

Chapter 6-Faults and warnings treatment

6.1 Display and checking

The alarm of LD3 series servos is divided into fault and warning. The main difference between the two is that the servo will stop running when a fault occurs, and the servo will still operate normally when a warning occurs. According to the fault or warning displayed on the panel, you can query the detailed description and handling method of the fault or warning in this manual.

After power-on, if the servo panel is off or “ $\Gamma d\le$ ” is not displayed at the last three digits, the possible causes and solutions are as follows:

Table 6.1 Treatment for Faults that the power-on servos are not ready

| No. | Falut causes | Confirmation method |
|-----|---------------------------------|---|
| 1 | Main power supply voltage fault | Check whether the 220VAC/380VAC power supply to the driver is normal. |
| 2 | Servo drives failure | Contact manufacturer after-sales service. |

After power-on, when the servo fault or warning occurs, the panel will give the corresponding display. Among them, the definitions shown are as follows:

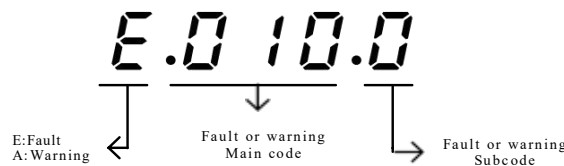


Figure 6.1 Example of fault display

For example, the panel shows *E.0 10.0*, indicating that the servo drives has a fault, the fault main code is “0x010”, the fault subcode is “0x0”; The panel shows *R.2 18.0*, indicating that the servo drives has a warning, warning main code is 0x218, warning subcode is 0x0.

After the above faults are removed, the panel should show " $\Gamma d\le$ ".

LD3 series servo drives have fault logging function, which can record the last 10 fault and warning names and the status parameters of the servo drive when the fault or warning occurred. If the last 5 failures or warnings are repeated, the failure or warning code (drive status) is recorded only once

After a fault or warning is reset, the fault and warning are still saved in the fault record. The Fault & Warning management module in the DriverStart debugging software can be used to view and clear the history. For details, see 3.3DriverStart Usage.

In addition, the Fault & Warning management module in DriverStart allows you to view a detailed description of the current fault, as well as reset the fault

6.2 Error code list

Table 6.2 Error code list

| Error code | Error explanation | Can be Reset or not |
|------------|---|---------------------|
| E.010 | Software parameter fault | × |
| E.011 | Software internal communication Initialization fault | × |
| E.012 | The software version does not match the product model | × |
| E.013 | Software internal interrupt times out | × |
| E.014 | Software internal communication times out | × |
| E.015 | Current sampling times out | × |
| E.016 | Torque instruction update timeout failure | × |
| E.017 | Parameter storage failure | × |
| E.018 | Parameters are out of range | × |
| E.019 | Product matching fault | × |
| E.210 | Hardware overcurrent Fault | × |
| E.211 | Output short-circuit to the ground is faulty | × |
| E.212 | The UVW phase sequence is faulty | × |
| E.213 | Galloping fault | × |
| E.214 | Control power supply undervoltage is faulty | × |
| E.215 | AI sampling fault | √ |
| E.216 | STO failure | √ |
| E.217 | Input open-phase fault (WU) | √ |
| E.218 | Servo emergency stop fault | √ |
| E.219 | Drive overheating fault | √ |
| E.227 | Output Phase loss fault | √ |
| E.228 | Pre-charge abnormality fault | √ |
| E.411 | DI function allocation fault | √ |
| E.412 | DO function allocation fault | √ |
| E.413 | Current calculation overflow fault | √ |
| E.414 | DC bus undervoltage fault | √ |
| E.415 | DC bus overvoltage fault | √ |
| E.416 | Overspeed fault | √ |
| E.417 | High starting speed fault | √ |
| E.418 | Servo repeat enable fault | √ |
| E.419 | Drive overload fault | √ |
| E.420 | High frequenc division output fault | √ |
| E.421 | Electronic gear ratio setting error | √ |
| E.423 | Position error too large fault | √ |
| E.424 | Position command overspeed fault | √ |
| E.429 | Gantry synchronization deviation too large | √ |
| E.430 | Gantry compensation data overflow | √ |

| | | |
|----------|--|---|
| E.710 | Overspeed fault | √ |
| E.711 | Inertia identification fault | √ |
| E.712 | Pole identification fault | √ |
| E.715 | Motor parameter identification failure | √ |
| E.716 | Gain auto-tuning fault | √ |
| E.910 | Encoder parameter fault | × |
| E.911 | Encoder communication fault | × |
| E.912 | Encoder parameter verification error fault | × |
| E.913 | Encoder three-phase Hall logic error fault | × |
| E.914 | Encoder disconnection fault | × |
| E.916 | Encoder disconnection | √ |
| E.917 | Encoder battery fault | √ |
| E.918 | Encoder multi-turn counting error | √ |
| E.922 | Encoder overheating warning | √ |
| E. B10 | Motor overload fault | √ |
| E. B11 | Motor block fault | √ |
| E. B13 | Motor vibration fault | √ |
| E. B14 | Error operation detection | √ |
| E. B15 | Motor PTC (Positive Temperature Coefficient) fault | √ |
| E. D15 | Soft limit upper and lower limit setting error | √ |
| ~ E. D16 | Origin offset exceeds soft limit range | √ |



Note:

"√" indicates that this fault can be reset. Refer to section 6.6 for resetting methods. It is important to note that the fault can only be successfully reset if the source of the fault has been resolved.

"×" indicates that this fault cannot be reset and requires power on and off again.

6.3 Warning Code list

All warnings can be automatically reset after the warning condition is resolved or by pressing any key on the control panel.

Table 6.3 Warning Code list

| Warning code | Warning explanation |
|--------------|---|
| A.220 | Forward Overtravel Warning |
| A.221 | Reverse Overtravel Warning |
| A.222 | Inpur open Phase Warning |
| A.223 | AI Zero bias too large Warning |
| A.224 | Regenerative resistor overload warning |
| A.226 | External regenerative resistor resistance too low warning |

| Warning code | Warning explanation |
|--------------|---|
| A.227 | Output open phase warning |
| A.425 | Homing failure warning |
| A.426 | Requires power on and off warning |
| A.427 | Parameter storage error warning |
| A.428 | Frequency division output setting wrong warning |
| A.920 | Encoder error warning |
| A.921 | Encoder battery low voltage warning |
| A.922 | Encoder overheating warning |
| A.928 | ABZ encoder feedback over frequency |

6.4 Fault treatment

Table 6.4 Fault treatment

| Fault Code | Fault cause | Measurement |
|---|---|---|
| E.010.0 Manufacturer Parameter Verification error | <ol style="list-style-type: none"> 1. Software updated. 2. Momentary power loss during parameter storage process. 3. The number of write times of a parameter in a certain period exceeded the maximum value. 4. Servo drive fault. | <ol style="list-style-type: none"> 1. Restore factory parameters (P0501=1). 2. Power off and on again, initialize system parameters (P0501=1), and rewrite parameters. 3. Change parameter writing method. 4. Replace servo drives. |
| E.011.0 Internal Software Communication Initialization error | <ol style="list-style-type: none"> 1. FPGA and MCU software versions do not match. 2. FPGA fault. | <ol style="list-style-type: none"> 1. Consult our technical support for updating compatible FPGA or MCU software versions. 2. Contact manufacturer technical support. |
| E.012.0 Software Version Does Not Match Product Model | <ol style="list-style-type: none"> 1. FPGA is underversion. 2. FPGA fault. | <ol style="list-style-type: none"> 1. Update compatible FPGA or MCU software versions 2. Contact manufacturer technical support. |
| E.013.0 FPGA Interrupt Signal Lost | <ol style="list-style-type: none"> 1. FPGA fault. 2. Error handshake between FPGA and MCU communication. 3. Internal drive operation timeout. | <ol style="list-style-type: none"> 1. Replace servo drive. 2. Contact manufacturer technical support. |
| E.014.0 MCU Communication Timeout with FPGA | <ol style="list-style-type: none"> 1. MCU communication timeout. 2. Encoder communication timeout. | <ol style="list-style-type: none"> 1. Use our standard motor and encoder cables. 2. Check cable connections for damage. 3. Separate strong and weak electrical cables. |

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| <p>E.015.0 Current Chip Sampling Timeout</p> | <ol style="list-style-type: none"> 1. Check if the power cable output is disconnected or has poor contact. 2. Current sampling timeout. | <ol style="list-style-type: none"> 1. Use LIMON standard motor cables and encoder cables. 2. Check cable connections for damage. 3. Separate strong and weak electrical cables. |
| <p>E.016.0 Torque Command Update Timeout</p> | <ol style="list-style-type: none"> 1. Servo drive fault. | <ol style="list-style-type: none"> 1. Replace servo drive. 2. Contact manufacturer technical support. |
| <p>E.017.0 Parameter Storage writing error</p> | <ol style="list-style-type: none"> 1. EEPROM data error fault. | <ol style="list-style-type: none"> 1. Initialize system parameters (P0501=1) and then power cycle. 2. Replace servo drive. |
| <p>E.018.0 Manufacturer Parameter Out of Range</p> | <ol style="list-style-type: none"> 1. Software updated, current value of function code exceeds allowed range 2. EEPROM fault 3. Servo drive fault. | <ol style="list-style-type: none"> 1. Power cycle, initialize system parameters (P0501=1), and rewrite parameters. 2. Replace servo drive. |
| <p>E.019.0 Encoder Matching Fault</p> | <ol style="list-style-type: none"> 1. Product code (motor or drive) does not exist. 2. Motor and drive power levels do not match. | <ol style="list-style-type: none"> 1. Refer to "Servo System Matching Specifications", replace mismatched product. |
| <p>E.021.0 Host Given Angle Exceeds Range</p> | <ol style="list-style-type: none"> 1. During angle identification, host given angle exceeds range. | <ol style="list-style-type: none"> 1. Move to motor position, re-identify. 2. Change identification method. |
| <p>E.022.0 Encoder Update Timeout Fault</p> | <ol style="list-style-type: none"> 1. Encoder Update Timeout Fault | <ol style="list-style-type: none"> 1. Contact manufacturer. |
| <p>E.210.0 Phase Overcurrent (P, N)</p> | <ol style="list-style-type: none"> 1. Brake resistor too small or short-circuited. 2. Poor contact or short circuit in motor cables. 3. Motor cables not properly grounded. 4. Motor burned out. 5. Gain parameter settings unreasonable, motor oscillation. 6. Encoder wiring issue. | <ol style="list-style-type: none"> 1. Refer to specifications, select appropriate brake resistor and set related parameters reasonably. 2. Check if motor cables are correctly connected, for short circuits, poor connections, or lack of grounding. 3. Check if encoder cables are damaged. 4. Re-adjust gain. 5. Replace motor. |
| <p>E.211.0 Output to Ground Short Circuit Causes Bus Voltage Overvoltage</p> | <ol style="list-style-type: none"> 1. Drive power cables (UVW) short-circuited to ground. 2. Motor short-circuited to ground. 3. Servo drive fault 4. Bus voltage discharge point (P0219) set too low. | <ol style="list-style-type: none"> 1. Reconnect or replace drive power cables. 2. Replace motor. 3. Correctly set bus voltage discharge point (P0219). |

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| <p>E.212.0 UVW Phase Sequence Error</p> | <p>1. During angle identification, the UVW phase sequence between the drive and motor does not match.</p> | <p>1. Correctly connect UVW phase sequence cables.</p> |
| <p>E.213.0 galloping fault</p> | <p>1. UVW phase sequence wiring wrongly 2. Power-up interference causing initial rotor phase error. 3. Encoder model or wiring error. 4. Under vertical axis conditions, excessive gravity load is too big.</p> | <p>1. Correctly connect UVW phase sequence cables. 2. Power cycle, restart the angle self-learning. 3. Replace with mutually compatible drive and motor, and correctly set motor model. 4. Check if encoder and motor cables are correctly connected. 5. Reduce vertical axis load, increase rigidity, or shield the fault without compromising safety and use conditions.</p> |
| <p>E.214.0 Control Power undervoltage</p> | <p>1. Unstable or dropped voltage from control power supply. 2. Poor contact of control power cables.</p> | <p>1. Check wiring or replace cables. 2. Power cycle; if abnormal power drop, need to ensure the power supply is stable or not. 2. Increase power supply capacity.</p> |
| <p>E.215.0 AI Sampling Voltage Too High</p> | | |
| <p>E.216.0 STO Terminal Not Connected</p> | <p>1. STO is activated due to STO not being connected.</p> | <p>1. Correctly wire for STO. 2. Replace servo drive.</p> |
| <p>E.217.0 Missing One Phase of Three-Phase Input</p> | <p>1. Three-phase drive connected to single-phase input. 2. Poor three-phase input wiring. 3. Unbalanced three-phase voltage or too low three-phase voltage.</p> | <p>1. Check three-phase power supply wiring. 2. For three-phase drives that allow single-phase operation (below 1 kW), disable alarm (set P0800-2).</p> |
| <p>E.218.0 Servo Emergency Stop Fault</p> | <p>1. DI Function 2: Emergency stop triggered. 2. Background communication emergency stop triggered.</p> | <p>1. Check operating mode, ensure safety conditions, release DI brake effective signal (after releasing emergency stop effective signal, this fault resets automatically).</p> |
| <p>E.219.0 Drive rtemperature is too high Fault</p> | <p>1. TooHigh ambient temperature. 2. After overload, reset the overload fault by shutting down the power and repeating multiple times. 3. Fan failure leading to inadequate cooling. 4. Improper installation orientation or inadequate spacing between servo drives.</p> | <p>1. Improve cooling conditions for the servo drive, reduce ambient temperature 2. Change the fault reset method: after overload, wait 30 seconds before resetting. Increase drive and motor capacity, extend acceleration and deceleration times, reduce load. 3. Install according to the installation standards for servo drives. 4. Replace the servo drive.</p> |

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| E.227.0 UVW open phase | 1. Motor U, V, or W phase power cable is disconnected | 1. Check motor power line connections, rewire if necessary, and replace cables if needed. |
| E.228.0 Pre-charge Relay Not Engaged | 1. Hardware damage | 1. Replace the servo drive. 2. Contact manufacturer technical support. |
| E.228.0 Pre-charge Resistor break | 1. Pre-charge resistor circuit is open | 1. Contact manufacturer technical support. |
| E.411.0 Duplicate DI Function Assignment | 1. During DI function assignment, the same function is assigned to multiple DI terminals. | 1. Reassign DI functions to avoid duplication. |
| E.412.0 DO Function Assignment Out of Defined Range | 1. Number of DO functions exceeds the number of DO functions | 1. Restore factory parameters, power cycle the system. |
| E.413.0 Current Calculation Overflow Fault | 1. DQ axis current overflow | 1. Restore factory parameters, power cycle the system. 2. Replace the servo drive. |
| E.414.0 DC Bus Undervoltage Fault | 1. Unstable or loss of main circuit power supply. 2. Momentary power drop. 3. Power supply voltage drop during operation. 4. Three-phase drive connected to single-phase input. | 1. Refer to input power supply specifications, adjust or replace the power supply. 2. Increase power supply capacity. 3. Shield open phase fault detection. |
| E.415.0 DC Bus Overvoltage Fault | 1. Main circuit input voltage is too high. 2. Power supply is in an unstable state or affected by lightning. 3. Braking resistor fault. 4. External braking resistor resistance is too high, maximum braking energy cannot be fully absorbed. 5. Significant deviation in DC bus voltage sampling value. 6. Motor operates in rapid acceleration and deceleration states, maximum braking energy exceeds absorptive capacity. | 1. Refer to input power supply specifications, adjust or replace the power supply. 2. Install surge suppressors. 3. Refer to external braking resistor specifications, choose an appropriate external braking resistor. 4. Increase acceleration and deceleration time where permissible. |
| E.416.0 Speed exceeding Maximum Speed | 1. Motor cable UVW phase sequence error. 2. Incorrect motor or encoder parameter settings, such as pole pairs, encoder resolution. 3. Motor angle identification not performed. 4. Input command exceeds overspeed fault threshold. 5. Motor speed loop overshoot. | 1. Reconnect according to correct UVW phase sequence (U, V, W). 2. Correctly set motor parameters or encoder resolution. 3. Increase power supply capacity. 4. Re-adjust gains. 5. Decrease electronic gear ratio within operational requirements. 6. Set speed limit threshold within overspeed threshold. |

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| <p>E.417.0 Startup speed exceeds rated speed.</p> | <p>1. the actual motor speed exceeds the rated speed, when drive enabled.</p> | <p>1. Reset fault, reduce actual motor speed, and restart.</p> |
| <p>E.418.0 Servo enable repeated</p> | <p>1. Under internal enable, communication servo enable is effective.</p> | <p>1. Disable the servo enable signal of PLC.</p> |
| <p>E.419.0 Drive overload fault.</p> | <p>1.Parameter settings error. 2. Drive load rate is too high, with excessive load inertia or mechanical stuck. 3. Motor blocked.</p> | <p>1. Set correct parameters according to the drive model (P0102). 2.Reasonably adjust parameters based on current feedback effects. 3.Replace with a higher power drive. 4.Adjust mechanical parts to resolve mechanical stuck. 5. Refer to fault treatment method for E. B11.0.</p> |
| <p>E.420.0 Frequency division output frequency too high fault.</p> | <p>1. Output pulse frequency exceeds the hardware allowed upper limit frequency (single channel 4MHz).</p> | <p>1. Reduce encoder frequency division output pulse number (P1316). 2. Use twisted pair shielded cables to prevent interference pulses from overlapping with real pulses, causing false fault reports.</p> |
| <p>E.421.0 Local electronic gear ratio setting error.</p> | <p>1. Electronic gear ratio setting value exceeds the above range. 2. Issue with parameter change sequence.</p> | <p>1.Set gear ratio according to electronic gear ratio range specifications. 2. Use fault reset function or power cycle.</p> |
| <p>E.422.0 Cannot switch between inner and outer loops when using multi-segment absolute position mode in full closed-loop.</p> | <p>1. In full closed-loop position mode, the position command comes from internal position command, but the internal - external loop switching mode is used.</p> | <p>1.When using full closed-loop function and the position command comes from internal position command, can only use external encoder feedback mode, i.e., P2200 can only be 1.</p> |
| <p>E.423.0 Inner loop position bias too large</p> | <p>1. Drive UVW phase output missing or phase sequence connected errorly. 2.Drive U VW output disconnected or encoder disconnected. 3.Motor blocked due to mechanical factors. 4. Low gain in servo drive. 5.Excessive increment in position command. 6.Deviation threshold 6065h/p0806 too small. 7.Servo drive/motor fault.</p> | <p>1. Reconnect according to correct wiring or replace cables. 2.Reconnect and if necessary, replace with new cables ensuring reliable connection. 3. Investigate mechanical factors. 4. Perform manual gain adjustment or automatic gain adjustment. 5.Increase acceleration/deceleration ramp of position command. 6. Increase deviation threshold 6065h/p0806. 7. Replace servo drive or motor.</p> |

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| E.424.0 Position command dual overspeed multiple times. | 1. Position command increment too large. 2. Before mode switching or servo enable, the target position (607A target position) was not aligned with the current position. 3. Sync loss leading to excessive accumulation of position commands. 4. Motor speed limit error. | 1. Decrease the increment of the target position command. 2. Before mode switching or enabling the servo, assign the current position value to the target position (607A target position). 3. Verify if the motor's maximum speed meets the application requirements. |
| E.429.0 Excessive deviation during gantry synchronization process. | 1. During gantry synchronization operation, the deviation between the two motors are significant. | 1. Eliminate physical stuck possibility and ensure normal operation of the gantry. 2. Modify (P0401 motor running direction) to ensure the gantry motor runs in the same direction as the command direction. 3. Modify (P2202 external encoder direction selection) to ensure the directions of internal and external encoders of both gantries change in the same direction as the running direction. 4. Adjust the values of the second drive (P2205 outer loop electronic gear ratio numerator) and (P2206 outer loop electronic gear ratio denominator). 5. Properly adjust (P2234 synchronous position gain) and (P2235 synchronous position differential). |
| E.430.0 Gantry compensation data write overflow. | Reserved | Reserved |
| E.710.0 FPGA internal speed measurement overflow. | 1. FPGA internal speed calculation overflow. | 1. Check and confirm correct encoder cable connections 2. Power cycle and attempt to run again. 3. Replace the motor or drive. |
| E.711.0 Offline inertia identification fault. | 1. Offline inertia identification incomplete. | 1. Contact manufacturer technical support. |
| E.711.1 Linear motor inertia identification result is 0. | 1. Linear motor inertia identification result is 0. | 1. Contact manufacturer technical support. |
| E.712.0 Pole identification fault. | 1. Motor initial magnetic pole angle identification fault. | 1. Motor shaft disconnected, re-perform angle identification. |
| E.715.0 Parameter identification result error. | 1. Identification result is . | 1. Contact manufacturer technical support. |
| E.716.0 Self-turning gain too small. | 1. Self-turning gain too small. | 1. Perform self-adjustment again; 2. Contact manufacturer technical support. |

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| E.910.0 Encoder parameter verification abnormal during power-on. | <ol style="list-style-type: none"> 1. Drive and motor types do not match. 2. Parameter verification error or parameters not stored in ROM for Ethercat-type incremental encoder. | <ol style="list-style-type: none"> 1. Replace with matching drive and motor. 2. Check encoder cables, please use LIMON standard encoder cables. 3. Separate encoder cables from power cables. |
| E.911.0 (Under detailed definition and differentiation) | <ol style="list-style-type: none"> 1. Encoder wiring error. 2. Encoder cable loose. 3. Encoder Z signal interference (EMC-related issues). 4. Encoder fault. | <ol style="list-style-type: none"> 1. Reconnect according to the correct wiring diagram. 2. Reconnect and ensure tight connections of encoder terminals. 3. Use LIMON standard encoder cables. 4. Replace servo motor. |
| E.912.0 Encoder parameter verification error. | <ol style="list-style-type: none"> 1. Ethercat-type incremental encoder cable disconnected or loose. 2. Ethercat-type incremental encoder parameter read/write error. | <ol style="list-style-type: none"> 1. Verify if encoder cables are incorrectly connected, disconnected, or have poor contact. 2. Separate encoder cables from power cables. 3. Replace servo motor. |
| E.913.0 The initial Angle reading was incorrectly during power-on initialization | <ol style="list-style-type: none"> 1. Driver and motor types do not match. 2. Encoder cable disconnected. | <ol style="list-style-type: none"> 1. Replace with matching motor and drive. 2. Replace intact encoder cables and secure connections. |
| E.914.0 Z signal wire disconnected. | <ol style="list-style-type: none"> 1. Encoder fault causing loss of Z signal. 2. Poor wiring or incorrect connection causing encoder Z signal loss. | <ol style="list-style-type: none"> 1. Replace servo motor. 2. Check if encoder cables are making good contact, rewire or replace cables. |
| E.916.1 Linear motor encoder grating scale disconnected. | <ol style="list-style-type: none"> 1. Check if encoder cables are connected; | <ol style="list-style-type: none"> 1. Connect encoder correctly. 2. Replace encoder cables. |
| E.917.0 Encoder battery fault. | <ol style="list-style-type: none"> 1. Absolute encoder, no battery connected during power-off period. 2. Encoder battery voltage too low. | <ol style="list-style-type: none"> 1. Reconnect battery or replace with a new battery. 2. Set P2005=L to clear the fault. |
| E.918.0 Encoder multi-turn counting error. | <ol style="list-style-type: none"> 1. Encoder fault. | <ol style="list-style-type: none"> 1. Set P2005=2 to clear the fault, then power cycle. 2. Replace the motor. |
| E.922.0 Encoder overheating warning. | <ol style="list-style-type: none"> 1. Encoder temperature too high. | <ol style="list-style-type: none"> 1. Stop the drive running for a period of time. 2. Ensure the encoder is well-ventilated, reduce ambient temperature. |
| E.928.0 ABZ encoder feedback over frequency. | <ol style="list-style-type: none"> 1. Due to incorrect parameter settings (P0018, P0105) or excessive motor encoder feedback frequency, the corresponding feedback frequencies of maximum speed calculated internally by the servo beyond hardware limits. | <ol style="list-style-type: none"> 1. Modify the Parameters such as P0018, P0105. 2. Contact manufacturer technical support. |

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| <p>E. B10.0 Motor overload fault</p> | <ol style="list-style-type: none"> 1. Motor wiring and encoder wiring are wrong and bad. 2. The load is too heavy, the effective output torque of the motor exceeds the rated torque, and the operation continues for a long time 3. Acceleration and deceleration are too frequent or the load inertia is large 4. The gain adjustment is inappropriate or the rigidity is too strong. 5. The driver or motor model is set incorrectly 6. The motor is blocked due to mechanical factors, resulting in excessive load during operation. | <ol style="list-style-type: none"> 1. Set the parameters of the driver model and motor model correctly. 2. Use LIMON standard cables. Check cable connections by referring to the wiring diagram 3. Replace the large-capacity drive and the matching motor, or reduce the load and increase the acceleration and deceleration time. 4. Increase the acceleration and deceleration time in a single run. 5. Adjust the gain. 6. Eliminate mechanical factors. |
| <p>E. B11.0 Motor block protection</p> | <ol style="list-style-type: none"> 1. Driver UVW output phase missing, broken line, phase sequence connection wrong. 2. The motor parameters are not set correctly, such as the number of poles. 3. Motor Angle identification is not carried out. 4. Communication instructions are interfered. 5. Motor blocked due to mechanical factors. | <ol style="list-style-type: none"> 1. Connect cables correctly or replace cables. 2. Set motor parameters correctly. 3. Check whether the communication line between the PLC and the servo is interfered. 4. Check the mechanical factors: whether there is stuck, occasionally stuck, eccentricity |
| <p>E. B13.0 Excessive motor vibration</p> | <ol style="list-style-type: none"> 1. Motor vibration is too large | <ol style="list-style-type: none"> 1. Adjust gain parameters 2. Turn on vibration suppression |
| <p>E. B14.0 Location anomaly detection</p> | | |
| <p>E. B15.0 Thermistor is disconnected or not connected</p> | <ol style="list-style-type: none"> 1. The thermistor is disconnected or not connected | <ol style="list-style-type: none"> 1. Check the thermistor and its cables. |
| <p>E. D15.0 The upper and lower limits of the soft limits are incorrectly set</p> | <ol style="list-style-type: none"> 1. The lower limit of the soft limit must be greater than or equal to the upper limit of the soft limit. | <ol style="list-style-type: none"> 1. Set the parameters again and ensure that 607D-01h is smaller than 607D-02h (POB45 is smaller than POB47). |
| <p>E. D16.0 Origin bias is out of the soft limit range</p> | <ol style="list-style-type: none"> 1. The origin is offset outside the range of the soft limit position | <ol style="list-style-type: none"> 1. Set parameters 607D-01h and 607D-02h (POB45 and POB47). |

6.5 Warning treatment

Table 6.5-1 Warning treatment

| Warning code | Possible reason | Measurement |
|---|---|--|
| A.220.0 Forward overtravel warning | 1.For the DI function 9, the forward limit input is valid and the forward drive is disabled | 1.Check the operation mode, under the premise of confirming safety, give the motor reverse instruction to run or reverse rotation of the motor, so that the forward limit is invalid. |
| A.221.0 Reverse overtravel warning | 1.For DI function 10, the reverse limit input is valid and the reverse drive is disabled. | 1.Check the operation mode, under the premise of confirming safety, give the motor forward instruction to run or forward rotation of the motor, so that the reverse limit is invalid. |
| A.222.0 Input open phrase warning | 1.The three-phase power input loss phase. | 1. Check the cables to the three-phase power supply. 2. Three-phase drive and allow single-phase operation (below 1kW), turn off the alarm (set P0800=2) |
| A.223.0 AI Zero-deviation is too large | reserve | reserve |
| A.224.0 Regenerative resistor overload warning | 1. Cables to the external regenerative resistor are faulty. 2. When the built-in regenerative resistor is used, the power terminals P and D are not connected. 3. The regenerated resistor type, resistance value, and power are incorrectly set. 4. The input voltage of the main loop exceeds the specification range. 5. The load moment of inertia ratio is too large. 6. The motor is in the decelerating operation state for a long time. 7. The capacity of the servo motor or the regenerative resistance is insufficient | 1. Check the cables to the external regenerative resistor are correct. 2. When the built-in regenerative resistor is used, connect the power terminals P and D correctly. 3. Set the parameters of regenerated resistor type, resistance value, and power correctly. 4. Check the specification and choose the suitable regenerative resistor. 5. Use the power input within the specifications. 6. Reduce the load, or increase the acceleration and deceleration time, or increase the operating cycle. |
| A.226.0 Resistance of the external regenerative resistor too small warning | 1. When the external regenerative resistor is used, the resistance of the external regenerative resistor is smaller than the minimum value allowed by the specification. | 1. Refer to the specification, select the appropriate regenerative resistor, and connect it correctly between P and C. 2. Set correct parameters related to the external regenerative resistor. |
| A.227.0 Output open phrase warning | 1. Power supply cable disconnected. | 1.Check the power cable connection of the motor, reconnect the cable, and replace the cable if necessary. |

Chapter 6-Faults and warnings treatment

| Warning code | Possible reason | Measurement |
|---|--|---|
| A.425.0 Homing failure warning | <ol style="list-style-type: none"> 1. The home switch is faulty. 2. The limited search time for the home position is too short. 3. The speed of high-speed search for the home switch signal is too small. 4. The switch Settings are incorrect. | <ol style="list-style-type: none"> 1. If hardware DI is used, ensure that DI function 11 has been configured for group P03, and then check whether the DI terminal is connected properly. Check that the homing operation is faulty or not and perform this function correctly. If virtual DI is used, check whether VDI is used correctly. 2. Increase the home position search time P13.49. 3. Increase the home position high-speed search speed P13.46. 4. Set the hardware switch position properly. |
| A.426.0 Warning for need to power it on and off again | <ol style="list-style-type: none"> 1. If the parameters are changed, you need to power them on and off again, then the parameter takes effect. | <ol style="list-style-type: none"> 1. Power it on and off again. |
| A.427.0 Parameter storage error warning | <ol style="list-style-type: none"> 1. Very frequently and large amounts of data are written to the EEPROM. | <ol style="list-style-type: none"> 1. Reduce unnecessary parameters written into EEPROM. 2. Set P05.10 to 0 and do not store parameters to EEPROM |
| A.428.0 frequency division output setting error warning. | <ol style="list-style-type: none"> 1. When use the frequency division function of encoder(P13.15=0), the frequency division pulse number of encoder(P13.16) are not within the specified range. | <ol style="list-style-type: none"> 1. Reset the frequency division pulse number of encoder (P13.16) to meet the specified range. |
| A.713.2 Sampling error warning | <ol style="list-style-type: none"> 1. Contact LIMON for technical support. | <ol style="list-style-type: none"> 1. Try parameter identification several times. 2. Contact LIMON for technical support. |
| A.713.3 Inspection rise time error warning. | <ol style="list-style-type: none"> 1. Contact LIMON for technical support. | <ol style="list-style-type: none"> 1. Try parameter identification several times. 2. Contact LIMON for technical support. |
| A.713.4 Inspection overshoot error warning. | <ol style="list-style-type: none"> 1. Contact LIMON for technical support. | <ol style="list-style-type: none"> 1. Try parameter identification several times. 2. Contact LIMON for technical support. |
| A.713.5 Q-axis current steady-state error test warning | <ol style="list-style-type: none"> 1. Contact LIMON for technical support. | <ol style="list-style-type: none"> 1. Try parameter identification several times. 2. Contact LIMON for technical support. |
| A.713.6 D-axis current steady-state error test warning | <ol style="list-style-type: none"> 1. Contact LIMON for technical support. | <ol style="list-style-type: none"> 1. Try parameter identification several times. 2. Contact LIMON for technical support. |
| A.920.0 Encoder internal algorithm error warning | <ol style="list-style-type: none"> 1. The encoder home position search algorithm fails. 2. The frequency division counting algorithm of encoder is wrong. | <ol style="list-style-type: none"> 1. Need to power off and on the servo again. 2. Change the servo motor. |

Chapter 6-Faults and warnings treatment

| Warning code | Possible reason | Measurement |
|--|---|--|
| A.921.0 Encoder battery voltage is too low warning | 1. Measure the battery voltage. | 1. Replace the battery with a new one. |
| A.922.0 Encoder overheating warning | 1. The temperature of the encoder is too high. | 1 Stop the running of the drive stops for a period of time. 2. Ensure that the encoder is well ventilated to reduce the circumstance temperature. |
| A.928.0 ABZ encoder feedback overlocking | 1. Due to the wrong parameter setting (P0018, P0105) or the high feedback frequency of the motor encoder, the feedback frequency corresponding to the maximum speed calculated in the servo exceeds the hardware limit. | 1. Modify the parameter of P0018 and P0105. 2. Contact LIMON for technical support. |
| A.D35.0 Homing mode P13.45 Parameter Settings are incorrect | 1. When the homing mode is used, a non-existent homing mode, such as 15/16/31/32, is entered on P13.45. | 1. Set correctly P13.45. |
| nrd Servo are not ready | 1. The power supply circuit voltage is too low; 2. The power circuit bus voltage is too low; 3. Abnormal encoder feedback; | 1. Check that the 220VAC power supply to the driver is normal by referring to specifications 2. Remove the motor from being reversed, or replace the motor encoder. |

6.6 Resetting Methods

LD3 series servo fault and warning reset in the following two ways:

- ⇨ Set parameter P20.03 = 1 to reset.
- ⇨ Reset via DI input (Function 5, fault reset);

Among them, for the fault reset, the servo should be turned off first, and then give the fault reset signal; For the reset of warning, the fault reset signal can be directly given. The fault can be successfully reset only when the fault condition is released. Warning After the warning condition is released, the warning will automatically reset.