Error Code Guide
Error Code Guide

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## Error Code Lists

### System Errors

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<th>Code</th>
<th>Description</th>
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| **E000** | Divide error  
**Contents** The CPU executed a 0 division. The CPU board may be considered faulty.  
**Countermeasure** Contact Sony Corporation. |
| **E001** | Debug exception error  
**Contents** The CPU board may be considered faulty.  
**Countermeasure** Contact Sony Corporation. |
| **E002** | NMI Debug interruption error  
**Contents** Either the CPU board, mother board or mains power unit may be considered faulty.  
**Countermeasure** Contact Sony Corporation. |
| **E003** | One byte interruption error  
**Contents** The CPU board may be considered faulty.  
**Countermeasure** Contact Sony Corporation. |
| **E004** | Interrupt on overflow error  
**Contents** The CPU board may be considered faulty.  
**Countermeasure** Contact Sony Corporation. |
| **E005** | Array bounds check error  
**Contents** The CPU board may be considered faulty.  
**Countermeasure** Contact Sony Corporation. |
System Errors

E006: Invalid OP-CODE error

[Contents] The CPU board or internal program may be considered faulty.
[Countermeasure] Contact Sony Corporation.

E007: FPU device not available error

[Contents] The CPU board may be considered faulty.
[Countermeasure] Contact Sony Corporation.

E008: Double fault error

[Contents] The CPU board may be considered faulty.
[Countermeasure] Contact Sony Corporation.

E010: Invalid TSS error

[Contents] The CPU board may be considered faulty.
[Countermeasure] Contact Sony Corporation.

E011: Segment not present error

[Contents] The CPU board may be considered faulty.
[Countermeasure] Contact Sony Corporation.

E012: Stack fault error

[Contents] The CPU board or internal program may be considered faulty.
[Countermeasure] Contact Sony Corporation.

E013: General protection fault error

[Contents] The CPU board or internal program may be considered faulty.
[Countermeasure] Contact Sony Corporation.
**System Errors**

**E014**: Page fault error

- **Contents**: The CPU board may be considered faulty.
- **Countermeasure**: Contact Sony Corporation.

**E016**: Coprocessor error

- **Contents**: The CPU board may be considered faulty.
- **Countermeasure**: Contact Sony Corporation.

**E030**: System error

- **Contents**: An error occurred with the internal program.
- **Countermeasure**: Contact Sony Corporation.

**E031**: System memory error

- **Contents**: Insufficient work area within the internal RAM.
- **Countermeasure**: 1. Delete all peripheral task programs not being used.
   2. Delete all variables not required by the program.
   3. Contact Sony Corporation if recovery is not possible with the above two procedures.
LUNA Program Errors

E100: System task execution error

[Contents] A system task program did not exist when the system task was run.
[Countermeasure] Transfer the system task program.

E110: Object code error

[Contents] A program code which cannot be interpreted exists.
[Countermeasure] 1. Check for low battery current with the diagnostic menu, and replace the battery if low current continues for several days.
2. Contact Sony Corporation if this continues to occur after the program has been re-compiled.

E111: System command error

[Contents] The method of using the system task command is wrong.
[Countermeasure] 1. Confirm that an attempt has not been made to execute a command which cannot be used, apart from the movement commands, for a system task. (Serial communication commands while awaiting input, etc.)
2. Confirm that an attempt has not been made to execute a command that can only be used with system task with another task.

E112: Robot command error

[Contents] An attempt was made to execute a robot task command with a peripheral task or a system task.
[Countermeasure] Delete the robot task command and execute again.

E113: I/O number error

[Contents] An unusable I/O number was used.
[Countermeasure] Check the I/O point and ensure that no further I/O numbers are used.
LUNA Program Errors

E114: Point data error

[Contents] The point data used does not exist.
[Countermeasure] Check the existence of the point data.

E115: Point number error

[Contents] The point data number specification is wrong.
[Countermeasure] Confirm the program's point data number.

E116: Parameter error

[Contents] The variable or command parameter specification is wrong.
[Countermeasure] The parameter specification method with a variable or command is wrong and requires confirmation.

E117: Array number error

[Contents] The specification of a variable array is wrong.
[Countermeasure] Confirm the variable array.

E118: Integer error

[Contents] The integer used exceeds the range of usable integers.
[Countermeasure] Confirm the value of the integer.

E119: FOR loop error

[Contents] The method of using the FOR statement is wrong.
[Countermeasure] 1. Confirm that the number of FOR statements nests does not exceed 10.
2. Confirm that the step count is not 0.
3. Confirm that the increase (decrease) of the step count is going towards the final value.
4. Confirm that a NEXT statement has not been used without a FOR loop.
LUNA Program Errors

E120: CALL nest error

[Contents] The number of nests for a sub-routine exceeds 10.
[Countermeasure] Confirm that the number of nests does not exceed 10, including sub-routines called from other sub-routines, operands and interruption functions.

E121: Branch error

[Contents] The method of using the sub-routine is wrong.
[Countermeasure] 1. Confirm that an attempt is not being made to execute a sub-routine when the sub-routine has not been called.
2. Confirm that an attempt is not being made to execute a RET statement outside of a sub-routine.

E122: Interrupt error

[Contents] The method of using the interruption function is wrong.
[Countermeasure] 1. Confirm that an interruption for a number not declared in an interruption sub-routine has not been authorized.
2. Confirm that a command that cannot be used within an interruption sub-routine is not being executed. (Movement command and input stand-by command, etc.)

E123: LN operand error

[Contents] The method of using the LN command is wrong.
[Countermeasure] Confirm that the LN command parameter is not below zero.

E124: SQRT operand error

[Contents] The method of using the SQRT command is wrong.
[Countermeasure] Confirm that the SQRT command parameter is not below zero.
LUNA Program Errors

**E130**: Axis 1 robot limit error

[Contents] The 1st axis destination point is outside the robot's range of operations.
[Countermeasure] Confirm the destination point.

**E131**: Axis 2 robot limit error

[Contents] The 2nd axis destination point is outside the robot's range of operations.
[Countermeasure] Confirm the destination point.

**E132**: Axis 3 robot limit error

[Contents] The 3rd axis destination point is outside the robot's range of operations.
[Countermeasure] Confirm the destination point.

**E133**: Axis 4 robot limit error

[Contents] The 4th axis destination point is outside the robot's range of operations.
[Countermeasure] Confirm the destination point.

**E134**: Axis 1 system limit error

[Contents] The 1st axis destination point is outside the system limits.
[Countermeasure] 1. Confirm the system limits.
2. Confirm the destination point.

**E135**: Axis 2 system limit error

[Contents] The 2nd axis destination point is outside the system limits.
[Countermeasure] 1. Confirm the system limits.
2. Confirm the destination point.
LUNA Program Errors

**E136**: Axis 3 system limit error

**Contents**: The 3rd axis destination point is outside the system limits.  
**Countermeasure**: 1. Confirm the system limits.  
2. Confirm the destination point.

**E137**: Axis 4 system limit error

**Contents**: The 4th axis destination point is outside the system limits.  
**Countermeasure**: 1. Confirm the system limits.  
2. Confirm the destination point.

**E138**: Axis 1 point limit error

**Contents**: The 1st axis destination point is outside the point limits.  
**Countermeasure**: 1. Confirm the point limits.  
2. Confirm the destination point data.

**E139**: Axis 2 point limit error

**Contents**: The 2nd axis destination point is outside the point limits.  
**Countermeasure**: 1. Confirm the point limits.  
2. Confirm the destination point data.

**E140**: Axis 3 point limit error

**Contents**: The 3rd axis destination point is outside the point limits.  
**Countermeasure**: 1. Confirm the point limits.  
2. Confirm the destination point data.

**E141**: Axis 4 point limit error

**Contents**: The 4th axis destination point is outside the point limits.  
**Countermeasure**: 1. Confirm the point limits.  
2. Confirm the destination point data.
PLC Program Errors

E200: PLC program code error

[Contents]  A program code which cannot be interpreted exists in the PLC program.

[Countermeasure] 1. Check for low battery current with the diagnostic menu, and replace the battery if low current continues for several days.
2. Contact Sony Corporation if this continues to occur after the program has been re-compiled.

E201: PLC CGET channel error

[Contents]  The specified reading channel exceeds 255 in the PLC program’s CGET command.

[Countermeasure] 255 is exceeded when an offset count (2nd parameter) is added to the CGET command’s standard channel number (1st parameter). As the maximum channel number allowed is 255, amend the program to fit within this range. Special care should be taken when a channel is used within an offset count (2nd parameter) and the channel value is offset.

E202: PLC CSET channel error

[Contents]  The specified writing channel exceeds 255 in the PLC program’s CSET command.

[Countermeasure] 255 is exceeded when an offset count (2nd parameter) is added to the CSET command’s standard channel number (1st parameter). As the maximum channel number allowed is 255, amend the program to fit within this range. Special care should be taken when a channel is used within an offset count (2nd parameter) and the channel value is offset.

E203: PLC BGET bit num error

[Contents]  The specified bit number exceeds the 0 - 15 range in the PLC program’s BGET command.

[Countermeasure] The BGET command’s 2nd parameter is indicated by the bit number, so amend the program so the value is within the 0 - 15 range. Special care should be taken when a channel is used within the 2nd parameter and the channel value is used as a bit number.
PLC Program Errors

E204: PLC BSET bit num error

[Contents] The specified bit number exceeds the 0 - 15 range in the PLC program's BSET command.

[Countermeasure] The BSET command's 2nd parameter is indicated by the bit number, so amend the program so the value is within the 0 - 15 range. Special care should be taken when a channel is used within the 2nd parameter and the channel value is used as a bit number.
**Robot Control Errors**

**E 3 0 0**: Emergency stop error

**[Contents]** The emergency stop mode has been entered.
**[Countermeasure]** 1. Cancel the controller's emergency stop switch.
2. Cancel the teaching pendant's emergency stop switch.
3. Connect the emergency stop's input contact point.

**E 3 0 1**: Axis 1 limit sensor error

**[Contents]** The 1st axis has entered the limit sensor.
**[Countermeasure]** 1. Confirm that the teaching position is not too close to the limit sensor.
2. Confirm limit sensor input with the diagnostic menu. It may be assumed that the sensor signal line is disconnected if the operational boundary is not adjacent, but the limit sensor is ON.

**E 3 0 2**: Axis 2 limit sensor error

**[Contents]** The 2nd axis has entered the limit sensor.
**[Countermeasure]** 1. Confirm that the teaching position is not too close to the limit sensor.
2. Confirm limit sensor input with the diagnostic menu. It may be assumed that the sensor signal line is disconnected if the operational boundary is not adjacent, but the limit sensor is ON.

**E 3 0 3**: Axis 3 limit sensor error

**[Contents]** The 3rd axis has entered the limit sensor.
**[Countermeasure]** 1. Confirm that the teaching position is not too close to the limit sensor.
2. Confirm limit sensor input with the diagnostic menu. It may be assumed that the sensor signal line is disconnected if the operational boundary is not adjacent, but the limit sensor is ON.
**Robot Control Errors**

**E304**: Axis 4 limit sensor error

- **Contents**: The 4th axis has entered the limit sensor.
- **Countermeasure**: 1. Confirm that the teaching position is not too close to the limit sensor.
   2. Confirm limit sensor input with the diagnostic menu. It may be assumed that the sensor signal line is disconnected if the operational boundary is not adjacent, but the limit sensor is ON.

**E305**: Barrier switch error

- **Contents**: The barrier switch was switched off when in the execution mode.
- **Countermeasure**: Connect the barrier switch’s contact point.

**E306**: TP safety switch error

- **Contents**: The teaching pendant’s (TP) safety switch was switched off when in the execution mode.
- **Countermeasure**: As the device conforms to overseas safety stipulations, an error will be triggered when the teaching pendant’s (TP) safety switch has not been pressed when in the execution mode.

**E307**: PC safety switch error

- **Contents**: The PC safety box’s safety switch was switched off when in the execution mode.
- **Countermeasure**: As the device conforms to overseas safety stipulations, an error will be triggered when the PC safety box’s safety switch has not been pressed when in the execution mode.
Robot Control Errors

**E310**: SERVO Axis 1 torque limit error

**[Contents]** The 1st axis load exceeded limits.

**[Countermeasure]** Indicates that the torque command value for the servo amplifier has exceeded specified limit ranges during calculation in the servo board, which is composed of position and speed control programs.

The reason for this could be any of the following:
1. Mechanical loads have been exceeded
   Grease temperature in the speed reducer, quantity of grease, or a mechanical fault in the speed reducer.
   Re-confirm the structure of the robot in this event. This confirmation is especially necessary when mechanical impact has occurred.

2. Electrical connections
   Fault in the power cable between the controller and robot.
   Fault in the wiring within the robot.
   Confirm the condition of the power cable and the connection of all connectors used for internal wiring, especially when an impact has occurred. The chance of the fault being electrical is large when errors are continually triggered when the servo is turned ON after the initial error has occurred.

3. Workload
   A workload exceeding limits has been carried.
   Confirm that a workload that exceeds robot specifications has not been carried. If there are certain work processes where this kind of workload must be carried, it is necessary to reduce the speed of operation to a level where the error is not triggered.

**E311**: SERVO Axis 2 torque limit error

**[Contents]** The 2nd axis load exceeded limits.

**[Countermeasure]** Process in the same manner as explained in E310.
Robot Control Errors

**E 3 1 2**: SERVO Axis 3 torque limit error

**Contents**
The 3rd axis load exceeded limits.

**Countermeasure**
Process in the same manner as explained in E310.

**E 3 1 3**: SERVO Axis 4 torque limit error

**Contents**
The 4th axis load exceeded limits.

**Countermeasure**
Process in the same manner as explained in E310.
In addition to workload, it is necessary to consider inertia.

**E 3 1 4**: SERVO Axis 1 position error

**Contents**
The target position value for the 1st axis is abnormal.
The servo board acquires the position target for each unit of time from the higher-level CPU board. An abnormality is determined and operations stopped with an error when this value does not arrive within the time unit, even when the maximum speed of the motor defined by each axis is issued.
There is a good chance that the following LUNA program statements are responsible in this situation.
1. The FOS value is too large
   An excessive speed command is issued when the position points are aligned in the same direction, a large FOS value is added and a double positioning operation overruns.
2. The operational route specified within the program is incorrect.
   An error exists within the order of the positioning statements, which may lead to the situation explained in 1.
3. When an error in which the first and last R axis coordinates in the interpolating command are different has occurred in the 4th axis.

**Countermeasure**
Program statements or teaching should be performed again in accordance with the likely-hood of the above causes.
Robot Control Errors

**E 3 1 5**: SERVO Axis 2 position error

[Contents] The target position value for the 2nd axis is abnormal.
[Countermeasure] Process in the same manner as explained in E314.

**E 3 1 6**: SERVO Axis 3 position error

[Contents] The target position value for the 3rd axis is abnormal.
[Countermeasure] Process in the same manner as explained in E314.

**E 3 1 7**: SERVO Axis 4 position error

[Contents] The target position value for the 4th axis is abnormal.
[Countermeasure] Process in the same manner as explained in E314.

**E 3 1 8**: SERVO CPU Communication error

[Contents] A communication error has occurred in the CPU board and servo board. Communication is carried out between the CPU board and the servo board at regular intervals, but an error will be triggered if discrepancies exist in the software communication flags.
[Countermeasure] Confirm that the connection between the mother board and the servo board is firm if a watchdog timer error has not occurred in the CPU board.

**E 3 1 9**: SERVO program error

[Contents] The servo board's program is not operating normally.
[Countermeasure] Contact Sony Corporation after checking the status.
Robot Control Errors

**E320**: AMP Axis 1 current error

**Contents**: A current exceeding set permissible currents has occurred in the motor drive.
Indicates that a current exceeding the maximum limits for a given time set with the software has been detected in the AC servo amplifier by the software.
The cause of this is the same for errors E310 - E313, and means that a load heavier than normal has been applied. For example, it may be assumed that a workload heavier than standard loads has been handled. There is also a slight change that, as the maximum current limits are set in accordance with device type, the error has been triggered by drive operations being performed by a controller set for a different device.

**Countermeasure**: Confirm that the load being carried does not exceed limits. Reduce the speed of operations if the load is considered to be large. It is also necessary to consider the combination of controller and robot.

**E321**: AMP Axis 2 current error

**Contents**: A current exceeding set permissible currents has occurred in the motor drive.

**Countermeasure**: Process in the same manner as explained in E320.

**E322**: AMP Axis 3 current error

**Contents**: A current exceeding set permissible currents has occurred in the motor drive.

**Countermeasure**: Process in the same manner as explained in E320.

**E323**: AMP Axis 4 current error

**Contents**: A current exceeding set permissible currents has occurred in the motor drive.

**Countermeasure**: Process in the same manner as explained in E320.
Robot Control Errors

E324: AMP Axis 1 speed error

[Contents] A speed exceeding set permissible speeds has occurred in the motor drive.
Indicates that a speed exceeding the maximum permissible parameters set with the software has occurred in the AC servo amplifier.
The reason for the robot arm operating at excessive speeds is that excessive current has been supplied to the motor regardless of software commands, and there is a high chance of this error being triggered when this fatal fault arises. There are also cases when this error will be triggered even though excessive speeds are not apparent in the robot arm. This is owing to the fact that a fault has occurred in the encoder feed-back line between the robot and the controller, and the occurrence of excessive speeds has been determined through disturbances in the encoder signals.

[Countermeasure] Confirm the wiring, including the encoder feed-back line, in the robot. It is also necessary to consider the combination of controller and robot.

E325: AMP Axis 2 speed error

[Contents] A speed exceeding set permissible speeds has occurred in the motor drive.

[Countermeasure] Process in the same manner as explained in E324.

E326: AMP Axis 3 speed error

[Contents] A speed exceeding set permissible speeds has occurred in the motor drive.

[Countermeasure] Process in the same manner as explained in E324.

E327: AMP Axis 4 speed error

[Contents] A speed exceeding set permissible speeds has occurred in the motor drive.

[Countermeasure] Process in the same manner as explained in E324.
## Robot Control Errors

**E 328**: AMP Axis 1 rated current error

**[Contents]** The R.M.S. current value exceeds motor stipulations. An error in the AC servo amplifier's R.M.S. current value triggered by the electrical thermal detector calculated with software. The actual temperature of the motor will exceed motor stipulations if the R.M.S. current value is increased. This indicates that robot movement during operations exceeds the permissible limits of the motor.

**[Countermeasure]** Reduce speed and stop the program at an appropriate location. Or, extend the stop time of the current program and reduce the R.M.S. current value.

**E 329**: AMP Axis 2 rated current error

**[Contents]** The R.M.S. current value exceeds motor stipulations.

**[Countermeasure]** Process in the same manner as explained in E328.

**E 330**: AMP Axis 3 rated current error

**[Contents]** The R.M.S. current value exceeds motor stipulations.

**[Countermeasure]** Process in the same manner as explained in E328.

**E 331**: AMP Axis 4 rated current error

**[Contents]** The R.M.S. current value exceeds motor stipulations.

**[Countermeasure]** Process in the same manner as explained in E328.

**E 332**: AMP Axis 1 encoder break error

**[Contents]** Connection problems in the encoder line. This error is confirmed during initial status detection when the mains power is switched on. Excessive load errors, etc., will stop operations when a faulty encoder line occurs during operations. If this error is triggered the next time the mains power is switched on, it proves that the cause is a break in the encoder connection.

**[Countermeasure]** Confirm the robot’s encoder line.
Robot Control Errors

E333: AMP Axis 2 encoder break error

[Contents] Connection problems in the encoder line.
[Countermeasure] Process in the same manner as explained in E332.

E334: AMP Axis 3 encoder break error

[Contents] Connection problems in the encoder line.
[Countermeasure] Process in the same manner as explained in E332.

E335: AMP Axis 4 encoder break error

[Contents] Connection problems in the encoder line.
[Countermeasure] Process in the same manner as explained in E332.

E336: AMP Axis 1 IPM error

[Contents] An IPM (Intelligent Power Module) error.
An error which occurs in the AC servo amplifier's drive module when the temperature and excessive electricity supply detection, etc., is OR.
[Countermeasure] There is a chance that this will occur when the surrounding temperature is high. In this event, clean the internal ventilation inlets and outlets, and re-inspect the installation location. There is also the chance that the module within the AC servo amplifier is faulty, so contact Sony Corporation.

E337: AMP Axis 2 IPM error

[Contents] An IPM (Intelligent Power Module) error.
[Countermeasure] Process in the same manner as explained in E336.

E338: AMP Axis 3 IPM error

[Contents] An IPM (Intelligent Power Module) error.
[Countermeasure] Process in the same manner as explained in E336.
**Robot Control Errors**

**E 3 3 9** : AMP Axis 4 IPM error

**Contents**  
An IPM (Intelligent Power Module) error.

**Countermeasure**  
Process in the same manner as explained in E336.

**E 3 4 0** : AMP WDT error

**Contents**  
A watchdog timer error in the AC servo amplifier.
A watchdog timer error in the micro-computer built into the AC servo amplifier. Indicates that the micro-computer operations are faulty.

**Countermeasure**  
The AC servo amplifier may be considered faulty, so contact Sony Corporation.

**E 3 4 1** : AMP Ready error

**Contents**  
Occurs when initialization is not completed after the mains power to the AC servo amplifier is switched on.

**Countermeasure**  
The AC servo amplifier may be considered faulty, so contact Sony Corporation.

**E 3 4 2** : AMP Main power error

**Contents**  
Fluctuations occurred in the AC servo amplifier’s main circuit voltage. Triggered when fluctuations occur in the AC servo amplifier’s main circuit voltage that exceed 10% of standard voltage.

**Countermeasure**  
Confirm the robot controller’s power line.
Robot Control Errors

**E350**: ABE Axis 1 encoder thermal error

- **[Contents]** Indicates that the temperature of the motor or encoder is rising. Rises in motor and encoder temperatures are acquired by the sensor located within the encoder. This error is triggered when the load on the motor is severe owing to operations of the axis in which the error occurred, and when the temperature of the surrounding atmosphere is abnormal.

- **[Countermeasure]** As this error is the result of actual temperature, it is necessary to wait until the temperature has dropped. The surrounding environment should also be considered.

**E351**: ABE Axis 2 encoder thermal error

- **[Contents]** Indicates that the temperature of the motor or encoder is rising.

- **[Countermeasure]** Process in the same manner as explained in E350.

**E352**: ABE Axis 3 encoder thermal error

- **[Contents]** Indicates that the temperature of the motor or encoder is rising.

- **[Countermeasure]** Process in the same manner as explained in E350.

**E353**: ABE Axis 4 encoder thermal error

- **[Contents]** Indicates that the temperature of the motor or encoder is rising.

- **[Countermeasure]** Process in the same manner as explained in E350.

**E354**: ABE Axis 1 encoder backup error

- **[Contents]** Triggered when switching the back-up voltage for the absolute encoder. This occurs when rapid acceleration is received during encoder back-up and a fault arises in the back-up count. (The arm impacting with obstacles.)

- **[Countermeasure]** Maintain the encoder’s mains power supply when problematic rapid acceleration occurs. Perform home return when this error is triggered.
Robot Control Errors

E355: ABE Axis 2 encoder backup error

[Contents] Triggered when switching the back-up voltage for the absolute encoder.
[Countermeasure] Process in the same manner as explained in E354.

E356: ABE Axis 3 encoder backup error

[Contents] Triggered when switching the back-up voltage for the absolute encoder.
[Countermeasure] Process in the same manner as explained in E354.

E357: ABE Axis 4 encoder backup error

[Contents] Triggered when switching the back-up voltage for the absolute encoder.
[Countermeasure] Process in the same manner as explained in E354.

E358: ABE Axis 1 encoder power error

[Contents] All mains power sources used by the absolute encoder are low. Triggered when the mains power normally used by the absolute encoder’s encoder and back-up is low (3.6V or less for both). In more detail, this error can occur in any of the following situations:
1. Back-up voltage dropped during back-up.
2. When the mains power for the encoder is switched on.
3. When the resistance value of the feed-back cable is high (affected by surrounding temperature, etc.)

[Countermeasure] Low battery voltage or faulty connections can be assumed for cases 1 and 2. Confirm the battery harness in the controller and replace if necessary.
In the case of 3, ensure that the temperature of the surrounding environment is appropriate and that the correct length feed-back cable is being used between the controller and the robot.
Perform home return when this error is triggered.

E359: ABE Axis 2 encoder power error

[Contents] All mains power sources used by the absolute encoder are low.
[Countermeasure] Process in the same manner as explained in E358.
Robot Control Errors

E 3 6 0 : ABE Axis 3 encoder power error

[Contents] All mains power sources used by the absolute encoder are low.
[Countermeasure] Process in the same manner as explained in E358.

E 3 6 1 : ABE Axis 4 encoder power error

[Contents] All mains power sources used by the absolute encoder are low.
[Countermeasure] Process in the same manner as explained in E358.

E 3 8 0 : SERVO CPU WDT error

[Contents] The servo board has detected a CPU WDT error.
[Countermeasure] The CPU board or servo board may be assumed as faulty. Contact Sony Corporation.

E 3 8 1 : SERVO trap error

[Contents] An incorrect interruption arrived in the servo board.
[Countermeasure] The servo board or servo program may be assumed as faulty. Contact Sony Corporation.

E 3 8 2 : SERVO P/S interface error

[Contents] An operational fault occurred in the sensor information communication board.
[Countermeasure] Contact Sony Corporation.

E 4 0 0 : SPD over speed error

[Contents] The robot operates at the speed higher than the safety operation speed during teaching mode or continuous mode.
[Countermeasure] Operation error occurs in the robot due to broken encoder signal line, etc. Perform "Diagnostics" and check that the encoder signals of each motor are counted correctly in the "SENSOR & CNT" mode. (Refer to Operation Guide page 5-44.)
Additional error code list for SRX-600 Series

E040: LUNA program memory error

[Contents]
An unsuitable value exists in the memory maintained by the LUNA program. The memory has not been initialized. This error may occur when the CPU board has been removed and then replaced in the controller, or when the back-up batteries have run out.

[Countermeasure]
Initialize the program area and then re-transfer all programs.
Initialization is performed by pressing the [F1] cancellation key while pressing the [High-Speed] key on the TP's [Management] [Type List].

E041: PLC program memory error

[Contents]
An unsuitable value exists in the memory maintained by the PLC program. The memory has not been initialized. This error may occur when the CPU board has been removed and then replaced in the controller, or when the back-up batteries have run out.

[Countermeasure]
Initialize the program area and then re-transfer all programs.
Initialization is performed by pressing the [F1] cancellation key while pressing the [High-Speed] key on the TP's [Management] [Type List].
E050: Controller parameter error

[Contents]
The parameters initially set in the controller are unsuitable. This error may occur when, for example, the correct sequence for returning to the home position is the X, Y and 2-axis robots, but Z, R or other parameters have been set, or when the servo parameters or other parameters are not within permitted ranges.

[Countermeasure]
The parameter types are set in the line numbers when this error is triggered. Correct the specified parameters to the correct values. Note: Ensure that the mains power to the controller is switched off and then rebooted after all corrections have been made.

E125: LUNA Memory card error

[Contents]
An error occurred when an attempt was made to access the memory card with the use of the MCDATI or MCDATR commands. The following reasons may be considered to be the cause of this:
(1) Access was attempted when MCOPEN was not open.
(2) Access was attempted during MCOPEN failure (the error value returned).
(3) Access was attempted with no card in position.

[Countermeasure]
MCDATI and MCDATR can only be used when correctly opened.

E126: LUNA Not available func error

[Contents]
The command used is restricted by model. Although a wide variety of SRX robot exist, there are commands that cannot be used with certain models.

[Countermeasure]
Do not use the command in question.
E154: CP Motion Error

[Contents]
This error only occurs with CAST.
It occurs when the specified CP operation speed cannot be attained
owing to the distance of the motion being too small.

[Countermeasure]
Either lower the specified speed (CPMAX) or lengthen the distance to
allow the specified speed to be attained.

E155: Circle Point Error

[Contents]
The three points passed across to the CIRCLE command form a straight
line.

[Countermeasure]
Specify points that do not form a straight line.

E205: PLC CRST no def counter error

[Contents]
An attempt was made to reset a counter that is not in use. The CRST
command can only be used to reset the counters annotated in the
execution area (= left-hand side) of the program, such as "C000:=R0001".

[Countermeasure]
There is no reason for resetting counters that are not in use. Either
annotate the counter in the execution area or delete the CRST for which
the error occurred.
E343: AMP Main power OV error

[Contents]
The mains power for the amplifier within the controller is supplied from the main circuit mains power, and overvoltage was detected in the amplifier's power input area. 445V (DC) or higher.

[Countermeasure]
Check the connection between the main circuit mains power and the amplifier. Contact Sony Corporation if this error occurs frequently.

E344: AMP Main power OL error

[Contents]
The mains power for the amplifier within the controller is supplied from the main circuit mains power, and voltage fluctuations were detected in the amplifier's power input area.

[Countermeasure]
Check to confirm that no fluctuations exist in the mains power supplied to the controller. Contact Sony Corporation if this error occurs frequently.

E345: AMP Kaseiteikou error

[Contents]
The resistance providing regain for the amplifier is receiving excessive current and is overheating.

[Countermeasure]
Check to confirm that the temperature surrounding the controller is within guaranteed operation limits (0 degrees C to 40 degrees C). Contact Sony Corporation if this error occurs frequently.
E369: ABE Axis 4 homing limit error

[Contents]
The 4th axis sensor for home position return could not be located even when moved a pre-determined distance.

[Countermeasure]
Observe the same instructions provided for E366.

E383: Servo Axis 1 servo ON error

[Contents]
Despite the fact that the servo board's system software has transmitted an ON command for the 1st axis servo to the amplifier, the servo has not been switched on.

[Countermeasure]
Contact Sony Corporation.

E384: Servo Axis 2 servo ON error

[Contents]
Despite the fact that the servo board's system software has transmitted an ON command for the 2nd axis servo to the amplifier, the servo has not been switched on.

[Countermeasure]
Contact Sony Corporation.
E366: ABE Axis 1 homing limit error

[Contents]
The 1st axis sensor for home position return could not be located even when moved a pre-determined distance.

[Countermeasure]
The occasional occurrence of this error does not indicate a fault. It may occur when home position return is started with the arm $B\%f (Js mechanical stopper being pressed. In this event, perform home position return once again. The continual occurrence of this error may indicate that the sensor is damaged. Normal home position return operations rely on the sensors alone when it is assumed that position information has been lost. This consequently means that sensor input will be searched for and the arm moved to unwanted areas when the sensor actually is damaged. Owing to this, Sony Corporation robots are designed to stop when specified sensors cannot be found after moving a pre-determined distance.

E367: ABE Axis 2 homing limit error

[Contents]
The 2nd axis sensor for home position return could not be located even when moved a pre-determined distance.

[Countermeasure]
Observe the same instructions provided for E366.

E368: ABE Axis 3 homing limit error

[Contents]
The 3rd axis sensor for home position return could not be located even when moved a pre-determined distance.

[Countermeasure]
Observe the same instructions provided for E366.
E388: Servo Axis 2 servo OFF error

[Contents]
Despite the fact that the servo board's system software has transmitted an OFF command for the 2nd axis servo to the amplifier, the servo has not been switched off.

[Countermeasure]
Contact Sony Corporation.

E389: Servo Axis 3 servo OFF error

[Contents]
Despite the fact that the servo board's system software has transmitted an OFF command for the 3rd axis servo to the amplifier, the servo has not been switched off.

[Countermeasure]
Contact Sony Corporation.

E390: Servo Axis 4 servo OFF error

[Contents]
Despite the fact that the servo board's system software has transmitted an OFF command for the 4th axis servo to the amplifier, the servo has not been switched off.

[Countermeasure]
Contact Sony Corporation.
**E385: Servo Axis 3 servo ON error**

[Contents]
Despite the fact that the servo board's system software has transmitted an ON command for the 3rd axis servo to the amplifier, the servo has not been switched on.

[Countermeasure]
Contact Sony Corporation.

**E386: Servo Axis 4 servo ON error**

[Contents]
Despite the fact that the servo board's system software has transmitted an ON command for the 4th axis servo to the amplifier, the servo has not been switched on.

[Countermeasure]
Contact Sony Corporation.

**E387: Servo Axis 1 servo OFF error**

[Contents]
Despite the fact that the servo board's system software has transmitted an OFF command for the 1st axis servo to the amplifier, the servo has not been switched off.

[Countermeasure]
Contact Sony Corporation.
E400: SPD over speed error

[Contents]
This error only occurs with the C61 model that conforms to overseas safety stipulations. Special hardware has detected a speed that exceeds the stipulations when in a mode where speed restrictions are required.

[Countermeasures]
This error may occur when a barrier error (E305) occurs owing to barrier input being OFF during robot operations. The error may be caused by a disconnected encoder signal wire if it is not related to the barrier error. Check to confirm that the encoder signals for each axis are being correctly read with [Sensors & Counters] on the TP. [Management] [Diagnosis] menu.

E401: DSS off error

[Contents]
This error only occurs with SMART specification controllers. The error occurs when the DSS is off during an attempt to switch on the servo.

[Countermeasure]
Ensure that the DSS signal (system input 7) is ON before switching on the servo.
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Appendix
I/O Circuits using the NPN logic

NPN logic I/O Boards and I/O Connectors
(1) Input Circuit, CN_IN
External 24V supply, OV common specification (standard settings)

Jumper Settings
- JP2: Short on the 0V.COM side
- JP3: Short on the EXT.24V side

*1. JP2: 24V common specification with short on the 24V.COM side
*2. JP3: An internal DC24V power supply can be used with short on the INT.24V side
(2) Output Circuit, CN_OUT

External 24V supply (standard settings)

Jumper Settings
- JP3: Short on the EXT.24V side
  *1. JP2 settings are for input.
  *2. JP3 settings are the same as input.

- Add a diode as indicated above when the output load is to be connected to the relay coil.
- The F1 and F2 fuses will blow if a current of 0.5A or more is used with a 24V output. Ensure that the fuses stipulated are used.
  Fuse: 0.5ADC48V, Model: LM05, Manufacturer: Daito Communication Apparatus Co., Ltd.
(3) **Fuses and jumpers**

The F1 and F2 fuses, and the JP2 and JP3 jumpers are located on the standard I/O board as indicated in the following diagram and will require replacement in accordance with necessity.

![Diagram of Fuses and Jumpers](image)

**Setting the JP2 and JP3 Jumpers**

**NPN logic I/O Board (rear panel)**
Supply Period of Repair Parts

The functional repair parts (parts needed to maintain product performance) of this machine will be supplied for up to ten years in principle after production is discontinued.

Because it may be possible to repair the machines depending upon the location of the problem even after this period, consult the service or sales representative from where you purchased the machine.

Contact: Sony Electronics Inc. Service Department
New York  Telephone: 914-365-6000  Fax: 914-365-6087
San Diego  Telephone: 619-673-2701  Fax: 619-674-1853

Sony Precision Engineering Center Pte Ltd.
Manufacturing Systems Division Service Engineering Dept.
Singapore  Telephone: 02-8691362  Fax: 02-8691322

Sony Wega Produktions GmbH Service Department
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