Diagnostic Functions

Overview

Use diagnostic functions to find the state of the TeSys H motor starter and understand the cause of tripping. When there is a detected error or trip condition, the device is in a safe, disconnected state.

Internal errors cannot be reset and are stored in the device. If more than 14 internal errors are detected, you can no longer operate the device.

Before you can leave the safe, disconnected state, you must reset the trip condition. To reset an external error, push the **SET/RESET** button and release it within 2 s.

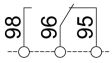
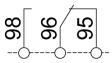
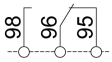
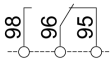
The tables in this section describe the combination of LED states, position of signaling contacts, and reset possibilities, in normal conditions and trip or error conditions. The following symbols indicate whether an LED is on, off, or flashing.

■ LED on

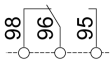
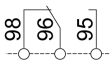
□ LED off

⧓ LED flashing at approximately 2 Hz (50:50)

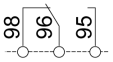
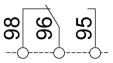
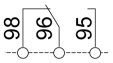
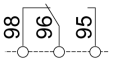
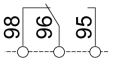
Diagnostics for Normal Conditions

Description	LED combination				Signaling contact	Reset
	110–230 Vac or 24 Vdc	TRIP/ERR	2	1		
Off Not connected to the control supply, or control supply is off.	□	□	□	□		–
Ready to start Supply voltage is available. No trip or detected error. The motor starter switches on when a run command is given.	■	□	□	□		–
Running in direction 1 A command is on **I2**.	■	□	■	□		–
Running in direction 2 A command is on **I1**.	■	□	□	■		–

Diagnostics for Internal Error Conditions

Description	LED combination				Signaling contact	Reset
	110–230 Vac or 24 Vdc	TRIP/ERR	2	1		
Internal error detected. The device must be replaced.	■	■	□	□		Not possible
Cheksum error during determination of the thermal system state. The reset mode must be manual or remote. The device does not reset if the reset mode is automatic.	■	⧓	⧓	⧓		Possible

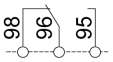
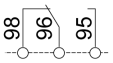
Diagnostics for Trip Conditions

Description	LED combination				Signaling contact	Reset
	110–230 Vac or 24 Vdc	TRIP/ERR	2	1		
Thermal overload protection function						
Overload trip occurred while the motor was running in direction 2. Time to reset is counting down. Reset is impossible.	■	⧓	■	□		Not possible
Overload trip occurred while the motor was running in direction 1. Time to reset is counting down. Reset is impossible.	■	⧓	□	■		Not possible
Overload trip occurred while the motor was running in direction 2. Cool down period is in progress. If reset mode is manual or remote, reset is possible. If reset mode is automatic, device resets automatically after the cool down period (20 minutes).	■	⧓	⧓	□		Possible
Overload trip occurred while the motor was running in direction 1. Cool down period is in progress. If reset mode is manual or remote, reset is possible. If reset mode is automatic, device resets automatically after the cool down period (20 minutes).	■	⧓	□	⧓		Possible
Phase unbalance						
The motor currents differ from each other by more than 33 %. Manual or remote reset is possible immediately.	■	⧓	□	□		Possible

Diagnostics for Error Conditions

The following events can cause error conditions:

- Two or more phases are missing.
- No connected motor.
- The motor current is lower than the minimum configurable current for more than 2 seconds, on at least two phases.

Description	LED combination				Signaling contact	Reset
	110–230 Vac or 24 Vdc	TRIP/ERR	2	1		
Error occurred while the motor was running in direction 2. When the phases return, the error is cleared automatically.	⧓	⧓	■	□		Not required
Error occurred while the motor was running in direction 1. When the phases return, the error is cleared automatically.	⧓	⧓	□	■		Not required

Resetting the TeSys H Motor Starter

Manual Reset with the SET/RESET Button

To reset the TeSys H motor starter manually, lift the cover and press the **SET/RESET** button on the front of the device.

Wait for at least 2 minutes after the motor starter has tripped before you reset it.

Remote Reset by a Normally Open (NO) Contact

To reset the TeSys H motor starter remotely, connect a **NO** contact between terminals **Y1** and **Y2**.

Wait for at least 2 minutes after the starter motor has tripped before you reset it.

Automatic Reset

To reset the TeSys H motor starter automatically, jumper the **Y1** and **Y3** terminals.

The motor starter resets automatically after 20 minutes. After 2 minutes, you can reset the motor starter manually or remotely.

⚠ WARNING

AUTOMATIC START HAZARD

- A motor connected to the circuit might start automatically in auto restart position.
- For applications in the Ex-protection area, automatic restart is not permitted.
- For emergency stop applications, the motor must be prevented from restarting automatically by a higher-level control system.

Failure to follow these instructions can result in death, serious injury, or equipment damage.