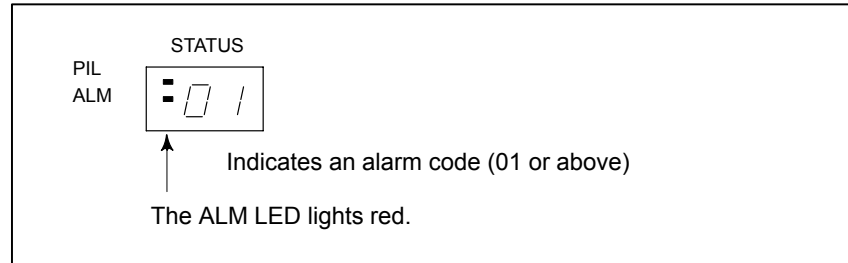


3

TROUBLESHOOTING AND ACTION

3.1 POWER SUPPLY MODULE

If an alarm occurs, in the STATUS display, the ALM LED lights red, and the two-digit 7-segment display indicates an alarm code.



3.1.1 Alarm Code 01

| Meaning

The main circuit power module (IPM) has detected an error. (PSM-5.5, -11)

Overcurrent flows into the input of the main circuit. (PSM-15 to -30)

• Cause and troubleshooting

(a) IGBT (or IPM) defective

⇒ Replace IGBT (or IPM).

(b) The specification of the AC reactor does not match the PSM in use.

⇒ Check the PSM and the specification of the AC reactor.

3.1.2 Alarm Code 02

| Meaning

A cooling fan for the control circuit has stopped.

• Cause and troubleshooting

(a) Cooling fan broken

Check whether the cooling fan rotates normally.

⇒ Replace it.

3.1.3
Alarm Code 03

- | Meaning
The temperature of the main circuit heat sink has risen abnormally.
- Cause and troubleshooting
 - (a) Cooling fan broken
Check whether the cooling fan rotates normally.
⇒ Replace it.
 - (b) Dust accumulation
⇒ Clean the cooling system with a vacuum cleaner or the factory air blower.
 - (c) Overload
⇒ Examine the operating conditions.

3.1.4
Alarm Code 04

- | Meaning
In the main circuit, the DC voltage (DC link) has dropped.
- Cause and troubleshooting
 - (a) A small power dip has occurred.
Check the power supply.
 - (b) Low input power supply voltage
Check the power supply specification.
 - (c) The main circuit power supply may have been switched off with an emergency stop state released.
⇒ Check the sequence.

3.1.5
Alarm Code 05

- | Meaning
The main circuit capacitor was not recharged within the specified time.
- Cause and troubleshooting
 - (a) Too many SVM and/or SPM units are connected.
⇒ Check the specification of the PSM.
 - (b) The DC link is short-circuited.
⇒ Check the connection.
 - (c) The recharge current limiting resistor is defective.
⇒ Replace the wiring board.

3.1.6
Alarm Code 06

- | Meaning
The input power supply is abnormal (open phase).
- Cause and troubleshooting
 - (a) The input power supply has an open phase.
⇒ Check the connection.

3.1.7
Alarm Code 07

- | Meaning
In the main circuit, the DC voltage at the DC link is abnormally high.
- Cause and troubleshooting

- (a) Excessive regenerated power
Regeneration is impossible. The PSM does not have a sufficient capacity.
⇒ Check the specification of the PSM.
- (b) The output impedance of the AC power source is too high.
⇒ Check the power source output impedance.
- (c) Regeneration circuit failure
Check whether there is an overvoltage at check terminal IR or IS.
⇒ Replace the wiring board or control printed circuit board.
- (d) IGBT (or IPM) defective
⇒ Replace the IGBT (or IPM).

3.2 SERVO AMPLIFIER MODULE TROUBLESHOOTING

3.2.1 Abnormal Current Alarms (8, 9, A, b, C, d, and E in the LED display)

- (1) Make sure that the following parameters are set to the standard values. If they are not, abnormal current control is performed.

No. 1809		No. 1884		NO. 1954 (15- A) , 1955 (15- B)			
No. 2004	No. 8X04	No. 2006	No. 8X06	No. 2011	No. 8X10		
No. 1852		No. 1853		No. 1967		No. 1991	
No. 2040	No. 8X40	No. 2041	No. 8X41	No. 2074	No. 8X74	No. 2098	No. 8X98

- (1) Remove the power line wires from the amplifier terminals, and release an emergency stop state.
If an abnormal current alarm occurs, go to (4).
If not, go to (3).
- (2) Check for insulation between PE and each of the removed power wires U, V, and W. If insulation is perfect, go to (4). If not, disconnect the power wires from the motor connector. Then check for insulation between PE and each of the U, V, and W terminals on the motor.
⇒ If there is a short-circuit between PE and U, V, or W of the motor, replace the motor.
⇒ If insulation is perfect, replace the power wires.
- (3) Connect the power wires. Attach the check board (A06B-6071-K290) to connector JX5 to measure the waveform of the actual current (IR and IS) in the servo amplifier module. Accelerate or decelerate the motor, and measure the actual current (IR and IS) of the amplifier.