If the error recurs frequently, inspect or repair the controller. |
| 2D19 | PowerDown signal back-check is abnormal | 5 | A power shutdown signal error was found by back-check. | If the error recurs frequently, inspect or repair the controller. |
| 2D1A | Contctr-ON prep signl back-chk abnormal | 5 | A CONTACTOR ON preparation signal error was found by back-check. | If the error recurs frequently, inspect or repair the controller. |
| 2D1B | System normal signl back-check abnormal | 5 | A system normal signal error was found by back-check. | If the error recurs frequently, inspect or repair the controller. |
| 2D1C | RelayBrd - MiniI/O commncation abnormal | 5 | A communications error has occurred in transfer from the relay board to the mini I/O board. | If the error recurs frequently, inspect or repair the controller. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 2D1D | Can't CheckBACK than this step | 1 | CHECK BACK is impossible since no motion step precedes the function code. | Insert a motion step preceding the function code. |
| 2D1E | The mode changed | 1 | The auto/manual mode of the teach pendant has been switched. | Match the modes of the teach pendant and operation panel with each other. |
| 2D1F | The mode is a disagreement | 1 | The modes of the teach pendant and operation panel are not matched with each other. | Match the modes of the teach pendant and operation panel with each other. |
| 2D20 | The switch is pushed | 2 | The controller power was turned ON with an operation panel key held down. | Release the key on the operation panel and then turn the controller power ON. |
| 2D21 | MiniIO communication abnormality | 4 | A communications error has occurred between mini IO and PLC. | If the error recurs frequently, inspect or repair the controller. |
| 2D22 | Out of range axis referred from BasePos1 | 3 | Position data at the specified step could not be obtained. | Add a correct step. |
| 2D23 | Out of range axis referred from BasePos2 | 3 | Position data at the specified step could not be obtained. | Add a correct step. |
| 2D24 | Out of range axis referred from BasePos3 | 3 | Position data at the specified step could not be obtained. | Add a correct step. |
| 2D25 | Out of range axis referred from BasePos4 | 3 | Position data at the specified step could not be obtained. | Add a correct step. |
| 2D26 | Not motion cmd refered from BasePostion1 | 3 | The step referred to does not contain a motion command. | Specify a step containing a motion command. |
| 2D27 | Not motion cmd refered from BasePostion2 | 3 | The step referred to does not contain a motion command. | Specify a step containing a motion command. |
| 2D28 | Not motion cmd refered from BasePostion3 | 3 | The step referred to does not contain a motion command. | Specify a step containing a motion command. |
| 2D29 | Not motion cmd refered from BasePostion4 | 3 | The step referred to does not contain a motion command. | Specify a step containing a motion command. |
| 2D2A | Cannot modify tool refered from BasePos1 | 3 | Rewriting tool information failed. | Correct the setting. If the error recurs frequently, inspect or repair the controller. |
| 2D2B | Cannot modify tool refered from BasePos2 | 3 | Rewriting tool information failed. | Correct the setting. If the error recurs frequently, inspect or repair the controller. |
| 2D2C | Cannot modify tool refered from BasePos3 | 3 | Rewriting tool information failed. | Correct the setting. If the error recurs frequently, inspect or repair the controller. |
| 2D2D | Cannot modify tool refered from BasePos4 | 3 | Rewriting tool information failed. | Correct the setting. If the error recurs frequently, inspect or repair the controller. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 2D2E | There is not a step | 3 | The specified step does not exist. | Specify an existing step. |
| 2D2F | Executing Check GO/BACK | 3 | An operation not executable during check GO/BACK operation was attempted. | Retry the operation when check GO/BACK operation is not in progress. |
| 2D30 | Step data error | 3 | The step data contains any error. | Correct the step. |
| 2D31 | File processing error | 3 | File processing failed. | Try again. If the error recurs frequently, inspect or repair the controller. |
| 2D32 | Failed in a TOOL number change | 3 | Changing the TOOL number failed. | Try again. If the error recurs frequently, inspect or repair the controller. |
| 2D33 | Step number change failure | 3 | Changing the step number failed. | Specify a correct step number. |
| 2D34 | Executing file operation | 3 | Writing data into a file is in progress. | Wait for data writing to complete. |
| 2D35 | Clipboard operation error | 3 | Clipboard operation failed. | If the error recurs frequently, inspect or repair the controller. |
| 2D36 | Home position 1 disable | 3 | The step specified as home position has been changed. | Set the home position. |
| 2D37 | Home position 2 disable | 3 | The step specified as home position has been changed. | Set the home position. |
| 2D38 | Home position 3 disable | 3 | The step specified as home position has been changed. | Set the home position. |
| 2D39 | Home position 4 disable | 3 | The step specified as home position has been changed. | Set the home position. |
| 2D3A | Movement information clear error | 3 | Motion data could not be cleared. | If the error recurs frequently, inspect or repair the controller. |
| 2D3B | Bad format of user error file | 3 | The error definition file (PLCERROR.EPL) could not be read. | The error definition file does not exist or its format is wrong. Transfer the correct error definition file from WINCAPSIII. |
| 2D3C | Editing mode is out of appointment | 3 | Invalid editing mode was specified. | Specify the valid editing mode. |
| 2D3D | Variable clear failure | 3 | Clearing variables in FN26 or FN82 command failed. | If the error recurs frequently, inspect or repair the controller. |
| 2D3E | Home position information edit failed | 3 | Editing home position data failed. | Set the data again. If the error recurs frequently, inspect or repair the controller. |
| 2D3F | Task creatio error | 5 | A controller internal error (OS error) has occurred. | Restart the controller, and then perform the operation again. |
| 2D40 | Standard watch data set error | 1 | The watchdog timer setting is out of range. | Set the correct reference time. |
| 2D41 | FN statement is not executable | 3 | An FN statement is specified, but it cannot be executed. | After specifying a motion command, CALL_PAC, or RUN_PAC, run the FN statement. |
| 2D42 | The miniIO data transfer failure | 4 | A processing error has occurred between the mini IO and PLC. | If the error occurs frequently, you need to investigate or repair the controller. |
| 2D43 | Restoration Failed. (Run TSR) | 3 | Attempted to activate the restoration function with a supervisory task(s) being enabled. | Disable the supervisory task. |
| 2D44 | Restoration Failed. (Signal Info) | 3 | Failed to restore O, L and R output signals. | If the error occurs frequently, you need to investigate or repair the controller. |
| 2D45 | Restoration Failed. (Code Info) | 3 | Failed to restore programs. | If the error occurs frequently, you need to investigate or repair the controller. |

| Code | Message | Level | Description | Remedy |
|---|---|---|---|---|
| 2D46 | Operation information cleared | 3 | Performed any operation that clears the restoration related information. | Execute the programs from the first step. |
| 2D47 | Restoration Failed. (T03) | 3 | Failed to back up the base program data at the time of a power failure. | If the error occurs frequently, you need to investigate or repair the controller. |
| 2D48 | Restoration Failed. (RS232C Info) | 3 | Failed to restore the RS-232C configuration data. | If the error occurs frequently, you need to investigate or repair the controller. |
| 2D49 | Restoration Failed. (DTR Info) | 3 | Failed to restore the DTR data. | If the error occurs frequently, you need to investigate or repair the controller. |
| 2D4A | Restoration Failed. (PAC runs TSR) | 3 | Restoration failed since a supervisory task is executed from a PAC program. | Do not use a RUN command for a supervisory task in a PAC program. |
| 2D4B | Restoration Failed. (TSR runs PAC) | 3 | Restoration failed since a PAC program is executed from a supervisory task. | Do not use a RUN command for a PAC program in a supervisory task. |
| 2D4C | Check Program(Program Data Failed) | 3 | At the start of running: The program data is abnormal when the power was turned off.<br>In running: The program cannot run due to any abnormality. | Check the program and edit it again. |
| 2D4D | Program ReEdit(Program Write Failed) | 3 | The edited program contains any abnormality. | Check the program and edit it again. |
| 2D4E | Program Save(Receiving or Forwarding) | 3 | Any editing operation has been performed when the data was being received or forwarded at high speed. | Perform an editing operation after completion of data forwarding or program saving. |
| 2D50 | Failure to turn on the motor power | 2 | An error occurred because of failure in turning the motor ON for some reason during MOTOR instruction execution, or because of timeout in consecutive MOTOR instruction activation. | Check and eliminate the cause of failure in turning the motor power ON. |
| 2D51 | Automatic start failed.Move to HomePos. | 3 | Program has been initialized due to an error level 3 or above has occurred.Because the robot is stopped at a position other than the home position, the program cannot be started in Auto mode. | 1.After turning the mode selector switch to the TEACH or MAN. position and moving the robot to the home position, start the program in Auto mode.<br>2.After resetting the program, start the program in Auto mode. |
| 2D52 | USB initialization error | 4 | Failed to initialize the USB interface during initialization of the robot safety controller RSC1. | Restart the controller. If the error persists, contact your local Denso Wave representative. |
| 2D53 | Communication error with USB | 4 | During communication between the robot controller and RSC1 via the USB interface, an error has occurred. | Restart the controller. If the error persists, contact your local Denso Wave representative. |
| 2D54 | Out of tool No.  Range | 5 | A controller internal error has occurred. | Turn OFF the controller power switch and restart the operation. |
| 2D55 | Communication error with USB Task | 4 | A controller internal error has occurred. | Turn OFF the controller power switch and restart the operation. |
| 2D56 | Failed to initialize Ethernet(Srv) | 4 | Failed to initialize the Ethernet interface during initialization of the robot safety controller RSC1. | Restart the controller. If the error persists, contact your local Denso Wave representative. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 2D57 | Failed to initialize Ethernet(Cli) | 4 | Failed to initialize the Ethernet interface during initialization of the robot safety controller RSC1. | Restart the controller. If the error persists, contact your local Denso Wave representative. |
| 2D58 | Conection error with Ethernet | 2 | At the start of Ethernet communication between the robot controller and RSC1, an error has occurred. | The LAN wire in the controller may be disconnected or poorly connected. Reconnect the RSC-RC2 connector in the controller and restart the controller. If the error persists, contact your Denso Wave service representative. |
| 2D59 | Communication error with Ethernet | 2 | During Ethernet communication between the robot controller and the RSC1, a communications error has occurred. | Restart the controller. If the error persists, contact your local Denso Wave representative. |
| 2D5A | Message send error | 5 | A controller internal error has occurred. | Turn OFF the controller power switch and restart the operation. |
| 2D5B | Failure to create task | 5 | A controller internal error has occurred. | Turn OFF the controller power switch and restart the operation. |
| 2D5C | File failure | 2 | Failed to access the RC parameters file. | Restart the controller. If the error persists, contact your local Denso Wave representative. |
| 2D5D | Limit stop OFF | 2 | Attempted to operate with Limit Stop being OFF. | Operate with Limit Stop being ON. |
| 2D5E | Limit stop ON | 2 | Attempted to operate with Limit Stop being ON. | Operate with Limit Stop being OFF. |
| 2D5F | RSC initializarion error | 4 | During initialization of the robot safety controller RSC1, an error has occurred. | Check that the IP address/subnet mask values in the RSC parameters are properly configured. The LAN wire in the controller may be disconnected or poorly connected. Reconnect the RSC-RC2 connector in the controller and restart the controller. If the error persists, contact your Denso Wave service representative. |
| 2D60 | Check Mode(Over-Travel release Failed) | 2 | Attempted to release an overtravel state in the mode not allowing "Release Overtravel." | Release the overtravel state in teaching outside the restricted area. |
| 2D61 | Updated the ArmGroup Setting s (group 1) | 1 | During the controller's start-up process, the ArmGroup settings (Group 1) were updated as it is suitable for the specifications of the robot. | Receive and back up the project data from the controller with WINCAPSIII again. |
| 2D62 | This pendant does not support exjoint | 3 | The teach pendant connected to the extended-joint support controller does not support extended-joints. | Replace the current teach pendant with the one supporting extended-joints and then restart the controller. |
| 2D63 | Please operate it with both hands! | 1 | Attempted to drive a joint configured for both-hand operation, with one hand. | Perform both-hand operation (that is, press an arm traverse key with the Enable switch held down). |
| 330C | Cannot create project file | 3 | Memory capacity required for compiling was not sufficient or a failure occurred in memory area for storing programs. | Delete files not required and reduce the number of programs. If the error persists carry out the same remedy as 330B. |
| 330F | Cannot create compile log file | 3 | Memory capacity required for compiling was not sufficient or a failure occurred in memory area for storing programs. | Delete unnecessary files and reduce the number of programs. If the error persists carry out the same remedy as 330B. |
| 331A | Project file is broken | 3 | Memory capacity required for compiling was not sufficient or a failure occurred in memory area for storing programs. | After turning OFF the controller power, turn it ON again and send data (WINCAPSIII or FD) again. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 331B | Compile error | 3 | An error occurred in compiling. | Check the compile log and correct the position at which the error occurred. |
| 331D | Link error | 3 | An error occurred in linking. | Check the compile log and correct the position at which the error occurred. |
| 331F | More than 256 PAC files to be compiled | 2 | Attempt was made to compile more than 256 PAC files. | Reduce the number of compiling object PAC files to 256 or less. |
| 3B3D | Subscript value out of permissible range | 3 | Subscript of <Error in execution> array exceeded the defined range. | Check the value of the variable used as a subscript. |
| 3B3E | Value out of permissible range | 3 | A value designated as an <Error in execution> argument exceeded the permissible range. | Check the value of the variable used as an argument. |
| 3C71 | Subscript of array out of range | 3 | Shown out of the range available to describe as a subscript of the array, when the array variable subscript was designated with constants. | Check the upper limit value for the subscript and correct it. |
| 3CB7 | Variable and/or constant types not match | 3 | Specified variable or constant types are incorrect. | Check the specified data type and correct it. |
| 3CBB | Wrong command format | 3 | Syntax error. | Check the syntax and correct it. |
| 3CC2 | Error occurred during error processing | 3 | While processing errors <Error in execution> another error occurred. | Check the cause of the error and correct the program. |
| 3CC4 | RESUME isn't in error processing routine | 3 | RESUME statement was executed with a normal process of <Error in execution>. | The RESUME statement is not present except for the error process or the control errors in processing due to branch commands other than the ON ERROR GOTO statement. |
| 42A1 | Vision board not mounted | 3 | 1.The vision board is not mounted.<br>2.Cannot recognize vision board. | 1.Mount the vision board.<br>2.Delete the vision only instructions from the program.<br>3.If the vision board is mounted, initialize the vision board from the teaching board.<br>4.Turn OFF the power switch ON the controller and restart the operation. |
| 42A2 | Vision parameter 1 out of range | 3 | Parameter 1 of the vision command is out of range. | Correct the corresponding parameters. |
| 42A3 | Vision parameter 2 out of range | 3 | Parameter 2 of the vision command is out of range. | Correct the corresponding parameters. |
| 42A4 | Vision parameter 3 out of range | 3 | Parameter 3 of the vision command is out of range. | Correct the corresponding parameters. |
| 42A5 | Vision parameter 4 out of range | 3 | Parameter 4 of the vision command is out of range. | Correct the corresponding parameters. |
| 42A6 | Vision parameter 5 out of range | 3 | Parameter 5 of the vision command is out of range. | Correct the corresponding parameters. |
| 42A7 | Vision parameter 6 out of range | 3 | Parameter 6 of the vision command is out of range. | Correct the corresponding parameters. |
| 42A8 | Vision parameter 7 out of range | 3 | Parameter 7 of the vision command is out of range. | Correct the corresponding parameters. |
| 42A9 | Vision parameter 8 out of range | 3 | Parameter 8 of the vision command is out of range. | Correct the corresponding parameters. |
| 42AA | Vision parameter 9 out of range | 3 | Parameter 9 of the vision command is out of range. | Correct the corresponding parameters. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 42AB | Vision parameter 10 out of range | 3 | Parameter 10 of the vision command is out of range. | Correct the corresponding parameters. |
| 42AC | Vision parameter 11 out of range | 3 | Parameter 11 of the vision command is out of range. | Correct the corresponding parameters. |
| 42AD | Vision parameter 12 out of range | 3 | Parameter 12 of the vision command is out of range. | Correct the corresponding parameters. |
| 42AE | Vision parameter 13 out of range | 3 | Parameter 13 of the vision command is out of range. | Correct the corresponding parameters. |
| 42AF | Vision parameter 14 out of range | 3 | Parameter 14 of the vision command is out of range. | Correct the corresponding parameters. |
| 42B0 | Transmission command failure | 3 | A failure occurred in the communication protocol with the vision board (sending). | 1.Initialize the vision board from the teaching board.<br>2.Turn OFF the power switch ON the controller and restart the operation. |
| 42B1 | Reception command failure | 3 | A failure occurred in the communication protocol with the vision board (receiving). | 1.Initialize the vision board from the teaching board.<br>2.Turn OFF the power switch ON the controller and restart the operation. |
| 42B2 | Camera input error | 3 | 1.The camera is not connected.<br>2.A failure was detected with the camera or the camera cable. | 1.Connect the camera.<br>2.Initialize the vision board from the teaching board.<br>3.Reboot the camera and the controller power. |
| 42B3 | Vision undefined command | 3 | 1.Undefined instruction for the vision board<br>2.Communication error occurred. | 1.Initialize the vision board from the teaching board.<br>2.Turn OFF the power switch ON the controller and restart the operation. |
| 42B4 | No response from vision board | 3 | A vision board communication error. | 1.Initialize the vision board from the teaching board.<br>2.Turn OFF the power switch ON the controller and restart the operation. |
| 42B5 | Vision board failure | 3 | A vision board communication error. | 1.Initialize the vision board from the teaching board.<br>2.Turn OFF the power switch ON the controller and restart the operation. |
| 42B6 | Window shape error | 3 | The window setting is out of range. | Correct the corresponding window settings. |
| 42B7 | Vision board undefined | 3 | An error occurred on the vision board. | 1.Initialize the vision board from the teaching board.<br>2.Turn OFF the power switch ON the controller and restart the operation. |
| 42B8 | Vision receiving timeout | 3 | Communication timeout occurred (receiving). | 1.Initialize the vision board from the teaching board.<br>2.Turn OFF the power switch ON the controller and restart the operation. |
| 42B9 | Vision sending timeout | 3 | Communication timeout occurred (sending). | 1.Initialize the vision board from the teaching board.<br>2.Turn OFF the power switch ON the controller and restart the operation. |
| 42BA | Vision communication protocol error | 3 | 1.An error occurred in communication.<br>2.This occurs when vision the instructions are executed after a communication timeout occurs. | 1.Initialize the vision board from the teaching board.<br>2.Turn OFF the power switch ON the controller and restart the operation. |
| 42BB | Error in vision command execution | 3 | The vision commands are not executable with the set parameters. | Correct the corresponding vision command (parameter) settings. |
| 52D0 | Main memory failure | 5 | The controller detected a failure by R/W check on the CPU built-in memory in the teach pendant. | Replace the teach pendant. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 52D1 | Buzzer failure | 2 | The controller detected a failure by R/W check on the buzzer I/O in the teach pendant. | Replace the teach pendant or its cable. |
| 52D2 | Backlight failure | 3 | The controller detected a failure by R/W check on the backlight I/O in the teach pendant. | If the backlight does not properly illuminate, replace the teach pendant. |
| 52D3 | Motor LED failure | 2 | The controller detected a failure by R/W check on the motor LED I/O in the teach pendant. | If the motor LED does not properly illuminate, replace the teach pendant. |
| 52D4 | Machine lock LED failure | 2 | The controller detected a failure by R/W check on the machine lock LED I/O in the teach pendant. | If the machine lock LED does not properly illuminate, replace the teach pendant. |
| 52D5 | GIVF failure | 3 | The controller checks if GVIF LOS in the teach pendant is set at Low (0). (L: digital transmission signal being sent, H: digital transmission signal stopped) | If the image is improperly displayed, replace the teach pendant or the cable. |
| 52D6 | Touch panel failure 1 | 2 | The controller outputs 00 to the scan signal line (bit 2-4 of port E) of the analog touch panel and checks the reading through the same port. | Replace the teach pendant. |
| 52D7 | Touch panel failure 2 | 2 | The controller outputs 01 to the scan signal line (bit 2-4 of port E) of the analog touch panel and checks the reading through the same port. | Replace the teach pendant. |
| 52D8 | Touch panel failure 3 | 2 | The controller outputs 010 to the scan signal line (bit 2-4 of port E) of the analog touch panel and checks the reading through the same port. | Replace the teach pendant. |
| 52D9 | Touch panel failure 4 | 2 | The controller outputs 100 to the scan signal line (bit 2-4 of port E) of the analog touch panel and checks the reading through the same port. | Replace the teach pendant. |
| 52DA | Dedicated key failure 1 | 3 | The controller outputs 0001 to the SW matrix scan signal line (bit 6-9 of port E) and checks the reading through the same port. It does not check the return line. | Replace the teach pendant. |
| 52DB | Dedicated key failure 2 | 3 | The controller outputs 0010 to the SW matrix scan signal line (bit 6-9 of port E) and checks the reading through the same port. It does not check the return line. | Replace the teach pendant. |
| 52DC | Dedicated key failure 3 | 3 | The controller outputs 0100 to the SW matrix scan signal line (bit 6-9 of port E) and checks the reading through the same port. It does not check the return line. | Replace the teach pendant. |
| 52DD | Dedicated key failure 4 | 3 | The controller outputs 1000 to the SW matrix scan signal line (bit 6-9 of port E) and checks the reading through the same port. It does not check the return line. | Replace the teach pendant. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 52DE | Dedicated key failure 5 | 3 | The controller outputs 0000 to the SW matrix scan signal line (bit 6-9 of port E) and checks the reading through the port. It does not check the return line. | Replace the teach pendant. |
| 52DF | RTS failure | 5 | The controller detected a failure in the RTS signal line of the teach pendant or the cable. | Replace the teach pendant or the cable. |
| 52E5 | Panel Timer Stopped | 1 | The panel timer stopped. No timer event can be caused. | 1.Reduce the number of timers or descriptions of the timer event processing.<br>2.Adjust the interval time of generating timer actions. |
| 52E6 | Panel Timer delay | 1 | Panel timer events cannot be started at the specified intervals. | 1.Reduce the number of timers or descriptions of the timer action (event processing).<br>2.Adjust the timer event interval time. |
| 52E7 | Panel Action timeout | 3 | A panel parts events could not be executed within the specified timeout. | 1.Reduce the descriptions of the timer event command.<br>2.Adjust the "Timeout" on the panel. |
| 52E8 | Panel Timer processing timeout | 3 | There is a timer event whose processing time is longer than the timer interval. | 1.Reduce the number of timers or descriptions of the timer event processing.<br>2.Adjust the timer event interval time. |
| 531C | Memory isn't enough for compiling | 5 | Memory necessary for compilation is not enough. | 1. Close all windows and recompile.<br>2. If this error recurs, reduce the number of programs and compile. Or, compile with WINCAPSIII and send data to the controller. |
| 53E3 | Insufficient memory | 5 | The amount of memory is insufficient to display the screen you requested. | Turn the controller power off and then on. Retry the operation.<br>If this error occurs during program editing, removing a part of that program may fix this problem. |
| 5790 | Speed over in Direct Teaching | 4 | Excessive speed in manual operation occurred during teaching in direct mode. | Carefully prevent excessive force application when operating the robot. |
| 5791 | J1 speed over in Direct Teaching | 4 | Excessive speed (axis 1) in manual operation occurred during teaching in direct mode. | Carefully prevent excessive force application when operating the robot. |
| 5792 | J2 speed over in Direct Teaching | 4 | Excessive speed (axis 2) in manual operation occurred during teaching in direct mode. | Carefully prevent excessive force application when operating the robot. |
| 5793 | J3 speed over in Direct Teaching | 4 | Excessive speed (axis 3) in manual operation occurred during teaching in direct mode. | Carefully prevent excessive force application when operating the robot. |
| 5794 | J4 speed over in Direct Teaching | 4 | Excessive speed (axis 4) in manual operation occurred during teaching in direct mode. | Carefully prevent excessive force application when operating the robot. |
| 5795 | J5 speed over in Direct Teaching | 4 | Excessive speed (axis 5) in manual operation occurred during teaching in direct mode. | Carefully prevent excessive force application when operating the robot. |
| 5796 | J6 speed over in Direct Teaching | 4 | Excessive speed (axis 6) in manual operation occurred during teaching in direct mode. | Carefully prevent excessive force application when operating the robot. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 5797 | J7 speed over in Direct Teaching | 4 | Excessive speed (axis 7) in manual operation occurred during teaching in direct mode. | Carefully prevent excessive force application when operating the robot. |
| 5798 | J8 speed over in Direct Teaching | 4 | Excessive speed (axis 8) in manual operation occurred during teaching in direct mode. | Carefully prevent excessive force application when operating the robot. |
| 6001 | Not executable | 3 | The specified operation is not executable. | 1.Enter again in executable status.<br>2.Enter a proper command. |
| 6002 | Wrong operation mode | 2 | The specified operation does not match the selected operation mode. | Select the mode suitable for the operation. |
| 6003 | Excess in effective value range | 3 | The specified value of various commands exceeds the permissible range.<br>Examples<br>1.Set value of speed is not 0.1 - 100.<br>2.The using condition parameter is not within designation available range.<br>3.Number of robot figures exceeds 31. | Enter the correct value again. |
| 6004 | Calibration not executed | 3 | 1.The program was executed before calibration.<br>2.Manual XY and TOOL motion were executed. | Execute calibration and operate again. |
| 6005 | Manual mode not selected | 2 | The manual XY mode, tool mode or the individual axis mode is not selected. | Select a mode to manually operate. |
| 6006 | Motor power is off | 3 | The motor power is not ON. | Turn ON the motor power. |
| 6008 | Robot stop is on | 2 | Attempted to turn the motor power ON when the robot stop input signal was OFF (open circuit).<br>Possible causes are:<br>1. Robot stop button being depressed (broken) on the teach pendant.<br>2. Pendant cable broken, short-circuited, or loosely connected.<br>3. Equipment wiring faulty (e.g., contact failure of the safety door).<br>4. Mini I/O faulty. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. The emergency stop button on the teach pendant is not depressed.<br>2. The pendant cable is correctly connected, without damage or short-circuit.<br>3. The robot stop input signals from the safety door, etc. are normal.<br>4. The mini I/O fuse (F5) is not blown. |
| 6009 | Turning off controller and restart | 5 | After an error, which required a restart, occurred the motor power attempted to turn ON without turning OFF the controller power. | Turn OFF the power switch ON the controller and restart the operation. |
| 600A | Motor power is ON | 3 | An unavailable operation was executed while the motor power was ON. | Operate after turning off the motor power. |
| 600B | Robot is running | 3 | The robot performed inoperable running. | After the robot stops, restart operation. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 600C | Emergency stop ON | 0 | The robot stop input was turned OFF(open) to stop the robot emergently. The robot stop button was pressed. If the robot is in the external automatic mode at this time, it is changed to the internal automatic mode. | Set the robot stop input to ON (short).Release the robot stop button. |
| 600D | Deadman switch off | 2 | The deadman switch is turned OFF. | Operate with the deadman switch pressed. |
| 600E | RobotType not specified | 5 | Robot type setting is incomplete or wrong. | Set the correct Robot type or transfer necessary parameters to the controller. Then turn OFF the power switch and restart the operation. |
| 600F | Do CAL after initializing encoder data | 3 | The encoder preset data was initialized because data was not received by the encoder occurred. | Execute calibration and operate again. |
| 6014 | Calibration aborted | 3 | Calibration execution aborted. | If this error occurs in automatic booting with the operation preparation start, check that the step stop and the halt of the system input are not OFF. If OFF, set them to ON (short). |
| 6015 | Avoiding passing throuth singular point | 1 | The robot arm is in singular point avoiding motion since it is passing through the vicinity of a singular point. | - |
| 6016 | Singular point avoiding motion completed | 1 | The robot arm has passed through the vicinity of a singular point, completing the singular point avoiding motion. | - |
| 6017 | Vector calculation error | 3 | Posture vectors (normal, orient, and approach) were not correctly set. | Properly set the specified vector and the type T variable. |
| 6018 | Arc interpolation calculation error | 4 | Arc interpolation through a specified passing position to a destination position is not available or a path shift due to deceleration stop occurred. | Set the passing or the destination position correctly. If this error occurs when restarting the robot after it is stopped with the motor OFF, curing motion, use the halt as the means to stop the robot. |
| 6019 | Path plane setting error | 4 | The path plane cannot be calculated with the MKPL and the ROTATE command. | A plane can not be formed with a vector specified as the argument. Correctly set it again. |
| 601A | Tool change not allowed | 3 | The tool attempted to change in status but the tool change was not available. | Changing the tool is not allowed while the robot is in motion. After the motion stops, operate again. |
| 601B | Parameter change not allowed | 3 | Attempted to change the parameter status but the parameter change was not allowed. | When the motor power is ON, you cannot change parameters. Turn OFF the motor power and operate again. |
| 601C | Change the posture | 1 | The motion destination figure position does not meet the motion finish. | There are times when the figure at the motion destination position does not match with that of the motion finish. Execute teaching again, at the motion finish position. The occurrence of this error does not affect the motion. |
| 601D | Motion restart command not executed | 3 | Controller internal error. | Set the robot stop input to ON and then to OFF before restarting the robot. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 601E | Machine lock on | 2 | Operations not available such as<br>1.Motor on<br>2.Brake releasing<br>3.Calibration or CALSET was executed while the machine was locked. | Release the machine lock and operate again. |
| 601F | Decrease the path start displacement | 1 | The set path start displacement distance exceeds the permissible value. | Set the path start displacement distance again. The path start displacement distance should be less than half of the moving distance. |
| 602A | Motor on failure | 2 | Communication timeout occurred and failed motor on. | If the error persists after turning the motor on again, you need to investigate or repair the controller. |
| 602B | Motor on failure | 2 | Communication data error occurred and failed motor on. | If the error persists after turning the motor on again, you need to investigate or repair the controller. |
| 602C | PWR communication error1 | 1 | Power communication timeout occurred and stopped to execute a process. | If the error occurs frequently, you need to investigate or repair the controller. |
| 602D | PWR communication error2 | 1 | Power communication data error occurred and stopped to execute a process. | If the error occurs frequently, you need to investigate or repair the controller. |
| 6038 | Improper arm parameter | 3 | Arm parameter failure | Transmit the arm manager file corresponding to the robot and reboot the robot. |
| 6039 | Servo watchdog error | 5 | A delay has occurred in an interrupt processing. | Reboot the robot controller and perform the operation again. |
| 603A | Servo CPU error | 5 | Controller internal failure (Servo CPU stops.) | Turn OFF the power switch of the controller and restart the operation. |
| 603B | Restart controller to change servo ctrl | 5 | Restarting the controller is required for changing the control system. | Restart the controller. |
| 6071 | Cur. Position J1 soft motion limit over | 3 | Current position exceeded the software motion limit of the 1st axis in motion.<br>The 1st axis exceeded the software motion limit during CP motion for deceleration stop. | 1.Re-specify the target position within the motion space.<br>2.If this error occurs after you change the robot data (by CALSET), check if you followed correct procedures to change the data.<br>3.Check if the robot does not pass the vicinity of the singular point in the CP motion, and correct the program so that it avoids the singular point. However, if you return the robot to the motion space, move the axes in manual mode. Axis movement may be impossible in XY or TOOL mode.<br>4.If this error occurs with increase In CP motion speed, decrease the speed. |
| 6072 | Cur. Position J2 soft motion limit over | 3 | Current position exceeded the software motion limit of the 2nd axis in motion.<br>The 2nd axis exceeded the software motion limit during CP motion for deceleration stop. | 1.Re-specify the target position within the motion space.<br>2.If this error occurs after you change the robot data (by CALSET), check if you followed correct procedures to change the data.<br>3.Check if the robot does not pass the vicinity of the singular point in the CP motion, and correct the program so that it avoids the singular point. However, if you return the robot to the motion space, move the axes in manual mode. Axis movement may be impossible in XY or TOOL mode.<br>4.If this error occurs with increase In CP motion speed, decrease the speed. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 6073 | Cur. Position J3 soft motion limit over | 3 | Current position exceeded the software motion limit of the 3rd axis in motion.<br>The 3rd axis exceeded the software motion limit during CP motion for deceleration stop. | 1.Re-specify the target position within the motion space.<br>2.If this error occurs after you change the robot data (by CALSET), check if you followed correct procedures to change the data.<br>3.Check if the robot does not pass the vicinity of the singular point in the CP motion, and correct the program so that it avoids the singular point. However, if you return the robot to the motion space, move the axes in manual mode. Axis movement may be impossible in XY or TOOL mode.<br>4.If this error occurs with increase In CP motion speed, decrease the speed. |
| 6074 | Cur. Position J4 soft motion limit over | 3 | Current position exceeded the software motion limit of the 4th axis in motion<br>The 4th axis exceeded the software motion limit during CP motion for deceleration stop. | 1.Re-specify the target position within the motion space.<br>2.If this error occurs after you change the robot data (by CALSET), check if you followed correct procedures to change the data.<br>3.Check if the robot does not pass the vicinity of the singular point in the CP motion, and correct the program so that it avoids the singular point. However, if you return the robot to the motion space, move the axes in manual mode. Axis movement may be impossible in XY or TOOL mode.<br>4.If this error occurs with increase In CP motion speed, decrease the speed. |
| 6075 | Cur. Position J5 soft motion limit over | 3 | Current position exceeded the software motion limit of the 5th axis in motion<br>The 5th axis exceeded the software motion limit during CP motion for deceleration stop. | 1.Re-specify the target position within the motion space.<br>2.If this error occurs after you change the robot data (by CALSET), check if you followed correct procedures to change the data.<br>3.Check if the robot does not pass the vicinity of the singular point in the CP motion, and correct the program so that it avoids the singular point. However, if you return the robot to the motion space, move the axes in manual mode. Axis movement may be impossible in XY or TOOL mode.<br>4.If this error occurs with increase In CP motion speed, decrease the speed. |
| 6076 | Cur. Position J6 soft motion limit over | 3 | Current position exceeded the software motion limit of the 6th axis in motion<br>The 6th axis exceeded the software motion limit during CP motion for deceleration stop. | 1.Re-specify the target position within the motion space.<br>2.If this error occurs after you change the robot data (by CALSET), check if you followed correct procedures to change the data.<br>3.Check if the robot does not pass the vicinity of the singular point in the CP motion, and correct the program so that it avoids the singular point. However, if you return the robot to the motion space, move the axes in manual mode. Axis movement may be impossible in XY or TOOL mode.<br>4.If this error occurs with increase In CP motion speed, decrease the speed. |
| 6077 | Cur. Position J7 soft motion limit over | 3 | (1)Current position exceeded the software motion limit of the 7th axis in motion<br>(2)The 7th axis exceeded the software motion limit during CP motion for deceleration stop. | 1.Re-specify the target position within the motion space.<br>2.If this error occurs after you change the robot data (by CALSET), check if you followed correct procedures to change the data.<br>3.Check if the robot does not pass the vicinity of the singular point in the CP motion, and correct the program so that it avoids the singular point. However, if you return the robot to the motion space, move the axes in manual mode. Axis movement may be impossible in XY or TOOL mode.<br>4.If this error occurs with increase In CP motion speed, decrease the speed. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 6078 | Cur. Position J8 soft motion limit over | 3 | (1)The current position exceeded the software motion limit of the 8th axis in motion.<br>(2)The 8th axis exceeded the software motion limit during CP motion at the deceleration stop. | 1.Re-specify the target position within the motion space.<br>2.If this error occurs after you change the robot data (by CALSET), check if you followed correct procedures to change the data.<br>3.Check if the robot does not pass the vicinity of the singular point in the CP motion, and correct the program so that it avoids the singular point. However, if you return the robot to the motion space, move the axes in manual mode. Axis movement may be impossible in XY or TOOL mode.<br>4.If this error occurs with increase In CP motion speed, decrease the speed. |
| 6079 | Current pos. out of operation range 1 | 3 | Current position reached out of motion space. | 1.Re-specify the target position within the motion space.<br>2.If this error occurs after you change the robot data (by CALSET), check if you followed correct procedures to change the data.<br>3.Check if target position of PTP motion and P/T variables in P2J and T2J commands specify a position and a figure where robot movement is physically possible. |
| 607A | Current pos. out operation range 2 | 3 | Current position reached out of operation range. | 1.Re-specify the target position within the motion space.<br>2.If this error occurs after you change the robot data (by CALSET), check if you followed correct procedures to change the data.<br>3.Check if target position of PTP motion and P/T variables in P2J and T2J commands specify a position and a figure where robot movement is physically possible. |
| 607B | Current pos. is in singular point | 3 | Current position is at a singular point, which disables execution of reverse coordinate transformation command. | Set the contents of the position variable to a non- singular point value. |
| 607C | Singular point avoiding motion disabled | 1 | The 4th-axis has rotated in high speed because the singular point avoiding motion was disabled. | Enable the singular point avoiding motion to inhibit the 4th-axis from rotation. |
| 607D | Not movable near singular point | 4 | The robot cannot move because it passes near a singular point in the CP motion. | Select PTP mode if no interference occurs during robot movement.<br>Correct the program to avoids a singular point in the CP motion.<br>3.If this error occurs with increase in CP motion speed, decrease the speed. |
| 607E | Cannot move in this posture | 3 | Cannot move to the specified position in this shape. | Change the shape and re-execute. |
| 607F | Robot posture mismatch | 3 | 1.Having specified a figure different from the current figure at the destination point in the CP motion, the specified motion is not possible.<br>2.When you restart the motion from the halt during the path motion from the PTP motion to the CP, the figure at the halt does not meet the one at the destination position of the CP motion. | 1.The robot does not move if the wrist, elbow and arm figures do not match the current figures at the destination positions, excluding a few exceptions. If this error occurs, teach the robot so that the wrist, the elbow and the arm figures match with those of the current figures.<br>2.This error may be possibly occurred when restarting the robot after it is stopped with the halt during path motion from the PTP motion to the CP motion.<br>Do not designate the path motion if you need to restart the robot after the robot stops during path motion from the PTP motion to the CP motion. |

| Code | Message | Level | Description | Remedy |
|---|---|---|---|---|
| 6081 | J1 command speed limit over | 3 | The CP motion cannot execute with the specified speed because the speed command value of the 1st axis exceeds the limit value. | 1.Reduce the speed or set the motion of the PTP, if there is no problem, such as interference, on the motion path. 2.Check the robot does not pass the singular point vicinity in the CP motion and correct the program so that it avoids the singular point. 3.Set the control set of motion optimization to 2 or 3. |
| 6082 | J2 command speed limit over | 3 | The CP motion cannot execute with the specified speed because the speed command value of the 2nd axis exceeds the limit value. | 1.Reduce the speed or set the motion of the PTP, if there is no problem, such as interference, on the motion path. 2.Check the robot does not pass the singular point vicinity in the CP motion and correct the program so that it avoids the singular point. 3.Set the control set of motion optimization to 2 or 3. |
| 6083 | J3 command speed limit over | 3 | The CP motion cannot execute with the specified speed because the speed command value of the 3rd axis exceeds the limit value. | 1.Reduce the speed or set the motion of the PTP, if there is no problem, such as interference, on the motion path. 2.Check the robot does not pass the singular point vicinity in the CP motion and correct the program so that it avoids the singular point. 3.Set the control set of motion optimization to 2 or 3. |
| 6084 | J4 command speed limit over | 3 | The CP motion cannot execute with the specified speed because the speed command value of the 4th axis exceeds the limit value. | 1.Reduce the speed or set the motion of the PTP, if there is no problem, such as interference, on the motion path. 2.Check the robot does not pass the singular point vicinity in the CP motion and correct the program so that it avoids the singular point. 3.Set the control set of motion optimization to 2 or 3. |
| 6085 | J5 command speed limit over | 3 | The CP motion cannot execute with the specified speed because the speed command value of the 5th axis exceeds the limit value. | 1.Reduce the speed or set the motion of the PTP, if there is no problem, such as interference, on the motion path. 2.Check the robot does not pass the singular point vicinity in the CP motion and correct the program so that it avoids the singular point. 3.Set the control set of motion optimization to 2 or 3. |
| 6086 | J6 command speed limit over | 3 | The CP motion cannot execute with the specified speed because the speed command value of the 6th axis exceeds the limit value. | 1.Reduce the speed or set the motion of the PTP, if there is no problem, such as interference, on the motion path. 2.Check the robot does not pass the singular point vicinity in the CP motion and correct the program so that it avoids the singular point. 3.Set the control set of motion optimization to 2 or 3. |
| 6087 | J7 command speed limit over | 3 | The CP motion cannot execute with the specified speed because the speed command value of the 7th axis exceeds the limit value. | 1.Reduce the speed or set the motion of the PTP, if there is no problem, such as interference, on the motion path. 2.Check the robot does not pass the singular point vicinity in the CP motion and correct the program so that it avoids the singular point. 3.Set the control set of motion optimization to 2 or 3. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 6088 | J8 command speed limit over | 3 | The CP motion cannot execute with the specified speed because the speed command value of the 8th axis exceeds the limit value. | 1.Reduce the speed or set the motion of the PTP, if there is no problem, such as interference, on the motion path. 2.Check the robot does not pass the singular point vicinity in the CP motion and correct the program so that it avoids the singular point. 3.Set the control set of motion optimization to 2 or 3. |
| 6089 | J1 command speed limit over (servo) | 4 | The CP motion cannot execute with the specified speed because the speed command value of the 1st axis exceeds the limit value. | 1.Check that the FG (frame ground) terminals of the robot and the controller are grounded. 2.Check that the robot and the controller are away from noise source such as a welding machine. 3.Decrease the speed. |
| 608A | J2 command speed limit over (servo) | 4 | The CP motion cannot execute with the specified speed because the speed command value of the 2nd axis exceeds the limit value. | 1.Check that the FG (frame ground) terminals of the robot and the controller are grounded. 2.Check that the robot and the controller are away from noise source such as a welding machine. 3.Decrease the speed. |
| 608B | J3 command speed limit over (servo) | 4 | The CP motion cannot execute with the specified speed because the speed command value of the 3rd axis exceeds the limit value. | 1.Check that the FG (frame ground) terminals of the robot and the controller are grounded. 2.Check that the robot and the controller are away from noise source such as a welding machine. 3.Decrease the speed. |
| 608C | J4 command speed limit over (servo) | 4 | The CP motion cannot execute with the specified speed because the speed command value of the 4th axis exceeds the limit value. | 1.Check that the FG (frame ground) terminals of the robot and the controller are grounded. 2.Check that the robot and the controller are away from noise source such as a welding machine. 3.Decrease the speed. |
| 608D | J5 command speed limit over (servo) | 4 | The CP motion cannot execute with the specified speed because the speed command value of the 5th axis exceeds the limit value. | 1.Check that the FG (frame ground) terminals of the robot and the controller are grounded. 2.Check that the robot and the controller are away from noise source such as a welding machine. 3.Decrease the speed. |
| 608E | J6 command speed limit over (servo) | 4 | The CP motion cannot execute with the specified speed because the speed command value of the 6th axis exceeds the limit value. | 1.Check that the FG (frame ground) terminals of the robot and the controller are grounded. 2.Check that the robot and the controller are away from noise source such as a welding machine. 3.Decrease the speed. |

| Code | Message | Level | Description | Remedy |
|---|---|---|---|---|
| 608F | J7 command speed limit over(servo) | 4 | The CP motion cannot execute with the specified speed because the speed command value of the 7th axis exceeds the limit value. | 1.Check that the FG (frame ground) terminals of the robot and the controller are grounded.<br>2.Check that the robot and the controller are away from noise source such as a welding machine.<br>3.Decrease the speed. |
| 6090 | J8 command speed limit over(servo) | 4 | The CP motion cannot execute with the specified speed because the speed command value of the 8th axis exceeds the limit value. | 1.Check that the FG (frame ground) terminals of the robot and the controller are grounded.<br>2.Check that the robot and the controller are away from noise source such as a welding machine.<br>3.Decrease the speed. |
| 6091 | J1 power module failure | 5 | The power module of the corresponding axis detected overcurrent or voltage drop of the control power.<br>Possible causes are:<br>1. Motor & encoder cable broken.<br>2. Oil, cutting water, or dust gotten into the controller.<br>3. Controller defective.<br>4. Power voltage drop.<br>5. Abnormal controller temperature. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. The filters of the controller are not clogged.<br>2. The cooling fans of the controller are working normally.<br>3. The controller is installed in an environment where the temperature is not high and there is no oil mist.<br>4. There is no contact failure in the motor & encoder cable connector.<br>5. Any section of the motor & encoder cable is not broken or crushed.<br>6. The power supply voltage is within the reference range. |
| 6092 | J2 power module failure | 5 | The power module of the corresponding axis detected overcurrent or voltage drop of the control power.<br>Possible causes are:<br>1. Motor & encoder cable broken.<br>2. Oil, cutting water, or dust gotten into the controller.<br>3. Controller defective.<br>4. Power voltage drop.<br>5. Abnormal controller temperature. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. The filters of the controller are not clogged.<br>2. The cooling fans of the controller are working normally.<br>3. The controller is installed in an environment where the temperature is not high and there is no oil mist.<br>4. There is no contact failure in the motor & encoder cable connector.<br>5. Any section of the motor & encoder cable is not broken or crushed.<br>6. The power supply voltage is within the reference range. |
| 6093 | J3 power module failure | 5 | The power module of the corresponding axis detected overcurrent or voltage drop of the control power.<br>Possible causes are:<br>1. Motor & encoder cable broken.<br>2. Oil, cutting water, or dust gotten into the controller.<br>3. Controller defective.<br>4. Power voltage drop.<br>5. Abnormal controller temperature. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. The filters of the controller are not clogged.<br>2. The cooling fans of the controller are working normally.<br>3. The controller is installed in an environment where the temperature is not high and there is no oil mist.<br>4. There is no contact failure in the motor & encoder cable connector.<br>5. Any section of the motor & encoder cable is not broken or crushed.<br>6. The power supply voltage is within the reference range. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 6094 | J4 power module failure | 5 | The power module of the corresponding axis detected overcurrent or voltage drop of the control power.<br>Possible causes are:<br>1. Motor & encoder cable broken.<br>2. Oil, cutting water, or dust gotten into the controller.<br>3. Controller defective.<br>4. Power voltage drop.<br>5. Abnormal controller temperature. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. The filters of the controller are not clogged.<br>2. The cooling fans of the controller are working normally.<br>3. The controller is installed in an environment where the temperature is not high and there is no oil mist.<br>4. There is no contact failure in the motor & encoder cable connector.<br>5. Any section of the motor & encoder cable is not broken or crushed.<br>6. The power supply voltage is within the reference range. |
| 6095 | J5 power module failure | 5 | The power module of the corresponding axis detected overcurrent or voltage drop of the control power.<br>Possible causes are:<br>1. Motor & encoder cable broken.<br>2. Oil, cutting water, or dust gotten into the controller.<br>3. Controller defective.<br>4. Power voltage drop.<br>5. Abnormal controller temperature. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. The filters of the controller are not clogged.<br>2. The cooling fans of the controller are working normally.<br>3. The controller is installed in an environment where the temperature is not high and there is no oil mist.<br>4. There is no contact failure in the motor & encoder cable connector.<br>5. Any section of the motor & encoder cable is not broken or crushed.<br>6. The power supply voltage is within the reference range. |
| 6096 | J6 power module failure | 5 | The power module of the corresponding axis detected overcurrent or voltage drop of the control power.<br>Possible causes are:<br>1. Motor & encoder cable broken.<br>2. Oil, cutting water, or dust gotten into the controller.<br>3. Controller defective.<br>4. Power voltage drop.<br>5. Abnormal controller temperature. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. The filters of the controller are not clogged.<br>2. The cooling fans of the controller are working normally.<br>3. The controller is installed in an environment where the temperature is not high and there is no oil mist.<br>4. There is no contact failure in the motor & encoder cable connector.<br>5. Any section of the motor & encoder cable is not broken or crushed.<br>6. The power supply voltage is within the reference range. |
| 6097 | J7 power module failure | 5 | The power module of the corresponding axis detected overcurrent or voltage drop of the control power.<br>Possible causes are:<br>1. Motor & encoder cable broken.<br>2. Oil, cutting water, or dust gotten into the controller.<br>3. Controller defective.<br>4. Power voltage drop.<br>5. Abnormal controller temperature. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. The filters of the controller are not clogged.<br>2. The cooling fans of the controller are working normally.<br>3. The controller is installed in an environment where the temperature is not high and there is no oil mist.<br>4. There is no contact failure in the motor & encoder cable connector.<br>5. Any section of the motor & encoder cable is not broken or crushed.<br>6. The power supply voltage is within the reference range. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 6098 | J8 power module failure | 5 | The power module of the corresponding axis detected overcurrent or voltage drop of the control power. Possible causes are: 1. Motor & encoder cable broken. 2. Oil, cutting water, or dust gotten into the controller. 3. Controller defective. 4. Power voltage drop. 5. Abnormal controller temperature. | Check the following. If the error persists, contact your Denso Wave service representative. 1. The filters of the controller are not clogged. 2. The cooling fans of the controller are working normally. 3. The controller is installed in an environment where the temperature is not high and there is no oil mist. 4. There is no contact failure in the motor & encoder cable connector. 5. Any section of the motor & encoder cable is not broken or crushed. 6. The power supply voltage is within the reference range. |
| 609F | power module failure | 5 | An error for an unknown axis occurs in the power module. | This error may cause a serious damage in the controller. Be sure to follow the steps below. 1)Check that the controller is installed correctly as specified in the INSTALLATION & MAINTENANCE GUIDE. 2)Check that all power modules are inserted correctly into the specified slots. 3)Check the current ambient temperature. 4)Clean up the fan filters. |
| 60B1 | J1 current offset failure | 5 | Abnormal current flow through the corresponding axis was detected. Possible causes are: 1. Motor & encoder cable broken. 2. Controller defective. | Check the following. If the error persists, contact your Denso Wave service representative. 1. There is no contact failure in the motor & encoder cable connector. 2. Any section of the motor & encoder cable is not broken or crushed. 3. There is no external noise source in the vicinity. 4. The controller is installed in an environment where the temperature is not high and there is no oil mist. |
| 60B2 | J2 current offset failure | 5 | Abnormal current flow through the corresponding axis was detected. Possible causes are: 1. Motor & encoder cable broken. 2. Controller defective. | Check the following. If the error persists, contact your Denso Wave service representative. 1. There is no contact failure in the motor & encoder cable connector. 2. Any section of the motor & encoder cable is not broken or crushed. 3. There is no external noise source in the vicinity. 4. The controller is installed in an environment where the temperature is not high and there is no oil mist. |
| 60B3 | J3 current offset failure | 5 | Abnormal current flow through the corresponding axis was detected. Possible causes are: 1. Motor & encoder cable broken. 2. Controller defective. | Check the following. If the error persists, contact your Denso Wave service representative. 1. There is no contact failure in the motor & encoder cable connector. 2. Any section of the motor & encoder cable is not broken or crushed. 3. There is no external noise source in the vicinity. 4. The controller is installed in an environment where the temperature is not high and there is no oil mist. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 60B4 | J4 current offset failure | 5 | Abnormal current flow through the corresponding axis was detected.<br>Possible causes are:<br>1. Motor & encoder cable broken.<br>2. Controller defective. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. There is no contact failure in the motor & encoder cable connector.<br>2. Any section of the motor & encoder cable is not broken or crushed.<br>3. There is no external noise source in the vicinity.<br>4. The controller is installed in an environment where the temperature is not high and there is no oil mist. |
| 60B5 | J5 current offset failure | 5 | Abnormal current flow through the corresponding axis was detected.<br>Possible causes are:<br>1. Motor & encoder cable broken.<br>2. Controller defective. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. There is no contact failure in the motor & encoder cable connector.<br>2. Any section of the motor & encoder cable is not broken or crushed.<br>3. There is no external noise source in the vicinity.<br>4. The controller is installed in an environment where the temperature is not high and there is no oil mist. |
| 60B6 | J6 current offset failure | 5 | Abnormal current flow through the corresponding axis was detected.<br>Possible causes are:<br>1. Motor & encoder cable broken.<br>2. Controller defective. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. There is no contact failure in the motor & encoder cable connector.<br>2. Any section of the motor & encoder cable is not broken or crushed.<br>3. There is no external noise source in the vicinity.<br>4. The controller is installed in an environment where the temperature is not high and there is no oil mist. |
| 60B7 | J7 current offset failure | 5 | Abnormal current flow through the corresponding axis was detected.<br>Possible causes are:<br>1. Motor & encoder cable broken.<br>2. Controller defective. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. There is no contact failure in the motor & encoder cable connector.<br>2. Any section of the motor & encoder cable is not broken or crushed.<br>3. There is no external noise source in the vicinity.<br>4. The controller is installed in an environment where the temperature is not high and there is no oil mist. |
| 60B8 | J8 current offset failure | 5 | Abnormal current flow through the corresponding axis was detected.<br>Possible causes are:<br>1. Motor & encoder cable broken.<br>2. Controller defective. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. There is no contact failure in the motor & encoder cable connector.<br>2. Any section of the motor & encoder cable is not broken or crushed.<br>3. There is no external noise source in the vicinity.<br>4. The controller is installed in an environment where the temperature is not high and there is no oil mist. |
| 60BE | Multi operation buffer overflow | 5 | Controller internal error (software) | Turn OFF the power switch on the controller and restart the operation. |
| 60BF | Multi operation buffer release failure | 5 | Controller internal error (software) | Turn OFF the power switch on the controller and restart the operation. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 60C0 | Robot 1 motion control buffer failure | 5 | Controller internal error (software) | Turn OFF the power switch on the controller and restart the operation. |
| 60C1 | Robot 2 motion control buffer failure | 5 | Controller internal error (software) | Turn OFF the power switch on the controller and restart the operation. |
| 60C2 | Path creation stack failure | 5 | Controller internal error (software) | Turn OFF the power switch on the controller and restart the operation. |
| 60C3 | Path creation buffer failure | 5 | Controller internal error (software) | Turn OFF the power switch on the controller and restart the operation. |
| 60C4 | Path creation file failure | 5 | Path creation parameter error. | Transmit the arm manager file corresponding to the robot and reboot. |
| 60C5 | Servo file failure | 5 | Servo parameter error. | Transmit the arm manager file corresponding to the robot and reboot. |
| 60C6 | Deceleration stop command failure | 4 | Controller internal error (Command value for deceleration stop cannot be created.) | Turn OFF the power switch on the controller and restart the operation. |
| 60C7 | Command transfer buffer write error | 5 | Controller internal error (Command value storage buffer is not present.) | Turn OFF the power switch on the controller and restart the operation. |
| 60C8 | Command transfer buffer read error | 5 | Controller internal error (Command value is not created.) | Turn OFF the power switch on the controller and restart the operation. |
| 60C9 | Path creation aborted | 5 | Controller internal error (Path creation process stopped.) | Turn OFF the power switch on the controller and restart the operation. |
| 60CA | Halt processing aborted | 5 | Controller internal error (Halt process failed.) | Turn OFF the power switch on the controller and restart the operation. |
| 60CB | Deceleration stop aborted | 5 | Controller internal error (Deceleration stop process failed.) | Turn OFF the power switch on the controller and restart the operation. |
| 60CC | Halt time over | 5 | Controller internal error (Halt process unfinished.) | Turn OFF the power switch on the controller and restart the operation. |
| 60CD | Deceleration stop time over | 5 | Controller internal error (Deceleration stop process unfinished.) | Turn OFF the power switch on the controller and restart the operation. |
| 60CE | Internal cycle processing aborted | 5 | Controller internal error (Host internal cycle process stop failure) | Turn OFF the power switch on the controller and restart the operation. |
| 60CF | Motion command processing aborted | 5 | Controller internal error (Motion command process stop failure) | Turn OFF the power switch on the controller and restart the operation. |
| 60D0 | Motion optimize function inexecutable | 4 | Command speed could not be changed when the control set of motion optimization was 2 or 3. | 1.Reduce the speed or set the motion of the PTP, if there is no problem, such as interference, on the motion path.<br>2.Check the robot does not pass the singular point vicinity in the CP motion and correct the program so that it avoids the singular point. |
| 60D1 | Motion optimization parameter error | 4 | Acceleration cannot be calculated due to load condition parameter failure when the control set of motion optimization mode was 2 or 3. | Enter the proper load condition value according to the practical load. |
| 60D2 | Mass of payload out of setting range | 3 | End load setting value is outside the robot specifications. | Enter the proper end load setting value. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 60D4 | Limit Stop ON | 1 | The robot controller has received a "Limit Stop ON" signal and issued an emergency stop signal to the robot. | Clear the error to cancel "Limit Stop." If an overtravel error has occurred, release the overtravel state, move the robot arm, and cancel the limit stop state. |
| 60D8 | Over-Travel release ON | 1 | The overtravel state has been released. ("Release Overtravel" ON) | When the overtravel state is released, the robot arm is movable only in the Teach mode even with the Limit Stop being ON. |
| 60D9 | Over-Travel release End | 1 | Releasing an overtravel state has been canceled. ("Release Overtravel" OFF) | To move the robot arm in an overtravel state, release the overtravel state ("Release Overtravel" ON). |
| 60DA | Can't operate to the Z-axis position | 1 | With the current settings of arch start and end positions, the robot arm cannot reach the commanded Z-coordinate. | Correct the current arch settings. |
| 60DB | decreased TCP speed | 1 | The specified rotation is so much that the robot cannot run at the specified TCP speed. The TCP speed has been decreased. | Set the smaller rotation angle. If it is impossible, decrease the whole robot speed. |
| 60DC | Executing pass restart process | 1 | Since stop processing was performed during path operation, save processing was performed at restart. | After save processing ended, return to normal operation. |
| 60DD | Execute CAL | 2 | Fetch of the correct position data failed. CAL execution is necessary. | Turn ON the motor and execute CAL. |
| 60DE | Rotary motion other than specified | 4 | While the arc interpolation command is executing, after a path motion, with the other motion command, you attempted to hold the robot and restart. | If the robot is held during execution of the arc interpolation command, after the path motion with the other motion command, and you restart the operation, the radius of the rotation and the motion position may change. Do not execute such operation. |
| 60DF | Automatic slowdown in progress | 1 | The command speed was changed when the control set of motion optimization was 2 or 3. | To avoid changing the command speed, set the control set of motion optimization to 0 or 1, and reduce the speed so that the command speed failure will not occur. |
| 60E0 | Log data retrieving error | 5 | Controller internal error. (A control log obtaining failure.) | Turn OFF the power switch of the controller and restart the operation. |
| 60E1 | Log data recording error | 5 | Controller internal error. (A control log recording failure.) | Turn OFF the power switch of the controller and restart the operation. |
| 60E2 | Obtain log | 2 | Attempt was made to refer to the load estimation value without obtaining control log. | Obtain the control log and operate again. |
| 60E3 | Log area allocation error | 4 | Control log is not available because of insufficient data area for the control log function. | Reset to the default value if the control log recording mode was altered. If the error occurs with default settings, the memory capacity is insufficient and the memory capacity shall be increased to use the control log function. |
| 60EF | Reset compliance mode | 2 | The motor was turned OFF during conference control and compliance control was ended forcibly. | When the motor was turned OFF during compliance control, continue start is disabled. Reset the program and restart operation. |
| 60F0 | Task creation error | 5 | Controller internal error occurred. (An OS error.) | Turn OFF the power switch on the controller and restart the operation. |
| 60F1 | Semaphore creation error | 5 | Controller internal error occurred. (An OS error.) | Turn OFF the power switch on the controller and restart the operation. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 60F2 | Semaphore taking error | 5 | Controller internal error occurred. (An OS error.) | Turn OFF the power switch on the controller and restart the operation. |
| 60F3 | Gravity compensation task stopped | 5 | Controller internal error occurred (OS error). | Turn OFF the power switch on the controller and restart the operation. |
| 60F4 | Compliance processing delay | 4 | Compliance processing delayed. | This error may occur when the controller keyboard is operated or the communication frequency by the RS232C or Ethernet is high where the compliance is valid.  Lower the communication frequency. |
| 60F5 | Compliance control is not executable | 4 | When the compliance is valid, the current is limited or gravity compensation is invalid. | Make the current limit invalid and the gravity compensation invalid, then restart operation. |
| 60F6 | Improper compliance parameter | 5 | The specified compliance parameter exceeded the allowable range. | Specify the compliance parameter in the allowable range. |
| 60F7 | Compliance state is unchangeable | 4 | Compliance function switching error. | Turn OFF the power switch of the controller once and restart operation. |
| 60F8 | Compliance deviation excess error | 4 | The compliance position deviation exceeded the allowable value. | Change the allowable value of the compliance position deviation. |
| 60F9 | Improper compliance set/reset operation | 4 | Program reset or step-back operation was performed during compliance set/reset operation.  The program was reset due to an error. | When performing program reset or step-back operation at instantaneous stop during compliance invalid operation, turn OFF the motor once and make the compliance invalid. |
| 60FA | Not Executable in compliance control | 4 | The gravity compensation was made invalid, the current limit was made valid, or the compliance parameter was changed during compliance processing. | Make the compliance invalid to invalidate the gravity compensation, validate the current limit, or change the compliance parameter. |
| 60FB | Improper compliance reference | 4 | An improper compliance reference value was specified during compliance control. | Confirm whether the extreme power is applied due to the interference of the robot.  Also check whether the robot is moved in the compliance control direction. |
| 60FC | Speed limit over in compliance mode | 3 | The specified speed is limited within 50% during compliance control.  This error occurs when 50% is exceeded for operation. | Specify the internal speed so that the specified speed is within 50%. |
| 60FD | PTP motion is not execurable | 3 | PTP operation cannot be performed during compliance control.  This error occurs when PTP operation is executed. | Change to CP operation |
| 60FE | Servo CPU version unmatched | 2 | The servo CPU is too old; so, its functions are unusable. | Upgrade the version of the servo CPU. |
| 60FF | Exception error occurred | 5 | The servo CPU is too old; so, its functions are unusable. | Turn OFF the power switch of the controller once and restart operation. |
| 6101 | Watchdog error | 5 | The CPU has been freezing.<br>Possible causes are:<br>1. Program highly loaded in processing (high-speed loop).<br>2. External noise, e.g., static electricity. | Check the following and restart the controller.<br>If the error persists, contact your Denso Wave service representative.<br>1. The program is not highly loaded.<br>To decrease the load on the program, decrease the speed or acceleration, insert a timer (pause), or set the control set of motion optimization to "0."<br>(Leave at least one minute before retrying the operation.)<br>2. There is no external noise source in the vicinity. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 6102 | Power failure | 5 | A power supply error was detected.<br>Possible causes are given below.<br>Note that this error that occurs when the power is shut down is not regarded as abnormal.<br>1. Power supply out of the range (e.g., low voltage and overvoltage).<br>2. Controller defective. | Check the following and restart the controller.<br>If the error persists, contact your Denso Wave service representative.<br>1. The power supply voltage is within the reference range.<br>2. There is no contact failure in the power cable connector. |
| 6103 | Warning: Backup battery low voltage | 1 | The memory backup battery voltage is low. | Save all data with WINCAPSIII and replace the backup battery. |
| 6104 | Power failure(DC) | 5 | 1.The +24V output source is short-circuited.<br>2.The power voltage in the controller has been dropped.<br>3.The counter electromotive force of the servomotor is abnormal.<br>4.The power supply board is faulty.<br>If this error message appears when you turn the controller off, it means no problem. | 1.At the wiring end of the controller I/O cable, check for a short between the +24V and 0V leads or between the +24V lead and output terminal.<br>2.Check that the hand specifications (including workpieces) do not exceed the robot capacity.<br>3.If the error persists after rebooting the controller, you need to investigate or repair the controller. |
| 6105 | Power failure(DB) | 5 | 1.The DB relay has been melted.<br>2.The power supply board is faulty. | If the error persists after rebooting the controller, you need to investigate or repair the controller. |
| 6111 | J1 excess error | 4 | The difference between the current encoder value (current position) of the corresponding axis and the command value exceeded the permitted value.<br>Possible causes are:<br>1. Robot colliding with any obstacle.<br>2. Inappropriate settings.<br>3. Motor & encoder cable broken.<br>4. Controller defective. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. The robot arm is not in contact with any obstacles.<br>2. The end-of-arm load is not exceeding the reference value.<br>3. The software limits and CALSET are appropriately configured if the corresponding axis is in contact with the mechanical end.<br>4. The robot motion (speed and acceleration) is not too fast.<br>5. There is no contact failure in the motor & encoder cable connector.<br>6. Any section of the motor & encoder cable is not broken or crushed.<br>7. The robot motion is smooth and no abnormal noise is heard.<br>8. The power supply voltage is within the reference range. |
| 6112 | J2 excess error | 4 | The difference between the current encoder value (current position) of the corresponding axis and the command value exceeded the permitted value.<br>Possible causes are:<br>1. Robot colliding with any obstacle.<br>2. Inappropriate settings.<br>3. Motor & encoder cable broken.<br>4. Controller defective. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. The robot arm is not in contact with any obstacles.<br>2. The end-of-arm load is not exceeding the reference value.<br>3. The software limits and CALSET are appropriately configured if the corresponding axis is in contact with the mechanical end.<br>4. The robot motion (speed and acceleration) is not too fast.<br>5. There is no contact failure in the motor & encoder cable connector.<br>6. Any section of the motor & encoder cable is not broken or crushed.<br>7. The robot motion is smooth and no abnormal noise is heard.<br>8. The power supply voltage is within the reference range. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 6113 | J3 excess error | 4 | The difference between the current encoder value (current position) of the corresponding axis and the command value exceeded the permitted value.<br>Possible causes are:<br>1. Robot colliding with any obstacle.<br>2. Inappropriate settings.<br>3. Motor & encoder cable broken.<br>4. Controller defective. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. The robot arm is not in contact with any obstacles.<br>2. The end-of-arm load is not exceeding the reference value.<br>3. The software limits and CALSET are appropriately configured if the corresponding axis is in contact with the mechanical end.<br>4. The robot motion (speed and acceleration) is not too fast.<br>5. There is no contact failure in the motor & encoder cable connector.<br>6. Any section of the motor & encoder cable is not broken or crushed.<br>7. The robot motion is smooth and no abnormal noise is heard.<br>8. The power supply voltage is within the reference range. |
| 6114 | J4 excess error | 4 | The difference between the current encoder value (current position) of the corresponding axis and the command value exceeded the permitted value.<br>Possible causes are:<br>1. Robot colliding with any obstacle.<br>2. Inappropriate settings.<br>3. Motor & encoder cable broken.<br>4. Controller defective. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. The robot arm is not in contact with any obstacles.<br>2. The end-of-arm load is not exceeding the reference value.<br>3. The software limits and CALSET are appropriately configured if the corresponding axis is in contact with the mechanical end.<br>4. The robot motion (speed and acceleration) is not too fast.<br>5. There is no contact failure in the motor & encoder cable connector.<br>6. Any section of the motor & encoder cable is not broken or crushed.<br>7. The robot motion is smooth and no abnormal noise is heard.<br>8. The power supply voltage is within the reference range. |
| 6115 | J5 excess error | 4 | The difference between the current encoder value (current position) of the corresponding axis and the command value exceeded the permitted value.<br>Possible causes are:<br>1. Robot colliding with any obstacle.<br>2. Inappropriate settings.<br>3. Motor & encoder cable broken.<br>4. Controller defective. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. The robot arm is not in contact with any obstacles.<br>2. The end-of-arm load is not exceeding the reference value.<br>3. The software limits and CALSET are appropriately configured if the corresponding axis is in contact with the mechanical end.<br>4. The robot motion (speed and acceleration) is not too fast.<br>5. There is no contact failure in the motor & encoder cable connector.<br>6. Any section of the motor & encoder cable is not broken or crushed.<br>7. The robot motion is smooth and no abnormal noise is heard.<br>8. The power supply voltage is within the reference range. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 6116 | J6 excess error | 4 | The difference between the current encoder value (current position) of the corresponding axis and the command value exceeded the permitted value.<br>Possible causes are:<br>1. Robot colliding with any obstacle.<br>2. Inappropriate settings.<br>3. Motor & encoder cable broken.<br>4. Controller defective. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. The robot arm is not in contact with any obstacles.<br>2. The end-of-arm load is not exceeding the reference value.<br>3. The software limits and CALSET are appropriately configured if the corresponding axis is in contact with the mechanical end.<br>4. The robot motion (speed and acceleration) is not too fast.<br>5. There is no contact failure in the motor & encoder cable connector.<br>6. Any section of the motor & encoder cable is not broken or crushed.<br>7. The robot motion is smooth and no abnormal noise is heard.<br>8. The power supply voltage is within the reference range. |
| 6117 | J7 excess error | 4 | The difference between the current encoder value (current position) of the corresponding axis and the command value exceeded the permitted value.<br>Possible causes are:<br>1. Robot colliding with any obstacle.<br>2. Inappropriate settings.<br>3. Motor & encoder cable broken.<br>4. Controller defective. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. The robot arm is not in contact with any obstacles.<br>2. The end-of-arm load is not exceeding the reference value.<br>3. The software limits and CALSET are appropriately configured if the corresponding axis is in contact with the mechanical end.<br>4. The robot motion (speed and acceleration) is not too fast.<br>5. There is no contact failure in the motor & encoder cable connector.<br>6. Any section of the motor & encoder cable is not broken or crushed.<br>7. The robot motion is smooth and no abnormal noise is heard.<br>8. The power supply voltage is within the reference range. |
| 6118 | J8 excess error | 4 | The difference between the current encoder value (current position) of the corresponding axis and the command value exceeded the permitted value.<br>Possible causes are:<br>1. Robot colliding with any obstacle.<br>2. Inappropriate settings.<br>3. Motor & encoder cable broken.<br>4. Controller defective. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. The robot arm is not in contact with any obstacles.<br>2. The end-of-arm load is not exceeding the reference value.<br>3. The software limits and CALSET are appropriately configured if the corresponding axis is in contact with the mechanical end.<br>4. The robot motion (speed and acceleration) is not too fast.<br>5. There is no contact failure in the motor & encoder cable connector.<br>6. Any section of the motor & encoder cable is not broken or crushed.<br>7. The robot motion is smooth and no abnormal noise is heard.<br>8. The power supply voltage is within the reference range. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 6119 | J1 overcurrent | 4 | An overcurrent error has occurred in the V-phase of the J1 motor. | 1.Check each joint (including hand and workpieces) for no interference with surrounding devices, piping or wiring.<br>2.If the joint interferes with any mechanical end so as to cause this error, change the software limit or check that the CALSET operation has been correctly performed.<br>3.Check that the hand specifications (including workpieces) do not exceed the robot capacity.<br>4.Check that the robot controller cable is securely connected to the robot unit and controller.<br>5.Check that the FG terminals of the robot unit and controller are grounded.<br>6.Decrease the speed and acceleration. |
| 611A | J2 overcurrent | 4 | An overcurrent error has occurred in the V-phase of the J2 motor. | 1.Check each joint (including hand and workpieces) for no interference with surrounding devices, piping or wiring.<br>2.If the joint interferes with any mechanical end so as to cause this error, change the software limit or check that the CALSET operation has been correctly performed.<br>3.Check that the hand specifications (including workpieces) do not exceed the robot capacity.<br>4.Check that the robot controller cable is securely connected to the robot unit and controller.<br>5.Check that the FG terminals of the robot unit and controller are grounded.<br>6.Decrease the speed and acceleration. |
| 611B | J3 overcurrent | 4 | An overcurrent error has occurred in the V-phase of the J3 motor. | 1.Check each joint (including hand and workpieces) for no interference with surrounding devices, piping or wiring.<br>2.If the joint interferes with any mechanical end so as to cause this error, change the software limit or check that the CALSET operation has been correctly performed.<br>3.Check that the hand specifications (including workpieces) do not exceed the robot capacity.<br>4.Check that the robot controller cable is securely connected to the robot unit and controller.<br>5.Check that the FG terminals of the robot unit and controller are grounded.<br>6.Decrease the speed and acceleration. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 611C | J4 overcurrent | 4 | An overcurrent error has occurred in the V-phase of the J4 motor. | 1.Check each joint (including hand and workpieces) for no interference with surrounding devices, piping or wiring.<br>2.If the joint interferes with any mechanical end so as to cause this error, change the software limit or check that the CALSET operation has been correctly performed.<br>3.Check that the hand specifications (including workpieces) do not exceed the robot capacity.<br>4.Check that the robot controller cable is securely connected to the robot unit and controller.<br>5.Check that the FG terminals of the robot unit and controller are grounded.<br>6.Decrease the speed and acceleration. |
| 611D | J5 overcurrent | 4 | An overcurrent error has occurred in the V-phase of the J5 motor. | 1.Check each joint (including hand and workpieces) for no interference with surrounding devices, piping or wiring.<br>2.If the joint interferes with any mechanical end so as to cause this error, change the software limit or check that the CALSET operation has been correctly performed.<br>3.Check that the hand specifications (including workpieces) do not exceed the robot capacity.<br>4.Check that the robot controller cable is securely connected to the robot unit and controller.<br>5.Check that the FG terminals of the robot unit and controller are grounded.<br>6.Decrease the speed and acceleration. |
| 611E | J6 overcurrent | 4 | An overcurrent error has occurred in the V-phase of the J6 motor. | 1.Check each joint (including hand and workpieces) for no interference with surrounding devices, piping or wiring.<br>2.If the joint interferes with any mechanical end so as to cause this error, change the software limit or check that the CALSET operation has been correctly performed.<br>3.Check that the hand specifications (including workpieces) do not exceed the robot capacity.<br>4.Check that the robot controller cable is securely connected to the robot unit and controller.<br>5.Check that the FG terminals of the robot unit and controller are grounded.<br>6.Decrease the speed and acceleration. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 611F | J7 overcurrent | 4 | An overcurrent error has occurred in the V-phase of the J7 motor. | 1.Check each joint (including hand and workpieces) for no interference with surrounding devices, piping or wiring.<br>2.If the joint interferes with any mechanical end so as to cause this error, change the software limit or check that the CALSET operation has been correctly performed.<br>3.Check that the hand specifications (including workpieces) do not exceed the robot capacity.<br>4.Check that the robot controller cable is securely connected to the robot unit and controller.<br>5.Check that the FG terminals of the robot unit and controller are grounded.<br>6.Decrease the speed and acceleration. |
| 6120 | J8 overcurrent | 4 | An overcurrent error has occurred in the V-phase of the J8 motor. | 1.Check each joint (including hand and workpieces) for no interference with surrounding devices, piping or wiring.<br>2.If the joint interferes with any mechanical end so as to cause this error, change the software limit or check that the CALSET operation has been correctly performed.<br>3.Check that the hand specifications (including workpieces) do not exceed the robot capacity.<br>4.Check that the robot controller cable is securely connected to the robot unit and controller.<br>5.Check that the FG terminals of the robot unit and controller are grounded.<br>6.Decrease the speed and acceleration. |
| 6121 | J1 overcurrent | 4 | Current flow through the motor of the corresponding axis exceeded the permitted value.<br>Possible causes are:<br>1. End-of-arm load exceeding the reference value.<br>2. Robot colliding with any obstacle.<br>3. Sliding failure.<br>4. Motor & encoder cable broken.<br>5. Controller defective.<br>6. Robot internal wiring broken. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. The end-of-arm load is not exceeding the reference value.<br>2. The robot arm is not in contact with any obstacles.<br>3. The robot motion is smooth and no abnormal noise is heard.<br>4. There is no contact failure in the motor & encoder cable connector.<br>5. Any section of the motor & encoder cable is not broken or crushed.<br>6. No cutting water, oil, or dust has gotten into the controller. |
| 6122 | J2 overcurrent | 4 | Current flow through the motor of the corresponding axis exceeded the permitted value.<br>Possible causes are:<br>1. End-of-arm load exceeding the reference value.<br>2. Robot colliding with any obstacle.<br>3. Sliding failure.<br>4. Motor & encoder cable broken.<br>5. Controller defective.<br>6. Robot internal wiring broken. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. The end-of-arm load is not exceeding the reference value.<br>2. The robot arm is not in contact with any obstacles.<br>3. The robot motion is smooth and no abnormal noise is heard.<br>4. There is no contact failure in the motor & encoder cable connector.<br>5. Any section of the motor & encoder cable is not broken or crushed.<br>6. No cutting water, oil, or dust has gotten into the controller. |

| Code | Message | Level | Description | Remedy |
|---|---|---|---|---|
| 6123 | J3 overcurrent | 4 | Current flow through the motor of the corresponding axis exceeded the permitted value.<br>Possible causes are:<br>1. End-of-arm load exceeding the reference value.<br>2. Robot colliding with any obstacle.<br>3. Sliding failure.<br>4. Motor & encoder cable broken.<br>5. Controller defective.<br>6. Robot internal wiring broken. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. The end-of-arm load is not exceeding the reference value.<br>2. The robot arm is not in contact with any obstacles.<br>3. The robot motion is smooth and no abnormal noise is heard.<br>4. There is no contact failure in the motor & encoder cable connector.<br>5. Any section of the motor & encoder cable is not broken or crushed.<br>6. No cutting water, oil, or dust has gotten into the controller. |
| 6124 | J4 overcurrent | 4 | Current flow through the motor of the corresponding axis exceeded the permitted value.<br>Possible causes are:<br>1. End-of-arm load exceeding the reference value.<br>2. Robot colliding with any obstacle.<br>3. Sliding failure.<br>4. Motor & encoder cable broken.<br>5. Controller defective.<br>6. Robot internal wiring broken. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. The end-of-arm load is not exceeding the reference value.<br>2. The robot arm is not in contact with any obstacles.<br>3. The robot motion is smooth and no abnormal noise is heard.<br>4. There is no contact failure in the motor & encoder cable connector.<br>5. Any section of the motor & encoder cable is not broken or crushed.<br>6. No cutting water, oil, or dust has gotten into the controller. |
| 6125 | J5 overcurrent | 4 | Current flow through the motor of the corresponding axis exceeded the permitted value.<br>Possible causes are:<br>1. End-of-arm load exceeding the reference value.<br>2. Robot colliding with any obstacle.<br>3. Sliding failure.<br>4. Motor & encoder cable broken.<br>5. Controller defective.<br>6. Robot internal wiring broken. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. The end-of-arm load is not exceeding the reference value.<br>2. The robot arm is not in contact with any obstacles.<br>3. The robot motion is smooth and no abnormal noise is heard.<br>4. There is no contact failure in the motor & encoder cable connector.<br>5. Any section of the motor & encoder cable is not broken or crushed.<br>6. No cutting water, oil, or dust has gotten into the controller. |
| 6126 | J6 overcurrent | 4 | Current flow through the motor of the corresponding axis exceeded the permitted value.<br>Possible causes are:<br>1. End-of-arm load exceeding the reference value.<br>2. Robot colliding with any obstacle.<br>3. Sliding failure.<br>4. Motor & encoder cable broken.<br>5. Controller defective.<br>6. Robot internal wiring broken. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. The end-of-arm load is not exceeding the reference value.<br>2. The robot arm is not in contact with any obstacles.<br>3. The robot motion is smooth and no abnormal noise is heard.<br>4. There is no contact failure in the motor & encoder cable connector.<br>5. Any section of the motor & encoder cable is not broken or crushed.<br>6. No cutting water, oil, or dust has gotten into the controller. |

| Code | Message | Level | Description | Remedy |
|---|---|---|---|---|
| 6127 | J7 overcurrent | 4 | Current flow through the motor of the corresponding axis exceeded the permitted value.<br>Possible causes are:<br>1. End-of-arm load exceeding the reference value.<br>2. Robot colliding with any obstacle.<br>3. Sliding failure.<br>4. Motor & encoder cable broken.<br>5. Controller defective.<br>6. Robot internal wiring broken. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. The end-of-arm load is not exceeding the reference value.<br>2. The robot arm is not in contact with any obstacles.<br>3. The robot motion is smooth and no abnormal noise is heard.<br>4. There is no contact failure in the motor & encoder cable connector.<br>5. Any section of the motor & encoder cable is not broken or crushed.<br>6. No cutting water, oil, or dust has gotten into the controller. |
| 6128 | J8 overcurrent | 4 | Current flow through the motor of the corresponding axis exceeded the permitted value.<br>Possible causes are:<br>1. End-of-arm load exceeding the reference value.<br>2. Robot colliding with any obstacle.<br>3. Sliding failure.<br>4. Motor & encoder cable broken.<br>5. Controller defective.<br>6. Robot internal wiring broken. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. The end-of-arm load is not exceeding the reference value.<br>2. The robot arm is not in contact with any obstacles.<br>3. The robot motion is smooth and no abnormal noise is heard.<br>4. There is no contact failure in the motor & encoder cable connector.<br>5. Any section of the motor & encoder cable is not broken or crushed.<br>6. No cutting water, oil, or dust has gotten into the controller. |
| 6129 | J1 overcurrent (software) | 4 | An overcurrent error on the 1st axis. The current to the motor exceeded the permissible value set in the software. | 1.Check if any axis, including the hand and the work-piece, interferes with an obstacle (peripheral devices, pipes or wires).<br>2.If this error occurs because the corresponding axis bumps into the mechanical stopper, change the software motion limit or check if you have executed the wrong procedures for CALSET.<br>3.Check if the hand, including a work-piece, specification is outside the robot standard specifications.<br>4.Check if the cable between the robot and the controller is firmly plugged.<br>5.Check that the FG terminals on the robot and the controller are grounded.<br>6.Decrease the speed and acceleration. |
| 612A | J2 overcurrent (software) | 4 | An overcurrent error on the 2nd axis. The current to the motor exceeded the permissible value set in the software. | 1.Check if any axis, including the hand and the work-piece, interferes with an obstacle (peripheral devices, pipes or wires).<br>2.If this error occurs because the corresponding axis bumps into the mechanical stopper, change the software motion limit or check if you have executed the wrong procedures for CALSET.<br>3.Check if the hand, including a work-piece, specification is outside the robot standard specifications.<br>4.Check if the cable between the robot and the controller is firmly plugged.<br>5.Check that the FG terminals on the robot and the controller are grounded.<br>6.Decrease the speed and acceleration. |

| Code | Message | Level | Description | Remedy |
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| 612B | J3 overcurrent (software) | 4 | An overcurrent error on the 3rd axis. The current to the motor exceeded the permissible value set in the software. | 1.Check if any axis, including the hand and the work-piece, interferes with an obstacle (peripheral devices, pipes or wires). 2.If this error occurs because the corresponding axis bumps into the mechanical stopper, change the software motion limit or check if you have executed the wrong procedures for CALSET. 3.Check if the hand, including a work-piece, specification is outside the robot standard specifications. 4.Check if the cable between the robot and the controller is firmly plugged. 5.Check that the FG terminals on the robot and the controller are grounded. 6.Decrease the speed and acceleration. |
| 612C | J4 overcurrent (software) | 4 | An overcurrent error on the 4th axis. The current to the motor exceeded the permissible value set in the software. | 1.Check if any axis, including the hand and the work-piece, interferes with an obstacle (peripheral devices, pipes or wires). 2.If this error occurs because the corresponding axis bumps into the mechanical stopper, change the software motion limit or check if you have executed the wrong procedures for CALSET. 3.Check if the hand, including a work-piece, specification is outside the robot standard specifications. 4.Check if the cable between the robot and the controller is firmly plugged. 5.Check that the FG terminals on the robot and the controller are grounded. 6.Decrease the speed and acceleration. |
| 612D | J5 overcurrent (software) | 4 | An overcurrent error on the 5th axis. The current to the motor exceeded the permissible value set in the software. | 1.Check if any axis, including the hand and the work-piece, interferes with an obstacle (peripheral devices, pipes or wires). 2.If this error occurs because the corresponding axis bumps into the mechanical stopper, change the software motion limit or check if you have executed the wrong procedures for CALSET. 3.Check if the hand, including a work-piece, specification is outside the robot standard specifications. 4.Check if the cable between the robot and the controller is firmly plugged. 5.Check that the FG terminals on the robot and the controller are grounded. 6.Decrease the speed and acceleration. |
| 612E | J6 overcurrent (software) | 4 | An overcurrent error on the 6th axis. The current to the motor exceeded the permissible value set in the software. | 1.Check if any axis, including the hand and the work-piece, interferes with an obstacle (peripheral devices, pipes or wires). 2.If this error occurs because the corresponding axis bumps into the mechanical stopper, change the software motion limit or check if you have executed the wrong procedures for CALSET. 3.Check if the hand, including a work-piece, specification is outside the robot standard specifications. 4.Check if the cable between the robot and the controller is firmly plugged. 5.heck that the FG terminals on the robot and the controller are grounded. 6.Decrease the speed and acceleration. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 612F | J7 overcurrent（software） | 4 | Overcurrent error on the 7th axis. The current flown through the motor exceeded the permissible value set in the software. | 1.Check if any axis, including the hand and the work-piece, interferes with an obstacle (peripheral devices, pipes or wires).<br>2.If this error occurs because the corresponding axis bumps into the mechanical stopper, change the software motion limit or check if you have executed the wrong procedures for CALSET.<br>3.Check if the hand, including a work-piece, specification is outside the robot standard specifications.<br>4.Check if the cable between the robot and the controller is firmly plugged.<br>5.Check that the FG terminals on the robot and the controller are grounded.<br>6.Decrease the speed and acceleration. |
| 6130 | J8 overcurrent（software） | 4 | Overcurrent error on the 8th axis. The current flown through the motor exceeded the permissible value set in the software. | 1.Check if any axis, including the hand and the work-piece, interferes with an obstacle (peripheral devices, pipes or wires).<br>2.If this error occurs because the corresponding axis bumps into the mechanical stopper, change the software motion limit or check if you have executed the wrong procedures for CALSET.<br>3.Check if the hand, including a work-piece, specification is outside the robot standard specifications.<br>4.Check if the cable between the robot and the controller is firmly plugged.<br>5.Check that the FG terminals on the robot and the controller are grounded.<br>6.Decrease the speed and acceleration. |
| 6131 | J1 encoder cable disconnected | 4 | 1st axis cable is not connected or broken. | 1.Check if the cable between the robot and the controller is firmly plugged.<br>2.Check that the FG terminals on the robot and the controller are grounded.<br>3.Check if the cable of the axis is not broken. |
| 6132 | J2 encoder cable disconnected | 4 | 2nd axis cable is not connected or broken. | 1.Check if the cable between the robot and the controller is firmly plugged.<br>2.Check that the FG terminals on the robot and the controller are grounded.<br>3.Check if the cable of the axis is not broken. |
| 6133 | J3 encoder cable disconnected | 4 | 3rd axis cable is not connected or broken. | 1.Check if the cable between the robot and the controller is firmly plugged.<br>2.Check that the FG terminals on the robot and the controller are grounded.<br>3.Check if the cable of the axis is not broken. |
| 6134 | J4 encoder cable disconnected | 4 | 4th axis cable is not connected or broken. | 1.Check if the cable between the robot and the controller is firmly plugged.<br>2.Check that the FG terminals on the robot and the controller are grounded.<br>3.Check if the cable of the axis is not broken. |
| 6135 | J5 encoder cable disconnected | 4 | 5th axis cable is not connected or broken. | 1.Check if the cable between the robot and the controller is firmly plugged.<br>2.Check that the FG terminals on the robot and the controller are grounded.<br>3.Check if the cable of the axis is not broken. |
| 6136 | J6 encoder cable disconnected | 4 | 6th axis cable is not connected or broken. | 1.Check if the cable between the robot and the controller is firmly plugged.<br>2.Check that the FG terminals on the robot and the controller are grounded.<br>3.Check if the cable of the axis is not broken. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 6137 | J7 encoder cable disconnected | 4 | The 7th-axis cable is not connected or broken. | 1.Check if the cable between the robot and the controller is firmly plugged.<br>2.Check that the FG terminals on the robot and the controller are grounded.<br>3.Check if the cable of the axis is not broken. |
| 6138 | J8 encoder cable disconnected | 4 | The 8th-axis cable is not connected or broken. | 1.Check if the cable between the robot and the controller is firmly plugged.<br>2.Check that the FG terminals on the robot and the controller are grounded.<br>3.Check if the cable of the axis is not broken. |
| 6139 | Power module overheated | 4 | The temperature inside the robot controller has arisen abnormally. | 1.Check the ambient temperature<br>2.Check that there is no obstruction to ventilation maintained by the fans inside the controller.<br>Once this error occurs, the motor will not be able to be turned on until the inside temperature drops below the specified level. Wait for at least one minute. |
| 613A | Power module overheated | 4 | The temperature inside the robot controller has risen abnormally. | 1.Check the ambient temperature<br>2.Check that there is no obstruction to ventilation maintained by the fans inside the controller.<br>Once this error occurs, the motor will not be able to be turned on until the inside temperature drops below the specified level. Wait for at least one minute. |
| 6140 | Motor brake fuse blown | 4 | (1) The motor brake fuse was blown.<br>(2) The contactor was failed (Only for RC7M).<br>(3) The brake release relay is broken. | Check the motor-encoder cable.<br>Check the motor.<br>(3) You need to investigate or repair the contactor (Only for RC7M). |
| 6141 | J1 power module failure | 4 | A fuse in the power module of the corresponding axis was blown.<br>Possible causes are:<br>1. Controller defective.<br>2. Motor & encoder cable broken.<br>3. Robot internal wiring broken. | It is necessary to repair the controller.<br>Contact your Denso Wave service representative and inform them of the results of the following checks.<br>1. There is no contact failure in the motor & encoder cable connector.<br>2. Any section of the motor & encoder cable is not broken or crushed.<br>3. No cutting water, oil, or dust has gotten into the controller. |
| 6142 | J2 power module failure | 4 | A fuse in the power module of the corresponding axis was blown.<br>Possible causes are:<br>1. Controller defective.<br>2. Motor & encoder cable broken.<br>3. Robot internal wiring broken. | It is necessary to repair the controller.<br>Contact your Denso Wave service representative and inform them of the results of the following checks.<br>1. There is no contact failure in the motor & encoder cable connector.<br>2. Any section of the motor & encoder cable is not broken or crushed.<br>3. No cutting water, oil, or dust has gotten into the controller. |
| 6143 | J3 power module failure | 4 | A fuse in the power module of the corresponding axis was blown.<br>Possible causes are:<br>1. Controller defective.<br>2. Motor & encoder cable broken.<br>3. Robot internal wiring broken. | It is necessary to repair the controller.<br>Contact your Denso Wave service representative and inform them of the results of the following checks.<br>1. There is no contact failure in the motor & encoder cable connector.<br>2. Any section of the motor & encoder cable is not broken or crushed.<br>3. No cutting water, oil, or dust has gotten into the controller. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 6144 | J4 power module failure | 4 | A fuse in the power module of the corresponding axis was blown.<br>Possible causes are:<br>1. Controller defective.<br>2. Motor & encoder cable broken.<br>3. Robot internal wiring broken. | It is necessary to repair the controller.<br>Contact your Denso Wave service representative and inform them of the results of the following checks.<br>1. There is no contact failure in the motor & encoder cable connector.<br>2. Any section of the motor & encoder cable is not broken or crushed.<br>3. No cutting water, oil, or dust has gotten into the controller. |
| 6145 | J5 power module failure | 4 | A fuse in the power module of the corresponding axis was blown.<br>Possible causes are:<br>1. Controller defective.<br>2. Motor & encoder cable broken.<br>3. Robot internal wiring broken. | It is necessary to repair the controller.<br>Contact your Denso Wave service representative and inform them of the results of the following checks.<br>1. There is no contact failure in the motor & encoder cable connector.<br>2. Any section of the motor & encoder cable is not broken or crushed.<br>3. No cutting water, oil, or dust has gotten into the controller. |
| 6146 | J6 power module failure | 4 | A fuse in the power module of the corresponding axis was blown.<br>Possible causes are:<br>1. Controller defective.<br>2. Motor & encoder cable broken.<br>3. Robot internal wiring broken. | It is necessary to repair the controller.<br>Contact your Denso Wave service representative and inform them of the results of the following checks.<br>1. There is no contact failure in the motor & encoder cable connector.<br>2. Any section of the motor & encoder cable is not broken or crushed.<br>3. No cutting water, oil, or dust has gotten into the controller. |
| 6147 | J7 power module failure | 4 | A fuse in the power module of the corresponding axis was blown.<br>Possible causes are:<br>1. Controller defective.<br>2. Motor & encoder cable broken.<br>3. Robot internal wiring broken. | It is necessary to repair the controller.<br>Contact your Denso Wave service representative and inform them of the results of the following checks.<br>1. There is no contact failure in the motor & encoder cable connector.<br>2. Any section of the motor & encoder cable is not broken or crushed.<br>3. No cutting water, oil, or dust has gotten into the controller. |
| 6148 | J8 power module failure | 4 | A fuse in the power module of the corresponding axis was blown.<br>Possible causes are:<br>1. Controller defective.<br>2. Motor & encoder cable broken.<br>3. Robot internal wiring broken. | It is necessary to repair the controller.<br>Contact your Denso Wave service representative and inform them of the results of the following checks.<br>1. There is no contact failure in the motor & encoder cable connector.<br>2. Any section of the motor & encoder cable is not broken or crushed.<br>3. No cutting water, oil, or dust has gotten into the controller. |
| 6149 | J1 power module capacity failure | 4 | The J1 power module does not match the motor parameter values. | 1.Check the matching between the power module capacity and the connected motor's output.<br>2.Check the matching between the arm file being used and the robot model.<br>3.When the joint is used as an extended-joint, check that the extended-joint path parameters for the motor are correctly set. |
| 614A | J2 power module capacity failure | 4 | The J2 power module does not match the motor parameter values. | 1.Check the matching between the power module capacity and the connected motor's output.<br>2.Check the matching between the arm file being used and the robot model.<br>3.When the joint is used as an extended-joint, check that the extended-joint path parameters for the motor are correctly set. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 614B | J3 power module capacity failure | 4 | The J3 power module does not match the motor parameter values. | 1.Check the matching between the power module capacity and the connected motor's output.<br>2.Check the matching between the arm file being used and the robot model.<br>3.When the joint is used as an extended-joint, check that the extended-joint path parameters for the motor are correctly set. |
| 614C | J4 power module capacity failure | 4 | The J4 power module does not match the motor parameter values. | 1.Check the matching between the power module capacity and the connected motor's output.<br>2.Check the matching between the arm file being used and the robot model.<br>3.When the joint is used as an extended-joint, check that the extended-joint path parameters for the motor are correctly set. |
| 614D | J5 power module capacity failure | 4 | The J5 power module does not match the motor parameter values. | 1.Check the matching between the power module capacity and the connected motor's output.<br>2.Check the matching between the arm file being used and the robot model.<br>3.When the joint is used as an extended-joint, check that the extended-joint path parameters for the motor are correctly set. |
| 614E | J6 power module capacity failure | 4 | The J6 power module does not match the motor parameter values. | 1.Check the matching between the power module capacity and the connected motor's output.<br>2.Check the matching between the arm file being used and the robot model.<br>3.When the joint is used as an extended-joint, check that the extended-joint path parameters for the motor are correctly set. |
| 614F | J7 power module capacity failure | 4 | The J7 power module does not match the motor parameter values. | 1.Check the matching between the power module capacity and the connected motor's output.<br>2.Check the matching between the arm file being used and the robot model.<br>3.When the joint is used as an extended-joint, check that the extended-joint path parameters for the motor are correctly set. |
| 6150 | J8 power module capacity failure | 4 | The J8 power module does not match the motor parameter values. | 1.Check the matching between the power module capacity and the connected motor's output.<br>2.Check the matching between the arm file being used and the robot model.<br>3.When the joint is used as an extended-joint, check that the extended-joint path parameters for the motor are correctly set. |
| 6170 | Contoroller overload | 4 | An overload error occurred in the controller. | Insert a timer between the motion commands or reduce the speed and acceleration.<br>Wait one minute before starting operation again. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 6171 | J1 motor overload | 4 | Load applied to the corresponding axis exceeded the permitted value.<br>Possible causes are:<br>1. Program too highly loaded.<br>2. End-of-arm load exceeding the reference value.<br>3. Robot motion rattling or jerky.<br>4. Motor & encoder cable broken. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. The program is not highly loaded.<br>To decrease the load on the program, decrease the speed or acceleration, insert a timer (pause), or set the control set of motion optimization to "0."<br>(Leave at least one minute before retrying the operation.)<br>2. The end-of-arm load is not exceeding the reference value.<br>3. There is no contact failure in the motor & encoder cable connector.<br>4. Any section of the motor & encoder cable is not broken or crushed.<br>5. The air balance cylinder is properly adjusted.<br>6. The robot motion is smooth and no abnormal noise is heard. |
| 6172 | J2 motor overload | 4 | Load applied to the corresponding axis exceeded the permitted value.<br>Possible causes are:<br>1. Program too highly loaded.<br>2. End-of-arm load exceeding the reference value.<br>3. Robot motion rattling or jerky.<br>4. Motor & encoder cable broken. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. The program is not highly loaded.<br>To decrease the load on the program, decrease the speed or acceleration, insert a timer (pause), or set the control set of motion optimization to "0."<br>(Leave at least one minute before retrying the operation.)<br>2. The end-of-arm load is not exceeding the reference value.<br>3. There is no contact failure in the motor & encoder cable connector.<br>4. Any section of the motor & encoder cable is not broken or crushed.<br>5. The air balance cylinder is properly adjusted.<br>6. The robot motion is smooth and no abnormal noise is heard. |
| 6173 | J3 motor overload | 4 | Load applied to the corresponding axis exceeded the permitted value.<br>Possible causes are:<br>1. Program too highly loaded.<br>2. End-of-arm load exceeding the reference value.<br>3. Robot motion rattling or jerky.<br>4. Motor & encoder cable broken. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. The program is not highly loaded.<br>To decrease the load on the program, decrease the speed or acceleration, insert a timer (pause), or set the control set of motion optimization to "0."<br>(Leave at least one minute before retrying the operation.)<br>2. The end-of-arm load is not exceeding the reference value.<br>3. There is no contact failure in the motor & encoder cable connector.<br>4. Any section of the motor & encoder cable is not broken or crushed.<br>5. The air balance cylinder is properly adjusted.<br>6. The robot motion is smooth and no abnormal noise is heard. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 6174 | J4 motor overload | 4 | Load applied to the corresponding axis exceeded the permitted value.<br>Possible causes are:<br>1. Program too highly loaded.<br>2. End-of-arm load exceeding the reference value.<br>3. Robot motion rattling or jerky.<br>4. Motor & encoder cable broken. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. The program is not highly loaded.<br>To decrease the load on the program, decrease the speed or acceleration, insert a timer (pause), or set the control set of motion optimization to "0."<br>(Leave at least one minute before retrying the operation.)<br>2. The end-of-arm load is not exceeding the reference value.<br>3. There is no contact failure in the motor & encoder cable connector.<br>4. Any section of the motor & encoder cable is not broken or crushed.<br>5. The air balance cylinder is properly adjusted.<br>6. The robot motion is smooth and no abnormal noise is heard. |
| 6175 | J5 motor overload | 4 | Load applied to the corresponding axis exceeded the permitted value.<br>Possible causes are:<br>1. Program too highly loaded.<br>2. End-of-arm load exceeding the reference value.<br>3. Robot motion rattling or jerky.<br>4. Motor & encoder cable broken. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. The program is not highly loaded.<br>To decrease the load on the program, decrease the speed or acceleration, insert a timer (pause), or set the control set of motion optimization to "0."<br>(Leave at least one minute before retrying the operation.)<br>2. The end-of-arm load is not exceeding the reference value.<br>3. There is no contact failure in the motor & encoder cable connector.<br>4. Any section of the motor & encoder cable is not broken or crushed.<br>5. The air balance cylinder is properly adjusted.<br>6. The robot motion is smooth and no abnormal noise is heard. |
| 6176 | J6 motor overload | 4 | Load applied to the corresponding axis exceeded the permitted value.<br>Possible causes are:<br>1. Program too highly loaded.<br>2. End-of-arm load exceeding the reference value.<br>3. Robot motion rattling or jerky.<br>4. Motor & encoder cable broken. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. The program is not highly loaded.<br>To decrease the load on the program, decrease the speed or acceleration, insert a timer (pause), or set the control set of motion optimization to "0."<br>(Leave at least one minute before retrying the operation.)<br>2. The end-of-arm load is not exceeding the reference value.<br>3. There is no contact failure in the motor & encoder cable connector.<br>4. Any section of the motor & encoder cable is not broken or crushed.<br>5. The air balance cylinder is properly adjusted.<br>6. The robot motion is smooth and no abnormal noise is heard. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 6177 | J7 motor overload | 4 | Load applied to the corresponding axis exceeded the permitted value.<br>Possible causes are:<br>1. Program too highly loaded.<br>2. End-of-arm load exceeding the reference value.<br>3. Robot motion rattling or jerky.<br>4. Motor & encoder cable broken. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. The program is not highly loaded.<br>To decrease the load on the program, decrease the speed or acceleration, insert a timer (pause), or set the control set of motion optimization to "0."<br>(Leave at least one minute before retrying the operation.)<br>2. The end-of-arm load is not exceeding the reference value.<br>3. There is no contact failure in the motor & encoder cable connector.<br>4. Any section of the motor & encoder cable is not broken or crushed.<br>5. The air balance cylinder is properly adjusted.<br>6. The robot motion is smooth and no abnormal noise is heard. |
| 6178 | J8 motor overload | 4 | Load applied to the corresponding axis exceeded the permitted value.<br>Possible causes are:<br>1. Program too highly loaded.<br>2. End-of-arm load exceeding the reference value.<br>3. Robot motion rattling or jerky.<br>4. Motor & encoder cable broken. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. The program is not highly loaded.<br>To decrease the load on the program, decrease the speed or acceleration, insert a timer (pause), or set the control set of motion optimization to "0."<br>(Leave at least one minute before retrying the operation.)<br>2. The end-of-arm load is not exceeding the reference value.<br>3. There is no contact failure in the motor & encoder cable connector.<br>4. Any section of the motor & encoder cable is not broken or crushed.<br>5. The air balance cylinder is properly adjusted.<br>6. The robot motion is smooth and no abnormal noise is heard. |
| 6180 | Servo communication data error | 5 | A controller internal error has occurred. (Servo-received data is out of the range.) | (1)Check that the FG wires of the robot unit and controller are grounded properly.<br>(2)Check that no noise sources (e.g., welding machines) are in the vicinity of the robot unit or controller. |
| 6181 | Servo calculation time over | 5 | Controller internal error (Servo process time over.) | 1.Check that the FG (frame ground) terminals of the robot and the controller are grounded.<br>2.Check that the robot and the controller are away from noise source such as a welding machine. |
| 6182 | Servo comm. interrupt delay (host) | 5 | Controller internal error (Interruption from servo exceeded the preset time.) | 1.Check that the FG (frame ground) terminals of the robot and the controller are grounded.<br>2.Check that the robot and the controller are away from noise source such as a welding machine. |
| 6183 | Servo data check sum error | 5 | A check sum failure occurred in communicating data between the host and the servo. | 1.Check that the FG (frame ground) terminals of the robot and the controller are grounded.<br>2.Check that the robot and the controller are away from noise source such as a welding machine. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 6185 | Host data check sum error | 5 | A check sum failure occurred in communicating data between the host and the servo. | 1.Check that the FG (frame ground) terminals of the robot and the controller are grounded.<br>2.Check that the robot and the controller are away from noise source such as a welding machine. |
| 6186 | Servo answer command receive error(host) | 5 | Controller internal error (An unregistered command was received from servo.) | Turn OFF the power switch of the controller and restart the operation. |
| 6189 | Servo transmission command undefined | 5 | Controller internal error (An unregistered command was received from upper module.) | Turn OFF the power switch of the controller and restart the operation. |
| 618A | Host send command receive error (servo) | 5 | Controller internal error (An unregistered command was received from host.) | Turn OFF the power switch of the controller and restart the operation. |
| 618B | Servo command mode unknown | 5 | Controller internal error (The sub data quantity of command to send servo is not defined.) | Turn OFF the power switch of the controller and restart the operation. |
| 618C | Servo command delete error | 5 | Controller internal error (The corresponding command to the one answered from servo is not present.) | Turn OFF the power switch of the controller and restart the operation. |
| 618D | Servo transmit command buffer overflow | 5 | Controller internal error (The number of commands to send from servo is over.) | Turn OFF the power switch of the controller and restart the operation. |
| 618E | Servo ans. command buffer overflow | 5 | Controller internal error (The number of commands waiting for answer from servo is over.) | Turn OFF the power switch of the controller and restart the operation. |
| 618F | Servo answer command mismatch | 5 | Controller internal error (There is no command that corresponds to the command returned from the servo.) | Turn OFF the power switch of the controller and restart the operation. |
| 6199 | J1 motor lock overload2 | 4 | The corresponding axis does not move.<br>Possible causes are:<br>1. Robot arm being in contact with an obstacle.<br>2. Sliding failure.<br>3. Motor & encoder cable broken.<br>4. Controller defective. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. The robot arm is not in contact with any obstacles.<br>2. The robot motion is smooth and no abnormal noise is heard.<br>3. There is no contact failure in the motor & encoder cable connector.<br>4. Any section of the motor & encoder cable is not broken or crushed.<br>5. The software limits and CALSET are appropriately configured if the corresponding axis is in contact with the mechanical end. |
| 619A | J2 motor lock overload2 | 4 | The corresponding axis does not move.<br>Possible causes are:<br>1. Robot arm being in contact with an obstacle.<br>2. Sliding failure.<br>3. Motor & encoder cable broken.<br>4. Controller defective. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. The robot arm is not in contact with any obstacles.<br>2. The robot motion is smooth and no abnormal noise is heard.<br>3. There is no contact failure in the motor & encoder cable connector.<br>4. Any section of the motor & encoder cable is not broken or crushed.<br>5. The software limits and CALSET are appropriately configured if the corresponding axis is in contact with the mechanical end. |

| Code | Message | Level | Description | Remedy |
|---|---|---|---|---|
| 619B | J3 motor lock overload2 | 4 | The corresponding axis does not move.<br>Possible causes are:<br>1. Robot arm being in contact with an obstacle.<br>2. Sliding failure.<br>3. Motor & encoder cable broken.<br>4. Controller defective. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. The robot arm is not in contact with any obstacles.<br>2. The robot motion is smooth and no abnormal noise is heard.<br>3. There is no contact failure in the motor & encoder cable connector.<br>4. Any section of the motor & encoder cable is not broken or crushed.<br>5. The software limits and CALSET are appropriately configured if the corresponding axis is in contact with the mechanical end. |
| 619C | J4 motor lock overload2 | 4 | The corresponding axis does not move.<br>Possible causes are:<br>1. Robot arm being in contact with an obstacle.<br>2. Sliding failure.<br>3. Motor & encoder cable broken.<br>4. Controller defective. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. The robot arm is not in contact with any obstacles.<br>2. The robot motion is smooth and no abnormal noise is heard.<br>3. There is no contact failure in the motor & encoder cable connector.<br>4. Any section of the motor & encoder cable is not broken or crushed.<br>5. The software limits and CALSET are appropriately configured if the corresponding axis is in contact with the mechanical end. |
| 619D | J5 motor lock overload2 | 4 | The corresponding axis does not move.<br>Possible causes are:<br>1. Robot arm being in contact with an obstacle.<br>2. Sliding failure.<br>3. Motor & encoder cable broken.<br>4. Controller defective. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. The robot arm is not in contact with any obstacles.<br>2. The robot motion is smooth and no abnormal noise is heard.<br>3. There is no contact failure in the motor & encoder cable connector.<br>4. Any section of the motor & encoder cable is not broken or crushed.<br>5. The software limits and CALSET are appropriately configured if the corresponding axis is in contact with the mechanical end. |
| 619E | J6 motor lock overload2 | 4 | The corresponding axis does not move.<br>Possible causes are:<br>1. Robot arm being in contact with an obstacle.<br>2. Sliding failure.<br>3. Motor & encoder cable broken.<br>4. Controller defective. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. The robot arm is not in contact with any obstacles.<br>2. The robot motion is smooth and no abnormal noise is heard.<br>3. There is no contact failure in the motor & encoder cable connector.<br>4. Any section of the motor & encoder cable is not broken or crushed.<br>5. The software limits and CALSET are appropriately configured if the corresponding axis is in contact with the mechanical end. |
| 619F | J7 motor lock overload2 | 4 | The corresponding axis does not move.<br>Possible causes are:<br>1. Robot arm being in contact with an obstacle.<br>2. Sliding failure.<br>3. Motor & encoder cable broken.<br>4. Controller defective. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. The robot arm is not in contact with any obstacles.<br>2. The robot motion is smooth and no abnormal noise is heard.<br>3. There is no contact failure in the motor & encoder cable connector.<br>4. Any section of the motor & encoder cable is not broken or crushed.<br>5. The software limits and CALSET are appropriately configured if the corresponding axis is in contact with the mechanical end. |

| Code | Message | Level | Description | Remedy |
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| 61A0 | J8 motor lock overload2 | 4 | The corresponding axis does not move.<br>Possible causes are:<br>1. Robot arm being in contact with an obstacle.<br>2. Sliding failure.<br>3. Motor & encoder cable broken.<br>4. Controller defective. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. The robot arm is not in contact with any obstacles.<br>2. The robot motion is smooth and no abnormal noise is heard.<br>3. There is no contact failure in the motor & encoder cable connector.<br>4. Any section of the motor & encoder cable is not broken or crushed.<br>5. The software limits and CALSET are appropriately configured if the corresponding axis is in contact with the mechanical end. |
| 61A1 | J1 torque limit time over | 4 | The 1st axis torque command reached its limit and the time exceeded its limit while maintaining that status. | 1.Check if any axis, including the hand and the work-piece, interferes with an obstacle (peripheral devices, pipes or wires).<br>2.If this error occurs because the corresponding axis bumps into the mechanical stopper, change the software motion limit or check if you have executed the wrong procedures for CALSET.<br>3.Check if the hand, including a work-piece, specification is outside the robot standard specifications.<br>4.Check if the cable between the robot and the controller is firmly plugged. |
| 61A2 | J2 torque limit time over | 4 | The of 2nd axis torque command reached its limit and the time exceeded its limit while maintaining that status. | 1.Check if any axis, including the hand and the work-piece, interferes with an obstacle (peripheral devices, pipes or wires).<br>2.If this error occurs because the corresponding axis bumps into the mechanical stopper, change the software motion limit or check if you have executed the wrong procedures for CALSET.<br>3.Check if the hand, including a work-piece, specification is outside the robot standard specifications.<br>4.Check if the cable between the robot and the controller is firmly plugged. |
| 61A3 | J3 torque limit time over | 4 | The 3rd axis torque command reached its limit and the time exceeded its limit while maintaining that status. | 1.Check if any axis, including the hand and the work-piece, interferes with an obstacle (peripheral devices, pipes or wires).<br>2.If this error occurs because the corresponding axis bumps into the mechanical stopper, change the software motion limit or check if you have executed the wrong procedures for CALSET.<br>3.Check if the hand, including a work-piece, specification is outside the robot standard specifications.<br>4.Check if the cable between the robot and the controller is firmly plugged. |
| 61A4 | J4 torque limit time over | 4 | The 4th axis torque command reached its limit and the time exceeded its limit while maintaining that status. | 1.Check if any axis, including the hand and the work-piece, interferes with an obstacle (peripheral devices, pipes or wires).<br>2.If this error occurs because the corresponding axis bumps into the mechanical stopper, change the software motion limit or check if you have executed the wrong procedures for CALSET.<br>3.Check if the hand, including a work-piece, specification is outside the robot standard specifications.<br>4.Check if the cable between the robot and the controller is firmly plugged. |

| Code | Message | Level | Description | Remedy |
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| 61A5 | J5 torque limit time over | 4 | The 5th axis torque command reached its limit and the time exceeded its limit while maintaining that status. | 1.Check if any axis, including the hand and the work-piece, interferes with an obstacle (peripheral devices, pipes or wires).<br>2.If this error occurs because the corresponding axis bumps into the mechanical stopper, change the software motion limit or check if you have executed the wrong procedures for CALSET.<br>3.Check if the hand, including a work-piece, specification is outside the robot standard specifications.<br>4.Check if the cable between the robot and the controller is firmly plugged. |
| 61A6 | J6 torque limit time over | 4 | The 6th axis torque command reached its limit and the time exceeded its limit while maintaining that status. | 1.Check if any axis, including the hand and the work-piece, interferes with an obstacle (peripheral devices, pipes or wires).<br>2.If this error occurs because the corresponding axis bumps into the mechanical stopper, change the software motion limit or check if you have executed the wrong procedures for CALSET.<br>3.Check if the hand, including a work-piece, specification is outside the robot standard specifications.<br>4.Check if the cable between the robot and the controller is firmly plugged. |
| 61A7 | J7 torque limit time over | 4 | The 7th axis torque command reached its limit and the time exceeded its limit while maintaining that status. | 1.Check if any axis, including the hand and the work-piece, interferes with an obstacle (peripheral devices, pipes or wires).<br>2.If this error occurs because the corresponding axis bumps into the mechanical stopper, change the software motion limit or check if you have executed the wrong procedures for CALSET.<br>3.Check if the hand, including a work-piece, specification is outside the robot standard specifications.<br>4.Check if the cable between the robot and the controller is firmly plugged. |
| 61A8 | J8 torque limit time over | 4 | The 8th axis torque command reached its limit and the time exceeded its limit while maintaining that status. | 1.Check if any axis, including the hand and the work-piece, interferes with an obstacle (peripheral devices, pipes or wires).<br>2.If this error occurs because the corresponding axis bumps into the mechanical stopper, change the software motion limit or check if you have executed the wrong procedures for CALSET.<br>3.Check if the hand, including a work-piece, specification is outside the robot standard specifications.<br>4.Check if the cable between the robot and the controller is firmly plugged. |
| 61A9 | J1 motor lock overload | 4 | The corresponding axis does not move.<br>Possible causes are:<br>1. Robot arm being in contact with an obstacle.<br>2. Sliding failure.<br>3. Motor & encoder cable broken.<br>4. Controller defective. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. The robot arm is not in contact with any obstacles.<br>2. The robot motion is smooth and no abnormal noise is heard.<br>3. There is no contact failure in the motor & encoder cable connector.<br>4. Any section of the motor & encoder cable is not broken or crushed.<br>5. The software limits and CALSET are appropriately configured if the corresponding axis is in contact with the mechanical end. |

| Code | Message | Level | Description | Remedy |
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| 61AA | J2 motor lock overload | 4 | The corresponding axis does not move.<br>Possible causes are:<br>1. Robot arm being in contact with an obstacle.<br>2. Sliding failure.<br>3. Motor & encoder cable broken.<br>4. Controller defective. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. The robot arm is not in contact with any obstacles.<br>2. The robot motion is smooth and no abnormal noise is heard.<br>3. There is no contact failure in the motor & encoder cable connector.<br>4. Any section of the motor & encoder cable is not broken or crushed.<br>5. The software limits and CALSET are appropriately configured if the corresponding axis is in contact with the mechanical end. |
| 61AB | J3 motor lock overload | 4 | The corresponding axis does not move.<br>Possible causes are:<br>1. Robot arm being in contact with an obstacle.<br>2. Sliding failure.<br>3. Motor & encoder cable broken.<br>4. Controller defective. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. The robot arm is not in contact with any obstacles.<br>2. The robot motion is smooth and no abnormal noise is heard.<br>3. There is no contact failure in the motor & encoder cable connector.<br>4. Any section of the motor & encoder cable is not broken or crushed.<br>5. The software limits and CALSET are appropriately configured if the corresponding axis is in contact with the mechanical end. |
| 61AC | J4 motor lock overload | 4 | The corresponding axis does not move.<br>Possible causes are:<br>1. Robot arm being in contact with an obstacle.<br>2. Sliding failure.<br>3. Motor & encoder cable broken.<br>4. Controller defective. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. The robot arm is not in contact with any obstacles.<br>2. The robot motion is smooth and no abnormal noise is heard.<br>3. There is no contact failure in the motor & encoder cable connector.<br>4. Any section of the motor & encoder cable is not broken or crushed.<br>5. The software limits and CALSET are appropriately configured if the corresponding axis is in contact with the mechanical end. |
| 61AD | J5 motor lock overload | 4 | The corresponding axis does not move.<br>Possible causes are:<br>1. Robot arm being in contact with an obstacle.<br>2. Sliding failure.<br>3. Motor & encoder cable broken.<br>4. Controller defective. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. The robot arm is not in contact with any obstacles.<br>2. The robot motion is smooth and no abnormal noise is heard.<br>3. There is no contact failure in the motor & encoder cable connector.<br>4. Any section of the motor & encoder cable is not broken or crushed.<br>5. The software limits and CALSET are appropriately configured if the corresponding axis is in contact with the mechanical end. |
| 61AE | J6 motor lock overload | 4 | The corresponding axis does not move.<br>Possible causes are:<br>1. Robot arm being in contact with an obstacle.<br>2. Sliding failure.<br>3. Motor & encoder cable broken.<br>4. Controller defective. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. The robot arm is not in contact with any obstacles.<br>2. The robot motion is smooth and no abnormal noise is heard.<br>3. There is no contact failure in the motor & encoder cable connector.<br>4. Any section of the motor & encoder cable is not broken or crushed.<br>5. The software limits and CALSET are appropriately configured if the corresponding axis is in contact with the mechanical end. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 61AF | J7 motor lock overload | 4 | The corresponding axis does not move.<br>Possible causes are:<br>1. Robot arm being in contact with an obstacle.<br>2. Sliding failure.<br>3. Motor & encoder cable broken.<br>4. Controller defective. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. The robot arm is not in contact with any obstacles.<br>2. The robot motion is smooth and no abnormal noise is heard.<br>3. There is no contact failure in the motor & encoder cable connector.<br>4. Any section of the motor & encoder cable is not broken or crushed.<br>5. The software limits and CALSET are appropriately configured if the corresponding axis is in contact with the mechanical end. |
| 61B0 | J8 motor lock overload | 4 | The corresponding axis does not move.<br>Possible causes are:<br>1. Robot arm being in contact with an obstacle.<br>2. Sliding failure.<br>3. Motor & encoder cable broken.<br>4. Controller defective. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. The robot arm is not in contact with any obstacles.<br>2. The robot motion is smooth and no abnormal noise is heard.<br>3. There is no contact failure in the motor & encoder cable connector.<br>4. Any section of the motor & encoder cable is not broken or crushed.<br>5. The software limits and CALSET are appropriately configured if the corresponding axis is in contact with the mechanical end. |
| 61B1 | J1 power module overload | 4 | Load applied to the corresponding axis exceeded the permitted value.<br>Possible causes are:<br>1. Program too highly loaded.<br>2. End-of-arm load exceeding the reference value.<br>3. Robot motion rattling or jerky.<br>4. Motor & encoder cable broken. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. The program is not highly loaded.<br>To decrease the load on the program, decrease the speed or acceleration, insert a timer (pause), or set the control set of motion optimization to "0."<br>(Leave at least one minute before retrying the operation.)<br>2. The end-of-arm load is not exceeding the reference value.<br>3. There is no contact failure in the motor & encoder cable connector.<br>4. Any section of the motor & encoder cable is not broken or crushed.<br>5. The air balance cylinder is properly adjusted.<br>6. The robot motion is smooth and no abnormal noise is heard.<br>7. The software limits and CALSET are appropriately configured if the corresponding axis is in contact with the mechanical end. |
| 61B2 | J2 power module overload | 4 | Load applied to the corresponding axis exceeded the permitted value.<br>Possible causes are:<br>1. Program too highly loaded.<br>2. End-of-arm load exceeding the reference value.<br>3. Robot motion rattling or jerky.<br>4. Motor & encoder cable broken. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. The program is not highly loaded.<br>To decrease the load on the program, decrease the speed or acceleration, insert a timer (pause), or set the control set of motion optimization to "0."<br>(Leave at least one minute before retrying the operation.)<br>2. The end-of-arm load is not exceeding the reference value.<br>3. There is no contact failure in the motor & encoder cable connector.<br>4. Any section of the motor & encoder cable is not broken or crushed.<br>5. The air balance cylinder is properly adjusted.<br>6. The robot motion is smooth and no abnormal noise is heard.<br>7. The software limits and CALSET are appropriately configured if the corresponding axis is in contact with the mechanical end. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 61B3 | J3 power module overload | 4 | Load applied to the corresponding axis exceeded the permitted value.<br>Possible causes are:<br>1. Program too highly loaded.<br>2. End-of-arm load exceeding the reference value.<br>3. Robot motion rattling or jerky.<br>4. Motor & encoder cable broken. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. The program is not highly loaded.<br>To decrease the load on the program, decrease the speed or acceleration, insert a timer (pause), or set the control set of motion optimization to "0." (Leave at least one minute before retrying the operation.)<br>2. The end-of-arm load is not exceeding the reference value.<br>3. There is no contact failure in the motor & encoder cable connector.<br>4. Any section of the motor & encoder cable is not broken or crushed.<br>5. The air balance cylinder is properly adjusted.<br>6. The robot motion is smooth and no abnormal noise is heard.<br>7. The software limits and CALSET are appropriately configured if the corresponding axis is in contact with the mechanical end. |
| 61B4 | J4 power module overload | 4 | Load applied to the corresponding axis exceeded the permitted value.<br>Possible causes are:<br>1. Program too highly loaded.<br>2. End-of-arm load exceeding the reference value.<br>3. Robot motion rattling or jerky.<br>4. Motor & encoder cable broken. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. The program is not highly loaded.<br>To decrease the load on the program, decrease the speed or acceleration, insert a timer (pause), or set the control set of motion optimization to "0." (Leave at least one minute before retrying the operation.)<br>2. The end-of-arm load is not exceeding the reference value.<br>3. There is no contact failure in the motor & encoder cable connector.<br>4. Any section of the motor & encoder cable is not broken or crushed.<br>5. The air balance cylinder is properly adjusted.<br>6. The robot motion is smooth and no abnormal noise is heard.<br>7. The software limits and CALSET are appropriately configured if the corresponding axis is in contact with the mechanical end. |
| 61B5 | J5 power module overload | 4 | Load applied to the corresponding axis exceeded the permitted value.<br>Possible causes are:<br>1. Program too highly loaded.<br>2. End-of-arm load exceeding the reference value.<br>3. Robot motion rattling or jerky.<br>4. Motor & encoder cable broken. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. The program is not highly loaded.<br>To decrease the load on the program, decrease the speed or acceleration, insert a timer (pause), or set the control set of motion optimization to "0." (Leave at least one minute before retrying the operation.)<br>2. The end-of-arm load is not exceeding the reference value.<br>3. There is no contact failure in the motor & encoder cable connector.<br>4. Any section of the motor & encoder cable is not broken or crushed.<br>5. The air balance cylinder is properly adjusted.<br>6. The robot motion is smooth and no abnormal noise is heard.<br>7. The software limits and CALSET are appropriately configured if the corresponding axis is in contact with the mechanical end. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 61B6 | J6 power module overload | 4 | Load applied to the corresponding axis exceeded the permitted value.<br>Possible causes are:<br>1. Program too highly loaded.<br>2. End-of-arm load exceeding the reference value.<br>3. Robot motion rattling or jerky.<br>4. Motor & encoder cable broken. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. The program is not highly loaded.<br>To decrease the load on the program, decrease the speed or acceleration, insert a timer (pause), or set the control set of motion optimization to "0."<br>(Leave at least one minute before retrying the operation.)<br>2. The end-of-arm load is not exceeding the reference value.<br>3. There is no contact failure in the motor & encoder cable connector.<br>4. Any section of the motor & encoder cable is not broken or crushed.<br>5. The air balance cylinder is properly adjusted.<br>6. The robot motion is smooth and no abnormal noise is heard.<br>7. The software limits and CALSET are appropriately configured if the corresponding axis is in contact with the mechanical end. |
| 61B7 | J7 power module overload | 4 | Load applied to the corresponding axis exceeded the permitted value.<br>Possible causes are:<br>1. Program too highly loaded.<br>2. End-of-arm load exceeding the reference value.<br>3. Robot motion rattling or jerky.<br>4. Motor & encoder cable broken. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. The program is not highly loaded.<br>To decrease the load on the program, decrease the speed or acceleration, insert a timer (pause), or set the control set of motion optimization to "0."<br>(Leave at least one minute before retrying the operation.)<br>2. The end-of-arm load is not exceeding the reference value.<br>3. There is no contact failure in the motor & encoder cable connector.<br>4. Any section of the motor & encoder cable is not broken or crushed.<br>5. The air balance cylinder is properly adjusted.<br>6. The robot motion is smooth and no abnormal noise is heard.<br>7. The software limits and CALSET are appropriately configured if the corresponding axis is in contact with the mechanical end. |
| 61B8 | J8 power module overload | 4 | Load applied to the corresponding axis exceeded the permitted value.<br>Possible causes are:<br>1. Program too highly loaded.<br>2. End-of-arm load exceeding the reference value.<br>3. Robot motion rattling or jerky.<br>4. Motor & encoder cable broken. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. The program is not highly loaded.<br>To decrease the load on the program, decrease the speed or acceleration, insert a timer (pause), or set the control set of motion optimization to "0."<br>(Leave at least one minute before retrying the operation.)<br>2. The end-of-arm load is not exceeding the reference value.<br>3. There is no contact failure in the motor & encoder cable connector.<br>4. Any section of the motor & encoder cable is not broken or crushed.<br>5. The air balance cylinder is properly adjusted.<br>6. The robot motion is smooth and no abnormal noise is heard.<br>7. The software limits and CALSET are appropriately configured if the corresponding axis is in contact with the mechanical end. |
| 61EC | Press the deadman switch | 3 | The deadman switch was turned off during auto gain tuning. | Hold down the deadman switch during auto gain tuning. |

| Code | Message | Level | Description | Remedy |
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| 61FF | Overcurrent error (mode undetected) | 4 | An overcurrent error was accidentally detected. | 1.Check that the FG (frame ground) terminals of the robot and the controller are grounded.<br>2.Check that the robot and the controller are away from noise source such as a welding machine.<br>3.Decrease the speed and acceleration. |
| 6306 | Can't operate in Direct teaching mode | 2 | An action prohibited in direct teaching mode, e.g. turning the motor power off, was attempted. | Do not attempt operations prohibited in direct teaching mode. |
| 6308 | Brake releasing | 2 | The motor power was attempted to turn ON during motor brake releasing. | Lock the motor brake and turn ON the motor power. |
| 6401 | J1 encoder acceleration error | 5 | 1st axis encoder exceeded the acceleration limit value. | 1.Check if the cable between the robot and the controller is firmly plugged.<br>2.Check that the FG terminals on the robot and the controller are grounded.<br>3.Check if the cable of the axis is not broken. |
| 6402 | J2 encoder acceleration error | 5 | 2nd axis encoder exceeded the acceleration limit value. | 1.Check if the cable between the robot and the controller is firmly plugged.<br>2.Check that the FG terminals on the robot and the controller are grounded.<br>3.Check if the cable of the axis is not broken. |
| 6403 | J3 encoder acceleration error | 5 | 3rd axis encoder exceeded the acceleration limit value. | 1.Check if the cable between the robot and the controller is firmly plugged.<br>2.Check that the FG terminals on the robot and the controller are grounded.<br>3.Check if the cable of the axis is not broken. |
| 6404 | J4 encoder acceleration error | 5 | 4th axis encoder exceeded the acceleration limit value. | 1.Check if the cable between the robot and the controller is firmly plugged.<br>2.Check that the FG terminals on the robot and the controller are grounded.<br>3.Check if the cable of the axis is not broken. |
| 6405 | J5 encoder acceleration error | 5 | 5th axis encoder exceeded the acceleration limit value. | 1.Check if the cable between the robot and the controller is firmly plugged.<br>2.Check that the FG terminals on the robot and the controller are grounded.<br>3.Check if the cable of the axis is not broken. |
| 6406 | J6 encoder acceleration error | 5 | 6th axis encoder exceeded the acceleration limit value. | 1.Check if the cable between the robot and the controller is firmly plugged.<br>2.Check that the FG terminals on the robot and the controller are grounded.<br>3.Check if the cable of the axis is not broken. |
| 6407 | J7 encoder acceleration error | 5 | The 7th-axis encoder exceeded the acceleration limit value. | 1.Check if the cable between the robot and the controller is firmly plugged.<br>2.Check that the FG terminals on the robot and the controller are grounded.<br>3.Check if the cable of the axis is not broken. |
| 6408 | J8 encoder acceleration error | 5 | The 8th-axis encoder exceeded the acceleration limit value. | 1.Check if the cable between the robot and the controller is firmly plugged.<br>2.Check that the FG terminals on the robot and the controller are grounded.<br>3.Check if the cable of the axis is not broken. |

| Code | Message | Level | Description | Remedy |
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| 6411 | J1 encoder system down failure | 5 | Failed to read the encoder information of the corresponding axis.<br>Possible causes are:<br>1. Short of power supply to the encoder.<br>2. Encoder (motor) defective. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. All joints are normal (The indicators light in green), which should be checked with the ENC information on the teach pendant.<br>2. The remaining charge of the encoder backup battery is sufficient. (The battery replacement time is not near.)<br>3. The encoder backup battery is correctly connected.<br>4. The encoder resetting, CALSET operation, etc., are correctly performed, which should be checked if the motor was replaced. |
| 6412 | J2 encoder system down failure | 5 | Failed to read the encoder information of the corresponding axis.<br>Possible causes are:<br>1. Short of power supply to the encoder.<br>2. Encoder (motor) defective. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. All joints are normal (The indicators light in green), which should be checked with the ENC information on the teach pendant.<br>2. The remaining charge of the encoder backup battery is sufficient. (The battery replacement time is not near.)<br>3. The encoder backup battery is correctly connected.<br>4. The encoder resetting, CALSET operation, etc., are correctly performed, which should be checked if the motor was replaced. |
| 6413 | J3 encoder system down failure | 5 | Failed to read the encoder information of the corresponding axis.<br>Possible causes are:<br>1. Short of power supply to the encoder.<br>2. Encoder (motor) defective. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. All joints are normal (The indicators light in green), which should be checked with the ENC information on the teach pendant.<br>2. The remaining charge of the encoder backup battery is sufficient. (The battery replacement time is not near.)<br>3. The encoder backup battery is correctly connected.<br>4. The encoder resetting, CALSET operation, etc., are correctly performed, which should be checked if the motor was replaced. |
| 6414 | J4 encoder system down failure | 5 | Failed to read the encoder information of the corresponding axis.<br>Possible causes are:<br>1. Short of power supply to the encoder.<br>2. Encoder (motor) defective. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. All joints are normal (The indicators light in green), which should be checked with the ENC information on the teach pendant.<br>2. The remaining charge of the encoder backup battery is sufficient. (The battery replacement time is not near.)<br>3. The encoder backup battery is correctly connected.<br>4. The encoder resetting, CALSET operation, etc., are correctly performed, which should be checked if the motor was replaced. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 6415 | J5 encoder system down failure | 5 | Failed to read the encoder information of the corresponding axis.<br>Possible causes are:<br>1. Short of power supply to the encoder.<br>2. Encoder (motor) defective. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. All joints are normal (The indicators light in green), which should be checked with the ENC information on the teach pendant.<br>2. The remaining charge of the encoder backup battery is sufficient. (The battery replacement time is not near.)<br>3. The encoder backup battery is correctly connected.<br>4. The encoder resetting, CALSET operation, etc., are correctly performed, which should be checked if the motor was replaced. |
| 6416 | J6 encoder system down failure | 5 | Failed to read the encoder information of the corresponding axis.<br>Possible causes are:<br>1. Short of power supply to the encoder.<br>2. Encoder (motor) defective. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. All joints are normal (The indicators light in green), which should be checked with the ENC information on the teach pendant.<br>2. The remaining charge of the encoder backup battery is sufficient. (The battery replacement time is not near.)<br>3. The encoder backup battery is correctly connected.<br>4. The encoder resetting, CALSET operation, etc., are correctly performed, which should be checked if the motor was replaced. |
| 6417 | J7 encoder system down failure | 5 | Failed to read the encoder information of the corresponding axis.<br>Possible causes are:<br>1. Short of power supply to the encoder.<br>2. Encoder (motor) defective. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. All joints are normal (The indicators light in green), which should be checked with the ENC information on the teach pendant.<br>2. The remaining charge of the encoder backup battery is sufficient. (The battery replacement time is not near.)<br>3. The encoder backup battery is correctly connected.<br>4. The encoder resetting, CALSET operation, etc., are correctly performed, which should be checked if the motor was replaced. |
| 6418 | J8 encoder system down failure | 5 | Failed to read the encoder information of the corresponding axis.<br>Possible causes are:<br>1. Short of power supply to the encoder.<br>2. Encoder (motor) defective. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. All joints are normal (The indicators light in green), which should be checked with the ENC information on the teach pendant.<br>2. The remaining charge of the encoder backup battery is sufficient. (The battery replacement time is not near.)<br>3. The encoder backup battery is correctly connected.<br>4. The encoder resetting, CALSET operation, etc., are correctly performed, which should be checked if the motor was replaced. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 6421 | J1 encoder data not received | 4 | Failed to receive the encoder data of the corresponding axis. Possible causes are: 1. Motor & encoder cable broken. 2. Motor defective. 3. Controller defective. 4. Robot internal wiring broken. | Check the following. If the error persists, contact your Denso Wave service representative. 1. There is no contact failure in the motor & encoder cable connector. 2. Any section of the motor & encoder cable is not broken or crushed. 3. There is no external noise source in the vicinity. 4. The FG is correctly grounded. |
| 6422 | J2 encoder data not received | 4 | Failed to receive the encoder data of the corresponding axis. Possible causes are: 1. Motor & encoder cable broken. 2. Motor defective. 3. Controller defective. 4. Robot internal wiring broken. | Check the following. If the error persists, contact your Denso Wave service representative. 1. There is no contact failure in the motor & encoder cable connector. 2. Any section of the motor & encoder cable is not broken or crushed. 3. There is no external noise source in the vicinity. 4. The FG is correctly grounded. |
| 6423 | J3 encoder data not received | 4 | Failed to receive the encoder data of the corresponding axis. Possible causes are: 1. Motor & encoder cable broken. 2. Motor defective. 3. Controller defective. 4. Robot internal wiring broken. | Check the following. If the error persists, contact your Denso Wave service representative. 1. There is no contact failure in the motor & encoder cable connector. 2. Any section of the motor & encoder cable is not broken or crushed. 3. There is no external noise source in the vicinity. 4. The FG is correctly grounded. |
| 6424 | J4 encoder data not received | 4 | Failed to receive the encoder data of the corresponding axis. Possible causes are: 1. Motor & encoder cable broken. 2. Motor defective. 3. Controller defective. 4. Robot internal wiring broken. | Check the following. If the error persists, contact your Denso Wave service representative. 1. There is no contact failure in the motor & encoder cable connector. 2. Any section of the motor & encoder cable is not broken or crushed. 3. There is no external noise source in the vicinity. 4. The FG is correctly grounded. |
| 6425 | J5 encoder data not received | 4 | Failed to receive the encoder data of the corresponding axis. Possible causes are: 1. Motor & encoder cable broken. 2. Motor defective. 3. Controller defective. 4. Robot internal wiring broken. | Check the following. If the error persists, contact your Denso Wave service representative. 1. There is no contact failure in the motor & encoder cable connector. 2. Any section of the motor & encoder cable is not broken or crushed. 3. There is no external noise source in the vicinity. 4. The FG is correctly grounded. |
| 6426 | J6 encoder data not received | 4 | Failed to receive the encoder data of the corresponding axis. Possible causes are: 1. Motor & encoder cable broken. 2. Motor defective. 3. Controller defective. 4. Robot internal wiring broken. | Check the following. If the error persists, contact your Denso Wave service representative. 1. There is no contact failure in the motor & encoder cable connector. 2. Any section of the motor & encoder cable is not broken or crushed. 3. There is no external noise source in the vicinity. 4. The FG is correctly grounded. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 6427 | J7 encoder data not received | 4 | Failed to receive the encoder data of the corresponding axis. Possible causes are: 1. Motor & encoder cable broken. 2. Motor defective. 3. Controller defective. 4. Robot internal wiring broken. | Check the following. If the error persists, contact your Denso Wave service representative. 1. There is no contact failure in the motor & encoder cable connector. 2. Any section of the motor & encoder cable is not broken or crushed. 3. There is no external noise source in the vicinity. 4. The FG is correctly grounded. |
| 6428 | J8 encoder data not received | 4 | Failed to receive the encoder data of the corresponding axis. Possible causes are: 1. Motor & encoder cable broken. 2. Motor defective. 3. Controller defective. 4. Robot internal wiring broken. | Check the following. If the error persists, contact your Denso Wave service representative. 1. There is no contact failure in the motor & encoder cable connector. 2. Any section of the motor & encoder cable is not broken or crushed. 3. There is no external noise source in the vicinity. 4. The FG is correctly grounded. |
| 6431 | J1 encoder counter overflow | 5 | The 1st axis multiple rotation data encoder overflowed. | Reset the 1st axis encoder and execute CALSET. |
| 6432 | J2 encoder counter overflow | 5 | The 2nd axis multiple rotation data encoder overflowed. | Reset the 2nd axis encoder and execute CALSET. |
| 6433 | J3 encoder counter overflow | 5 | The 3rd axis multiple rotation data encoder overflowed. | Reset the 3rd axis encoder and execute CALSET. |
| 6434 | J4 encoder counter overflow | 5 | The 4th axis multiple rotation data encoder overflowed. | Reset the 4th axis encoder and execute CALSET. |
| 6435 | J5 encoder counter overflow | 5 | The 5th axis multiple rotation data encoder overflowed. | Reset the 5th axis encoder and execute CALSET. |
| 6436 | J6 encoder counter overflow | 5 | The 6th axis multiple rotation data encoder overflowed. | Reset the 6th axis encoder and execute CALSET. |
| 6437 | J7 encoder counter overflow | 5 | The multi-rotation data of the 7th-axis encoder has overflowed. | Reset the 7th-axis encoder and execute CALSET. |
| 6438 | J8 encoder counter overflow | 5 | The multi-rotation data of the 8th-axis encoder has overflowed. | Reset the 8th-axis encoder and execute CALSET. |
| 6439 | J1 encoder counter error3 | 5 | A J1 encoder counter error (single rotation data) has occurred. | 1.Check that the FG (Frame Ground) terminals on the robot and the controller are grounded. 2.Check that the robot and the controller are away from noise source such as a welding machine. 3.Check if the cable between the robot and the controller is firmly plugged. |
| 643A | J2 encoder counter error3 | 5 | A J2 encoder counter error (single rotation data) has occurred. | 1.Check that the FG (Frame Ground) terminals on the robot and the controller are grounded. 2.Check that the robot and the controller are away from noise source such as a welding machine. 3.Check if the cable between the robot and the controller is firmly plugged. |
| 643B | J3 encoder counter error3 | 5 | A J3 encoder counter error (single rotation data) has occurred. | 1.Check that the FG (Frame Ground) terminals on the robot and the controller are grounded. 2.Check that the robot and the controller are away from noise source such as a welding machine. 3.Check if the cable between the robot and the controller is firmly plugged. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 643C | J4 encoder counter error3 | 5 | A J4 encoder counter error (single rotation data) has occurred. | 1.Check that the FG (Frame Ground) terminals on the robot and the controller are grounded.<br>2.Check that the robot and the controller are away from noise source such as a welding machine.<br>3.Check if the cable between the robot and the controller is firmly plugged. |
| 643D | J5 encoder counter error3 | 5 | A J5 encoder counter error (single rotation data) has occurred. | 1.Check that the FG (Frame Ground) terminals on the robot and the controller are grounded.<br>2.Check that the robot and the controller are away from noise source such as a welding machine.<br>3.Check if the cable between the robot and the controller is firmly plugged. |
| 643E | J6 encoder counter error3 | 5 | A J6 encoder counter error (single rotation data) has occurred. | 1.Check that the FG (Frame Ground) terminals on the robot and the controller are grounded.<br>2.Check that the robot and the controller are away from noise source such as a welding machine.<br>3.Check if the cable between the robot and the controller is firmly plugged. |
| 643F | J7 encoder counter error3 | 5 | A J7 encoder counter error (single rotation data) has occurred. | 1.Check that the FG (Frame Ground) terminals on the robot and the controller are grounded.<br>2.Check that the robot and the controller are away from noise source such as a welding machine.<br>3.Check if the cable between the robot and the controller is firmly plugged. |
| 6440 | J8 encoder counter error3 | 5 | A J8 encoder counter error (single rotation data) has occurred. | 1.Check that the FG (Frame Ground) terminals on the robot and the controller are grounded.<br>2.Check that the robot and the controller are away from noise source such as a welding machine.<br>3.Check if the cable between the robot and the controller is firmly plugged. |
| 6441 | J1 encoder counter error | 5 | Failed to count the motor rpm correctly due to an encoder failure.<br>Possible causes are:<br>1. Oil or water gotten into the encoder (motor).<br>2. External noise, e.g., static electricity. | It is necessary to replace the encoder (motor).<br>Contact your Denso Wave service representative and inform them of the results of the following checks.<br>1. No oil or water has gotten into the encoder (motor).<br>2. There is no external noise source in the vicinity.<br>3. There is no contact failure in the motor & encoder cable connector. |
| 6442 | J2 encoder counter error | 5 | Failed to count the motor rpm correctly due to an encoder failure.<br>Possible causes are:<br>1. Oil or water gotten into the encoder (motor).<br>2. External noise, e.g., static electricity. | It is necessary to replace the encoder (motor).<br>Contact your Denso Wave service representative and inform them of the results of the following checks.<br>1. No oil or water has gotten into the encoder (motor).<br>2. There is no external noise source in the vicinity.<br>3. There is no contact failure in the motor & encoder cable connector. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 6443 | J3 encoder counter error | 5 | Failed to count the motor rpm correctly due to an encoder failure.<br>Possible causes are:<br>1. Oil or water gotten into the encoder (motor).<br>2. External noise, e.g., static electricity. | It is necessary to replace the encoder (motor).<br>Contact your Denso Wave service representative and inform them of the results of the following checks.<br>1. No oil or water has gotten into the encoder (motor).<br>2. There is no external noise source in the vicinity.<br>3. There is no contact failure in the motor & encoder cable connector. |
| 6444 | J4 encoder counter error | 5 | Failed to count the motor rpm correctly due to an encoder failure.<br>Possible causes are:<br>1. Oil or water gotten into the encoder (motor).<br>2. External noise, e.g., static electricity. | It is necessary to replace the encoder (motor).<br>Contact your Denso Wave service representative and inform them of the results of the following checks.<br>1. No oil or water has gotten into the encoder (motor).<br>2. There is no external noise source in the vicinity.<br>3. There is no contact failure in the motor & encoder cable connector. |
| 6445 | J5 encoder counter error | 5 | Failed to count the motor rpm correctly due to an encoder failure.<br>Possible causes are:<br>1. Oil or water gotten into the encoder (motor).<br>2. External noise, e.g., static electricity. | It is necessary to replace the encoder (motor).<br>Contact your Denso Wave service representative and inform them of the results of the following checks.<br>1. No oil or water has gotten into the encoder (motor).<br>2. There is no external noise source in the vicinity.<br>3. There is no contact failure in the motor & encoder cable connector. |
| 6446 | J6 encoder counter error | 5 | Failed to count the motor rpm correctly due to an encoder failure.<br>Possible causes are:<br>1. Oil or water gotten into the encoder (motor).<br>2. External noise, e.g., static electricity. | It is necessary to replace the encoder (motor).<br>Contact your Denso Wave service representative and inform them of the results of the following checks.<br>1. No oil or water has gotten into the encoder (motor).<br>2. There is no external noise source in the vicinity.<br>3. There is no contact failure in the motor & encoder cable connector. |
| 6447 | J7 encoder counter error | 5 | Failed to count the motor rpm correctly due to an encoder failure.<br>Possible causes are:<br>1. Oil or water gotten into the encoder (motor).<br>2. External noise, e.g., static electricity. | It is necessary to replace the encoder (motor).<br>Contact your Denso Wave service representative and inform them of the results of the following checks.<br>1. No oil or water has gotten into the encoder (motor).<br>2. There is no external noise source in the vicinity.<br>3. There is no contact failure in the motor & encoder cable connector. |
| 6448 | J8 encoder counter error | 5 | Failed to count the motor rpm correctly due to an encoder failure.<br>Possible causes are:<br>1. Oil or water gotten into the encoder (motor).<br>2. External noise, e.g., static electricity. | It is necessary to replace the encoder (motor).<br>Contact your Denso Wave service representative and inform them of the results of the following checks.<br>1. No oil or water has gotten into the encoder (motor).<br>2. There is no external noise source in the vicinity.<br>3. There is no contact failure in the motor & encoder cable connector. |
| 6449 | J1 encoder counter error2 | 5 | J1 encoder counter error (Coarse data) | Restart the controller and CALSET J1. |
| 644A | J2 encoder counter error2 | 5 | J2 encoder counter error (Coarse data) | Restart the controller and CALSET J2. |
| 644B | J3 encoder counter error2 | 5 | J3 encoder counter error (Coarse data) | Restart the controller and CALSET J3. |

| Code | Message | Level | Description | Remedy |
|---|---|---|---|---|
| 644C | J4 encoder counter error2 | 5 | J4 encoder counter error (Coarse data) | Restart the controller and CALSET J4. |
| 644D | J5 encoder counter error2 | 5 | J5 encoder counter error (Coarse data) | Restart the controller and CALSET J5. |
| 644E | J6 encoder counter error2 | 5 | J6 encoder counter error (Coarse data) | Restart the controller and CALSET J6. |
| 644F | J7 encoder counter error2 | 5 | J7 encoder counter error (Coarse data) | Restart the controller and CALSET J7. |
| 6450 | J8 encoder counter error2 | 5 | J8 encoder counter error (Coarse data) | Restart the controller and CALSET J8. |
| 6451 | J1 Encoder G/A counter error | 5 | Controller internal error (G/A count error) occurred. | 1.Check that the FG (Frame Ground) terminals on the robot and the controller are grounded.<br>2.Check that the robot and the controller are away from noise source such as a welding machine.<br>3.Check if the cable between the robot and the controller is firmly plugged. |
| 6452 | J2 Encoder G/A counter error | 5 | Controller internal error (G/A count error) occurred. | 1.Check that the FG (Frame Ground) terminals on the robot and the controller are grounded.<br>2.Check that the robot and the controller are away from noise source such as a welding machine.<br>3.Check if the cable between the robot and the controller is firmly plugged. |
| 6453 | J3 encoder G/A counter error | 5 | Controller internal error (G/A count error) occurred. | 1.Check that the FG (Frame Ground) terminals on the robot and the controller are grounded.<br>2.Check that the robot and the controller are away from noise source such as a welding machine.<br>3.Check if the cable between the robot and the controller is firmly plugged. |
| 6454 | J4 encoder G/A counter error | 5 | Controller internal error (G/A count error) occurred. | 1.Check that the FG (Frame Ground) terminals on the robot and the controller are grounded.<br>2.Check that the robot and the controller are away from noise source such as a welding machine.<br>3.Check if the cable between the robot and the controller is firmly plugged. |
| 6455 | J5 encoder G/A counter error | 5 | Controller internal error (G/A count error) occurred. | 1.Check that the FG (Frame Ground) terminals on the robot and the controller are grounded.<br>2.Check that the robot and the controller are away from noise source such as a welding machine.<br>3.Check if the cable between the robot and the controller is firmly plugged. |
| 6456 | J6 encoder G/A counter error | 5 | Controller internal error (G/A count error) occurred. | 1.Check that the FG (Frame Ground) terminals on the robot and the controller are grounded.<br>2.Check that the robot and the controller are away from noise source such as a welding machine.<br>3.Check if the cable between the robot and the controller is firmly plugged. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 6457 | J7 encoder G/A counter error | 5 | Controller internal error (G/A count error) occurred. | 1.Check that the FG (Frame Ground) terminals on the robot and the controller are grounded.<br>2.Check that the robot and the controller are away from noise source such as a welding machine.<br>3.Check if the cable between the robot and the controller is firmly plugged. |
| 6458 | J8 encoder G/A counter error | 5 | Controller internal error (G/A count error) occurred. | 1.Check that the FG (Frame Ground) terminals on the robot and the controller are grounded.<br>2.Check that the robot and the controller are away from noise source such as a welding machine.<br>3.Check if the cable between the robot and the controller is firmly plugged. |
| 6461 | J1 encoder phase Rx signal interrupted | 4 | 1st axis cable is not connected or broken. | 1.Check if the cable between the robot and the controller is firmly plugged.<br>2.Check that the FG terminals on the robot and the controller are grounded.<br>3.Check if the cable of the axis is not broken. |
| 6462 | J2 encoder phase Rx signal interrupted | 4 | 2nd axis cable is not connected or broken. | 1.Check if the cable between the robot and the controller is firmly plugged.<br>2.Check that the FG terminals on the robot and the controller are grounded.<br>3.Check if the cable of the axis is not broken. |
| 6463 | J3 encoder phase Rx signal interrupted | 4 | 3rd axis cable is not connected or broken. | 1.Check if the cable between the robot and the controller is firmly plugged.<br>2.Check that the FG terminals on the robot and the controller are grounded.<br>3.Check if the cable of the axis is not broken. |
| 6464 | J4 encoder phase Rx signal interrupted | 4 | 4th axis cable is not connected or broken. | 1.Check if the cable between the robot and the controller is firmly plugged.<br>2.Check that the FG terminals on the robot and the controller are grounded.<br>3.Check if the cable of the axis is not broken. |
| 6465 | J5 encoder phase Rx signal interrupted | 4 | 5th axis cable is not connected or broken. | 1.Check if the cable between the robot and the controller is firmly plugged.<br>2.Check that the FG terminals on the robot and the controller are grounded.<br>3.Check if the cable of the axis is not broken. |
| 6466 | J6 encoder phase Rx signal interrupted | 4 | 6th axis cable is not connected or broken. | 1.Check if the cable between the robot and the controller is firmly plugged.<br>2.Check that the FG terminals on the robot and the controller are grounded.<br>3.Check if the cable of the axis is not broken. |
| 6467 | J7 encoder phase Rx signal interrupted | 4 | The 7th-axis cable is not connected or broken. | 1.Check if the cable between the robot and the controller is firmly plugged.<br>2.Check that the FG terminals on the robot and the controller are grounded.<br>3.Check if the cable of the axis is not broken. |
| 6468 | J8 encoder phase Rx signal interrupted | 4 | The 8th-axis cable is not connected or broken. | 1.Check if the cable between the robot and the controller is firmly plugged.<br>2.Check that the FG terminals on the robot and the controller are grounded.<br>3.Check if the cable of the axis is not broken. |
| 6470 | CALSET execution failed | 3 | CALSET execution error on all axes | Check if the motor can be turned ON. If possible, execute again. If not, reboot the system. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 6471 | J1 CALSET execution failed | 2 | CALSET execution error on the 1st axis | Move the corresponding axis a little bit with hand before executing CALSET and return the axis again to the CALSET position. |
| 6472 | J2 CALSET execution failed | 2 | CALSET execution error on the 2nd axis | Move the corresponding axis a little bit with hand before executing CALSET and return the axis again to the CALSET position. |
| 6473 | J3 CALSET execution failed | 2 | CALSET execution error on the 3rd axis | Move the corresponding axis a little bit with hand before executing CALSET and return the axis again to the CALSET position. |
| 6474 | J4 CALSET execution failed | 2 | CALSET execution error on the 4th axis | Move the corresponding axis a little bit with hand before executing CALSET and return the axis again to the CALSET position. |
| 6475 | J5 CALSET execution failed | 2 | CALSET execution error on the 5th axis | Move the corresponding axis a little bit with hand before executing CALSET and return the axis again to the CALSET position. |
| 6476 | J6 CALSET execution failed | 2 | CALSET execution error on the 6th axis | Move the corresponding axis a little bit with hand before executing CALSET and return the axis again to the CALSET position. |
| 6477 | J7 CALSET execution failed | 2 | CALSET execution error on the 7th axis. | Move the corresponding axis a little bit with hand before executing CALSET and return the axis again to the CALSET position. |
| 6478 | J8 CALSET execution failed | 2 | CALSET execution error on the 8th axis. | Move the corresponding axis a little bit with hand before executing CALSET and return the axis again to the CALSET position. |
| 6486 | Excessive position gap for ARRIVE | 2 | At restart the deviation from the stop position exceeded the permissible value. | Cannot continue the operation. Restart from the top of the program. |
| 6488 | Stop command in positioning check | 1 | Halt was executed while the controller was checking the positioning accuracy (@E) by accuracy check command. | Check of static accuracy was interrupted by the halt, and so the accuracy check has not been finished. Check the static accuracy when restarting the robot. |
| 6489 | Invalid state for ARRIVE | 2 | Cannot continue the operation because the condition designated by ARRIVE command was not fulfilled. | Cannot continue the operation. Restart from the top of the program. |
| 648A | Joint not available for ARRIVE | 2 | ARRIVE command was executed to the inoperable axis. | Cannot continue the operation. Restart from the top of the program. |
| 648B | not message | 2 | Cannot calculate parameters needed for arc operation. | Cannot continue the operation. Restart from the top of the program. |
| 648C | No preceding motion command for ARRIVE | 2 | Operation command was not executed. | Cannot continue the operation. Restart from the top of the program. |
| 648F | CPU performance does not suffice | 3 | This operation has run out of the processing capacity of the CPU, so it cannot be executed. | Execution of this operation requires a higher performance CPU. For replacement of the CPU board, contact your local Denso Wave representative. |
| 64A1 | J1 encoder low battery | 2 | The 1st axis encoder back-up battery voltage dropped. | Replace the encoder back-up battery. |
| 64A2 | J2 encoder low battery | 2 | The 2nd axis encoder back-up battery voltage dropped. | Replace the encoder back-up battery. |
| 64A3 | J3 encoder low battery | 2 | The 3rd axis encoder back-up battery voltage dropped. | Replace the encoder back-up battery. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 64A4 | J4 encoder low battery | 2 | The 4th axis encoder back-up battery voltage dropped. | Replace the encoder back-up battery. |
| 64A5 | J5 encoder low battery | 2 | The 5th axis encoder back-up battery voltage dropped. | Replace the encoder back-up battery. |
| 64A6 | J6 encoder low battery | 2 | The 6th axis encoder back-up battery voltage dropped. | Replace the encoder back-up battery. |
| 64A7 | J7 encoder low battery | 2 | The 7th axis encoder back-up battery voltage dropped. | Replace the encoder back-up battery. |
| 64A8 | J8 encoder low battery | 2 | The 8th axis encoder back-up battery voltage dropped. | Replace the encoder back-up battery. |
| 64A9 | J1 encoder preset status error | 4 | Failed to correctly recognize the current encoder position of the corresponding axis. Possible causes are: 1. Oil or water gotten into the encoder (motor). 2. Motor & encoder cable broken. 3. Robot internal wiring broken. | Check the following. If the error persists, contact your Denso Wave service representative. 1. There is no contact failure in the motor & encoder cable connector. 2. Any section of the motor & encoder cable is not broken or crushed. 3. No oil or water has gotten into the encoder (motor). 4. The robot arm is not in contact with any obstacles. |
| 64AA | J2 encoder preset status error | 4 | Failed to correctly recognize the current encoder position of the corresponding axis. Possible causes are: 1. Oil or water gotten into the encoder (motor). 2. Motor & encoder cable broken. 3. Robot internal wiring broken. | Check the following. If the error persists, contact your Denso Wave service representative. 1. There is no contact failure in the motor & encoder cable connector. 2. Any section of the motor & encoder cable is not broken or crushed. 3. No oil or water has gotten into the encoder (motor). 4. The robot arm is not in contact with any obstacles. |
| 64AB | J3 encoder preset status error | 4 | Failed to correctly recognize the current encoder position of the corresponding axis. Possible causes are: 1. Oil or water gotten into the encoder (motor). 2. Motor & encoder cable broken. 3. Robot internal wiring broken. | Check the following. If the error persists, contact your Denso Wave service representative. 1. There is no contact failure in the motor & encoder cable connector. 2. Any section of the motor & encoder cable is not broken or crushed. 3. No oil or water has gotten into the encoder (motor). 4. The robot arm is not in contact with any obstacles. |
| 64AC | J4 encoder preset status error | 4 | Failed to correctly recognize the current encoder position of the corresponding axis. Possible causes are: 1. Oil or water gotten into the encoder (motor). 2. Motor & encoder cable broken. 3. Robot internal wiring broken. | Check the following. If the error persists, contact your Denso Wave service representative. 1. There is no contact failure in the motor & encoder cable connector. 2. Any section of the motor & encoder cable is not broken or crushed. 3. No oil or water has gotten into the encoder (motor). 4. The robot arm is not in contact with any obstacles. |
| 64AD | J5 encoder preset status error | 4 | Failed to correctly recognize the current encoder position of the corresponding axis. Possible causes are: 1. Oil or water gotten into the encoder (motor). 2. Motor & encoder cable broken. 3. Robot internal wiring broken. | Check the following. If the error persists, contact your Denso Wave service representative. 1. There is no contact failure in the motor & encoder cable connector. 2. Any section of the motor & encoder cable is not broken or crushed. 3. No oil or water has gotten into the encoder (motor). 4. The robot arm is not in contact with any obstacles. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 64AE | J6 encoder preset status error | 4 | Failed to correctly recognize the current encoder position of the corresponding axis.<br>Possible causes are:<br>1. Oil or water gotten into the encoder (motor).<br>2. Motor & encoder cable broken.<br>3. Robot internal wiring broken. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. There is no contact failure in the motor & encoder cable connector.<br>2. Any section of the motor & encoder cable is not broken or crushed.<br>3. No oil or water has gotten into the encoder (motor).<br>4. The robot arm is not in contact with any obstacles. |
| 64AF | J7 encoder preset status error | 4 | Failed to correctly recognize the current encoder position of the corresponding axis.<br>Possible causes are:<br>1. Oil or water gotten into the encoder (motor).<br>2. Motor & encoder cable broken.<br>3. Robot internal wiring broken. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. There is no contact failure in the motor & encoder cable connector.<br>2. Any section of the motor & encoder cable is not broken or crushed.<br>3. No oil or water has gotten into the encoder (motor).<br>4. The robot arm is not in contact with any obstacles. |
| 64B0 | J8 encoder preset status error | 4 | Failed to correctly recognize the current encoder position of the corresponding axis.<br>Possible causes are:<br>1. Oil or water gotten into the encoder (motor).<br>2. Motor & encoder cable broken.<br>3. Robot internal wiring broken. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. There is no contact failure in the motor & encoder cable connector.<br>2. Any section of the motor & encoder cable is not broken or crushed.<br>3. No oil or water has gotten into the encoder (motor).<br>4. The robot arm is not in contact with any obstacles. |
| 64B1 | J1 encoder CRC check error | 4 | Failed to correctly recognize the encoder data of the corresponding axis.<br>Possible causes are:<br>1. External noise, e.g., static electricity.<br>2. Motor & encoder cable broken.<br>3. Encoder (motor) defective.<br>4. Controller defective. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. There is no external noise source in the vicinity.<br>2. The FG is correctly grounded.<br>3. There is no contact failure in the motor & encoder cable connector.<br>4. Any section of the motor & encoder cable is not broken or crushed.<br>5. No oil or water has gotten into the encoder (motor).<br>6. No cutting water, oil, or dust has gotten into the controller. |
| 64B2 | J2 encoder CRC check error | 4 | Failed to correctly recognize the encoder data of the corresponding axis.<br>Possible causes are:<br>1. External noise, e.g., static electricity.<br>2. Motor & encoder cable broken.<br>3. Encoder (motor) defective.<br>4. Controller defective. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. There is no external noise source in the vicinity.<br>2. The FG is correctly grounded.<br>3. There is no contact failure in the motor & encoder cable connector.<br>4. Any section of the motor & encoder cable is not broken or crushed.<br>5. No oil or water has gotten into the encoder (motor).<br>6. No cutting water, oil, or dust has gotten into the controller. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 64B3 | J3 encoder CRC check error | 4 | Failed to correctly recognize the encoder data of the corresponding axis.<br>Possible causes are:<br>1. External noise, e.g., static electricity.<br>2. Motor & encoder cable broken.<br>3. Encoder (motor) defective.<br>4. Controller defective. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. There is no external noise source in the vicinity.<br>2. The FG is correctly grounded.<br>3. There is no contact failure in the motor & encoder cable connector.<br>4. Any section of the motor & encoder cable is not broken or crushed.<br>5. No oil or water has gotten into the encoder (motor).<br>6. No cutting water, oil, or dust has gotten into the controller. |
| 64B4 | J4 encoder CRC check error | 4 | Failed to correctly recognize the encoder data of the corresponding axis.<br>Possible causes are:<br>1. External noise, e.g., static electricity.<br>2. Motor & encoder cable broken.<br>3. Encoder (motor) defective.<br>4. Controller defective. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. There is no external noise source in the vicinity.<br>2. The FG is correctly grounded.<br>3. There is no contact failure in the motor & encoder cable connector.<br>4. Any section of the motor & encoder cable is not broken or crushed.<br>5. No oil or water has gotten into the encoder (motor).<br>6. No cutting water, oil, or dust has gotten into the controller. |
| 64B5 | J5 encoder CRC check error | 4 | Failed to correctly recognize the encoder data of the corresponding axis.<br>Possible causes are:<br>1. External noise, e.g., static electricity.<br>2. Motor & encoder cable broken.<br>3. Encoder (motor) defective.<br>4. Controller defective. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. There is no external noise source in the vicinity.<br>2. The FG is correctly grounded.<br>3. There is no contact failure in the motor & encoder cable connector.<br>4. Any section of the motor & encoder cable is not broken or crushed.<br>5. No oil or water has gotten into the encoder (motor).<br>6. No cutting water, oil, or dust has gotten into the controller. |
| 64B6 | J6 encoder CRC check error | 4 | Failed to correctly recognize the encoder data of the corresponding axis.<br>Possible causes are:<br>1. External noise, e.g., static electricity.<br>2. Motor & encoder cable broken.<br>3. Encoder (motor) defective.<br>4. Controller defective. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. There is no external noise source in the vicinity.<br>2. The FG is correctly grounded.<br>3. There is no contact failure in the motor & encoder cable connector.<br>4. Any section of the motor & encoder cable is not broken or crushed.<br>5. No oil or water has gotten into the encoder (motor).<br>6. No cutting water, oil, or dust has gotten into the controller. |
| 64B7 | J7 encoder CRC check error | 4 | Failed to correctly recognize the encoder data of the corresponding axis.<br>Possible causes are:<br>1. External noise, e.g., static electricity.<br>2. Motor & encoder cable broken.<br>3. Encoder (motor) defective.<br>4. Controller defective. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. There is no external noise source in the vicinity.<br>2. The FG is correctly grounded.<br>3. There is no contact failure in the motor & encoder cable connector.<br>4. Any section of the motor & encoder cable is not broken or crushed.<br>5. No oil or water has gotten into the encoder (motor).<br>6. No cutting water, oil, or dust has gotten into the controller. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 64B8 | J8 encoder CRC check error | 4 | Failed to correctly recognize the encoder data of the corresponding axis.<br>Possible causes are:<br>1. External noise, e.g., static electricity.<br>2. Motor & encoder cable broken.<br>3. Encoder (motor) defective.<br>4. Controller defective. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. There is no external noise source in the vicinity.<br>2. The FG is correctly grounded.<br>3. There is no contact failure in the motor & encoder cable connector.<br>4. Any section of the motor & encoder cable is not broken or crushed.<br>5. No oil or water has gotten into the encoder (motor).<br>6. No cutting water, oil, or dust has gotten into the controller. |
| 64B9 | J1 encoder overheated | 3 | The internal temperature of the 1st encoder has exceeded the set value. | Wait until the encoder's internal temperature drops to a value in the permissible range. |
| 64BA | J2 encoder overheated | 3 | The internal temperature of the 2nd encoder has exceeded the set value. | Wait until the encoder's internal temperature drops to a value in the permissible range. |
| 64BB | J3 encoder overheated | 3 | The internal temperature of the 3rd encoder has exceeded the set value. | Wait until the encoder's internal temperature drops to a value in the permissible range. |
| 64BC | J4 encoder overheated | 3 | The internal temperature of the 4th encoder has exceeded the set value. | Wait until the encoder's internal temperature drops to a value in the permissible range. |
| 64BD | J5 encoder overheated | 3 | The internal temperature of the 5th encoder has exceeded the set value. | Wait until the encoder's internal temperature drops to a value in the permissible range. |
| 64BE | J6 encoder overheated | 3 | The internal temperature of the 6th encoder has exceeded the set value. | Wait until the encoder's internal temperature drops to a value in the permissible range. |
| 64BF | J7 encoder overheated | 3 | The internal temperature of the 7th encoder has exceeded the set value. | Wait until the encoder's internal temperature drops to a value in the permissible range. |
| 64C0 | J8 encoder overheated | 3 | The internal temperature of the 8th encoder has exceeded the set value. | Wait until the encoder's internal temperature drops to a value in the permissible range. |
| 64C1 | J1 encoder framing error | 4 | Failed to correctly recognize the encoder data of the corresponding axis.<br>Possible causes are:<br>1. External noise, e.g., static electricity.<br>2. Motor & encoder cable broken.<br>3. Oil or water gotten into the encoder (motor).<br>4. Encoder (motor) defective.<br>5. Robot internal wiring broken. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. There is no external noise source in the vicinity.<br>2. The FG is correctly grounded.<br>3. There is no contact failure in the motor & encoder cable connector.<br>4. Any section of the motor & encoder cable is not broken or crushed.<br>5. No oil or water has gotten into the encoder (motor).<br>6. No cutting water, oil, or dust has gotten into the controller. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 64C2 | J2 encoder framing error | 4 | Failed to correctly recognize the encoder data of the corresponding axis.<br>Possible causes are:<br>1. External noise, e.g., static electricity.<br>2. Motor & encoder cable broken.<br>3. Oil or water gotten into the encoder (motor).<br>4. Encoder (motor) defective.<br>5. Robot internal wiring broken. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. There is no external noise source in the vicinity.<br>2. The FG is correctly grounded.<br>3. There is no contact failure in the motor & encoder cable connector.<br>4. Any section of the motor & encoder cable is not broken or crushed.<br>5. No oil or water has gotten into the encoder (motor).<br>6. No cutting water, oil, or dust has gotten into the controller. |
| 64C3 | J3 encoder framing error | 4 | Failed to correctly recognize the encoder data of the corresponding axis.<br>Possible causes are:<br>1. External noise, e.g., static electricity.<br>2. Motor & encoder cable broken.<br>3. Oil or water gotten into the encoder (motor).<br>4. Encoder (motor) defective.<br>5. Robot internal wiring broken. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. There is no external noise source in the vicinity.<br>2. The FG is correctly grounded.<br>3. There is no contact failure in the motor & encoder cable connector.<br>4. Any section of the motor & encoder cable is not broken or crushed.<br>5. No oil or water has gotten into the encoder (motor).<br>6. No cutting water, oil, or dust has gotten into the controller. |
| 64C4 | J4 encoder framing error | 4 | Failed to correctly recognize the encoder data of the corresponding axis.<br>Possible causes are:<br>1. External noise, e.g., static electricity.<br>2. Motor & encoder cable broken.<br>3. Oil or water gotten into the encoder (motor).<br>4. Encoder (motor) defective.<br>5. Robot internal wiring broken. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. There is no external noise source in the vicinity.<br>2. The FG is correctly grounded.<br>3. There is no contact failure in the motor & encoder cable connector.<br>4. Any section of the motor & encoder cable is not broken or crushed.<br>5. No oil or water has gotten into the encoder (motor).<br>6. No cutting water, oil, or dust has gotten into the controller. |
| 64C5 | J5 encoder framing error | 4 | Failed to correctly recognize the encoder data of the corresponding axis.<br>Possible causes are:<br>1. External noise, e.g., static electricity.<br>2. Motor & encoder cable broken.<br>3. Oil or water gotten into the encoder (motor).<br>4. Encoder (motor) defective.<br>5. Robot internal wiring broken. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. There is no external noise source in the vicinity.<br>2. The FG is correctly grounded.<br>3. There is no contact failure in the motor & encoder cable connector.<br>4. Any section of the motor & encoder cable is not broken or crushed.<br>5. No oil or water has gotten into the encoder (motor).<br>6. No cutting water, oil, or dust has gotten into the controller. |
| 64C6 | J6 encoder framing error | 4 | Failed to correctly recognize the encoder data of the corresponding axis.<br>Possible causes are:<br>1. External noise, e.g., static electricity.<br>2. Motor & encoder cable broken.<br>3. Oil or water gotten into the encoder (motor).<br>4. Encoder (motor) defective.<br>5. Robot internal wiring broken. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. There is no external noise source in the vicinity.<br>2. The FG is correctly grounded.<br>3. There is no contact failure in the motor & encoder cable connector.<br>4. Any section of the motor & encoder cable is not broken or crushed.<br>5. No oil or water has gotten into the encoder (motor).<br>6. No cutting water, oil, or dust has gotten into the controller. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 64C7 | J7 encoder framing error | 4 | Failed to correctly recognize the encoder data of the corresponding axis.<br>Possible causes are:<br>1. External noise, e.g., static electricity.<br>2. Motor & encoder cable broken.<br>3. Oil or water gotten into the encoder (motor).<br>4. Encoder (motor) defective.<br>5. Robot internal wiring broken. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. There is no external noise source in the vicinity.<br>2. The FG is correctly grounded.<br>3. There is no contact failure in the motor & encoder cable connector.<br>4. Any section of the motor & encoder cable is not broken or crushed.<br>5. No oil or water has gotten into the encoder (motor).<br>6. No cutting water, oil, or dust has gotten into the controller. |
| 64C8 | J8 encoder framing error | 4 | Failed to correctly recognize the encoder data of the corresponding axis.<br>Possible causes are:<br>1. External noise, e.g., static electricity.<br>2. Motor & encoder cable broken.<br>3. Oil or water gotten into the encoder (motor).<br>4. Encoder (motor) defective.<br>5. Robot internal wiring broken. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. There is no external noise source in the vicinity.<br>2. The FG is correctly grounded.<br>3. There is no contact failure in the motor & encoder cable connector.<br>4. Any section of the motor & encoder cable is not broken or crushed.<br>5. No oil or water has gotten into the encoder (motor).<br>6. No cutting water, oil, or dust has gotten into the controller. |
| 64D1 | J1 Encoder Access Error | 5 | Failed to access the J1 encoder correctly. | 1.Check that the FG (frame ground) terminals of the robot and the controller are grounded.<br>2.Check that the robot and the controller are away from noise source such as a welding machine.<br>3.Check that the cable between the robot and the controller is firmly plugged. |
| 64D2 | J2 Encoder Access Error | 5 | Failed to access the J2 encoder correctly. | 1.Check that the FG (frame ground) terminals of the robot and the controller are grounded.<br>2.Check that the robot and the controller are away from noise source such as a welding machine.<br>3.Check that the cable between the robot and the controller is firmly plugged. |
| 64D3 | J3 Encoder Access Error | 5 | Failed to access the J3 encoder correctly. | 1.Check that the FG (frame ground) terminals of the robot and the controller are grounded.<br>2.Check that the robot and the controller are away from noise source such as a welding machine.<br>3.Check that the cable between the robot and the controller is firmly plugged. |
| 64D4 | J4 Encoder Access Error | 5 | Failed to access the J4 encoder correctly. | 1.Check that the FG (frame ground) terminals of the robot and the controller are grounded.<br>2.Check that the robot and the controller are away from noise source such as a welding machine.<br>3.Check that the cable between the robot and the controller is firmly plugged. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 64D5 | J5 Encoder Access Error | 5 | Failed to access the J5 encoder correctly. | 1.Check that the FG (frame ground) terminals of the robot and the controller are grounded.<br>2.Check that the robot and the controller are away from noise source such as a welding machine.<br>3.Check that the cable between the robot and the controller is firmly plugged. |
| 64D6 | J6 Encoder Access Error | 5 | Failed to access the J6 encoder correctly. | 1.Check that the FG (frame ground) terminals of the robot and the controller are grounded.<br>2.Check that the robot and the controller are away from noise source such as a welding machine.<br>3.Check that the cable between the robot and the controller is firmly plugged. |
| 64D7 | J7 Encoder Access Error | 5 | Failed to access the J7 encoder correctly. | 1.Check that the FG (frame ground) terminals of the robot and the controller are grounded.<br>2.Check that the robot and the controller are away from noise source such as a welding machine.<br>3.Check that the cable between the robot and the controller is firmly plugged. |
| 64D8 | J8 Encoder Access Error | 5 | Failed to access the J8 encoder correctly. | 1.Check that the FG (frame ground) terminals of the robot and the controller are grounded.<br>2.Check that the robot and the controller are away from noise source such as a welding machine.<br>3.Check that the cable between the robot and the controller is firmly plugged. |
| 64E1 | J1 encoder phase Rx not received(CABS) | 4 | 1st axis encoder communication error occurred. | 1.Check that the FG (Frame Ground) terminals on the robot and the controller are grounded.<br>2.Check that the robot and the controller are away from noise source such as a welding machine.<br>3.Check if the cable between the robot and the controller is firmly plugged.<br>4.If the error occurred after motor change, check that the encoder ID number of the changed motor is correctly set. Check the error log if communication error on the other axes occurred. If error occurred on the specific axis through the 6th axis, then check the specific axis encoder connector is securely plugged. If error occurred on all axes, perform remedy 3. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 64E2 | J2 encoder phase Rx not received(CABS) | 4 | 2nd axis encoder communication error occurred. | 1.Check that the FG (Frame Ground) terminals on the robot and the controller are grounded. 2.Check that the robot and the controller are away from noise source such as a welding machine. 3.Check if the cable between the robot and the controller is firmly plugged. 4.If the error occurred after motor change, check that the encoder ID number of the changed motor is correctly set. Check the error log if communication error on the other axes occurred. If error occurred on the specific axis through the 6th axis, then check the specific axis encoder connector is securely plugged. If error occurred on all axes, perform remedy 3. |
| 64E3 | J3 encoder phase Rx not received(CABS) | 4 | 3rd axis encoder communication error occurred. | 1.Check that the FG (Frame Ground) terminals on the robot and the controller are grounded. 2.Check that the robot and the controller are away from noise source such as a welding machine. 3.Check if the cable between the robot and the controller is firmly plugged. 4.If the error occurred after motor change, check that the encoder ID number of the changed motor is correctly set. Check the error log if communication error on the other axes occurred. If error occurred on the specific axis through the 6th axis, then check the specific axis encoder connector is securely plugged. If error occurred on all axes, perform remedy 3. |
| 64E4 | J4 encoder phase Rx not received(CABS) | 4 | 4th axis encoder communication error occurred. | 1.Check that the FG (Frame Ground) terminals on the robot and the controller are grounded. 2.Check that the robot and the controller are away from noise source such as a welding machine. 3.Check if the cable between the robot and the controller is firmly plugged. 4.If the error occurred after motor change, check that the encoder ID number of the changed motor is correctly set. Check the error log if communication error on the other axes occurred. If error occurred on the specific axis through the 6th axis, then check the specific axis encoder connector is securely plugged. If error occurred on all axes, perform remedy 3. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 64E5 | J5 encoder phase Rx not received(CABS) | 4 | 5th axis encoder communication error occurred. | 1.Check that the FG (Frame Ground) terminals on the robot and the controller are grounded.<br>2.Check that the robot and the controller are away from noise source such as a welding machine.<br>3.Check if the cable between the robot and the controller is firmly plugged.<br>4.If the error occurred after motor change, check that the encoder ID number of the changed motor is correctly set. Check the error log if communication error on the other axes occurred. If error occurred on the specific axis through the 6th axis, then check the specific axis encoder connector is securely plugged. If error occurred on all axes, perform remedy 3. |
| 64E6 | J6 encoder phase Rx not received(CABS) | 4 | 6th axis encoder communication error occurred. | 1.Check that the FG (Frame Ground) terminals on the robot and the controller are grounded.<br>2.Check that the robot and the controller are away from noise source such as a welding machine.<br>3.Check if the cable between the robot and the controller is firmly plugged.<br>4.If the error occurred after motor change, check that the encoder ID number of the changed motor is correctly set. Check the error log if communication error on the other axes occurred. If error occurred on the specific axis through the 6th axis, then check the specific axis encoder connector is securely plugged. If error occurred on all axes, perform remedy 3. |
| 64E7 | J7 encoder phase Rx not received(CABS) | 4 | 7th axis encoder communication error occurred. | 1.Check that the FG (Frame Ground) terminals on the robot and the controller are grounded.<br>2.Check that the robot and the controller are away from noise source such as a welding machine.<br>3.Check if the cable between the robot and the controller is firmly plugged.<br>4.If the error occurred after motor change, check that the encoder ID number of the changed motor is correctly set. Check the error log if communication error on the other axes occurred. If error occurred on the specific axis through the 6th axis, then check the specific axis encoder connector is securely plugged. If error occurred on all axes, perform remedy 3. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 64E8 | J8 encoder phase Rx not received(CABS) | 4 | 8th axis encoder communication error occurred. | 1.Check that the FG (Frame Ground) terminals on the robot and the controller are grounded.<br>2.Check that the robot and the controller are away from noise source such as a welding machine.<br>3.Check if the cable between the robot and the controller is firmly plugged.<br>4.If the error occurred after motor change, check that the encoder ID number of the changed motor is correctly set. Check the error log if communication error on the other axes occurred. If error occurred on the specific axis through the 6th axis, then check the specific axis encoder connector is securely plugged. If error occurred on all axes, perform remedy 3. |
| 64F1 | J1 encoder CRC check error(CABS) | 4 | CRC error on 1st axis encoder data occurred. | 1.Check that the FG (Frame Ground) terminals on the robot and the controller are grounded.<br>2.Check that the robot and the controller are away from noise source such as a welding machine.<br>3.Check if the cable between the robot and the controller is firmly plugged. |
| 64F2 | J2 encoder CRC check error(CABS) | 4 | CRC error on 2nd axis encoder data occurred. | 1.Check that the FG (Frame Ground) terminals on the robot and the controller are grounded.<br>2.Check that the robot and the controller are away from noise source such as a welding machine.<br>3.Check if the cable between the robot and the controller is firmly plugged. |
| 64F3 | J3 encoder CRC check error(CABS) | 4 | CRC error on 3rd axis encoder data occurred. | 1.Check that the FG (Frame Ground) terminals on the robot and the controller are grounded.<br>2.Check that the robot and the controller are away from noise source such as a welding machine.<br>3.Check if the cable between the robot and the controller is firmly plugged. |
| 64F4 | J4 encoder CRC check error(CABS) | 4 | CRC error on 4th axis encoder data occurred. | 1.Check that the FG (Frame Ground) terminals on the robot and the controller are grounded.<br>2.Check that the robot and the controller are away from noise source such as a welding machine.<br>3.Check if the cable between the robot and the controller is firmly plugged. |
| 64F5 | J5 encoder CRC check error(CABS) | 4 | CRC error on 5th axis encoder data occurred. | 1.Check that the FG (Frame Ground) terminals on the robot and the controller are grounded.<br>2.Check that the robot and the controller are away from noise source such as a welding machine.<br>3.Check if the cable between the robot and the controller is firmly plugged. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 64F6 | J6 encoder CRC check error(CABS) | 4 | CRC error on 6th axis encoder data occurred. | 1.Check that the FG (Frame Ground) terminals on the robot and the controller are grounded.<br>2.Check that the robot and the controller are away from noise source such as a welding machine.<br>3.Check if the cable between the robot and the controller is firmly plugged. |
| 64F7 | J7 encoder CRC check error(CABS) | 4 | CRC error on 7th axis encoder data occurred. | 1.Check that the FG (Frame Ground) terminals on the robot and the controller are grounded.<br>2.Check that the robot and the controller are away from noise source such as a welding machine.<br>3.Check if the cable between the robot and the controller is firmly plugged. |
| 64F8 | J8 encoder CRC check error(CABS) | 4 | CRC error on 8th axis encoder data occurred. | 1.Check that the FG (Frame Ground) terminals on the robot and the controller are grounded.<br>2.Check that the robot and the controller are away from noise source such as a welding machine.<br>3.Check if the cable between the robot and the controller is firmly plugged. |
| 64F9 | More than one motor is connected | 2 | Since more than one motor is connected, ID setting is impossible. | Connect only one motor and retry ID setting. |
| 64FA | Cutting of a belt was detected | 3 | The controller detects the U-joint drive belt being broken. | Remove the robot cover and check or replace the belt. |
| 64FF | Encoder error (mode undetected) | 4 | Though the encoder GA detected an encoder error; however, the encoder does not detect any error. | 1.Check that the FG (frame ground) terminals of the robot and the controller are grounded.<br>2.Check that the robot and the controller are away from noise source such as a welding machine.<br>3.Check that the cable between the robot and the controller is firmly plugged. |
| 6600 | Host-servo communicate IC error (servo) | 5 | Controller internal error (A communication IC failure was detected in the servo initialization. A communication error occurred in servo communication.) | 1.Check that the FG (frame ground) terminals of the robot and the controller are grounded.<br>2.Check that the robot and the controller are away from noise source such as a welding machine.<br>3.Check that the cable between the robot and the controller is firmly plugged. |
| 6601 | Host-servo com. IC error (1:host-1) | 5 | Controller internal error (A send error was detected just before the host data was sent or when the periodical check was done.) | 1.Check that the FG (frame ground) terminals of the robot and the controller are grounded.<br>2.Check that the robot and the controller are away from noise source such as a welding machine.<br>3.Check that the cable between the robot and the controller is firmly plugged. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 6602 | Host-servo com. IC error (2:host-2) | 5 | Controller internal error (A receiving error was detected just before host data was sent or when periodical check was done.) | 1.Check that the FG (frame ground) terminals of the robot and the controller are grounded.<br>2.Check that the robot and the controller are away from noise source such as a welding machine.<br>3.Check that the cable between the robot and the controller is firmly plugged. |
| 6603 | Host com. interrupt delay (servo) | 4 | Controller internal error (Interruption from host stops exceeds the fixed time.) | 1.Check that the FG (frame ground) terminals of the robot and the controller are grounded.<br>2.Check that the robot and the controller are away from noise source such as a welding machine.<br>3.Check that the cable between the robot and the controller is firmly plugged. |
| 6604 | Servo command answer timeout | 4 | Controller internal error (The command finish answer from servo was not returned.) | 1.Check that the FG (frame ground) terminals of the robot and the controller are grounded.<br>2.Check that the robot and the controller are away from noise source such as a welding machine.<br>3.Check that the cable between the robot and the controller is firmly plugged. |
| 6605 | Host-servo com. IC error (host receive) | 5 | Controller internal error (A communication failure was detected just after the host data was received.) | 1.Check that the FG (frame ground) terminals of the robot and the controller are grounded.<br>2.Check that the robot and the controller are away from noise source such as a welding machine.<br>3.Check that the cable between the robot and the controller is firmly plugged. |
| 6607 | Servo parameter error | 5 | An error has occurred in the servo parameter. | Reboot the robot controller and perform the operation again. |
| 6608 | Host parameter error | 5 | An error has occurred in operation parameters. | Reboot the robot controller and perform the operation again. |
| 6609 | System timer interrupt delay | 5 | A delay has occurred in the internal clock. | Reboot the robot controller and perform the operation again. |
| 660A | Safety board communication error(ESC) | 5 | A communications error of the safety board was detected. Possible causes are:<br>1. Equipment circuit error.<br>2. External noise, e.g., static electricity.<br>3. Safety board defective. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. The equipment circuit is operating normally.<br>2. There is no external noise source in the vicinity. |
| 660B | Safety board communication error(BOX) | 5 | A communications error of the safety box was detected. Possible causes are:<br>1. Equipment circuit error.<br>2. External noise, e.g., static electricity.<br>3. Safety box defective. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. The equipment circuit is operating normally.<br>2. There is no external noise source in the vicinity. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 660C | Safety board communication error(TYT) | 5 | A safety circuit communications error has been detected. | (1)Check connections between the I/O board and peripheral equipment. (2)Check that there is no noise source near the controller. |
| 660D | ES error | 5 | An ES error has been detected. | (1)Check connections between the I/O board and peripheral equipment. (2)Check that there is no noise source near the controller. |
| 660F | Contactor on failure | 2 | CONTACTOR ON could not be executed. | Execute MOTOR ON again. If the error recurs frequently, inspect or repair the controller. |
| 661E | Over-Travel release signal abnormal | 5 | A backcheck error of the "Release Overtravel" signal (hardware failure) has occurred. | Restart the controller. If the error persists, contact your local Denso Wave representative. |
| 661F | RSC reset signal abnormal | 5 | A backcheck error of the "Reset RSC" signal (hardware failure) has occurred. | Restart the controller. If the error persists, contact your local Denso Wave representative. |
| 6631 | J1 speed limit over | 4 | Motion exceeded the 1st axis speed limit. | 1.Check that the FG (frame ground) terminals of the robot and the controller are grounded. 2.Check that the robot and the controller are away from noise source such as a welding machine. 3.Check that the cable between the robot and the controller is firmly plugged. 4.Transmit the arm manager file corresponding to the robot and reboot the controller. 5.Decrease the speed. |
| 6632 | J2 speed limit over | 4 | Motion exceeded the 2nd axis speed limit. | 1.Check that the FG (frame ground) terminals of the robot and the controller are grounded. 2.Check that the robot and the controller are away from noise source such as a welding machine. 3.Check that the cable between the robot and the controller is firmly plugged. 4.Transmit the arm manager file corresponding to the robot and reboot the controller. 5.Decrease the speed. |
| 6633 | J3 speed limit over | 4 | Motion exceeded the 3rd axis speed limit. | 1.Check that the FG (frame ground) terminals of the robot and the controller are grounded. 2.Check that the robot and the controller are away from noise source such as a welding machine. 3.Check that the cable between the robot and the controller is firmly plugged. 4.Transmit the arm manager file corresponding to the robot and reboot the controller. 5.Decrease the speed. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 6634 | J4 speed limit over | 4 | Motion exceeded the 4th axis speed limit. | 1.Check that the FG (frame ground) terminals of the robot and the controller are grounded.<br>2.Check that the robot and the controller are away from noise source such as a welding machine.<br>3.Check that the cable between the robot and the controller is firmly plugged.<br>4.Transmit the arm manager file corresponding to the robot and reboot the controller.<br>5.Decrease the speed. |
| 6635 | J5 speed limit over | 4 | Motion exceeded the 5th axis speed limit. | 1.Check that the FG (frame ground) terminals of the robot and the controller are grounded.<br>2.Check that the robot and the controller are away from noise source such as a welding machine.<br>3.Check that the cable between the robot and the controller is firmly plugged.<br>4.Transmit the arm manager file corresponding to the robot and reboot the controller.<br>5.Decrease the speed. |
| 6636 | J6 speed limit over | 4 | Motion exceeded the 6th axis speed limit. | 1.Check that the FG (frame ground) terminals of the robot and the controller are grounded.<br>2.Check that the robot and the controller are away from noise source such as a welding machine.<br>3.Check that the cable between the robot and the controller is firmly plugged.<br>4.Transmit the arm manager file corresponding to the robot and reboot the controller.<br>5.Decrease the speed. |
| 6637 | J7 speed limit over | 4 | Motion exceeded the 7th axis speed limit | 1.Check that the FG (frame ground) terminals of the robot and the controller are grounded.<br>2.Check that the robot and the controller are away from noise source such as a welding machine.<br>3.Check that the cable between the robot and the controller is firmly plugged.<br>4.Transmit the arm manager file corresponding to the robot and reboot the controller.<br>5.Decrease the speed. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 6638 | J8 speed limit over | 4 | Motion exceeded the 8th axis speed limit | 1.Check that the FG (frame ground) terminals of the robot and the controller are grounded.<br>2.Check that the robot and the controller are away from noise source such as a welding machine.<br>3.Check that the cable between the robot and the controller is firmly plugged.<br>4.Transmit the arm manager file corresponding to the robot and reboot the controller.<br>5.Decrease the speed. |
| 6641 | J1 acceleration limit over | 4 | The acceleration of the motor of the corresponding axis exceeded the permitted value.<br>Possible causes are:<br>1. Robot colliding with any obstacle.<br>2. End-of-arm load exceeding the reference value.<br>3. Robot motion rattling or jerky.<br>4. Motor & encoder cable broken.<br>5. Controller defective.<br>6. Motor defective. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. The robot arm is not in contact with any obstacles.<br>2. The end-of-arm load is not exceeding the reference value.<br>3. The robot motion is smooth and no abnormal noise is heard.<br>4. The movable sections of the robot unit are not rattling.<br>5. There is no contact failure in the motor & encoder cable connector.<br>6. Any section of the motor & encoder cable is not broken or crushed.<br>7. The air balance cylinder is properly adjusted.<br>(Lowering the motor speed may avoid this type of errors.) |
| 6642 | J2 acceleration limit over | 4 | The acceleration of the motor of the corresponding axis exceeded the permitted value.<br>Possible causes are:<br>1. Robot colliding with any obstacle.<br>2. End-of-arm load exceeding the reference value.<br>3. Robot motion rattling or jerky.<br>4. Motor & encoder cable broken.<br>5. Controller defective.<br>6. Motor defective. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. The robot arm is not in contact with any obstacles.<br>2. The end-of-arm load is not exceeding the reference value.<br>3. The robot motion is smooth and no abnormal noise is heard.<br>4. The movable sections of the robot unit are not rattling.<br>5. There is no contact failure in the motor & encoder cable connector.<br>6. Any section of the motor & encoder cable is not broken or crushed.<br>7. The air balance cylinder is properly adjusted.<br>(Lowering the motor speed may avoid this type of errors.) |
| 6643 | J3 acceleration limit over | 4 | The acceleration of the motor of the corresponding axis exceeded the permitted value.<br>Possible causes are:<br>1. Robot colliding with any obstacle.<br>2. End-of-arm load exceeding the reference value.<br>3. Robot motion rattling or jerky.<br>4. Motor & encoder cable broken.<br>5. Controller defective.<br>6. Motor defective. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. The robot arm is not in contact with any obstacles.<br>2. The end-of-arm load is not exceeding the reference value.<br>3. The robot motion is smooth and no abnormal noise is heard.<br>4. The movable sections of the robot unit are not rattling.<br>5. There is no contact failure in the motor & encoder cable connector.<br>6. Any section of the motor & encoder cable is not broken or crushed.<br>7. The air balance cylinder is properly adjusted.<br>(Lowering the motor speed may avoid this type of errors.) |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 6644 | J4 acceleration limit over | 4 | The acceleration of the motor of the corresponding axis exceeded the permitted value.<br>Possible causes are:<br>1. Robot colliding with any obstacle.<br>2. End-of-arm load exceeding the reference value.<br>3. Robot motion rattling or jerky.<br>4. Motor & encoder cable broken.<br>5. Controller defective.<br>6. Motor defective. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. The robot arm is not in contact with any obstacles.<br>2. The end-of-arm load is not exceeding the reference value.<br>3. The robot motion is smooth and no abnormal noise is heard.<br>4. The movable sections of the robot unit are not rattling.<br>5. There is no contact failure in the motor & encoder cable connector.<br>6. Any section of the motor & encoder cable is not broken or crushed.<br>7. The air balance cylinder is properly adjusted.<br>(Lowering the motor speed may avoid this type of errors.) |
| 6645 | J5 acceleration limit over | 4 | The acceleration of the motor of the corresponding axis exceeded the permitted value.<br>Possible causes are:<br>1. Robot colliding with any obstacle.<br>2. End-of-arm load exceeding the reference value.<br>3. Robot motion rattling or jerky.<br>4. Motor & encoder cable broken.<br>5. Controller defective.<br>6. Motor defective. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. The robot arm is not in contact with any obstacles.<br>2. The end-of-arm load is not exceeding the reference value.<br>3. The robot motion is smooth and no abnormal noise is heard.<br>4. The movable sections of the robot unit are not rattling.<br>5. There is no contact failure in the motor & encoder cable connector.<br>6. Any section of the motor & encoder cable is not broken or crushed.<br>7. The air balance cylinder is properly adjusted.<br>(Lowering the motor speed may avoid this type of errors.) |
| 6646 | J6 acceleration limit over | 4 | The acceleration of the motor of the corresponding axis exceeded the permitted value.<br>Possible causes are:<br>1. Robot colliding with any obstacle.<br>2. End-of-arm load exceeding the reference value.<br>3. Robot motion rattling or jerky.<br>4. Motor & encoder cable broken.<br>5. Controller defective.<br>6. Motor defective. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. The robot arm is not in contact with any obstacles.<br>2. The end-of-arm load is not exceeding the reference value.<br>3. The robot motion is smooth and no abnormal noise is heard.<br>4. The movable sections of the robot unit are not rattling.<br>5. There is no contact failure in the motor & encoder cable connector.<br>6. Any section of the motor & encoder cable is not broken or crushed.<br>7. The air balance cylinder is properly adjusted.<br>(Lowering the motor speed may avoid this type of errors.) |
| 6647 | J7 acceleration limit over | 4 | The acceleration of the motor of the corresponding axis exceeded the permitted value.<br>Possible causes are:<br>1. Robot colliding with any obstacle.<br>2. End-of-arm load exceeding the reference value.<br>3. Robot motion rattling or jerky.<br>4. Motor & encoder cable broken.<br>5. Controller defective.<br>6. Motor defective. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. The robot arm is not in contact with any obstacles.<br>2. The end-of-arm load is not exceeding the reference value.<br>3. The robot motion is smooth and no abnormal noise is heard.<br>4. The movable sections of the robot unit are not rattling.<br>5. There is no contact failure in the motor & encoder cable connector.<br>6. Any section of the motor & encoder cable is not broken or crushed.<br>7. The air balance cylinder is properly adjusted.<br>(Lowering the motor speed may avoid this type of errors.) |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 6648 | J8 acceleration limit over | 4 | The acceleration of the motor of the corresponding axis exceeded the permitted value.<br>Possible causes are:<br>1. Robot colliding with any obstacle.<br>2. End-of-arm load exceeding the reference value.<br>3. Robot motion rattling or jerky.<br>4. Motor & encoder cable broken.<br>5. Controller defective.<br>6. Motor defective. | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. The robot arm is not in contact with any obstacles.<br>2. The end-of-arm load is not exceeding the reference value.<br>3. The robot motion is smooth and no abnormal noise is heard.<br>4. The movable sections of the robot unit are not rattling.<br>5. There is no contact failure in the motor & encoder cable connector.<br>6. Any section of the motor & encoder cable is not broken or crushed.<br>7. The air balance cylinder is properly adjusted.<br>(Lowering the motor speed may avoid this type of errors.) |
| 6651 | Check command time over | 3 | Failed to move to the specified position within the specified time.<br>Possible causes are:<br>1. Sliding failure.<br>2. Robot colliding with any obstacle.<br>3. End-of-arm load exceeding the reference value.<br>4. Inappropriate settings of "Encoder pulse count for positioning allowance" or "Positioning completion timeout." | Check the following.<br>If the error persists, contact your Denso Wave service representative.<br>1. The robot motion is smooth and no abnormal noise is heard.<br>2. The robot arm is not in contact with any obstacles.<br>3. The end-of-arm load is not exceeding the reference value.<br>4. The settings of "Encoder pulse count for positioning allowance" and "Positioning completion timeout" are not too small.<br>Libraries "mvResetPulseWidth" and "mvResetPulseWidthJnt" revert the "Encoder pulse count for positioning allowance" to the default.<br>Library "mvResetTimeOut" reverts the "Positioning completion timeout" to the default. |
| 665A | Can not enable current limitation | 3 | Attempted to execute current limit setting while the gravity compensation is ineffective. | Execute current limit setting after enabling the gravity compensation. |
| 665B | Can not disable gravity compensation | 3 | Attempted to disable the gravity compensation while the current limit is effective. | Disable gravity compensation after releasing current limit. |
| 6671 | Dest. pos. out of J1 soft motion limit | 3 | 1.The motion destination position of the 1st axis is out of the software motion limit.<br>2.The robot cannot physically perform linear movements in the CP motion for the coordinate entered. | 1.Change the motion destination position to within the motion space.<br>2.If this error occurs after you change the robot specifications (CALSET), check that you have not executed wrong procedures to change the specification.<br>3.Check that the robot does not pass the singular point vicinity in the CP motion and correct the program so that it avoids the singular point. However, if you return the robot to within the motion space, use the manual mode for each axis. It is not possible to move an axis with either the XY mode or the TOOL mode. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 6672 | Dest. pos. out of J2 soft motion limit | 3 | 1.The motion destination position of the 2nd axis is out of the software motion limit.<br>2.The robot cannot physically perform linear movements in the CP motion for the coordinate entered. | 1.Change the motion destination position to within the motion space.<br>2.If this error occurs after you change the robot specifications (CALSET), check that you have not executed wrong procedures to change the specification.<br>3.Check that the robot does not pass the singular point vicinity in the CP motion and correct the program so that it avoids the singular point. However, if you return the robot to within the motion space, use the manual mode for each axis. It is not possible to move an axis with either the XY mode or the TOOL mode. |
| 6673 | Dest. pos. out of J3 soft motion limit | 3 | 1.The motion destination position of the 3rd axis is out of the software motion limit.<br>2.The robot cannot physically perform linear movements in the CP motion for the coordinate entered. | 1.Change the motion destination position to within the motion space.<br>2.If this error occurs after you change the robot specifications (CALSET), check that you have not executed wrong procedures to change the specification.<br>3.Check that the robot does not pass the singular point vicinity in the CP motion and correct the program so that it avoids the singular point. However, if you return the robot to within the motion space, use the manual mode for each axis. It is not possible to move an axis with either the XY mode or the TOOL mode. |
| 6674 | Dest. pos. out of J4 soft motion limit | 3 | 1.The motion destination position of the 4th axis is out of the software motion limit.<br>2.The robot cannot physically perform linear movements in the CP motion for the coordinate entered. | 1.Change the motion destination position to within the motion space.<br>2.If this error occurs after you change the robot specifications (CALSET), check that you have not executed wrong procedures to change the specification.<br>3.Check that the robot does not pass the singular point vicinity in the CP motion and correct the program so that it avoids the singular point. However, if you return the robot to within the motion space, use the manual mode for each axis. It is not possible to move an axis with either the XY mode or the TOOL mode. |
| 6675 | Dest. pos. out of J5 soft motion limit | 3 | 1.The motion destination position of the 5th axis is out of the software motion limit.<br>2.The robot cannot physically perform linear movements in the CP motion for the coordinate entered. | 1.Change the motion destination position to within the motion space.<br>2.If this error occurs after you change the robot specifications (CALSET), check that you have not executed wrong procedures to change the specification.<br>3.Check that the robot does not pass the singular point vicinity in the CP motion and correct the program so that it avoids the singular point. However, if you return the robot to within the motion space, use the manual mode for each axis. It is not possible to move an axis with either the XY mode or the TOOL mode. |

| Code | Message | Level | Description | Remedy |
|---|---|---|---|---|
| 6676 | Dest. pos. out of J6 soft motion limit | 3 | 1.The motion destination position of the 6th axis is out of the software motion limit.<br>2.The robot cannot physically perform linear movements in the CP motion for the coordinate entered. | 1.Change the motion destination position to within the motion space.<br>2.If this error occurs after you change the robot specifications (CALSET), check that you have not executed wrong procedures to change the specification.<br>3.Check that the robot does not pass the singular point vicinity in the CP motion and correct the program so that it avoids the singular point. However, if you return the robot to within the motion space, use the manual mode for each axis. It is not possible to move an axis with either the XY mode or the TOOL mode. |
| 6677 | Dest. pos. out of J7 soft motion limit | 3 | (1)The motion destination position of the 7th axis is out of the software motion limit.<br>(2)The robot cannot physically perform linear movements in the CP motion for the coordinate entered. | 1.Change the motion destination position to within the motion space.<br>2.If this error occurs after you change the robot specifications (CALSET), check that you have not executed wrong procedures to change the specification.<br>3.Check that the robot does not pass the singular point vicinity in the CP motion and correct the program so that it avoids the singular point. However, if you return the robot to within the motion space, use the manual mode for each axis. It is not possible to move an axis with either the XY mode or the TOOL mode. |
| 6678 | Dest. pos. out of J8 soft motion limit | 3 | (1)The motion destination position of the 8th axis is out of the software motion limit.<br>(2)The robot cannot physically perform linear movements in the CP motion for the coordinate entered. | 1.Change the motion destination position to within the motion space.<br>2.If this error occurs after you change the robot specifications (CALSET), check that you have not executed wrong procedures to change the specification.<br>3.Check that the robot does not pass the singular point vicinity in the CP motion and correct the program so that it avoids the singular point. However, if you return the robot to within the motion space, use the manual mode for each axis. It is not possible to move an axis with either the XY mode or the TOOL mode. |
| 6679 | Dest. position out of motion space 1 | 3 | The motion destination position is out of the motion space. | 1.Re-specify the target position within the motion space.<br>2.If this error occurs after you change the robot data (by CALSET), check that you followed correct procedures to change the data.<br>3.Specify a position and a figure where robot movements are physically possible as the target position of the PTP motion and P/T variables of P2J and T2J commands. |
| 667A | Dest. position out of motion space 2 | 3 | The motion destination position is out of the motion space. | 1.Re-specify the target position within the motion space.<br>2.If this error occurs after you change the robot data (by CALSET), check that you followed correct procedures to change the data.<br>3.Specify a position and a figure where robot movements are physically possible as the target position of the PTP motion and P/T variables of P2J and T2J commands. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 667B | Destination position in singular point | 3 | A singular point has been specified as the contents of the variable. Therefore, reverse coordinate transformation command cannot execute. | Set the contents of the position variable to a non-singular point value. |
| 6680 | Interference check task error | 5 | The interference check task has detected an abnormality and stopped the robot. | Restart the controller. If the error persists, contact your local Denso Wave representative. |
| 6681 | Zeroing error | 4 | The CALSET and RANG values are not matched with the zeroing values. | 1. When the arm parameters (CALSET and RANG values) are backed up, send the arm parameters to the controller again.<br>2. When the arm parameters (CALSET and RANG values) are not backed up, perform CALSET again. |
| 6682 | Interference check data error | 5 | The interference check data is abnormal. | Check the following.<br>1. The restricted area and the partial restricted area (robot entry-prohibited area) are properly configured.<br>2. The tool interference object and the arm interference monitor points are properly configured.<br>3. The robot mounting position is properly configured.<br>If the error persists, contact your local Denso Wave representative. |
| 6683 | Restricted area and Tool interfere 1 | 2 | A tool interference object has gotten out of the restricted area (under monitoring with the command value of the robot mounting position). | Move the robot arm to bring the tool interference object into the restricted area. |
| 6684 | Restricted area and Arm interfere 1 | 2 | Arm interference monitor points have gotten out of the restricted area (under monitoring with the command value of the robot mounting position). | Move the robot arm to bring the arm interference monitor points into the restricted area. |
| 6685 | Partial area and Tool interfere 1 | 2 | A tool interference object has intruded into the partial restricted area (robot entry-prohibited area) (under monitoring with the command value of the robot mounting position). | Move the robot arm to bring the tool interference object out of the partial restricted area (robot entry-prohibited area). |
| 6686 | Partial area and Arm interfere 1 | 2 | Arm interference monitor points have intruded into the partial restricted area (under monitoring with the command value of the robot mounting position). | Move the robot arm to bring the arm interference monitor points out of the partial restricted area (robot entry-prohibited area). |
| 6687 | Restricted area and Tool interfere 2 | 2 | A tool interference object has gotten out of the restricted area (under monitoring with the current value of the robot mounting position). | Move the robot arm to bring the tool interference object into the restricted area. |
| 6688 | Restricted area and Arm interfere 2 | 2 | Arm interference monitor points have gotten out of the restricted area (under monitoring with the current value of the robot mounting position). | Move the robot arm to bring the arm interference monitor points into the restricted area. |
| 6689 | Partial area and Tool interfere 2 | 2 | A tool interference object has intruded into the partial restricted area (robot entry-prohibited area) (under monitoring with the current value of the robot mounting position). | Move the robot arm to bring the tool interference object out of the partial restricted area (robot entry-prohibited area). |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 668A | Partial area and Arm interfere 2 | 2 | Arm interference monitor points have intruded into the partial restricted area (robot entry-prohibited area) (under monitoring with the current value of the robot mounting position). | Move the robot arm to bring the arm interference monitor points out of the partial restricted area (robot entry-prohibited area). |
| 66D1 | J1 software limit over (Compliance) | 3 | The 1 axis software limit was exceeded during compliance control. | Correct the operation position so that the robot is operable in the software limit. |
| 66D2 | J2 software limit over (Compliance) | 3 | The 2 axis software limit was exceeded during compliance control. | Correct the operation position so that the robot is operable in the software limit. |
| 66D3 | J3 software limit over (Compliance) | 3 | The 3 axis software limit was exceeded during compliance control. | Correct the operation position so that the robot is operable in the software limit. |
| 66D4 | J4 software limit over (Compliance) | 3 | The 4 axis software limit was exceeded during compliance control. | Correct the operation position so that the robot is operable in the software limit. |
| 66D5 | J5 software limit over (Compliance) | 3 | The 5 axis software limit was exceeded during compliance control. | Correct the operation position so that the robot is operable in the software limit. |
| 66D6 | J6 software limit over (Compliance) | 3 | The 6 axis software limit was exceeded during compliance control. | Correct the operation position so that the robot is operable in the software limit. |
| 66D7 | J7 software limit over (Compliance) | 3 | The 7th-axis software limit was exceeded during compliance control. | Correct the operation position so that the robot is operable in the software limit. |
| 66D8 | J8 software limit over (Compliance) | 3 | The 8th-axis software limit was exceeded during compliance control. | Correct the operation position so that the robot is operable in the software limit. |
| 6710 | Servo communication initialization error | 5 | Controller internal error. (The host and the servo communication process initialization failed.) | 1.Check that the FG (frame ground) terminals of the robot and the controller are grounded.<br>2.Check that the robot and the controller are away from noise source such as a welding machine.<br>3.Check that the cable between the robot and the controller is firmly plugged. |
| 671A | Command value calculation delay | 4 | Time-over error occurred in calculation of command value. | This error may occur if communication is frequently executed with the RS232C and the Ethernet or if you operate the controller keyboard during the robot motion. Operate again after the robot stops. |
| 671B | Servo command processing delay | 4 | Controller internal error. (A command interruption delay from the servo.) | 1.Check that the FG (frame ground) terminals of the robot and the controller are grounded.<br>2.Check that the robot and the controller are away from noise source such as a welding machine.<br>3.Check that the cable between the robot and the controller is firmly plugged. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 6750 | CALSET not executed | 2 | CALSET has not been executed on all axes. | 1.If you did not execute CALSET after resetting the encoder, then execute CALSET.<br>2.If you did not transmit the arm parameters after clearing the memory, transmit the parameters. |
| 6751 | Execute J1 CALSET | 2 | CALSET has not been executed on the 1st axis. | 1.If you did not execute CALSET after resetting the encoder, then execute CALSET.<br>2.If you did not transmit the arm parameters after clearing the memory, transmit the parameters. |
| 6752 | Execute J2 CALSET | 2 | CALSET has not been executed on the 2nd axis. | 1.If you did not execute CALSET after resetting the encoder, then execute CALSET.<br>2.If you did not transmit the arm parameters after clearing the memory, transmit the parameters. |
| 6753 | Execute J3 CALSET | 2 | CALSET has not been executed on the 3rd axis. | 1.If you did not execute CALSET after resetting the encoder, then execute CALSET.<br>2.If you did not transmit the arm parameters after clearing the memory, transmit the parameters. |
| 6754 | Execute J4 CALSET | 2 | CALSET has not been executed on the 4th axis. | 1.If you did not execute CALSET after resetting the encoder, then execute CALSET.<br>2.If you did not transmit the arm parameters after clearing the memory, transmit the parameters. |
| 6755 | Execute J5 CALSET | 2 | CALSET has not been executed on the 5th axis. | 1.If you did not execute CALSET after resetting the encoder, then execute CALSET.<br>2.If you did not transmit the arm parameters after clearing the memory, transmit the parameters. |
| 6756 | Execute J6 CALSET | 2 | CALSET has not been executed on the 6th axis. | 1.If you did not execute CALSET after resetting the encoder, then execute CALSET.<br>2.If you did not transmit the arm parameters after clearing the memory, transmit the parameters. |
| 6757 | Execute J7 CALSET | 2 | CALSET has not been executed on the 7th axis. | 1.If you did not execute CALSET after resetting the encoder, then execute CALSET.<br>2.If you did not transmit the arm parameters after clearing the memory, transmit the parameters. |
| 6758 | Execute J8 CALSET | 2 | CALSET has not been executed on the 8th axis. | 1.If you did not execute CALSET after resetting the encoder, then execute CALSET.<br>2.If you did not transmit the arm parameters after clearing the memory, transmit the parameters. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 6761 | J1 command accel limit over (servo) | 4 | The CP motion is not available with the specified speed because the acceleration command value exceeds the limit on the 1st axis. | 1.Reduce the speed and the acceleration. If there are no problems, such as interference in the motion path, set the PTP motion.<br>2.Check that the robot does not pass the singular point vicinity in the CP motion, and correct the program so that it avoids the singular point.<br>3.If an error occurs when the control set of motion optimization is set to 2 or 3, decrease the speed and deceleration. |
| 6762 | J2 command accel limit over (servo) | 4 | The CP motion is not available with the specified speed because the acceleration command value exceeds the limit on the 2nd axis. | 1.Reduce the speed and the acceleration. If there are no problems, such as interference in the motion path, set the PTP motion.<br>2.Check that the robot does not pass the singular point vicinity in the CP motion, and correct the program so that it avoids the singular point.<br>3.If an error occurs when the control set of motion optimization is set to 2 or 3, decrease the speed and deceleration. |
| 6763 | J3 command accel limit over (servo) | 4 | The CP motion is not available with the specified speed because the acceleration command value exceeds the limit on the 3rd axis. | 1.Reduce the speed and the acceleration. If there are no problems, such as interference in the motion path, set the PTP motion.<br>2.Check that the robot does not pass the singular point vicinity in the CP motion, and correct the program so that it avoids the singular point.<br>3.If an error occurs when the control set of motion optimization is set to 2 or 3, decrease the speed and deceleration. |
| 6764 | J4 command accel limit over (servo) | 4 | The CP motion is not available with the specified speed because the acceleration command value exceeds the limit on the 4th axis. | 1.Reduce the speed and the acceleration. If there are no problems, such as interference in the motion path, set the PTP motion.<br>2.Check that the robot does not pass the singular point vicinity in the CP motion, and correct the program so that it avoids the singular point.<br>3.If an error occurs when the control set of motion optimization is set to 2 or 3, decrease the speed and deceleration. |
| 6765 | J5 command accel limit over (servo) | 4 | The CP motion is not available with the specified speed because the acceleration command value exceeds the limit on the 5th axis. | 1.Reduce the speed and the acceleration. If there are no problems, such as interference in the motion path, set the PTP motion.<br>2.Check that the robot does not pass the singular point vicinity in the CP motion, and correct the program so that it avoids the singular point.<br>3.If an error occurs when the control set of motion optimization is set to 2 or 3, decrease the speed and deceleration. |
| 6766 | J6 command accel limit over (servo) | 4 | The CP motion is not available with the specified speed because the acceleration command value exceeds the limit on the 6th axis. | 1.Reduce the speed and the acceleration. If there are no problems, such as interference in the motion path, set the PTP motion.<br>2.Check that the robot does not pass the singular point vicinity in the CP motion, and correct the program so that it avoids the singular point.<br>3.If an error occurs when the control set of motion optimization is set to 2 or 3, decrease the speed and deceleration. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 6767 | J7 command accel limit over (servo) | 4 | The CP motion is not available with the specified speed because the acceleration command value exceeds the limit on the 7th axis. | 1.Reduce the speed and the acceleration. If there are no problems, such as interference in the motion path, set the PTP motion.<br>2.Check that the robot does not pass the singular point vicinity in the CP motion, and correct the program so that it avoids the singular point.<br>3.If an error occurs when the control set of motion optimization is set to 2 or 3, decrease the speed and deceleration. |
| 6768 | J8 command accel limit over (servo) | 4 | The CP motion is not available with the specified speed because the acceleration command value exceeds the limit on the 8th axis. | 1.Reduce the speed and the acceleration. If there are no problems, such as interference in the motion path, set the PTP motion.<br>2.Check that the robot does not pass the singular point vicinity in the CP motion, and correct the program so that it avoids the singular point.<br>3.If an error occurs when the control set of motion optimization is set to 2 or 3, decrease the speed and deceleration. |
| 6769 | J1 command accel limit over (host) | 4 | The CP motion is not available with the specified speed because acceleration command value exceeds the limit on the 1st axis. | 1.Reduce the speed and the acceleration. If there are no problems, such as interference in the motion path, set the PTP motion.<br>2.Check that the robot does not pass the singular point vicinity in the CP motion, and correct the program so that it avoids the singular point.<br>3.If an error occurs when the control set of motion optimization is set to 2 or 3, decrease the speed and deceleration. |
| 676A | J2 command accel limit over (host) | 4 | The CP motion is not available with the specified speed because acceleration command value exceeds the limit on the 2nd axis. | 1.Reduce the speed and the acceleration. If there are no problems, such as interference in the motion path, set the PTP motion.<br>2.Check that the robot does not pass the singular point vicinity in the CP motion, and correct the program so that it avoids the singular point.<br>3.If an error occurs when the control set of motion optimization is set to 2 or 3, decrease the speed and deceleration. |
| 676B | J3 command accel limit over (host) | 4 | The CP motion is not available with the specified speed because acceleration command value exceeds the limit on the 3rd axis. | 1.Reduce the speed and the acceleration. If there are no problems, such as interference in the motion path, set the PTP motion.<br>2.Check that the robot does not pass the singular point vicinity in the CP motion, and correct the program so that it avoids the singular point.<br>3.If an error occurs when the control set of motion optimization is set to 2 or 3, decrease the speed and deceleration. |
| 676C | J4 command accel limit over (host) | 4 | The CP motion is not available with the specified speed because acceleration command value exceeds the limit on the 4th axis. | 1.Reduce the speed and the acceleration. If there are no problems, such as interference in the motion path, set the PTP motion.<br>2.Check that the robot does not pass the singular point vicinity in the CP motion, and correct the program so that it avoids the singular point.<br>3.If an error occurs when the control set of motion optimization is set to 2 or 3, decrease the speed and deceleration. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 676D | J5 command accel limit over (host) | 4 | The CP motion is not available with the specified speed because acceleration command value exceeds the limit on the 5th axis. | 1.Reduce the speed and the acceleration. If there are no problems, such as interference in the motion path, set the PTP motion.<br>2.Check that the robot does not pass the singular point vicinity in the CP motion, and correct the program so that it avoids the singular point.<br>3.If an error occurs when the control set of motion optimization is set to 2 or 3, decrease the speed and deceleration. |
| 676E | J6 command accel limit over (host) | 4 | The CP motion is not available with the specified speed because acceleration command value exceeds the limit on the 6th axis. | 1.Reduce the speed and the acceleration. If there are no problems, such as interference in the motion path, set the PTP motion.<br>2.Check that the robot does not pass the singular point vicinity in the CP motion, and correct the program so that it avoids the singular point.<br>3.If an error occurs when the control set of motion optimization is set to 2 or 3, decrease the speed and deceleration. |
| 676F | J7 command accel limit over (host) | 4 | The CP motion is not available with the specified speed because acceleration command value exceeds the limit on the 7th axis. | 1.Reduce the speed and the acceleration. If there are no problems, such as interference in the motion path, set the PTP motion.<br>2.Check that the robot does not pass the singular point vicinity in the CP motion, and correct the program so that it avoids the singular point.<br>3.If an error occurs when the control set of motion optimization is set to 2 or 3, decrease the speed and deceleration. |
| 6770 | J8 command accel limit over (host) | 4 | The CP motion is not available with the specified speed because acceleration command value exceeds the limit on the 8th axis. | 1.Reduce the speed and the acceleration. If there are no problems, such as interference in the motion path, set the PTP motion.<br>2.Check that the robot does not pass the singular point vicinity in the CP motion, and correct the program so that it avoids the singular point.<br>3.If an error occurs when the control set of motion optimization is set to 2 or 3, decrease the speed and deceleration. |
| 6771 | J1 encoder speed over | 5 | When the controller power was OFF, an encoder speed error occurred on the 1st axis. | When the controller power is OFF, if excess force is applied on the robot, this error occurs. Reset the encoder and execute CALSET. |
| 6772 | J2 encoder speed over | 5 | When the controller power was OFF, an encoder speed error occurred on the 2nd axis. | When the controller power is OFF, if excess force is applied on the robot, this error occurs. Reset the encoder and execute CALSET. |
| 6773 | J3 encoder speed over | 5 | When the controller power was OFF, an encoder speed error occurred on the 3rd axis. | When the controller power is OFF, if excess force is applied on the robot, this error occurs. Reset the encoder and execute CALSET. |
| 6774 | J4 encoder speed over | 5 | When the controller power was OFF, an encoder speed error occurred on the 4th axis. | When the controller power is OFF, if excess force is applied on the robot, this error occurs. Reset the encoder and execute CALSET. |
| 6775 | J5 encoder speed over | 5 | When the controller power was OFF, an encoder speed error occurred on the 5th axis. | When the controller power is OFF, if excess force is applied on the robot, this error occurs. Reset the encoder and execute CALSET. |
| 6776 | J6 encoder speed over | 5 | When the controller power was OFF, an encoder speed error occurred on the 6th axis. | When the controller power is OFF, if excess force is applied on the robot, this error occurs. Reset the encoder and execute CALSET. |
| 6777 | J7 encoder speed over | 5 | When the controller power was OFF, an encoder speed error occurred on the 7th axis. | When the controller power is OFF, if excess force is applied on the robot, this error occurs. Reset the encoder and execute CALSET. |

| Code | Message | Level | Description | Remedy |
|---|---|---|---|---|
| 6778 | J8 encoder speed over | 5 | When the controller power was OFF, an encoder speed error occurred on the 8th axis. | When the controller power is OFF, if excess force is applied on the robot, this error occurs. Reset the encoder and execute CALSET. |
| 6781 | J1 speed over at brake releasing | 2 | When the brake is OFF, an encoder speed error occurred on the 1st axis. | When you move the robot by releasing the brake, do not apply excess force on the robot. |
| 6782 | J2 speed over at brake releasing | 2 | When the brake is OFF, an encoder speed error occurred on the 2nd axis. | When you move the robot by releasing the brake, do not apply excess force on the robot. |
| 6783 | J3 speed over at brake releasing | 2 | When the brake is OFF, an encoder speed error occurred on the 3rd axis. | When you move the robot by releasing the brake, do not apply excess force on the robot. |
| 6784 | J4 speed over at brake releasing | 2 | When the brake is OFF, an encoder speed error occurred on the 4th axis. | When you move the robot by releasing the brake, do not apply excess force on the robot. |
| 6785 | J5 speed over at brake releasing | 2 | When the brake is OFF, an encoder speed error occurred on the 5th axis. | When you move the robot by releasing the brake, do not apply excess force on the robot. |
| 6786 | J6 speed over at brake releasing | 2 | When the brake is OFF, an encoder speed error occurred on the 6th axis. | When you move the robot by releasing the brake, do not apply excess force on the robot. |
| 6787 | J7 speed over at brake releasing | 2 | When the brake is OFF, an encoder speed error occurred on the 7th axis. | When you move the robot by releasing the brake, do not apply excess force on the robot. |
| 6788 | J8 speed over at brake releasing | 2 | When the brake is OFF, an encoder speed error occurred on the 8th axis. | When you move the robot by releasing the brake, do not apply excess force on the robot. |
| 678a | Cut off brake releasing power | 2 | Having detected an overspeed of a brake-released axis, the controller shuts down the brake release power. | When moving the robot after releasing the brake, do not apply an excessive force. |
| 678b | Brake releasing power relay failure | 2 | An error has been detected in the brake release power shutdown relay. | (1)Check connections between the I/O board and peripheral equipment. (2)Check that there is no noise source near the controller. |
| 67B3 | Move data restoration error | 3 | The power was turned off before storage of the operation command. | Restarting in succession to the state before power off is impossible. Since all programs and I-O units are initialized, operate the robot after moving the robot to a safe position to prevent it from coming into contact with any adjacent equipment. |
| 67B4 | Arrive data restoration error | 3 | The power was turned off before storage of the ARRIVE command data. | Restarting in succession to the state before power off is impossible. Since all programs and I-O units are initialized, operate the robot after moving the robot to a safe position to prevent it from coming into contact with any adjacent equipment. |
| 67B5 | Restoration error(Not Auto mode motion) | 3 | No operation command executed in the automatic mode. | Restarting in succession to the state before power off is impossible. Since all programs and I-O units are initialized, operate the robot after moving the robot to a safe position to prevent it from coming into contact with any adjacent equipment. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 67B6 | Restoration error (Machine lock drive) | 3 | The power switch turned off in machine lock status. | Restarting in succession to the state before power off is impossible. Since all programs and I-O units are initialized, operate the robot after moving the robot to a safe position to prevent it from coming into contact with any adjacent equipment. |
| 67E7 | Boundless rotatory joint isn't available | 3 | This command or operation cannot execute to a boundless rotatory joint. | Release the joint from the boundless rotation or do not execute this command or operation to the boundless rotatory joint. |
| 67E8 | Not set boundless rotatory joint | 3 | This command or operation cannot execute to a limited rotatory joint. | Set the joint for boundless rotation or do not execute this command or operation to the limited rotatory joint. |
| 67FE | Error in initialization process | 5 | Controller internal error. (The host initialization process failed.) | Turn OFF the power switch of the controller and restart the operation. |
| 67FF | Abnormal configuration | 5 | Controller internal error (software failure). | Turn OFF the power switch of the controller and restart the operation. |
| 6809 | Auto gain tuning is interrupted | 3 | The auto gain tuning process has been interrupted. | Execute auto gain tuning again. |
| 680a | Inertia identification error | 3 | The inertia identification process is not possible during auto gain tuning | Auto gain tuning is not possible. Implement manual gain tuning. |
| 680b | Auto gain tuning warning 1 | 1 | Overshoot was found at the end of motion during fine adjustment of gain. | To reduce the overshoot, implement manual gain tuning. |
| 680c | Auto gain tuning warning 2 | 1 | Slow settlement was found at the end of motion during fine adjustment of gain. | To reduce the settlement time, implement manual gain tuning. |
| 680d | Auto gain tuning warning 3 | 1 | Low-level oscillation was found during fine adjustment of gain. | To reduce the oscillation, implement manual gain tuning. |
| 680e | Servo data monitor error | 4 | Failed to monitor servo single-joint. | Clear the error and start monitoring the servo single-joint again. |
| 680f | Auto gain tuning is not executable | 3 | The auto gain tuning start requirements are not satisfied. | Check the auto gain tuning start requirements and implement auto gain tuning again. |
| 6819 | Unexpected command (Host1) | 5 | A controller internal error (software error) has occurred. | Restart the controller. |
| 681A | Unexpected command (Host2) | 5 | A controller internal error (software error) has occurred. | Restart the controller. |
| 681B | Unexpected command (Host3) | 5 | A controller internal error (software error) has occurred. | Restart the controller. |
| 681C | Unexpected command (Servo1) | 5 | A controller internal error (software error) has occurred. | Restart the controller. |
| 681D | Unexpected command (Servo2) | 5 | A controller internal error (software error) has occurred. | Restart the controller. |
| 681E | Unexpected command (Servo3) | 5 | A controller internal error (software error) has occurred. | Restart the controller. |
| 6829 | Collision detection processing delay | 4 | Collision detection processing not available in time. | This error could occur if the controller is frequently accessed via the RS-232C interface or Ethernet or from the teach pendant. Restrict access to the controller. |
| 682a | Collision detection execution error | 4 | Collision detection not available under compliance control. | Cancel compliance control and then use the collision detection function. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 682b | Improper collision detection operation | 4 | During switching of collision detection between Enable and Disable, none of Halt (Stop), Program Reset, and Step Back is allowed. | To execute Halt (Stop), Program Reset, or Step Back during switching of collision detection, turn the motor off once. |
| 682f | Collision error is not cleared | 2 | Switched the operation mode without clearing a collision detection error. | Clear a collision detection error and then try the intended operation again. |
| 6831 | Collision error (J1) | 2 | Detected a collision of Joint 1. | Check the collision state, remove the error cause, and clear the error. |
| 6832 | Collision error (J2) | 2 | Detected a collision of Joint 2. | Check the collision state, remove the error cause, and clear the error. |
| 6833 | Collision error (J3) | 2 | Detected a collision of Joint 3. | Check the collision state, remove the error cause, and clear the error. |
| 6834 | Collision error (J4) | 2 | Detected a collision of Joint 4. | Check the collision state, remove the error cause, and clear the error. |
| 6835 | Collision error (J5) | 2 | Detected a collision of Joint 5. | Check the collision state, remove the error cause, and clear the error. |
| 6836 | Collision error (J6) | 2 | Detected a collision of Joint 6. | Check the collision state, remove the error cause, and clear the error. |
| 6837 | Collision error (J7) | 2 | Detected a collision of Joint 7. | Check the collision state, remove the error cause, and clear the error. |
| 6838 | Collision error (J8) | 2 | Detected a collision of Joint 8. | Check the collision state, remove the error cause, and clear the error. |
| 6839 | Track processing delay | 4 | Conveyor tracking delayed and was not completed within the specified time. | This error may occur when communication frequency by Ether net is high or when hand I/O interrupt occurs frequently. Decrease the communication or hand I/O interrupt frequency. |
| 683A | Track semaphore error | 4 | A controller internal abnormality (OS abnormality) occurred. | Turn the controller power switch once and restart operation. |
| 683B | Track Enc.1 Speed error | 3 | Conveyor 1 (encoder 1) exceeded the limit speed. | Check the conveyor tracking parameter for the encoder speed upper limit. Check if encoder 1 cable connection is normal. |
| 683C | Track Enc.2 Speed error | 3 | Conveyor 2 (encoder 2) exceeded the limit speed. | Check the conveyor tracking parameter for the encoder speed upper limit. Check if encoder 2 cable connection is normal. |
| 683D | Internal track mode error | 4 | Internal abnormality of conveyor tracking process. | Turn the controller power switch once and restart operation. |
| 683E | Track state is unchangable | 3 | Switching to tracking operation fails. | Disable the current limit, OFFSRVLOCK instruction and OFFPWM instruction when executing tracking operation. |
| 683F | Not set track reference data | 3 | Internal abnormality of conveyor tracking process. | Turn the controller power switch once and restart operation. |
| 6840 | Out of track Area | 3 | The target tracking position is outside the tracking range. | Set the upper and lower limits of the tracking range in conveyor tracking parameters correctly. |
| 6841 | Interrupted track motion | 3 | Tracking operation was interrupted because of stop input during tracking. | Restart the program. |
| 6842 | Track data buffer input error | 3 | Abnormal argument of the TrackDataSet instruction. | Execute the TrackDataSet instruction as many time as the number of works recognized by the TrackDataSet instruction. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 6843 | Track data buffer overflow | 3 | The number of data saved in the tracking buffer was exceeded 100. | The number of data saved in the tracking buffer increases and decreases with TrackDataGet instructions. Edit the program so that only TrackDataSet instructions are not executed continuously. |
| 6844 | Robot posture mismatch (track) | 3 | The robot form was changed during tracking operation. | The robot form cannot be changed during tracking operation. Change the tracking operation position. |
| 6845 | Track Enc.1 under speed | 3 | The speed of conveyor 1 (encoder 1) dropped below the set level. | Check the lower limit of the encoder speed in conveyor tracking parameters. Check if the encoder 1 cable is connected normally. |
| 6846 | Track Enc.2 under speed | 3 | The speed of conveyor 2 (encoder 2) dropped below the set level. | Check the lower limit of the encoder speed in conveyor tracking parameters. Check if the encoder 2 cable is connected normally. |
| 6847 | Time out of waiting tracking motion | 3 | The work position did not come into the rage allowing tracking operation within the specified time. | Either change the timeout setting or change the tracking start range. |
| 6848 | Track parameter error | 3 | The tracking operation setting is invalidated. | Set the parameter correctly. |
| 6849 | Not Executable in tracking mode | 3 | An unexecutable processing was tried during tracking operation. | Do not execute current limitation, OFFSRVLOCK instruction or OFFPWM instruction during tracking operation. |
| 684A | Interrupt buffer overflow | 3 | Hand I/O interrupts occurred more than 100 times, but TrackDataSet was not executed. | Execute the TrackDataInitialize instruction, and clear the buffer. Up to 100 work position data detected upon hand I/O interrupts can be stored. The work position data moves to the conveyor tracking data buffer upon execution of TrackDataSet. Always execute the TrackDataSet instruction. |
| 684B | Out of track start area | 3 | The object work is downstream the tracking start range (+ side) upon execution of the WaitTrackMove instruction, resulting in tracking failure. | Correctly set the tracking start range in conveyor tracking parameters. |
| 684C | Track Enc.1 Accel error | 3 | Conveyer 1 (Encoder 1) accelerates abnormally. | Check the encoder 1 cable for connection. |
| 684D | Track Enc.2 Accel error | 3 | Conveyer 2 (Encoder 2) accelerates abnormally. | Check the encoder 2 cable for connection. |
| 6858 | Free curve calculation error | 3 | Free curve calculation error occurred. | Check that via points are adequate or not. |
| 6859 | Free curve exec. condition error | 3 | Free curve motion can not be executed, | Check the executable conditions. During conveyor tracking, no free curve motion is allowed. |
| 685A | Free curve pass point overflow | 3 | Exceeding 200 viapoints were specified in free curve. | Reduce viapoints up to 200. |
| 685B | Number of free curve mismuch | 3 | Free curve trajectory number is mismatched. | Check the trajectory number of free curve. Specify the viapoints if not specified. |
| 685C | Number of free curve pass point mismuch | 3 | The viapoint number is mismatch. | Check the viapoint number of free curve. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 685D | Free curve step back error | 3 | Step back error is occurred in the free curve.<br>Modifying viapoints after a free curve motion does not allow a Step Back operation on the free curve path specified before the modification of viapoints. | After execution of the free curve motion, execute Step Back operation. |
| 685E | Free curve path deviation error | 3 | Path deviation is too much. | Check that via points are adequate or not. |
| 6A91 | J1 encoder communication error (bit) | 4 | The J1 encoder data received is abnormal. | (1)Check that the FG wires of the robot unit and controller are grounded properly.<br>(2)Check that no noise sources (e.g., welding machines) are in the vicinity of the robot unit or controller. |
| 6A92 | J2 encoder communication error (bit) | 4 | The J2 encoder data received is abnormal. | (1)Check that the FG wires of the robot unit and controller are grounded properly.<br>(2)Check that no noise sources (e.g., welding machines) are in the vicinity of the robot unit or controller. |
| 6A93 | J3 encoder communication error (bit) | 4 | The J3 encoder data received is abnormal. | (1)Check that the FG wires of the robot unit and controller are grounded properly.<br>(2)Check that no noise sources (e.g., welding machines) are in the vicinity of the robot unit or controller. |
| 6A94 | J4 encoder communication error (bit) | 4 | The J4 encoder data received is abnormal. | (1)Check that the FG wires of the robot unit and controller are grounded properly.<br>(2)Check that no noise sources (e.g., welding machines) are in the vicinity of the robot unit or controller. |
| 6A95 | J5 encoder communication error (bit) | 4 | The J5 encoder data received is abnormal. | (1)Check that the FG wires of the robot unit and controller are grounded properly.<br>(2)Check that no noise sources (e.g., welding machines) are in the vicinity of the robot unit or controller. |
| 6A96 | J6 encoder communication error (bit) | 4 | The J6 encoder data received is abnormal. | (1)Check that the FG wires of the robot unit and controller are grounded properly.<br>(2)Check that no noise sources (e.g., welding machines) are in the vicinity of the robot unit or controller. |
| 6A97 | J7 encoder communication error (bit) | 4 | The J7 encoder data received is abnormal. | (1)Check that the FG wires of the robot unit and controller are grounded properly.<br>(2)Check that no noise sources (e.g., welding machines) are in the vicinity of the robot unit or controller. |
| 6A98 | J8 encoder communication error (bit) | 4 | The J8 encoder data received is abnormal. | (1)Check that the FG wires of the robot unit and controller are grounded properly.<br>(2)Check that no noise sources (e.g., welding machines) are in the vicinity of the robot unit or controller. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 6AA1 | J1 encoder backup error | 5 | The J1 backup battery does not work so that the internal data has been lost. | (1)Check that the encoder backup battery connector is firmly plugged in. (2)To recover from this error state, you need to reset the related encoder and perform CALSET. |
| 6AA2 | J2 encoder backup error | 5 | The J2 backup has run out so that the internal data has been lost. | (1)Check that the encoder backup battery connector is firmly plugged in. (2)To recover from this error state, you need to reset the related encoder and perform CALSET. |
| 6AA3 | J3 encoder backup error | 5 | The J3 backup battery has run out so that the internal data has been lost. | (1)Check that the encoder backup battery connector is firmly plugged in. (2)To recover from this error state, you need to reset the related encoder and perform CALSET. |
| 6AA4 | J4 encoder backup error | 5 | The J4 backup battery has run out so that the internal data has been lost. | (1)Check that the encoder backup battery connector is firmly plugged in. (2)To recover from this error state, you need to reset the related encoder and perform CALSET. |
| 6AA5 | J5 encoder backup error | 5 | The J5 backup battery has run out so that the internal data has been lost. | (1)Check that the encoder backup battery connector is firmly plugged in. (2)To recover from this error state, you need to reset the related encoder and perform CALSET. |
| 6AA6 | J6 encoder backup error | 5 | The J6 backup battery has run out so that the internal data has been lost. | (1)Check that the encoder backup battery connector is firmly plugged in. (2)To recover from this error state, you need to reset the related encoder and perform CALSET. |
| 6AA7 | J7 encoder backup error | 5 | The J7 backup battery has run out so that the internal data has been lost. | (1)Check that the encoder backup battery connector is firmly plugged in. (2)To recover from this error state, you need to reset the related encoder and perform CALSET. |
| 6AA8 | J8 encoder backup error | 5 | The J8 backup battery has run out so that the internal data has been lost. | (1)Check that the encoder backup battery connector is firmly plugged in. (2)To recover from this error state, you need to reset the related encoder and perform CALSET. |
| 6AA9 | J1 encoder initialize error | 4 | An error has occurred during initialization of the J1 encoder. | (1)Check that the FG wires of the robot unit and controller are grounded properly. (2)Check that no noise sources (e.g., welding machines) are in the vicinity of the robot unit or controller. |
| 6AAA | J2 encoder initialize error | 4 | An error has occurred during initialization of the J2 encoder. | (1)Check that the FG wires of the robot unit and controller are grounded properly. (2)Check that no noise sources (e.g., welding machines) are in the vicinity of the robot unit or controller. |
| 6AAB | J3 encoder initialize error | 4 | An error has occurred during initialization of the J3 encoder. | (1)Check that the FG wires of the robot unit and controller are grounded properly. (2)Check that no noise sources (e.g., welding machines) are in the vicinity of the robot unit or controller. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 6AAC | J4 encoder initialize error | 4 | An error has occurred during initialization of the J4 encoder. | (1)Check that the FG wires of the robot unit and controller are grounded properly.<br>(2)Check that no noise sources (e.g., welding machines) are in the vicinity of the robot unit or controller. |
| 6AAD | J5 encoder initialize error | 4 | An error has occurred during initialization of the J5 encoder. | (1)Check that the FG wires of the robot unit and controller are grounded properly.<br>(2)Check that no noise sources (e.g., welding machines) are in the vicinity of the robot unit or controller. |
| 6AAE | J6 encoder initialize error | 4 | An error has occurred during initialization of the J6 encoder. | (1)Check that the FG wires of the robot unit and controller are grounded properly.<br>(2)Check that no noise sources (e.g., welding machines) are in the vicinity of the robot unit or controller. |
| 6AAF | J7 encoder initialize error | 4 | An error has occurred during initialization of the J7 encoder. | (1)Check that the FG wires of the robot unit and controller are grounded properly.<br>(2)Check that no noise sources (e.g., welding machines) are in the vicinity of the robot unit or controller. |
| 6AB0 | J8 encoder initialize error | 4 | An error has occurred during initialization of the J8 encoder. | (1)Check that the FG wires of the robot unit and controller are grounded properly.<br>(2)Check that no noise sources (e.g., welding machines) are in the vicinity of the robot unit or controller. |
| 6AB1 | J1 encoder absolute data error | 5 | The J1 position data may be wrong. | (1)Check that the FG wires of the robot unit and controller are grounded properly.<br>(2)Check that no noise sources (e.g., welding machines) are in the vicinity of the robot unit or controller. |
| 6AB2 | J2 encoder absolute data error | 5 | The J2 position data may be wrong. | (1)Check that the FG wires of the robot unit and controller are grounded properly.<br>(2)Check that no noise sources (e.g., welding machines) are in the vicinity of the robot unit or controller. |
| 6AB3 | J3 encoder absolute data error | 5 | The J3 position data may be wrong. | (1)Check that the FG wires of the robot unit and controller are grounded properly.<br>(2)Check that no noise sources (e.g., welding machines) are in the vicinity of the robot unit or controller. |
| 6AB4 | J4 encoder absolute data error | 5 | The J4 position data may be wrong. | (1)Check that the FG wires of the robot unit and controller are grounded properly.<br>(2)Check that no noise sources (e.g., welding machines) are in the vicinity of the robot unit or controller. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 6AB5 | J5 encoder absolute data error | 5 | The J5 position data may be wrong. | (1)Check that the FG wires of the robot unit and controller are grounded properly.<br>(2)Check that no noise sources (e.g., welding machines) are in the vicinity of the robot unit or controller. |
| 6AB6 | J6 encoder absolute data error | 5 | The J6 position data may be wrong. | (1)Check that the FG wires of the robot unit and controller are grounded properly.<br>(2)Check that no noise sources (e.g., welding machines) are in the vicinity of the robot unit or controller. |
| 6AB7 | J7 encoder absolute data error | 5 | The J7 position data may be wrong. | (1)Check that the FG wires of the robot unit and controller are grounded properly.<br>(2)Check that no noise sources (e.g., welding machines) are in the vicinity of the robot unit or controller. |
| 6AB8 | J8 encoder absolute data error | 5 | The J8 position data may be wrong. | (1)Check that the FG wires of the robot unit and controller are grounded properly.<br>(2)Check that no noise sources (e.g., welding machines) are in the vicinity of the robot unit or controller. |
| 6AB9 | J1 encoder error | 5 | A J1 encoder error has occurred. | (1)Check that the FG wires of the robot unit and controller are grounded properly.<br>(2)Check that no noise sources (e.g., welding machines) are in the vicinity of the robot unit or controller.<br>(3)To recover from this error state, you need to reset the related encoder and perform CALSET. |
| 6ABA | J2 encoder error | 5 | A J2 encoder error has occurred. | (1)Check that the FG wires of the robot unit and controller are grounded properly.<br>(2)Check that no noise sources (e.g., welding machines) are in the vicinity of the robot unit or controller.<br>(3)To recover from this error state, you need to reset the related encoder and perform CALSET. |
| 6ABB | J3 encoder error | 5 | A J3 encoder error has occurred. | (1)Check that the FG wires of the robot unit and controller are grounded properly.<br>(2)Check that no noise sources (e.g., welding machines) are in the vicinity of the robot unit or controller.<br>(3)To recover from this error state, you need to reset the related encoder and perform CALSET. |

| Code | Message | Level | Description | Remedy |
|---|---|---|---|---|
| 6ABC | J4 encoder error | 5 | A J4 encoder error has occurred. | (1)Check that the FG wires of the robot unit and controller are grounded properly.<br>(2)Check that no noise sources (e.g., welding machines) are in the vicinity of the robot unit or controller.<br>(3)To recover from this error state, you need to reset the related encoder and perform CALSET. |
| 6ABD | J5 encoder error | 5 | A J5 encoder error has occurred. | (1)Check that the FG wires of the robot unit and controller are grounded properly.<br>(2)Check that no noise sources (e.g., welding machines) are in the vicinity of the robot unit or controller.<br>(3)To recover from this error state, you need to reset the related encoder and perform CALSET. |
| 6ABE | J6 encoder error | 5 | A J6 encoder error has occurred. | (1)Check that the FG wires of the robot unit and controller are grounded properly.<br>(2)Check that no noise sources (e.g., welding machines) are in the vicinity of the robot unit or controller.<br>(3)To recover from this error state, you need to reset the related encoder and perform CALSET. |
| 6ABF | J7 encoder error | 5 | A J7 encoder error has occurred. | (1)Check that the FG wires of the robot unit and controller are grounded properly.<br>(2)Check that no noise sources (e.g., welding machines) are in the vicinity of the robot unit or controller.<br>(3)To recover from this error state, you need to reset the related encoder and perform CALSET. |
| 6AC0 | J8 encoder error | 5 | A J8 encoder error has occurred. | (1)Check that the FG wires of the robot unit and controller are grounded properly.<br>(2)Check that no noise sources (e.g., welding machines) are in the vicinity of the robot unit or controller.<br>(3)To recover from this error state, you need to reset the related encoder and perform CALSET. |
| 6AC1 | J1 encoder over speed error | 5 | The J1 speed was too high when the power was turned on. | When the robot is on halt, restart the controller. |
| 6AC2 | J2 encoder over speed error | 5 | The J2 speed was too high when the power was turned on. | When the robot is on halt, restart the controller. |
| 6AC3 | J3 encoder over speed error | 5 | The J3 speed was too high when the power was turned on. | When the robot is on halt, restart the controller. |
| 6AC4 | J4 encoder over speed error | 5 | The J4 speed was too high when the power was turned on. | When the robot is on halt, restart the controller. |
| 6AC5 | J5 encoder over speed error | 5 | The J5 speed was too high when the power was turned on. | When the robot is on halt, restart the controller. |
| 6AC6 | J6 encoder over speed error | 5 | The J6 speed was too high when the power was turned on. | When the robot is on halt, restart the controller. |
| 6AC7 | J7 encoder over speed error | 5 | The J7 speed was too high when the power was turned on. | When the robot is on halt, restart the controller. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 6AC8 | J8 encoder over speed error | 5 | The J8 speed was too high when the power was turned on. | When the robot is on halt, restart the controller. |
| 6AC9 | J1 encoder communication error | 4 | The J1 encoder data has not been updated correctly. | (1)Check that the FG wires of the robot unit and controller are grounded properly.<br>(2)Check that no noise sources (e.g., welding machines) are in the vicinity of the robot unit or controller. |
| 6ACA | J2 encoder communication error | 4 | The J2 encoder data has not been updated correctly. | (1)Check that the FG wires of the robot unit and controller are grounded properly.<br>(2)Check that no noise sources (e.g., welding machines) are in the vicinity of the robot unit or controller. |
| 6ACB | J3 encoder communication error | 4 | The J3 encoder data has not been updated correctly. | (1)Check that the FG wires of the robot unit and controller are grounded properly.<br>(2)Check that no noise sources (e.g., welding machines) are in the vicinity of the robot unit or controller. |
| 6ACC | J4 encoder communication error | 4 | The J4 encoder data has not been updated correctly. | (1)Check that the FG wires of the robot unit and controller are grounded properly.<br>(2)Check that no noise sources (e.g., welding machines) are in the vicinity of the robot unit or controller. |
| 6ACD | J5 encoder communication error | 4 | The J5 encoder data has not been updated correctly. | (1)Check that the FG wires of the robot unit and controller are grounded properly.<br>(2)Check that no noise sources (e.g., welding machines) are in the vicinity of the robot unit or controller. |
| 6ACE | J6 encoder communication error | 4 | The J6 encoder data has not been updated correctly. | (1)Check that the FG wires of the robot unit and controller are grounded properly.<br>(2)Check that no noise sources (e.g., welding machines) are in the vicinity of the robot unit or controller. |
| 6ACF | J7 encoder communication error | 4 | The J7 encoder data has not been updated correctly. | (1)Check that the FG wires of the robot unit and controller are grounded properly.<br>(2)Check that no noise sources (e.g., welding machines) are in the vicinity of the robot unit or controller. |
| 6AD0 | J8 encoder communication error | 4 | The J8 encoder data has not been updated correctly. | (1)Check that the FG wires of the robot unit and controller are grounded properly.<br>(2)Check that no noise sources (e.g., welding machines) are in the vicinity of the robot unit or controller. |
| 6AD1 | J1 encoder data not received | 4 | Cannot receive J1 encoder data. | (1)Check that the FG wires of the robot unit and controller are grounded properly.<br>(2)Check that no noise sources (e.g., welding machines) are in the vicinity of the robot unit or controller.<br>(3)Check the cables between the robot unit and controller for connection. |

| Code | Message | Level | Description | Remedy |
|---|---|---|---|---|
| 6AD2 | J2 encoder data not received | 4 | Cannot receive J2 encoder data. | (1)Check that the FG wires of the robot unit and controller are grounded properly.<br>(2)Check that no noise sources (e.g., welding machines) are in the vicinity of the robot unit or controller.<br>(3)Check the cables between the robot unit and controller for connection. |
| 6AD3 | J3 encoder data not received | 4 | Cannot receive J3 encoder data. | (1)Check that the FG wires of the robot unit and controller are grounded properly.<br>(2)Check that no noise sources (e.g., welding machines) are in the vicinity of the robot unit or controller.<br>(3)Check the cables between the robot unit and controller for connection. |
| 6AD4 | J4 encoder data not received | 4 | Cannot receive J4 encoder data. | (1)Check that the FG wires of the robot unit and controller are grounded properly.<br>(2)Check that no noise sources (e.g., welding machines) are in the vicinity of the robot unit or controller.<br>(3)Check the cables between the robot unit and controller for connection. |
| 6AD5 | J5 encoder data not received | 4 | Cannot receive J5 encoder data. | (1)Check that the FG wires of the robot unit and controller are grounded properly.<br>(2)Check that no noise sources (e.g., welding machines) are in the vicinity of the robot unit or controller.<br>(3)Check the cables between the robot unit and controller for connection. |
| 6AD6 | J6 encoder data not received | 4 | Cannot receive J6 encoder data. | (1)Check that the FG wires of the robot unit and controller are grounded properly.<br>(2)Check that no noise sources (e.g., welding machines) are in the vicinity of the robot unit or controller.<br>(3)Check the cables between the robot unit and controller for connection. |
| 6AD7 | J7 encoder data not received | 4 | Cannot receive J7 encoder data. | (1)Check that the FG wires of the robot unit and controller are grounded properly.<br>(2)Check that no noise sources (e.g., welding machines) are in the vicinity of the robot unit or controller.<br>(3)Check the cables between the robot unit and controller for connection. |
| 6AD8 | J8 encoder data not received | 4 | Cannot receive J8 encoder data. | (1)Check that the FG wires of the robot unit and controller are grounded properly.<br>(2)Check that no noise sources (e.g., welding machines) are in the vicinity of the robot unit or controller.<br>(3)Check the cables between the robot unit and controller for connection. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 6AD9 | J1 encoder over heat error | 4 | The internal temperature of the J1 encoder is too high. | This high temperature state may break the encoder, so follow the steps below.<br>(1)Check the temperature of the operating environment.<br>(2)Check that the specifications of the hand (inc. workpiece) do not exceed the acceptable capacity of the robot.<br>(3)Set timers between motion commands or decrease the speed and/or acceleration. (Before performing the operation again, wait for at least one minute.) |
| 6ADA | J2 encoder over heat error | 4 | The internal temperature of the J2 encoder is too high. | This high temperature state may break the encoder, so follow the steps below.<br>(1)Check the temperature of the operating environment.<br>(2)Check that the specifications of the hand (inc. workpiece) do not exceed the acceptable capacity of the robot.<br>(3)Set timers between motion commands or decrease the speed and/or acceleration. (Before performing the operation again, wait for at least one minute.) |
| 6ADB | J3 encoder over heat error | 4 | The internal temperature of the J3 encoder is too high. | This high temperature state may break the encoder, so follow the steps below.<br>(1)Check the temperature of the operating environment.<br>(2)Check that the specifications of the hand (inc. workpiece) do not exceed the acceptable capacity of the robot.<br>(3)Set timers between motion commands or decrease the speed and/or acceleration. (Before performing the operation again, wait for at least one minute.) |
| 6ADC | J4 encoder over heat error | 4 | The internal temperature of the J4 encoder is too high. | This high temperature state may break the encoder, so follow the steps below.<br>(1)Check the temperature of the operating environment.<br>(2)Check that the specifications of the hand (inc. workpiece) do not exceed the acceptable capacity of the robot.<br>(3)Set timers between motion commands or decrease the speed and/or acceleration. (Before performing the operation again, wait for at least one minute.) |
| 6ADD | J5 encoder over heat error | 4 | The internal temperature of the J5 encoder is too high. | This high temperature state may break the encoder, so follow the steps below.<br>(1)Check the temperature of the operating environment.<br>(2)Check that the specifications of the hand (inc. workpiece) do not exceed the acceptable capacity of the robot.<br>(3)Set timers between motion commands or decrease the speed and/or acceleration. (Before performing the operation again, wait for at least one minute.) |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 6ADE | J6 encoder over heat error | 4 | The internal temperature of the J6 encoder is too high. | This high temperature state may break the encoder, so follow the steps below.<br>(1)Check the temperature of the operating environment.<br>(2)Check that the specifications of the hand (inc. workpiece) do not exceed the acceptable capacity of the robot.<br>(3)Set timers between motion commands or decrease the speed and/or acceleration. (Before performing the operation again, wait for at least one minute.) |
| 6ADF | J7 encoder over heat error | 4 | The internal temperature of the J7 encoder is too high. | This high temperature state may break the encoder, so follow the steps below.<br>(1)Check the temperature of the operating environment.<br>(2)Check that the specifications of the hand (inc. workpiece) do not exceed the acceptable capacity of the robot.<br>(3)Set timers between motion commands or decrease the speed and/or acceleration. (Before performing the operation again, wait for at least one minute.) |
| 6AE0 | J8 encoder over heat error | 4 | The internal temperature of the J8 encoder is too high. | This high temperature state may break the encoder, so follow the steps below.<br>(1)Check the temperature of the operating environment.<br>(2)Check that the specifications of the hand (inc. workpiece) do not exceed the acceptable capacity of the robot.<br>(3)Set timers between motion commands or decrease the speed and/or acceleration. (Before performing the operation again, wait for at least one minute.) |
| 6AE1 | J1 encoder battery low voltage | 2 | The battery voltage level of the J1 encoder has dropped. | Replace the encoder backup battery of the related joint. |
| 6AE2 | J2 encoder battery low voltage | 2 | The battery voltage level of the J2 encoder has dropped. | Replace the encoder backup battery of the related joint. |
| 6AE3 | J3 encoder battery low voltage | 2 | The battery voltage level of the J3 encoder has dropped. | Replace the encoder backup battery of the related joint. |
| 6AE4 | J4 encoder battery low voltage | 2 | The battery voltage level of the J4 encoder has dropped. | Replace the encoder backup battery of the related joint. |
| 6AE5 | J5 encoder battery low voltage | 2 | The battery voltage level of the J5 encoder has dropped. | Replace the encoder backup battery of the related joint. |
| 6AE6 | J6 encoder battery low voltage | 2 | The battery voltage level of the J6 encoder has dropped. | Replace the encoder backup battery of the related joint. |
| 6AE7 | J7 encoder battery low voltage | 2 | The battery voltage level of the J7 encoder has dropped. | Replace the encoder backup battery of the related joint. |
| 6AE8 | J8 encoder battery low voltage | 2 | The battery voltage level of the J8 encoder has dropped. | Replace the encoder backup battery of the related joint. |
| 6AE9 | J1 encoder overflow warning | 4 | If the motor keeps running in the current direction, the J1 position encoder counter will be overflown. | If you need to rotate the motor in the same direction further, reset the encoder of the related joint and perform CALSET. |
| 6AEA | J2 encoder overflow warning | 4 | If the motor keeps running in the current direction, the J2 position encoder counter will be overflown. | If you need to rotate the motor in the same direction further, reset the encoder of the related joint and perform CALSET. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 6AEB | J3 encoder overflow warning | 4 | If the motor keeps running in the current direction, the J3 position encoder counter will be overflown. | If you need to rotate the motor in the same direction further, reset the encoder of the related joint and perform CALSET. |
| 6AEC | J4 encoder overflow warning | 4 | If the motor keeps running in the current direction, the J4 position encoder counter will be overflown. | If you need to rotate the motor in the same direction further, reset the encoder of the related joint and perform CALSET. |
| 6AED | J5 encoder overflow warning | 4 | If the motor keeps running in the current direction, the J5 position encoder counter will be overflown. | If you need to rotate the motor in the same direction further, reset the encoder of the related joint and perform CALSET. |
| 6AEE | J6 encoder overflow warning | 4 | If the motor keeps running in the current direction, the J6 position encoder counter will be overflown. | If you need to rotate the motor in the same direction further, reset the encoder of the related joint and perform CALSET. |
| 6AEF | J7 encoder overflow warning | 4 | If the motor keeps running in the current direction, the J7 position encoder counter will be overflown. | If you need to rotate the motor in the same direction further, reset the encoder of the related joint and perform CALSET. |
| 6AF0 | J8 encoder overflow warning | 4 | If the motor keeps running in the current direction, the J8 position encoder counter will be overflown. | If you need to rotate the motor in the same direction further, reset the encoder of the related joint and perform CALSET. |
| 6AF3 | Interference area detected by J1,2,3 | 3 | The end-effector has came in the defined interference check area. | Run the robot to make the end-effector go out of the interference check area and then try the operation again. |
| 700B | Robot is running | 3 | The specified command cannot be executed during robot operation. | Stop the robot and retry. |
| 7047 | Subroutine return stack overflow | 4 | Number of calling subroutines exceeded their set value. | 1.Check that the program, which had the error, does not call itself as a subroutine.<br>2.Check that the program calls the other program as a subroutine and that the subroutine calls the main program (calling) again as a subroutine.<br>3.Modify the program configuration so that subroutines are not called (by CALL or GOSUB statement) more than the specified times (32 times).<br>4.Check that the subroutine called by a GOSUB statement has returned control to the calling program by a RETURN statement. |
| 7048 | Undefined process command | 4 | An undefined processing command in the current software attempted to execute. | 1.Check that the controller software version matches with the WINCAPSIII compiler version.<br>2.Re-create the execution form file using WINCAPSIII or the controller.<br>3.Check that no error occurs when the program is transferred from WINCAPSIII to the controller and when the program is being loaded. |
| 7062 | Mode change failure | 3 | Failed in changing the operation mode. | 1. Check the error log for the error that occurred immediately before, and avoid it.<br>2. Change the operation mode to internal or external automatic mode. |
| 71E0 | Program is running | 2 | Attempted to perform an operation not executable while the program is in execution. | Restart the operation confirming that the program is not in execution. |
| 736A | Error in stop process | 4 | Operation did not stop within a specified time after HALT and Robot stop. | Clear error and restart the operation. |

| Code | Message | Level | Description | Remedy |
|---|---|---|---|---|
| 736B | Automatic load not permitted | 1 | When the Program List window or the Select Variable Type window was opened, you attempted to carry out automatic load. | Try automatic load again with the teach pendant. |
| 736C | The program may not start from the top | 2 | A program in Teach-Check condition was attempted to start by RUN command from other program. | If the operation is confirmed to be safe, start the program. If not, restart the program after 'HALT' of the Teach-Check program. |
| 736D | TC time detected. All programs stop. | 1 | This condition occurs when TC time (non-operation time) exceeds the set time in SS function stop mode setting. | Cannot start next operation by the unknown causes. Solve the causes. |
| 736E | Cannot use this exec program version. | 4 | Cannot load the program because the program version does not coincide with the controller version.<br>WINCAPS III version may be older than the controller software version. | 1. Upgrade WINCAPS III. To upgrade the software, start WINCAPS III Trial CD shipped with the controller, and WINCAPS III that matchs with the controller version will be installed. WINCAPS III project data and license key information on older version is automatically saved and taken over by the upgraded version.<br>2. Recompile the program on the controller. |
| 736F | Can't start program with array arguments | 2 | In stand alone mode, the current system does not support starting of programs containing array argument(s). | Only the CALL statement can call such a program that contains array argument(s). |
| 737A | Failed to write motion record | 1 | Failed in recording robot operation command data used in step-back function. | Execute step start or cycle start in case of executing the step-back of the program.<br>The limitation of step back in this condition is up to the first robot operation command when step start or cycle start was executed after the error occurrence. |
| 737B | Failed to initialize motion record | 1 | Failed in initializing the robot operation command data used in step back function. | In case of using step back function, switch off the controller power switch and restart the operation. |
| 737C | Recorded motion execution error | 3 | Failed in the execution of step back function. Or failed in step start or cycle start to the starting point of the step back operation | In case of using step back function, execute the robot operation command by step start or cycle start. |
| 737D | No more motion record available | 1 | Cannot step back further. | Execute the robot operation command by step start or cycle start. |
| 737E | No motion record available | 1 | No operation command data to be used in step back function was found. | Execute the robot operation command by step start or cycle start. |
| 737F | Executing recorded motion | 1 | In execution of step back operation, or in execution of step start / cycle start to the starting point of the step back operation. | Execute step start or cycle start again. |
| 738A | Cannot change nonexistent parameter | 3 | A variable specified with the program does not exist. (The table number or element number is out of range.) | Read the program again and change or correct the program so that the table number and element number is within the range. |
| 738B | Cannot change this parameter by program | 3 | A variable specified with a program cannot be changed from the program. | Read the program again and delete this command or correct the variable so that it is available to use. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 738C | RETURN destination not found | 3 | RETURN command was used by the program not executed with GOSUB. | Review the program and correct the RETURN position or GOSUB. |
| 738D | Program return stack broken | 4 | The content of the Return stack is destroyed. | 1.Switch off the controller power switch and restart the operation.<br>2.Recompile the program.<br>3.Notify us if the condition is not improved by the recompile. |
| 738E | CRC error of BP's data | 5 | A break-point data error was detected. | Release all break points, turn OFF the power switch of the controller, and specify break points for operation again. |
| 7395 | Cannot start program during stop | 3 | The program cannot be started during stopping process. | After some time, restart the program. |
| 7396 | An integer type variable cannot be used | 3 | Integer variables cannot be used in approximate comparison operation. | Change the variable type to single-precision or double-precision real. |
| 7397 | Undefined folder variable substance | 3 | Attempted to use the folder variable not yet defined. | Check the PAC program and define the folder variable. |
| 7398 | Type of folder variable mismatch | 3 | The type of folder variable in FOLDER declaration does not match that in EXTERN declaration. | Check the PAC program and make those types match each other. |
| 7399 | Folder variable array mismatch | 3 | The array subscript of folder variable in FOLDER declaration does not match that in EXTERN declaration. | Check the PAC program and make array subscripts each other. |
| 739B | Failure to allocate task control area | 4 | Memory area for multitasking program manager was not normally allocated. | Turn OFF the power switch of the controller and restart the operation. |
| 739C | Failure to initialize prog. exe. process | 4 | An error occurred when the multitasking program process section was initialized. | Turn OFF the power switch of the controller and restart the operation. |
| 739D | Failure to initialize step exe. process | 4 | An error occurred when the step execution process section was initialized. | Turn OFF the power switch of the controller and restart the operation. |
| 739E | Failure to load execution file | 4 | The controller could not load the execution form file. | 1.Check that the execution form file and the mutual reference file were transmitted from WINCAPSIII to the controller, before you execute loading.<br>2.Check that another error occurs in execution of loading with the error log function. If the error occurred, remove the cause of the error and reload them.<br>3.Check that no error occurs when a program is transferred from WINCAPSIII to the controller.<br>4.Check that no error occurs when the compiling is executed in the controller.<br>5.Use WINCAPSIII or the controller and create the execution form file again.<br>6.Check that the file name (e.g., program name and project name) does not contain any prohibited character. For prohibited characters, refer to the WINCAPSIII Guide. |
| 739F | Failure to create internal task | 4 | Creation of a task, used in the internal process, failed. | Turn OFF the power switch of the controller and restart the operation. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 73A0 | Own task deleting ID error | 4 | The program called by the CALL statement attempted to forcibly terminate that calling program with the KILL statement. | Do not attempt to forcibly terminate the calling program in the called program. |
| 73A1 | Failure to delete semaphore | 4 | Semaphore was not deleted normally. | 1.Check if the semaphore ID given with the GIVESEM statement is the same as that taken with the CREATESEM statement.<br>2.Turn OFF the power switch of the controller and restart the operation. |
| 73A2 | Failure to create semaphore | 4 | Creation of a task used in the internal process failed. | Turn OFF the power switch of the controller and restart the operation. |
| 73A3 | Failure to terminate cycle process | 4 | The termination process for the CYCLE option executing section of the RUN statement could not execute. | Turn OFF the power switch of the controller and restart the operation. |
| 73A4 | Failure to initialize cycle process | 4 | Initialization for the CYCLE option executing section of the RUN statement could not execute. | Turn OFF the power switch of the controller and restart the operation. |
| 73A5 | Failure to start cycle process | 4 | The start process for the CYCLE option executing section of the RUN statement could not execute. | Turn OFF the power switch of the controller and restart the operation. |
| 73A6 | Forbidden process tried during loading | 4 | A process command not available to execute attempted to execute in program load processing. | 1.Check that no transmit error occurs when an execution form file is transmitted from WINCAPSIII to the controller<br>2.Check that no error occurs when compiling is executed in the controller.<br>3.Use WINCAPSIII or the controller and create the execution form file again. |
| 73A7 | Cannot take cycle process semaphore | 4 | Internal process semaphore for execution of CYCLE option of RUN statement was not taken normally. | Turn OFF the power switch of the controller and restart the operation. |
| 73A8 | Failure to write Interpreter queue | 4 | Transfer of an execution contents command to the program executing section failed. | Turn OFF the power switch of the controller and restart the operation. |
| 73A9 | Fail to release cycle process semaphore | 4 | Internal process semaphore for execution of CYCLE option of RUN statement was not released normally. | Turn OFF the power switch of the controller and restart the operation. |
| 73AA | Cannot allocate interpreter memory | 4 | Memory area for execution form file interpreter was not allocated normally. | Turn OFF the power switch of the controller and restart the operation. |
| 73AB | Undefined variable format (1) appeared | 4 | Attempted to interpret variable data; however, different data from the variable data appeared in the execution form file. | 1.Check that the controller software version corresponds to the WINCAPSIII compiler version.<br>2. Check that no transmit error occurs when an execution form file is transmitted from WINCAPSIII to the controller.<br>3.Check that no error occurs when compiling is executed in the controller.<br>4.Use WINCAPSIII or the controller and create the execution form file again. |
| 73AC | Undefined variable format (2) appeared | 4 | Attempted to interpret the variable data; however, different data from the variable data appeared in the execution form file. | 1.Check that the controller software version corresponds to the WINCAPSIII compiler version.<br>2.Check that no transmit error occurs when an execution form file is transmitted from WINCAPSIII to the controller.<br>3.Check that no error occurs when compiling is executed in the controller.<br>4.Use WINCAPSIII or the controller and create the execution form file again. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 73AD | Non-integer type variable appeared | 4 | Integer data attempted to interpret; however, different data from the integer data appeared in the execution form file. | 1.Check that the controller software version corresponds to the WINCAPSIII compiler version.<br>2.Check that no transmit error occurs when an execution form file is transmitted from WINCAPSIII to the controller.<br>3.Check that no error occurs when compiling is executed in the controller.<br>4.Use WINCAPSIII or the controller and create the execution form file again. |
| 73AE | Program internal No. not defined | 4 | Attempted to be read a program number in program load processing; however, the number did not appear. | 1.Check that the controller software version corresponds to the WINCAPSIII compiler version.<br>2.Check that no transmit error occurs when an execution form file is transmitted from WINCAPSIII to the controller.<br>3.Check that no error occurs when compiling is executed in the controller.<br>4.Use WINCAPSIII or the controller and create the execution form file again. |
| 73AF | Program define start command not found | 4 | Attempted to read the program definition; however, the command declaring the program start did not appear. | 1.Check that no transmit error occurs when an execution form file is transmitted from WINCAPSIII to the controller.<br>2.Check that no error occurs when compiling is executed in the controller.<br>3.Use WINCAPSIII or the controller and create the execution form file again. |
| 73B0 | Program define No. out of setting range | 4 | A program internal definition number was read; however, the value was out of permissible range. | 1.Check that the controller software version corresponds to the WINCAPSIII compiler version.<br>2.Check that no transmit error occurs when an execution form file is transmitted from WINCAPSIII to the controller.<br>3.Check that no error occurs when compiling is executed in the controller.<br>4.Use WINCAPSIII or the controller and create the execution form file again. |
| 73B1 | Cannot alloc. program define memory area | 4 | Working memory for copying program contents in the program loading process was not allocated normally. | 1.Check that the controller software version corresponds to the WINCAPSIII compiler version.<br>2.Check that no transmit error occurs when an execution form file is transmitted from WINCAPSIII to the controller.<br>3.Check that no error occurs when compiling is executed in the controller.<br>4.Use WINCAPSIII or the controller and create the execution form file again.<br>5.The program size total number exceeds the system permissible value. Reduce the number of programs, which construct the project, recompile and load them. |
| 73B2 | Program size differs from definition | 4 | Program size declaration appeared at the head of the program definition and the practical program size did not match that definition. | 1.Check that the controller software version corresponds to the WINCAPSIII compiler version.<br>2.Check that no transmit error occurs when an execution form file is transmitted from WINCAPSIII to the controller.<br>3.Check that no error occurs when compiling is executed in the controller.<br>4.Use WINCAPSIII or the controller and create the execution form file again. |

| Code | Message | Level | Description | Remedy |
|---|---|---|---|---|
| 73B3 | Local variable not initialized | 4 | 1.A local variable was declared. The variable contents attempted to read without assigning a value at least once.<br>2.A attempted calling a subroutine; however, the corresponding program could not be found.<br>3.HOME is not set before execution of the GOHOME command. | Case 1.:<br> -Review the program again and correct the program so that the value is assigned before the value of the local variable is read, after the program is loaded.<br>Case 2.:<br> -Check that no transmit error occurs when an execution form file is transmitted from WINCAPSIII to the controller.<br> -Check that no error occurs when compiling is executed in the controller.<br> - Use WINCAPSIII or the controller and create the execution form file again.<br>Case 3.:<br>Set the home position with the HOME command. |
| 73B4 | Failure to alloc. variable reading area | 4 | Process area to read variable data from could not be allocated. | Turn OFF the power switch on the controller and restart the operation. |
| 73B5 | Undefined variable format (1) appeared | 4 | Attempted to interpret variable data; however, data different from the variable data appeared in the execution form file. | 1.Check that the controller software version corresponds to the WINCAPSIII compiler version.<br>2.Check that no transmit error occurs when an execution form file is transmitted from WINCAPSIII to the controller.<br>3.Check that no error occurs when compiling is executed in the controller.<br>4.Use WINCAPSIII or the controller and create the execution form file again. |
| 73B6 | Undefined variable format (2) appeared | 4 | Attempted to interpret variable data; however, data different from the variable data appeared in the execution form file. | 1.Check that the controller software version corresponds to the WINCAPSIII compiler version.<br>2.Check that no transmit error occurs when an execution form file is transmitted from WINCAPSIII to the controller.<br>3.Check that no error occurs when compiling is executed in the controller.<br>4.Use WINCAPSIII or the controller and create the execution form file again. |
| 73B8 | Failure to write load data | 4 | Attempted to transmit data to the process section, in order to load the program; however, transfer writing failed. | Turn OFF the power switch on the controller and restart the operation. |
| 73B9 | Failure to read load data | 4 | The process section attempted to read data, in order to load a program. However, the reading failed. An attempted to transmit data to the process section and to load the program, by transfer writing failed. | Turn OFF the power switch on the controller and restart the operation. |
| 73BA | Program restart failed | 4 | The RUN command could not restart the program, which was in a hold status, due to the halt. | Set the program to the stop status and execute again, from the top. |
| 73BB | Failure to specify start program | 4 | Program start was attempted by the teach pendant I/O or PAC RUN command. But the controller failed to specify the program number at the program interpreter. | Turn OFF the power switch on the controller and restart the operation. |
| 73BC | Program suspension failed | 4 | Attempt was made to suspend the program. But, it was terminated because of failure. | Turn OFF the power switch on the controller and restart the operation. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 73BD | Program restart failed | 4 | The controller failed to restart the program in hold status. | Set the program to stop status and run the program again from the top. |
| 73C0 | Failure to read break point reading area | 4 | The controller failed to secure the reading area to read the break point setting lines. | Turn OFF the power switch on the controller and restart the operation. |
| 73C1 | Cannot set no more break points | 4 | The number of break points attempted to set for the program exceeds the upper limit. | Release unnecessary break points and set again. |
| 73C2 | No break point is set in a line | 4 | Attempt was made to delete the break point at a line where no break point was set. | Check if a break point is set on the line where the break point attempted to delete. |
| 73C3 | Program stop designation undefined | 4 | Attempt was made to set an undefined status process, to designate status for the break point, program execution trace, step start and step stop. | Turn OFF the power switch on the controller and restart the operation. |
| 73C4 | Step stop specify semaphore not prepared | 4 | Step stop was attempted. But the required internal semaphore was not prepared. | Turn OFF the power switch on the controller and restart the operation. |
| 73C6 | Failure to create break point semaphore | 4 | Internal semaphore for the break point process was not created normally. | Turn OFF the power switch on the controller and restart the operation. |
| 73C7 | Failure to take break point semaphore | 4 | Internal semaphore for the break point process was not taken normally. | Turn OFF the power switch on the controller and restart the operation. |
| 73C8 | Failure to delete break point semaphore | 4 | Internal semaphore for the break point process was not deleted normally. | Turn OFF the power switch on the controller and restart the operation. |
| 73C9 | Failure to obtain task status | 4 | The program operation status was not obtained normally. | 1.Check that the controller software version corresponds to the WINCAPSIII compiler version. 2.Check that no transmit error occurs when an execution form file is transmitted from WINCAPSIII to the controller. 3.Check that no error occurs when compiling is executed in the controller. 4.Use WINCAPSIII or the controller and create the execution form file again. |
| 73CA | Failure to obtain task information | 4 | Attempted to obtain the program information; however, the information recorded section could not be found. | Turn OFF the power switch on the controller and restart the operation. |
| 73CB | Failure to search task information | 4 | The program information recorded section was searched; however, it could not be found. | 1.The number of PAC programs, which construct the project, exceeds the set upper limit. Reduce the number of the PAC programs. Then, recompile and load them. 2.Check that no transmit error occurs when an execution form file is transmitted from WINCAPSIII to the controller. 3.Check that no error occurs when compiling is executed in the controller. 4.Use WINCAPSIII or the controller and create the execution form file again. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 73CC | Failure to alloc. task info record area | 4 | When the program was being loaded, the program information attempted to record; however, it could not record because the record area was full. | 1.The number of PAC programs, which construct the project, exceeds the set upper limit. Reduce the number of the PAC programs. Then, recompile and load them.<br>2.Check that no transmit error occurs when an execution form file is transmitted from WINCAPSIII to the controller.<br>3.Check that no error occurs when compiling is executed in the controller.<br>4.Use WINCAPSIII or the controller and create the execution form file again. |
| 73CD | Wrong data type of command argument | 4 | When the program was executed, a command argument of a type, which does not correspond to the command attempted to execute, appeared. | 1.Check that the controller software version corresponds to the WINCAPSIII compiler version.<br>2.Check that no transmit error occurs when an execution form file is transmitted from WINCAPSIII to the controller.<br>3.Check that no error occurs when compiling is executed in the controller.<br>4.Use WINCAPSIII or the controller and create the execution form file again. |
| 73CE | Failure to get version char. string area | 4 | The program tried to get the software specification version but failed to allocate the record memory area. | Turn OFF the power switch on the controller and restart the operation. |
| 73CF | Failure to read type P variables | 4 | Type P variables were not normally read from the temporary storage. | 1.Check that the controller software version corresponds to the WINCAPSIII compiler version.<br>2.Check that no transmit error occurs when an execution form file is transmitted from WINCAPSIII to the controller.<br>3.Check that no error occurs when compiling is executed in the controller.<br>4.Use WINCAPSIII or the controller and create the execution form file again. |
| 73D0 | Failure to read type T variables | 4 | Type T variables were not normally read from the temporary storage. | 1.Check that the controller software version corresponds to the WINCAPSIII compiler version.<br>2.Check that no transmit error occurs when an execution form file is transmitted from WINCAPSIII to the controller.<br>3.Check that no error occurs when compiling is executed in the controller.<br>4.Use WINCAPSIII or the controller and create the execution form file again. |
| 73D2 | Interpreter failure | 4 | Data in the controller was somehow corrupted. | Turn OFF the power switch on the controller and restart the operation. |
| 73D3 | Code undefined | 4 | The controller attempted to execute an unexpected command. The following are the possible reasons.<br>1.The WINCAPSIII and controller versions do not match, which may occur if teaching is done with a computer.<br>2.The controller attempted to execute unsupported commands.<br>3.Data in the controller was somehow corrupted. | Case 1:Replace the version with the right one.<br>Case 2:Do not manually execute unsupported commands.<br>Case 3:Turn OFF the power switch on the controller and restart the operation. |
| 73D4 | Lack of memory | 4 | A newly declared variable area could not be secured. | Delete the declaration of unused variables and increase the memory space. If the teach pendant displays the program contents, close the window for operation. |
| 73D5 | Register failure | 4 | Data in the controller was corrupted. | Turn OFF the power switch of the controller and restart the operation. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 73D6 | Unsupported command | 4 | The controller attempted to execute unexpected command. The following are the possible reasons. 1.The WINCAPSIII and controller versions do not match, which may occur if teaching is done with a computer. 2.The controller attempted to execute unsupported commands. 3.Data in the controller was somehow corrupted. | In case of 1:Replace the version with the right one. In case of 2:Do not manually execute unsupported commands. In case of 3:Turn OFF the power switch of the controller and restart the operation. |
| 73D7 | Data size error | 4 | Data in the controller was somehow corrupted. | Turn OFF the power switch on the controller and restart the operation. |
| 73D8 | User code area not registered | 3 | The variables have not been initialized. | Read the program again and initialize the variables. |
| 73D9 | No user code | 3 | Data in the controller was somehow corrupted. | Turn OFF the power switch on the controller and restart the operation. |
| 73DA | Type mismatch | 4 | Data in the controller was somehow corrupted. | Turn OFF the power switch on the controller and restart the operation. |
| 73DB | Data tag error | 4 | 1.Data type is different. 2.Data in the controller was somehow corrupted. | 1.Read the program again and check that there is an assignment to different type data and correct it. 2.Turn OFF the power switch on the controller and restart the operation. |
| 73DC | Improper data length | 4 | 1.The maximum number of characters exceeds the character string type. 2.Data in the controller was somehow corrupted. | 1.Read the program again and check that there is an assignment to different type data and correct it. 2.Turn OFF the power switch on the controller and restart the operation. |
| 73DD | Zero division error | 4 | The expression operation of which the denominator becomes 0 was attempted. | Read the program again and initialize the variables. Delete or change the operation to divide by 0. |
| 73DE | External reference | 4 | The value of the approximation comparison parameter exceeds the permissible range. | Reconsider the value of the approximation comparison parameter. |
| 73DF | User code range error | 4 | Data in the controller was somehow corrupted. | Turn OFF the power switch on the controller and restart the operation. |
| 73E0 | User code range over | 4 | Data in the controller was somehow corrupted. | Turn OFF the power switch on the controller and restart the operation. |
| 73E1 | User code not registered | 4 | Data in the controller was somehow corrupted. | Turn OFF the power switch on the controller and restart the operation. |
| 73E2 | Time data error | 3 | Time data attempted to operate with the character string functions. However, the value not permissible. | Reconsider the time data and change it to a permissible value. |
| 73E3 | Lack of memory | 4 | The newly declared variable area could not be secured. | Delete the declaration of unused variables and increase the memory space. If the teach pendant displays the program contents, close the window for operation. |
| 73E4 | Out of I/O range | 3 | An I/O number, which is outside the available range, was specified. | Read the program again and delete the command, which attempted to operate the I/O number, not available to use. |
| 73E5 | Undefined input/output device | 4 | Device not available was selected. | Read the program again and delete the command which, attempted to operate the device, not available to use. |
| 73E6 | Stack overflow | 4 | The data area, which can be used by the program, is overfilled. | Turn OFF the power switch on the controller and restart the operation. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 73E7 | Stack underflow | 4 | Data area that can be used by the program is insufficient. | Turn OFF the power switch on the controller and restart the operation. |
| 73E8 | Pose data error | 4 | The data in the controller was somehow corrupted. | Turn OFF the power switch on the controller and restart the operation. |
| 73E9 | Semaphore error | 4 | The data in the controller was somehow corrupted. | Turn OFF the power switch on the controller and restart the operation. |
| 73EA | Syntax error | 4 | 1.The data type is different.<br>2.Character string not initialized was used.<br>3.The data in the controller was somehow corrupted. | 1.Read the program again to check if there is an assignment with different type data and correct it.<br>2.Initialize (assign the data) the character string.<br>3.Turn OFF the power switch on the controller and restart the operation. |
| 73EB | Undefined joint type | 4 | Attempt was made to move unusable joint. | Read the program again and delete the command for moving the unusable joint. |
| 73EC | Unsupported command | 4 | The controller tried to execute unexpected commands. The possible causes are as follows:<br>1.Execution of an unsupported command.<br>2.Controller data was destroyed due to some reason. | Case 1:Do not manually execute unsupported commands.<br>Case 2:Turn OFF the power switch on the controller and reboot the operation. |
| 73ED | Unsupported command | 4 | The controller tried to execute unexpected commands. The possible causes are as follows:<br>1.Execution of an unsupported command.<br>2.Controller data was destroyed due to some reason. | Case 1:Do not manually execute unsupported commands.<br>Case 2:Turn OFF the power switch on the controller and reboot the operation. |
| 73EE | Cannot run (max. number of tasks) | 4 | The number of tasks, which exceeded the set number of user tasks, attempted to run. | Correct the number of user tasks, reboot the controller and try the operation again. |
| 73EF | Variable/element No. out of set range | 3 | Subscripts of array variables or element number types T, J and P exceeded the permissible range. | Read the program again and change it so that the array subscript or the element number types T, J and P become permissible values or extend the array area. |
| 73F0 | Index error | 4 | Array variable subscripts were not out of range. | Read the program again and change the values so that the array subscript becomes the permissible value. |
| 73F1 | No project | 4 | Although the execution available project was not present, loading was attempted. | Create a project. |
| 73F2 | Domain error | 4 | The robot program arguments are out of range. | Read the program again and change the value so that the argument becomes the permissible value. |
| 73F3 | Value out of range | 4 | The robot program arguments are out of range. | Read the program again and change the value so that the argument becomes the permissible value. |
| 73F4 | All memory initial (variable area error) | 5 | A failure was found in the variable storage area in program loading. | This is information that the system found an error and the correction process was finished. However, because all the variables are initialized, execute the process to return the values of the variables back to their original values. |
| 73F5 | Local variable initialized | 2 | A value of the local variable was initialized. | This is information that due to program transmission and compiling all the local variables are initialized. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 73F6 | Cannot fetch position w/o CAL execution | 3 | Obtaining a position is not available because CAL is not executed. | Return to the arm menu and execute CAL. |
| 73F7 | Specified tool No. not usable | 3 | The specified TOOL number cannot be used. | Change the TOOL number in the program to the permissible value. |
| 73F8 | Failure to create semaphore | 4 | Semaphore was not created normally. | The maximum number of semaphores was exceeded. Reduce the number of created semaphores. |
| 73F9 | Failure to delete semaphore | 4 | Semaphore was not deleted normally. | The semaphore to be deleted is not found. Review the usage of DELETESEM function. |
| 73FA | Failure to take semaphore | 4 | The specified semaphore ID is not valid, so the program failed to take a semaphore. | Review the program, observing the following instructions.<br>1. Use a semaphore ID already generated with CREATESEM.<br>2. Do not use a semaphore ID that has been deleted by DELETESEM. |
| 73FB | Semaphore taking timeout | 3 | Timeout error occurred in taking semaphore. | The semaphore is used by another task. Review the usage of TAKESEM function. |
| 73FC | Failure to release semaphore | 3 | Semaphore was not released normally. | The semaphore to be released is not found. Review the usage of GIVESEM function. |
| 73FD | Failure to release tasks wait semaphore | 3 | Semaphore-waiting tasks were not released normally. | Semaphore to be released is not found.  Review the usage of FLUSHSEM function. |
| 73FE | Cannot start program with arguments | 2 | A program with arguments cannot run from the teach pendant, the operating panel or an external device. | If you are calling a program with arguments, use another program. |
| 73FF | Cannot start program during stop | 2 | Attempted to start a program during HALT processing.<br>(This error will occur also in Teach Check mode if you start a program immediately after releasing the deadman switch.) | Wait for a while and then restart the program.<br>If HALT is commanded to all tasks, no program can run until all tasks come to stop.<br>If step-stop is commanded to all tasks but any task is stopped by WAIT statement so as not to step-stop, then satisfy the WAIT condition to step-stop the task or stop that task. (If placed in Slow mode with the SS function, the task will come into the same state.)<br>When operating the robot through I/Os, switching the external mode or Auto Enable will cause stop to all tasks, so the program cannot start for a while. Wait for a second or more and start the program. |
| 75B0 | client port open error | 3 | The specified client port is already occupied or invalid. | Change the port or correct the client port settings. |
| 75B1 | client port close error | 3 | The client port closing operation was not completed because it was attempted while another one commanded by any other program is in execution. | Modify the program so that the client port closing operation cannot be executed while the one commanded by any other program is in execution. |
| 7780 | The max number of folder was exceeded | 3 | The number of folders created has exceeded the limit (256). | Decrease the number of folders below the limit and then try again. |
| 7799 | The maximum number of TSR was exceeded | 3 | The number of active supervisory tasks has exceeded its limit (32). | Modify the program so that the number of active supervisory tasks does not exceed 32. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 779A | Ex-Joint is selected | 3 | The specified command cannot be executed when an additional axis is selected as a robot axis. | Select an axis other than additional axes and retry. |
| 779B | The maximum number of file was exceeded | 3 | The number of files created in the controller has exceeded the limit: 256 for PAC files and 256 for the combination of header files and operation panel files. | Decrease the number of files and then try again. |
| 779F | Failure to turn on the motor power | 3 | An error occurred because of failure in turning the motor ON for some reason during MOTOR instruction execution, or because of timeout in consecutive MOTOR instruction activation. | Restart after checking and eliminating the cause of failure in turning the motor power ON. |
| 77B7 | Motor off command while robot is running | 3 | The MOTOR OFF command cannot execute when the robot is running. | Correct your program so as not to execute the MOTOR OFF command when the robot is running. |
| 77B8 | Motor on command with deadman switch off | 3 | In Robot System "Type A," the MOTOR ON command cannot execute when the deadman switch is released in Manual mode or Teach check mode. | When executing the MOTOR ON command in Manual mode or Teach check mode, hold down the deadman switch. |
| 77D1 | Undefined arm group | 4 | Attempted to get an undefined arm group. | Correct the program. Or define the arm group, turn the controller power off and then on, and start the operation again. |
| 77D2 | Arm group has been taken | 4 | Attempted to get any other different arm group from that already gotten. | Correct the program so as not to get the different arm group in the same program. |
| 77E4 | EX(EXA) option can use only exjoint | 3 | The EX (EXA) option cannot drive the robot joints. | Correct the program so that no robot joint is included in the EX (EXA) option. |
| 77E5 | This joint is not available | 3 | The position of the extended joint disabled cannot be taken. | Correct the program. Or enable the extended joint, turn the controller power off and then on, then start the operation again. |
| 77E6 | Cannot take semaphore of invalid joint | 3 | Cannot get an arm group containing an extended joint disabled. | Correct the program. Or enable the extended joint, turn the controller power off and then on, then start the operation again. |
| 77E7 | Boundless rotary joint isn't available | 3 | This command or operation cannot execute to a boundless rotary joint. | Release the joint from the boundless rotation or do not execute this command or operation to the boundless rotary joint. |
| 77E8 | Not set boundless rotary joint | 3 | This command or operation cannot execute to a limited rotary joint. | Set the joint for boundless rotation or do not execute this command or operation to the limited rotary joint. |
| 77E9 | Can't execute INIT(EXECUTING INIT) | 4 | During execution of an INIT command, the controller attempted to execute any other INIT command. | Correct the program so that during execution of an INIT command, any other INIT command will not run. |
| 77EA | Can not start Program in Manual Mode | 3 | In Manual or Teach Check mode, a supervisory task attempted to start a user task. | Stop the supervisory task or delete a user task start instruction written in the supervisory task. |
| 77EB | Can not execute this command by TSR | 3 | To prohibit robot motions, a supervisory task called the TAKEARM command. | Correct the program so that robot motions are written in a user task. |

| Code | Message | Level | Description | Remedy |
|------|---------|-------|-------------|--------|
| 77EC | TSR setting is "P-TASK No Use" | 2 | Attempted to start a supervisory task, but the supervisory task mode has been disabled. | Enable the supervisory task mode and restart the robot controller. |
| 77ED | Cannot start TSR | 3 | Attempted to run a supervisory task in general tasks. | Correct the program not to attempt to start a supervisory task in general tasks. |
| 77EE | TSR can't be started continuously | 1 | A supervisory task is not allowed to start in succession. | To run a supervisory task in succession explicitly, correct the program so that the repetitions loop inside the supervisory task. |
| 77EF | Failure to do calibration (INIT) | 3 | Failed to CAL due to any cause during execution of INIT. | Fix the CAL failure cause and restart the robot controller. |
| 77F0 | Failure to turn on the motor power(INIT) | 3 | Failed to turn the motor on due to any cause during execution of INIT. INIT commands executed in succession have caused a timeout error. | Fix the failure cause and restart the robot controller. |
| 77F1 | Command exclusive to TSR | 3 | In a general task, you attempted to execute a command(s) exclusively allowed for a supervisory task. | Correct the program so that the command executes in a supervisory task. |
| 77F2 | COM-DATA length too short | 3 | In binary transmission, the data length specified by <inputbytes> in linputb command is too short. | Send data whose length matches that specified by <inputbytes> from external equipment to the robot controller. |
| 77F6 | DETECT command is invalid. | 3 | Attempted to execute the DETECT command when disabled. | Enable the DETECT command. |
| 77F7 | Can't execute this operation by TSR | 3 | Attempted to execute operations unsupported by a supervisory task, e.g., step-run and starting of general tasks by a supervisory task at the occurrence of an error. | Perform supported operations. Or correct the program so that it will cause no error. |
| 77F8 | TSR start Canceled | 2 | The power was turned on with the deadman switch being held down, so no supervisory task has not started. NOTE: This message will appear even when the supervisory task function is disabled if you turn the power on with the deadman switch being held down. | To start a supervisory task when turning the power on, do not press the deadman switch. If this message appears when the supervisory task function is disabled, then delete it and proceed to your task. |
| 77F9 | I/O output (Not depends on the setting) | 2 | Since a supervisory task is enabled, the I/O may be outputted independently of the machine lock setting. | If a supervisory task is enabled, be careful with the I/O status which may be changed. |
| 77FA | It is the undefined axis | 3 | Attempted to detect an undefined axis. | Use a DETECT command to define a robot joint or extended-joint that is applicable to JOINT. |
| 77FB | I/O number has overlapped | 3 | The same I/O number has been double assigned in any other program. | Declare any other I/O. Or avoid turning on the same I/O in the DETECT command at the same time. |
| 77FC | Can't execute program (error occurring) | 3 | Since an error has occurred, the supervisory task cannot start any general task program. | Correct the user program, settings, and conditions so that no error will occur in it. |
| 77FD | The I/O number which is not declared | 3 | Attempted to turn off the I/O number that had not been turned on in the DETECT command. | Set the I/O number declared in the same program. |

**ERROR CODE TABLES(T03)**

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8N**C

The purpose of this manual is to provide accurate information in the handling and operating of the robot. Please feel free to send your comments regarding any errors or omissions you may have found, or any suggestions you may have for generally improving the manual.