# 11 Trip Codes and Fault Finding

## 11.1 Trip codes

The last trip code is stored in **Pr98**. The value read from **Pr98** using serial communications is the trip code number.

**OU**

**Trip Code number: 1**
**Over-voltage**

The DC bus voltage has exceeded the permitted maximum of 808V.

**UU**

**Trip Code number: 2**
**Under-voltage**

The DC bus voltage has dropped below the permitted minimum of 404V.

**OC**

**Trip Code number: 3**
**Over-current**

Excessive current (>110% of $I_{pk}$) has been detected in the output bridge.

**th**

**Trip Code number: 4**
**Over-temperature**

The temperature of the heatsink has exceeded the permitted maximum of 95°C.

**rb**

**Trip Code number: 5**
**Resolver circuit break**

One of the connections to the resolver has been lost or broken.

**It**

**Trip Code number: 6**
**$I^2t$ Current limitation**

The output current has been in excess of that set in **Pr45** for an excessive time. The Drive is limiting the current to the value set in **Pr45**.

**Note**

**This is not a trip condition.**

**PA**

**Trip Code number: 7**
**Over-temperture Pre-Alarm**

The heatsink temperature is close to the permitted maimum.

**OS**

**Trip Code number: 8**
**Motor over-speed**

The motor speed has exceeded the safe limit set in **Pr58**.

**SC**

**Trip Code number: 9**
**Digital output short-circuit**

A digital output (terminals B7, B8, B15) is short-circuit to 0V.

**Et**

**Trip Code number: 10**
**External trip**

The external trip input has been activated. If a motor thermistor (PTC) is connected, the motor is overheating.

**Err or dOI**

**Trip Code number: 11**
**Hardware fault or Drive operating incorrectly**

There is an internal hardware fault. Removing, then re-connecting AC power may clear the fault, otherwise consult the supplier of the Drive.

## 11.2 Fault finding

| Condition | Causes | Actions |
|---|---|---|
| When AC power is applied, the Drive is enabled but the motor is disabled. | | |
| | **b2** set at 0 | Set **b2** at 1 |
| Analog speed reference ≠ 0 but motor does not turn and is in torque. | | |
| | Hold-zero-speed function active | Check that the input applied to pin **B6** is 0V and that **b18** is set at 0. |
| | Digital ref. selected | Check that **b17** is set at 0. |
| Analog speed reference varies but motor rotates at constant speed. | | |
| | Digital ref. selected | Check that **b17** is set at 0. |
| Motor speed changes with analog reference change, but speed and reference do not correspond. | | |
| | Torque control selected | Check that **b6** is set at 0. |
| When the Drive is enabled, the motor is in torque at maximum current, and the Drive enters the $I^2t$ region. | | |
| | Faulty connections | Check the wiring, especially for inverted phases |
| When the Drive is enabled and a speed reference is applied, the motor is at a standstill but free to rotate. | | |
| | No current in motor | Check that current limit (either analog or digital) ≠ 0. Refer to **b11** or **Pr42**, **Pr43** and **Pr45** |
| Communication with host computer not possible. | | |
| | Serial communications programming error | Check Baud rates and data formats correspond. Check polarity of wiring connections. |
| When AC power is applied, the Drive displays **dEf**. | | |
| | The User Table of parameters has become corrupted or parameters do not match the version of the software | Set **b99** at 1. Re-program the parameters and again set **b99** at 1.<br>**Model sizes 1 and 2**<br>If **dEf** re-appears when AC power is next applied, change the Control Keypad<br>**Model sizes 3 and 4**<br>If **dEf** re-appears when AC power is next applied, change the NOVRAM control box. |