





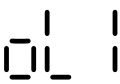






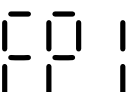


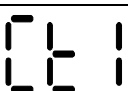



CHAPTER 7 ERROR MESSAGE AND TROUBLESHOOTING

The Drive has a comprehensive fault diagnostic system that includes various alarms and fault messages such as over-voltage, low-voltage and over-current. Once a fault is detected, the corresponding protective functions will be activated, and the Drive will stop the output and the motor will then coast to stop. The following faults are displayed as shown on the Drive digital keypad panel. Once the fault occurred, eliminate it first, and 5 seconds later, press the RESET button to reactivate the operation.

Problems and Solutions

| Fault name | Fault Descriptions | Treatments |
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|  | Over Current (OC): The Drive detects an abnormal increase in Output current. | <ol style="list-style-type: none"> 1. Check whether the motors horsepower corresponds to the Drive output power. 2. Check the wiring connections between the Drive and motor for possible short circuits. 3. Increase the Acceleration time (Pr1-11, Pr1-12) 4. Check for possible excessive loading conditions at the motor. 5. If there are any abnormal conditions when operating the Drive after short-circuit being removed, it should be sent back to manufacturer. |
|  | Over Voltage (OV): The Drive detects that the DC bus voltage has exceeded its maximum allowable value. 110/230 V class: about 800V 460 V class: about 800V | <ol style="list-style-type: none"> 1. Check whether the input voltage falls within the rated Drive input voltage. 2. Check for possible voltage transients. 3. Bus over-voltage may also be caused by motor regeneration. Either increase the decel time or add an optional braking unit and a resistor. 4. Check whether the required braking power is within the specified limits. |
|  | OVD: The Drive detects that the DC bus voltage has exceeded its maximum allowable value while in decel. 115/230 V class: about 400V 460 V class: about 800V | <p>Bus over-voltage caused by motor regeneration. Either increase the decel time or add an optional braking resistor.</p> <p>Some model need to add a Dynamic Brake Unit (optional).</p> |

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|  | <p>Ground Fault (GF): The Drive output is abnormal. When the output terminal is grounded (short circuit current is 50% more than the drive rated current), the Drive power module may be damaged. The short circuit protection is provided for Drive protection, not for personnel protection.</p> | <ol style="list-style-type: none"> 1. Check whether the connection to the motor is short circuited or grounded 2. Check whether the IGBT power module is functioning right 3. Check whether the wiring on the output side is of poor insulation |
|  | <p>Short Circuit (SC): Output side of the AC drive is short circuited</p> | <ol style="list-style-type: none"> 1. Check whether the motor's resistance and insulation are functioning right 2. Check whether the connection to the motor is short circuited |
|  | <p>Over Load (OL): The Drive detects excessive drive output current. Note: The Drive can withstand up to 125% of the rated current for a maximum of 60 seconds.</p> | <ol style="list-style-type: none"> 1. Check whether the motor is overloaded 2. Reduce torque compensation setting as set in Pr5-01 3. Increase the acceleration time 4. Increase the Drive output capacity |
|  | <p>Over Load 1 (OL1): Motor overload Internal electronic thermal relay protections</p> | <ol style="list-style-type: none"> 1. Check for possible motor overload 2. Check electronic thermal overload setting or Increase motor capacity. 3. Reduce the current level so that the drive output current does not exceed the value set by the Full-Load Current of Motor Pr5-00 |
|  | <p>Motor over torque (OT)</p> | <ol style="list-style-type: none"> 1. Check whether the loading of the motor is too heavy 2. Check the setting of the over-torque detection level (Pr5-15 to Pr5-17) |
|  | <p>Over-current during Steady State Operation (OCn)</p> | <ol style="list-style-type: none"> 1. Check for possible poor insulation at the output line 2. Check for possible motor stall 3. Replace with the Drive with one that has a higher output capacity (next Hp size) |

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|  | Over-current during Acceleration (OCA) | <ol style="list-style-type: none"> 1. Check for possible poor insulation at the output line 2. Decrease the torque boost setting in Pr5-01 3. Increase the acceleration time 4. Replace with the Drive with one that has a higher output capacity (next Hp size) |
|  | Over-current during Deceleration (OCd) | <ol style="list-style-type: none"> 1. Check for possible poor insulation at the output line 2. Increase the deceleration time 3. Replace with the Drive with one that has a higher output capacity (next Hp size) |
|  | Internal memory IC can not be programmed (EP1) | <ol style="list-style-type: none"> 1. Switch off power supply. 2. Check whether the input voltage falls within the rated Drive input voltage. 3. Switch the Drive back on. return to the factory |
|  | Internal memory IC can not be read (EP2) | <ol style="list-style-type: none"> 1. Check the connections between the main control board and the power board. 2. Reset drive to factory defaults. 3. Return to the factory if the previous method is not working |
|  | The external terminal EF-GND goes from OFF to ON (EF) | When external terminal EF-GND is closed, the output will be turned off (under N.O. E.F.). Eliminate the fault source and then press the RESET button |
|  | The internal A/D 1 loop is defected (Ct1) | Return to the factory |
|  | The internal A/D 2 loop is defected (Ct2) | Return to the factory |
|  | Hardware Protection Failure (HPF) | <ol style="list-style-type: none"> 1. Check every appliance that connects to the Drive 2. Return to the factory |
|  | The Drive temperature sensor detects excessive heat (OH1) | <ol style="list-style-type: none"> 1. Ensure that the ambient temperature falls within the specified temperature range. 2. Make sure that the ventilation holes are not obstructed. 3. Remove any foreign objects on the heat sinks and check for possible dirty heat sink fins. 4. Provide enough spacing for adequate ventilation. |

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| OH2 | Braking transistor over-heat (OH2) | 1. Check the fan and the ambient temperature 2. Review the braking time and the braking resistor's rate of usage |
| SoFt | Inrush limit resistor fault (SoFt) | Return to the factory |
| ACI | ACI loose wires (ACI) | Check the wiring of ACI |
| ASC | Communication Error (ASC) | Check the connection between the drive and computer for loose wires |
| PId | PID function error (PI d) | 1. Check whether the PID parameters setting is appropriate 2. Check the PID feedback wiring |
| Pu | KEYPAD communication Overtime (Pu) | Check whether the keypad communication circuit is well-conducted |
| tunE | Auto Tuning Error (tunE) | 1. Check cabling between drive and motor 2. Retry again |
| bF | Braking Transistor Fault (bF) | Return to the factory |
| PG | PG loose wires (PG) | 1. Check the PG connection 2. Whether the motor is blocked |
| PHL | Phase Loss (PHL): Three phase imbalanced at the input voltage | 1. Check whether the power voltage is normal 2. Check whether the screw at the input power terminal is tightened |
| CC | Current message error while the drive is stopped (CC) | Return to the factory |
| CPu | Electronics Circuit Fault (CPu) | Return to the factory |
| FAn | Fan Fault (Fan) | 1. Check whether the fan is blocked 2. Return to the factory |
| LU | The Drive detects that the DC bus voltage has fallen below its minimum value (LU) | 1. Check whether the input power voltage is normal 2. Check whether the loading will be put on another unexpected heavy loading 3. Whether the 3-phase model is of the single-phase power input or the phase-lacking |
| bb | External Base Block (bb): Drive output is turned off. | 1. When the external input terminal (B.B) is active, the Drive output will be turned off. 2. Disable this connection and the Drive will begin to work again. |