

SIEMENS



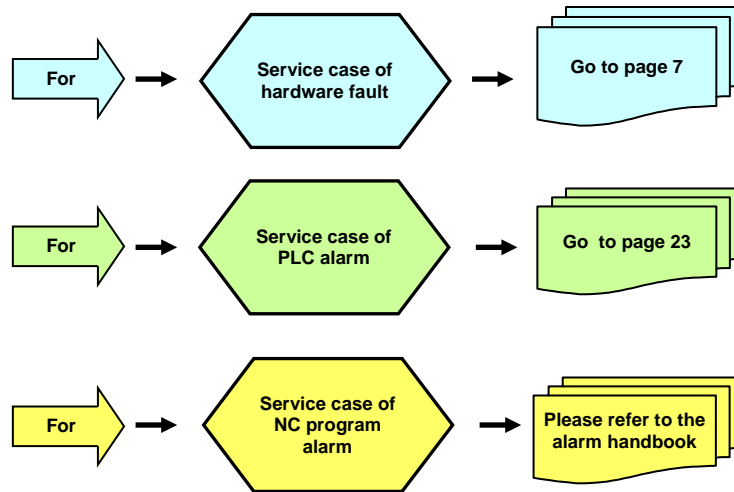
Training manual

Sinumerik 808D Service Guide

Version 2013-01

Notes

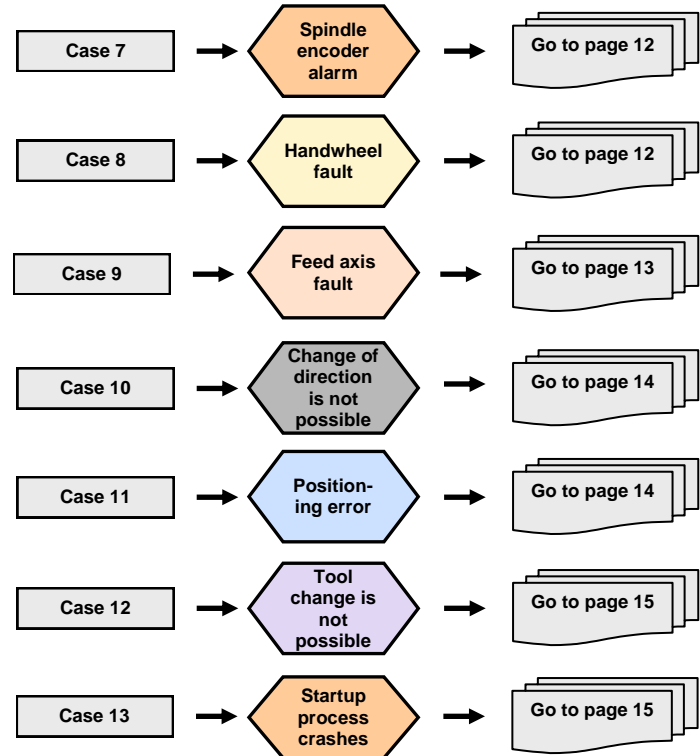
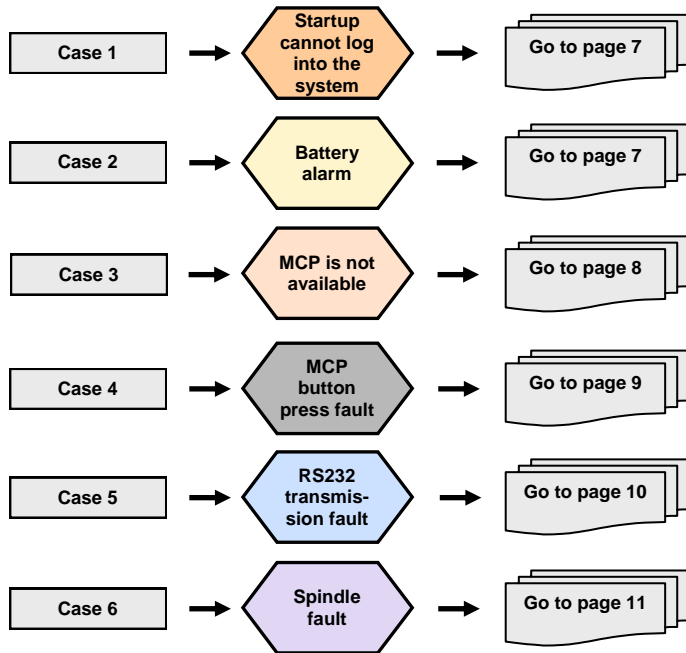
A large rectangular area filled with a light gray grid pattern, intended for taking notes. The grid consists of small squares and covers most of the page's width and height.



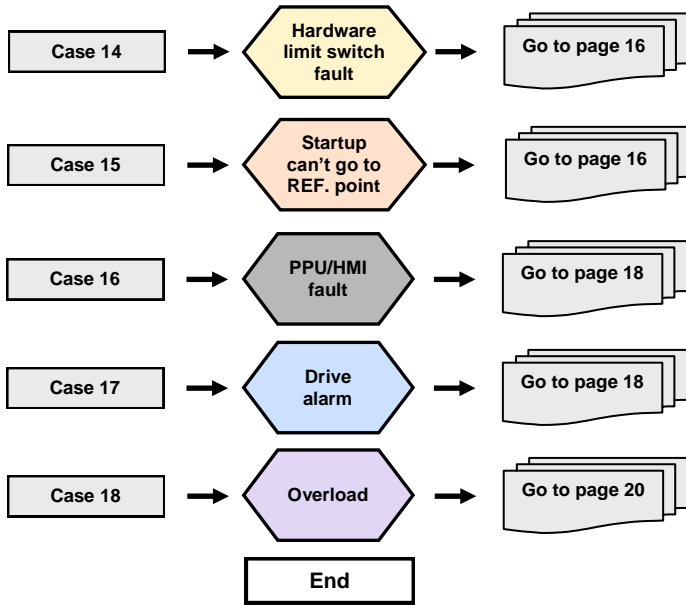
Notes

A large rectangular area filled with a light gray grid pattern, intended for taking notes. The grid consists of small squares and covers most of the page's width and height.

For normal hardware faults, we provide the basic service diagnostic steps and detecting procedures which are only for Siemens service engineers, OEM service engineers and Siemens authorized service engineers.



Service case of hardware fault



Service case of hardware fault

Startup cannot log into the system

Fault description:
Cannot log into the system after power on; normally black screen, no display at all.

Diagnostic steps

Check the power indicator light on the PPU panel:



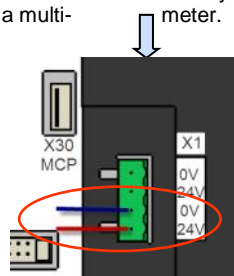
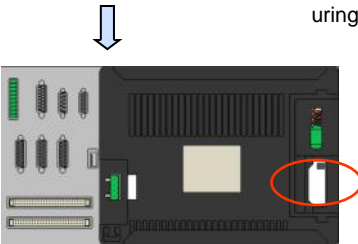
If the indicator light is on:

Power off and check whether the CF card is inserted correctly, then power on and restart, observe whether the fault is eliminated.

If the indicator light is off:

Check the X1 power plug interface on the back of the PPU

1. Whether the connection is loose.
2. Whether the 24 V terminal matches the interface.
3. Whether 24 VDC is available by measuring with a multi-



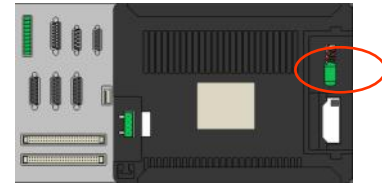
Replacement and maintenance are necessary if the fault still exists after the above inspection, because it is probable that the PPU is damaged.

Battery alarm

Fault description:
The system issues a battery alarm. tput.

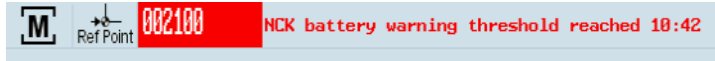
Diagnostic steps

Replace the battery when the system issues the alarm "2100".
Remove the battery and replace it ,in the power-on state.



Note

Battery: Lithium 3V DC 950mAh
Life time: 3 years
Order number: 6FC5247-0AA18-0AA0.



Battery alarm number 002100: This alarm indicates that the battery power of the system is low. In this case, replace the battery within six weeks, otherwise it may cause data loss.

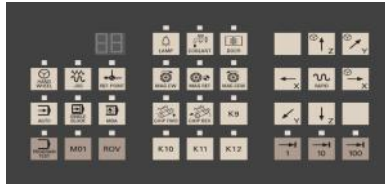


Battery alarm number 002101: This alarm indicates that the battery power of the system will soon be used up. In this case, replace the battery immediately, otherwise it may cause data loss.

MCP is not
available

Fault description:

1. MCP does not respond after power on, all the indicator lights are off and all the operations are not available.



2. All the indicator lights of MCP are flashing all the time.



Note: In this case, the alarm number on the PPU may be 400003.



Diagnostic steps

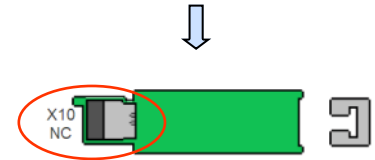
Check the connections between the MCP and the PPU

1. Whether the connections are disconnected.
2. Whether the connections are damaged or have a faulty contact.
(Check whether the fault is resolved by replacement with a new wire.)

Check whether the interface of X30 on the back of the PPU is damaged or there is a faulty contact. (Check whether the fault is resolved by replacement with a new wire.)



Check whether the interface of X10 on the back of the MCP is damaged or there is a faulty contact. (Check whether the fault is resolved by replacement with a new wire.)



A PLC program fault can also cause flashing of all the MCP indicator lights. In this case, check whether there is problem in the PLC program.

Replacement and maintenance are necessary if the fault still exists after the above inspection, because it is probable that the PPU or MCP is damaged.

Service case of hardware fault

MCP button press fault

Fault description:
Some buttons on the MCP do not respond.

(Common buttons with faults: "Cycle start" button and "Reset" button.)

Diagnostic steps

Check the state of the PLC input/output.

If the PLC status bit corresponding to the buttons changes







MCP buttons function correctly. In this case, make further observation to see if there are other alarms or whether the PLC program is correct in a different position.

If the PLC status bit corresponding to the buttons does not change



Replacement and maintenance are necessary because the MCP buttons are damaged.

Note: The steps for entering the PLC status monitoring interface on the PPU:

1. Press the "Machine" button on the PPU. 
2. Press the "Shift+ Alarm" buttons at the same time. 
3. Press the "PLC" softkey on the PPU. 
4. Press the "PLC status" softkey on the PPU. 

Example of PLC status monitoring

PLC status display		Active
Operand	Format	Value
DB1000.DBB3	B	0000 0000

Address of the "Reset" button:
DB1000.DBX3.5

Address of the "Cycle start" button:
DB1000.DBX3.3


RS232
transmission
fault

Fault description:

Data communication is not possible via RS232.

Diagnostic steps

Check the RS232 communication settings on the PPU

1. Whether the communication is activated.
2. Whether the communication parameters match the PC terminal.
3. Whether the X2 interface on the PPU panel is loose. 
4. Whether the cable of RS232 is damaged.
5. Whether the RS232 interface of the PC terminal is damaged.














Replacement and maintenance are necessary if the fault still exists after the above inspection, because it is probable that the PPU is damaged.

Note: When you use WINPCIN, please make sure that STEP 7 is closed otherwise this may cause a communication fault.









Note: The steps for entering the RS232 communication interface on the PPU:

a. Using RS232 to establish the PLC programming tool connection

1. Press the "Machine" button on the PPU.  
2. Press the "Shift+ Alarm" buttons at the same time   + 
3. Press the "PLC" button on the PPU.  
4. Press the "STEP 7 connect" softkey on the PPU.  
5. Press the "Connect. ON" softkey on the PPU after setting up the communications data.  

b. Using RS232 to establish the WINPCIN connection

1. Press the "Program management" button on the PPU.  
2. Press the "RS232" softkey on the PPU.  
3. Press the "Setup" softkey on the PPU.  
4. Adjust the "Communications settings" parameters until they are exactly the same as the configuration parameters in the computer communication software.



Please make sure that STEP7 is closed (OFF) before using WINPCIN !



Service case of hardware fault

Spindle fault

Fault description:

1. The spindle cannot move, the PPU screen shows the waiting for spindle signal and the screen has no alarm prompt.
2. The screen has spindle values, but the actual spindle cannot move and the screen has no alarm prompt.
3. The spindle angle of rotation is not steady (varies during rotation).

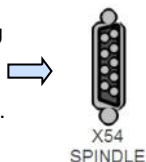
Diagnostic steps

- Case1** If the fault is: The spindle cannot move, the PPU screen shows the waiting for spindle signal.

Check the settings of machine data **MD30200** (spindle is set to 1 if it has an encoder, otherwise 0).

Check the spindle interface of X54 on the back of the PPU

1. Whether the interface is loose or damaged.
2. Measure pins 1 and 9 of X54 with a multi-meter after starting the spindle, then observe if there is voltage output.



Check whether the connection cable between the PPU, spindle and encoder is good.

Check whether the settings of machine data **MD30130/MD30240/MD30134/MD32250/MD32260/MD35150** are correct.

1. MD30130 = 1 / MD30240 = 2
2. MD30134 - spindle output polarity (set between 0 ~ 2)
0-dual polarity, 1/2-single polarity (depends on the actual situation)
3. MD32250 = 100 / MD32260, it is consistent with actual motor rated speed.

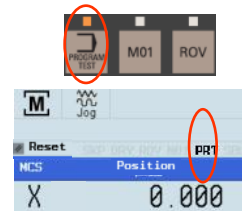
Check whether the spindle converter shows a fault or not.

Replacement and maintenance are necessary if the fault still exists after the above inspection, because it is probable that the PPU is damaged.

- Case2** If the fault is: The screen has spindle values, but the actual spindle cannot move.

Please check whether the PPU is in the program test state.

1. Whether the indicator light of the "Program test" key on MCP is on or not (it should not be on).
2. Whether the "PRT" indicator on the PPU screen is activated or not (it should not be activated).



Use the diagnostic steps of "Case1" mentioned above to check the spindle if the fault still exists.

- Case3** If the fault is: The spindle angle of rotation is not steady (varies during rotation)

Check whether there is an interference between the connections (it is better to separate thicker and thinner wires).

- Check the interface of X54 on the back of the PPU
1. Whether the interface is loose.
 2. Whether the connections have a faulty contact.



Please check whether the connection of the spindle converter is loose or whether the converter is damaged.



Service case of hardware fault

Spindle encoder alarm

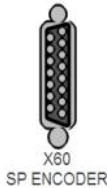
Fault description:

The spindle cannot move, and the 025000 alarm appears on the screen at the same time.



Diagnostic steps

Check the spindle encoder interface on the back of the PPU. →



Check whether the connection of the PPU spindle encoder is damaged or the connection is correct.

Check whether the settings of machine data **MD30200/MD30240** in the PPU are correct.

1. MD30200: Spindle is set to 1 if it has an encoder, otherwise 0.
2. MD30240=2

Check whether the spindle encoder is damaged, replace it with a new encoder and test it again.

Replacement and maintenance are necessary if the fault still exists after the above inspection, because it is probable that the PPU is damaged.

Handwheel fault

Fault description:

Handwheel is not available / axis is not selected.

Diagnostic steps

Check whether the process is correct, and confirm whether the feed axis has been selected for operation in the "Handwheel" state. →

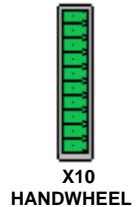


Use the PLC input/output for monitoring the axis inspection with the selected key.

Check whether the connections on the handwheel are correct, and observe if there are short-circuits to adjacent connections.

Check the X10 interface on the front of the PPU. →

1. Whether the connection is loose.
2. Whether the connection is damaged.
3. Check the X10 interface (terminal 5/6) and observe if there is 5 V output.



Check whether the handwheel is damaged.

Replacement and maintenance are necessary if the fault still exists after the above inspection, because it is probable that the PPU is damaged.

Service case of hardware fault

Feed axis fault

Fault description:

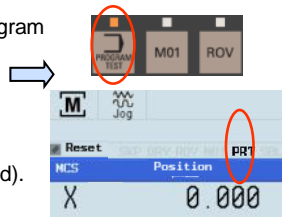
1. The system has completed the state of returning to the reference point. The screen can display feed axis data, but the actual machine cannot move.
2. The actual direction of motion is opposite to the operational direction of the machine / is opposite to the direction of screen display.

Diagnostic steps

Case1 If the fault is: The screen can display feed axis data, but the actual machine cannot move.

Please check whether the PPU is in the program test state.

1. Whether the indicator light of the "Program test" button on the MCP is on (it should not be on).
2. Whether the "PRT" indicator on the PPU screen is activated (it should not be activated).




Check whether the mechanical coupling is loose.

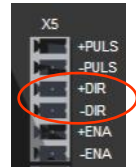
Check whether the connection between the axis signal and the drive is good, and whether the pins on the V60 are tight/damaged.

Check whether there are alarms on the drive if using a third-party drive.

Replacement and maintenance are necessary if the fault still exists after the above inspection, because it is probable that the PPU is damaged.

Case2 If the fault is: The actual direction of motion is opposite to the operational direction of the machine / is opposite to the direction of screen display.

Check whether the connections of the direction keys on the V60 drive are correct.  Check whether the wiring of terminal + DIR / - DIR is correct depending on the actual situation.



Check whether the settings of machine data **MD32100 / MD32110** are correct.

MD32100: Axis reverse key (The implied value = 1. It is permitted to change to -1 according to the actual situation.)

MD32110: Encoder position feedback polarity key (The implied value = 1. It is permitted to change to -1 according to the actual situation.)

Service case of hardware fault

Change of direction is not possible

Fault description:

The machine can only move in one direction when the Shaft + (or shaft-) key is used in "Manual" mode, and the direction cannot be changed.

Diagnostic steps

Check whether the drive is damaged.

If using a third-party drive, it is necessary to verify the compatibility between the system and the drive.

Position- ing error

Fault description:

The operating position of the machine coordinate system is not accurate.

Diagnostic steps

Check whether the settings of machine parameters **MD31030/MD31050/MD31060/MD31020/MD31400** are consistent with the actual mechanical parameters.

1. MD31030 → leadscrew pitch value storage
2. MD31050/MD31060 → shaft deceleration rate
3. MD31020 = MD31400 → encoder line number (set to 10000 when using the V60 drive)

Note: Check whether there is play on the drive encoder.

Check the drive parameters. Do not set up the deceleration rate parameters in the drive.

Check whether the machine installation is stable.

Check whether the mechanical coupling is loose / the belt is slipping.

Check whether it is necessary to adjust the compensation of the lead-screw pitch and the backlash.

Service case of hardware fault

Tool change fault

Fault description:

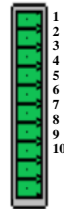
Machine cannot change tools / tool change error / tools keep rotating.

Diagnostic steps

Check whether the connected sequence of machine source / tool motor is correct.

Check the tool rotation signal output on the back of the PPU / input points interface of the tool signal in place

1. Whether it is damaged.
2. Whether the wire is loose.
3. Terminal no. 1/10 is connected to 24 V / 0 V.
4. Whether the connection is correct or different in the settings of PLC program.



Connected interface

Check whether the wires between the tool signal input /output point on the back of the PPU and the connections between the tools are loose or damaged.

Check whether the signal code wheel of the machine is damaged.

Replacement and maintenance are necessary if the fault still exists after the above inspection, because it is probably the fault of the PPU.

Startup process crashes

Fault description:

The system loading process crashes during startup (usually it freezes when loading at 40%).

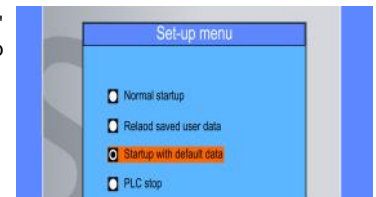
Diagnostic steps

Power off and restart. Check whether the fault is resolved.

Power off and check whether the CF card is inserted correctly or has a faulty contact, then power on again to check whether the fault is resolved.



Power off and press the "Selection" button on the PPU during power-up to open the menu, then select "Startup with default data".



Note: All machine data is lost during this operation. Please ensure that there is an appropriate backup.

Replacement and maintenance are necessary if the fault still exists after the above inspection, because it is probable that the PPU is damaged.



Service case of hardware fault


Hardware limit fault

Fault description:

1. Hardware limit switch alarm appears on the PPU.
2. The machine has crossed the hardware limit switch, but can still move, no alarm.

Diagnostic steps

Case1 If the fault is: Hardware limit switch alarm appears on the PPU.

 Channel 1 axis Z/Z hardware limit switch +

Press the "Reset" button on the PPU and press the direction key controlling the feed shaft movement on the PPU at the same time to make the feed axis move in the opposite direction and break away from the hardware limit switch. The alarm can then be cleared.

The hardware limit switches on the machine must be checked if these methods do not resolve the fault.

1. Use a multi-meter to check whether the hardware limit switch connection is good.
2. Check whether the hardware limit switches are damaged.

Case2 If the fault is: The machine has crossed the hardware limit switch, but can still move, no alarm.

Check whether the hardware limit switch connection is short-circuited with the high level.

Check whether the hardware limit switches are damaged.

Startup can't go to REF. point

Fault description:

1. Press the axis + (or axis-) key, the screen coordinates do not change and the machine does not move.
2. Press the axis + (or axis-) key, screen coordinates change but the machine does not move.
3. Press the axis + (or axis-) key, the machine can move until the hardware limit switch alarm appears.
4. Press the axis + (or axis-) key, the machine is always moving in the opposite direction.
5. Press the axis + (or axis-) key, the machine moves only a short distance.
6. Press the axis + (or axis-) key, the machine alarm 20002 appears after exiting the slowdown switch.
7. Press the axis + (or axis-) key, the start point and automatic processing program are running normally, but the system does not respond when returning to the reference point.

Diagnostic steps

Case1 If the fault is: Press the axis + (or axis-) key, the screen coordinates do not change and the machine does not move.

Check if there is an alarm number on the PPU screen, continue operation after eliminating the alarm via the "Reset" key.

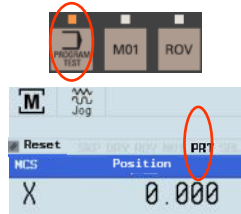
The machine data is lost if the alarm numbers 004060/004062/004065 appear; in this case, it is necessary to back up the data and restart after power-off to check whether the fault has been eliminated.

Case2 If the fault is: Press the axis + (or axis-) key, screen coordinates change but the machine does not move.

Check whether the PPU is in the program test state.

1. Whether the indicator light of the "Program test" key on MCP is on (it should not be on).

2. Whether the "PRT" indicator on the PPU screen is activated (it should not be activated).



Check whether the settings of machine data **MD30130/MD30240/MD30350** are correct.

1. Feed axis MD30130=2 / MD30240=3
2. MD30350=0

Case3 If the fault is: Press the axis + (or axis-) key, the machine can move until the hardware limit switch alarm appears.

Check whether the machine deceleration switches and their related connections are broken.

Case4 If the fault is: Press the axis + (or axis-) key, the machine is always moving in the opposite direction.

Check whether the machine deceleration switches can bounce.

Check whether the machine deceleration switches and their related connections are broken.

Case5 If the fault is: Press the axis + (or axis-) key, the machine moves only a short distance.

Check whether the settings of machine data **MD34000** are correct (the machine deceleration switches are not available when 34000=0).

Case6

If the fault is: Press the axis + (or axis-) key, the machine alarm 20002 appears after exiting the slowdown switch.

Check whether the machine approaching switch and its related connections are damaged.

Check whether the settings of machine data **MD34060** are correct.

Check whether the encoder corresponding to the feed axis and its related connections are damaged.

Case7 If the fault is: Press the axis + (or axis-) key, the start point and automatic processing program are running normally, but the system does not respond when returning to the reference point.

Check whether the settings of machine data **MD30200** are correct (it cannot return to the reference point when 30200=0).



PPU/HMI
fault

Fault description:

PPU button is defect / HMI screen is defect

Diagnostic steps

Check whether it is in the crashed state. If so, power off and on, then check whether the fault still exists.

Replacement and maintenance are necessary if the fault still exists after the above operation, because it is probable that the PPU is damaged.

Drive
alarm



This section discusses only the Siemens
SINAMICS V60 drive

Fault description:



025201 Axis X drive fault

The system issues a drive-related alarm.

The V60 drive also issues an alarm, the common alarm numbers are A05/
A06/A07/A08/A09

Diagnostic steps

A05 alarm

IGBT overcurrent → appears when power is obtained from
the line supply / appears during motor operation.

Check the U, V, W, PE connections on the drive

1. Whether connections among different phases are short-circuited.
2. Whether the grounding connection is incorrect or has bad grounding.
3. Whether the connection is damaged.

Power on again and observe whether the fault still exists after verification.

If the fault still exists after the above operation, check the insulation of the
motor and see if it is damaged. The motor can be changed when neces-
sary. Then power on again and observe whether the fault still exists.

Replacement and maintenance are necessary if the fault still exists after
the above operation, because it is probable that the drive is damaged.

A06 alarm Internal chip overcurrent → appears when power is obtained from the line supply / appears during motor operation.

Check the U, V, W, PE connections on the drive
1. Whether connections between different phases are short-circuited.

2. Whether a U, V, W phase is disconnected.

3. Whether the grounding connection is incorrect or has bad grounding.

4. Whether the connection is damaged.

Power on again and observe whether the fault still exists after verification.

If the fault still exists after the above operation, check the insulation of the motor and see if it is damaged. The motor can be changed when necessary. Then power on again and observe whether the fault still exists.

Replacement and maintenance are necessary if the fault still exists after the above operation, because it is probable that the drive is damaged.

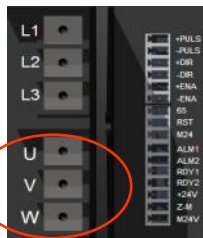
A07 alarm The ground circuit is short-circuited → appears when power is obtained from the line supply / appears during motor operation.

Check the U, V, W, PE connections on the drive

1. Whether connections among different phases are short-circuited.

Power on again and observe whether the fault still exists after verification.

Replacement and maintenance are necessary if the fault still exists after the above operation, because it is probable that the IGBT module in the drive is damaged.



A08 alarm The encoder U/V/W connections are incorrect.

Check the signal cable between the motor and the drive (the encoder from the drive to the motor)

1. Whether the internal cable connections have faulty contacts.

2. Whether the cable shielding is poor.

3. Whether the shielded ground cable is connected correctly.

Power on again and observe whether the fault still exists after verification.

The interface circuit of the encoder must be checked if the fault still exists after the above operation.

Replacement and maintenance are necessary if the fault still exists after the above operation, because it is probable that the encoder on the drive is damaged.

A09 alarm The encoder TTL has pulse faults.

Check the signal cable between the motor and the drive (the encoder from the drive to the motor)

1. Whether the connection of the encoder cable is correct.

2. Whether the internal cable connections have faulty contacts.

3. Whether the cable shielding is poor.

4. Whether the shielded ground cable is connected correctly.

Power on again and observe whether the fault still exists after verification.

The interface circuit of the encoder must be checked if the fault still exists after the above operation.

Replacement and maintenance are necessary if the fault still exists after the above operation, because it is probable that the encoder in the drive is damaged.

Service case
of hardware
fault

Overload

Fault description:

The machine cannot move or moves difficultly because of overload (the drive may issue an overload alarm).

Diagnostic steps

Check whether the guide lubrication is sufficient

1. Whether the tubing/nozzle is unimpeded.
2. Whether the setting of the lubrication interval time is sufficient (the interval should not be too long).

Stop the machine and check whether the guides / the screw are blocked by the machining waste. If so, it may need proper cleaning.

Check the connection of the shaft coupling

1. Whether the connection is too tight.
2. Whether the connection is concentric.

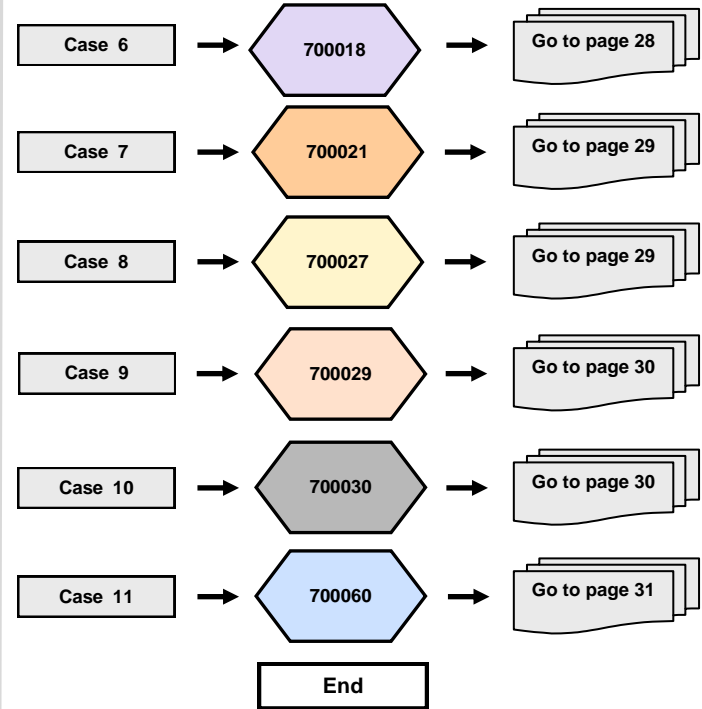
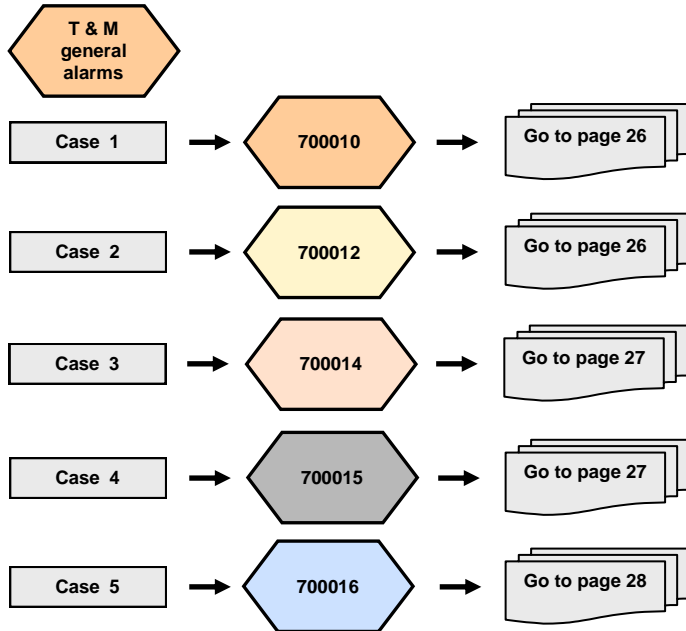
Notes

A large, empty grid area for taking notes, consisting of a uniform pattern of small squares. The grid is bounded by a thin grey border.

Notes

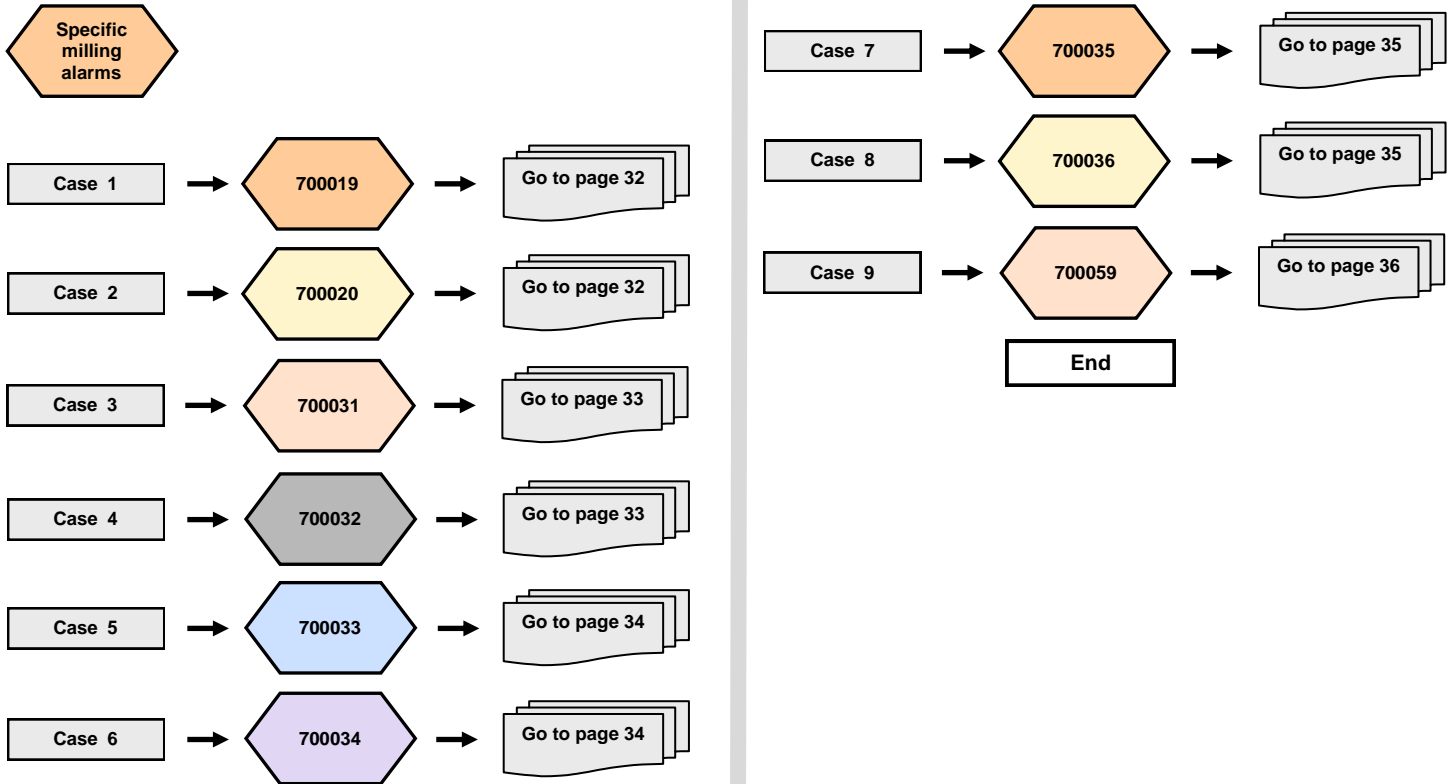
A large grid area for taking notes, consisting of a uniform pattern of small squares. The grid is empty and occupies the majority of the page's content area.

We provide guidance in analyzing and diagnosing alarms caused by the standard PLC in the 808D which are only for Siemens service engineers, OEM service engineers and Siemens authorized service engineers.



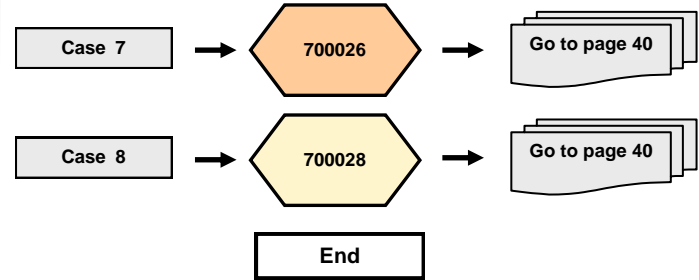
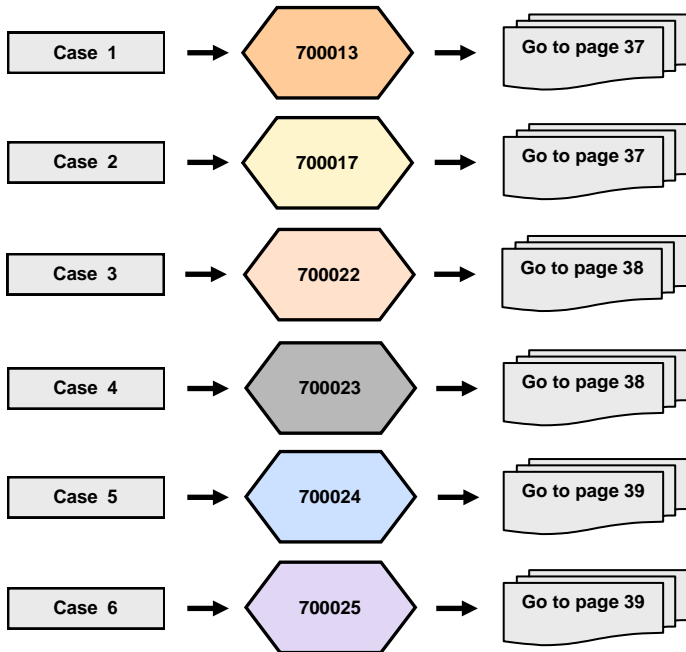
Service case
of PLC alarm

Specific
milling
alarms



Service case
of PLC alarm

Specific
turning
alarms



Service case of PLC alarm

700010

Name of alarm:

HHU is active



700010

HHU is active

PLC information

Address of PLC: DB1600.DBX1.2

Name of subprogram: MINI_HHU (SBR 41)

Alarm comment

It is not a fault, the alarm acts as a reminder and points out that the handwheel is activated.

(Conditions for the alarm to appear: The handwheel function has been activated and the axis selection operation is already in progress.)

Processing method

No special action is required; the alarm will disappear after cancellation of the handwheel function / cancellation of the handwheel selection.

700012

Name of alarm:

Spindle in braking progress



700012

Spindle in braking progress

PLC information

Address of PLC: DB1600.DBX1.4

Name of subprogram: SPINDLE (SBR 42)

Alarm comment

It is not a fault, the alarm acts as a reminder and points out that the spindle is braking.

Processing method

Please wait for the end of spindle braking, the alarm will disappear.

700014

Name of alarm:

Gear-change timeout



700014 Gear-change time out

PLC information

Address of PLC: DB1600.DBX1.6

Name of subprogram: GearChg1_Auto (SBR 49)

Alarm comment

Fault, the spindle shift time is beyond the permitted limit.

Processing method

Check whether the gear-change monitoring time is set too low.

Check whether the spindle gearbox has mechanical problems.

700015

Name of alarm:

Gear level position error



700015 Gear level position error

PLC information

Address of PLC: DB1600.DBX1.7

Name of subprogram: GearChg1_Auto (SBR 49)

Alarm comment

Fault, the control cannot accept the gear level signal / the control accepts the wrong gear level signal.

Processing method

Check the related parts of the gear level signal

1. Use PLC monitoring to detect if there is an input signal at the gear level signal's relevant input points.

2. Check whether the input terminals of the interface on the back of the PPU are damaged/loose or the wiring is damaged.

Check whether the spindle gearbox has mechanical problems.

700016

Name of alarm:
Drives not ready



700016 DRIVES NOT READY

PLC information

Address of PLC: DB1600.DBX2.0
Name of subprogram: EMG_STOP (SBR 33)

Alarm comment

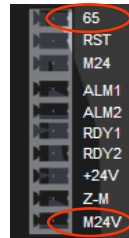
Fault, the drive is not ready for operation or preparation.
Note: This alarm always appears for an "emergency stop".

Processing method

Check whether an emergency stop alarm has caused this alarm.

Check the drive

1. Whether the terminal of X6 is tight / wiring is loose or disconnected / 65 enable and M24 pins are faulted.
2. Whether a drive alarm exists / no startup.
3. Whether the drive is damaged.



700018

Name of alarm:
Cooling motor overload



700018 COOLING MOTOR OVERLOAD

PLC information

Address of PLC: DB1600.DBX2.2
Name of subprogram: COOLING (SBR 44)

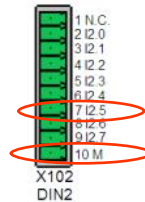
Alarm comment

Fault, cooling motor overload, cooling fluid function cannot be used normally, the system issues an alarm.

Processing method

Check whether the cooling motor's overload protection switch is operable.

- Check the terminal of X102 on the back of the PPU
1. Whether the connection of pin 7 is loose/disconnected.
 2. Confirm that pin 10 is connected normally with 0 V.



700021



700021 LUBRICANT LIQUID POSITION IN LOW LEVEL

Name of alarm:

Lubricant liquid position in low level

PLC information

Address of PLC: DB1600.DBX2.5

Name of subprogram: LUBRICAT(SBR 45)

Alarm comment

Fault, the lubricating oil level in the oil box is lower than the lowest set value and this results in the alarm; it may cause mechanical damage if not corrected in time.

Processing method

Check whether the lubricating oil level is too low and add lubricating oil in time.

Check the relevant terminals on the back of the PPU

1. Whether the input point is damaged/loose.
2. Whether pin10 is connected normally with 0 V.

700027



700027 APPROACH REF.POINT AGAIN AFTER ROT. MONITORING

Name of alarm:

Approach ref point again after rot. monitoring

PLC information

Address of PLC: DB1600.DBX3.3

Name of subprogram: AXIS_CTL(SBR 46)

Alarm comment

Fault caused by a drive stage loss (this usually occurs during motor high-speed operation).
The result is that the running program is terminated and the reference points are lost.

Processing method

Check the +24 V, Z-M, M24 of the X6 cable on the drive

- 1.Whether the connection is correct.
- 2.Whether the connection has been cut / damaged.



Power on again and observe whether the fault is eliminated after power off.

You can reduce the machining speed in the permitted range.

Replacement and maintenance are necessary if the fault occurs frequently, because it is probable that the drive has a problem.

Service case of PLC alarm

700029

Name of alarm:



700029 Reminding information for 1st service plan

Reminding information for 1st service plan

PLC information

Address of PLC: DB1600.DBX3.5

Name of subprogram: PI_SERVICE (SBR 46)

Alarm comment

It is not a fault, the alarm acts as a reminder. The appearance of this alarm shows that the reminding information for the 1st service plan which is set ahead of time is arriving.

Processing method

Check the predetermined service maintenance plan and make the relevant preparations.

Press the "Task completed" softkey on the PPU to eliminate the alarm.



Task completed



700030

Name of alarm:



700030 Alarm for 1st service plan

Alarm for 1st service plan

PLC information

Address of PLC: DB1600.DBX3.6

Name of subprogram: PI_SERVICE (SBR 46)

Alarm comment

It is not a fault, the alarm acts as a reminder. The appearance of this alarm shows that the reminding information for the 1st service plan which is set ahead of time has arrived, please execute the relevant service plan immediately.

Processing method

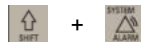
Press the "Task completed" softkey on the "Service plan" interface after executing the relevant service plan to eliminate the alarm.



Task completed

Note: The steps on the "Service plan" interface are as follows

1. Press the "Shift + Diagnosis" buttons at the same time.



2. Press the "Service plan" softkey on the PPU.



Service case of PLC alarm

700060

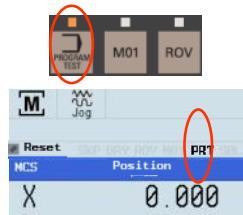
Name of alarm:  **700060** Channel not in reset, change PRT not possible
Channel not in reset, change PRT not possible.

PLC information

Address of PLC: DB1600.DBX7.4
Name of subprogram: MCP_NCK (SBR 37)

Alarm comment

Fault, the "Program test" softkey to change this state is not available during the program operation so the system must first be switched to the "Reset" state.



Processing method

Press the "Alarm cancel" button to cancel the alarm, the program will continue.



You can also press the "Reset" button to cancel the alarm. (Note: the implemented program is also reset at this time.)



Service case of PLC alarm

700019

Name of alarm:

Coolant liquid position in low level



700019 COOLANT LIQUID POSITION IN LOW LEVEL

PLC information

Address of PLC: DB1600.DBX2.3

Name of subprogram: COOLING (SBR 44)

Alarm comment

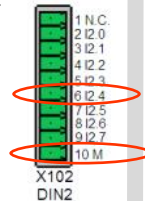
Fault, the coolant liquid position in the machine is lower than the lowest set value and this alarm is issued; it can cause mechanical damage if not corrected in time.

Processing method

Check whether the lubricating oil level is too low and add lubricating oil in time.

Check terminal X102 on the back of the PPU

1. Whether the connection of pin 6 is loose/disconnected.
2. Whether pin 10 has been connected normally to 0 V.



700020

Name of alarm:

Lubricating motor overload



700020 LUBRICATING MOTOR OVERLOAD

PLC information

address of PLC : DB1600.DBX2.4

Name of subprogram: LUBRICAT (SBR 45)

Alarm comment

Fault, lubricating motor overload, lubricating fluid function cannot be used normally, the system issues an alarm.

Processing method

Check whether the motor's lubricating overload protection switch is operable or not.

Check the relevant terminals on the back of the PPU

1. Whether the input point is damaged/loose.
2. Whether pin 10 is connected normally to 0 V.



700031

⇒ **700031** Magazine not in spindle pos. or original pos.

Name of alarm:

Magazine not in spindle pos. or original pos.

PLC information

Address of PLC: DB1600.DBX3.7

Name of subprogram: DISK_MGZ_M (SBR 60)

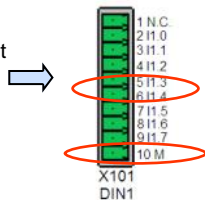
Alarm comment

Fault, the magazine is not in the spindle position or the original position, the changing of tool is stopped at this time.

Processing method

Check terminal X101 on the back of the PPU

1. Use the PLC status monitoring to detect the input state of I1.3 / I1.4
2. Whether the connections of pin 5 and pin 6 are loose/disconnected.
3. Whether pin 10 is connected normally to 0 V.



Check whether the magazine air pressure is low.

Check whether the test switches of the magazine's extrusion limit and withdrawal limit are faulty.

Note: Press the "Reset" button to eliminate the alarm after the magazine has returned to the correct position.



700032

⇒ **700032** Magazine in spindle pos. and original pos.

Name of alarm:

Magazine in spindle pos. and original pos.

PLC information

Address of PLC: DB1600.DBX4.0

Name of subprogram: DISK_MGZ_M (SBR 60)

Alarm comment

Fault, the system detects that the magazine is in the spindle position and the original position; the action of the magazine is stopped at this time.

Processing method

Check terminal X101 on the back of the PPU

1. Use the PLC status monitoring to detect the input state of I1.3 / I1.4
2. Whether the connections of pin 5 and pin 6 are loose/disconnected.
3. Whether pin 10 is connected normally to 0 V.



Check whether the test switches of the magazine's extrusion limit and withdrawal limit are faulty.

Note: Press the "Reset" button to eliminate the alarm after the magazine has returned to the correct position.



700033

Name of alarm:



700033

Magazine turn key when magazine or sp. not ready

Magazine turn key when magazine or sp. not ready

PLC information

Address of PLC: DB1600.DBX4.1

Name of subprogram: DISK_MGZ_M(SBR 60)

Alarm comment

Fault, the "Move magazine" button is pressed when the magazine or the spindle is not ready; the result is that the magazine cannot move.

Processing method

Press the "Reset" button to cancel the alarm, then continue.



Note: The magazine cannot be moved in the following cases

1. The spindle is turning in the positive direction.
2. The magazine is executing the forward rotation / reverse rotation command.
3. The spindle is executing the tool-release command.
4. The emergency stop state is activated.



700034

Name of alarm:



700034

Block-search, tool in spindle <> programmed tool

Block search, tool in spindle <> programmed tool

PLC information

Address of PLC: DB1600.DBX4.2

Name of subprogram: DISK_MGZ_M(SBR 60)

Alarm comment

Fault, the spindle tool number is not equal to the program tool number; the result is that an alarm is issued and the program cannot be executed.

Processing method

Make sure that you have used the correct "Program search" method to restart the program.

Check whether the tool number selection in the current program which is to be activated is consistent with the current spindle load tool.

Cancel this alarm by pressing the "Reset" button after making sure that the entire information is correct.



700035

Name of alarm:



700035

Spindle not reach tool-release pos. in time

Spindle not reach tool-release pos. in time

PLC information

Address of PLC: DB1600.DBX4.3

Name of subprogram: DISK_MGZ_M(SBR 60)

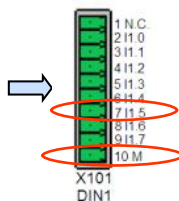
Alarm comment

Fault, the tool-release process takes longer than the monitoring time; this results in the failure of the spindle tool release.

Processing method

Check terminal X101 on the back of the PPU

1. Use the PLC status monitoring to detect the input state of I1.5
2. Whether the connections of pin 7 are loose/disconnected?



Check whether the setting of the tool-release monitoring timer (T19) in the PLC is correct.

Check whether the air pressure is sufficient.

Check whether the spindle tool-release switch is normal.

Note: Press the "Reset" button to eliminate the alarm after eliminating the actual fault.



700036

Name of alarm:



700036

Spindle not reach tool-lock pos. in time

Spindle not reach tool-lock pos. in time

PLC information

Address of PLC: DB1600.DBX4.4

Name of subprogram: DISK_MGZ_M(SBR 60)

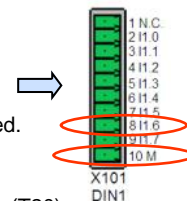
Alarm comment

Fault, the tool-lock process takes longer than the monitoring time; this results in the failure of the spindle tool lock.

Processing method

Check terminal X101 on the back of the PPU

1. Use the PLC status monitoring to detect the input state of I1.6.
2. Whether the connections of pin 8 are loose/disconnected.
3. Whether pin 10 is connected normally to 0 V.



Check whether the setting of the tool-lock monitoring timer (T20) in PLC is reasonable.

Check whether the air pressure is sufficient.

Check whether the spindle tool-lock switch is normal.

Note: Press the "Reset" button to eliminate the alarm after eliminating the actual fault.



Service case of PLC alarm

700059

Name of alarm:



700059 safety door not closed, NC start not possible

Safety door not closed, NC start not possible.

PLC information

Address of PLC: DB1600.DBX7.3

Name of subprogram: AUX_MCP (SBR 20)

Alarm comment

Fault, running the program without closing the safety door; the result is that the program cannot be executed.

Processing method



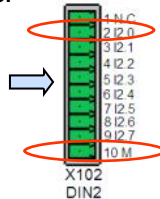
Check whether the safety door is closed (if using the safety door control key on the MCP, please check whether this button is activated).

If the safety door has been closed, please check the following:

Check terminal X102 on the back of the PPU
1. Whether the connections of pin 7 are loose/disconnected.

Check whether the door-closed limit switch is normal.

Note: Press the "Reset" button to eliminate the alarm after eliminating the actual fault.



Service case of PLC alarm

700013

Name of alarm:



700013

Operation while chuck is not locked

Operation while chuck is not locked

PLC information

Address of PLC: DB1600.DBX1.5

Name of subprogram: Lock_ unlock _T (SBR 56)

Alarm comment

Fault, the chuck is not locked tightly and the cycle start as well as the spindle forward/reverse operation is not permitted.

Processing method

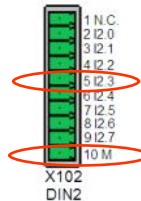
Check whether the MCP "Chuck open" indicator light is on.



Check whether the actual machine parts are clamped in the chuck.

Check terminal X102 on the back of the PPU

1. Whether the connections of pin 5 are loose/disconnected.
2. Whether pin 10 is connected normally to 0 V.



700017

Name of alarm:



700017

Operate chuck when sp. or part prog. is running

Operate chuck when sp. or part prog. is running

PLC information

Address of PLC: DB1600.DBX2.1

Name of subprogram: MAIN (OB1)

Alarm comment

Fault, no "Chuck open" operation when spindle or program is running.

Processing method

The fault causes the issuing of this alarm. Please notice that there is no chuck operation when the spindle / program is running.

Press the "Alarm cancel" button to cancel the alarm, the action will continue.



You can also press the "Reset" button to cancel the alarm.

(Note: The action is also reset at this time.)



Service case of PLC alarm

700022

Name of alarm:



700022 TURRET MOTOR OVERLOAD

Turret motor overload

PLC information

Address of PLC: DB1600.DBX2.6

Name of subprogram: MAIN (OB1)

Alarm comment

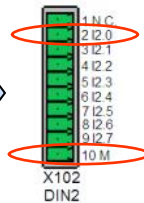
Fault, the turret motor is overloaded, the function cannot be used normally, the system issues the alarm; the result is that all operations are not available.

Processing method

Check whether the motor overload protection switch is operable.

Check terminal X102 on the back of the PPU

1. Whether the connections of pin 2 are loose/disconnected.
2. Whether pin 10 is connected normally with 0 V.



700023

Name of alarm:



700023 PROGRAMMED TOOL NUM. > MAX. TURRET NUMBER

Programmed tool num. > max. tool number

PLC information

Address of PLC: DB1600.DBX2.7

Name of subprogram: MAIN (OB1)

Alarm comment

Fault, because the program is incorrect.

Processing method

Check the content of the machining program, then set the program tool number according to actual situation.



700024

Name of alarm:



700024

Max. tool number setting error

Max. tool number setting error

PLC information

Address of PLC: DB1600.DBX3.0

Name of subprogram: MAIN (OB1)

Alarm comment

Fault, the setting of the max. tool number in the system is not correct.
The correct setting number is: 4 or 6

Processing method

Check whether the settings of parameters **MD14510[20]** (max. tool number) are correct.

700025

Name of alarm:



700025

NO POSITION SIGNALS FROM TURRET

No position signals from turret

PLC information

Address of PLC: DB1600.DBX3.1

Name of subprogram: MAIN (OB1)

Alarm comment

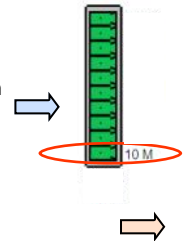
Fault, no position signals can be detected from the turret.

Processing method

Check the tool code wheel
1. Whether the tool signal point is damaged.
2. Whether the tool itself is faulty.

Check the corresponding terminals of the I/O interface on the back of the PPU

1. Whether the connections are disconnected/loose.
2. Whether the terminals are damaged/loose?
3. Whether the point of mon. terminal is connected normally to 0 V.



Service case of PLC alarm

700026

Name of alarm:



700026 Not able to find expected tool in monitor time

Not able to find expected tool in monitor time

PLC information

Address of PLC: DB1600.DBX3.2

Name of subprogram: MAIN(OB1)

Alarm comment

Fault, the alarm appears because no tool position is detected in the time limit.

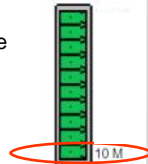
Processing method

Check the tool code wheel

1. Whether the tool signal point is damaged.
2. Whether the tool itself is faulty.

Check the corresponding terminals of the I/O interface on the back of the PPU

1. Whether the connections are disconnected/loose.
2. Whether the terminals are damaged/loose.
3. Whether the point of the mon. terminal are connected normally to 0 V.



Check whether the settings of **MD14510[22]** are correct (the value can be increased appropriately).



700028

Name of alarm:



700028 Tool is not locked

Tool is not locked

PLC information

Address of PLC: DB1600.DBX3.4

Name of subprogram: Turret3_CODE_T (SBR 53)

Alarm comment

Fault, the tool-locked signal is not in the system and therefore the tool is not locked tightly.

Processing method

Check the tool-locked signal

1. Whether the relevant input terminals on the back of the PPU are loose/damaged.
2. Whether the connections of relevant input terminals on the back of the PPU are damaged/disconnected.
3. Use the PLC monitoring to detect whether the corresponding input point of this signal has input signals.



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