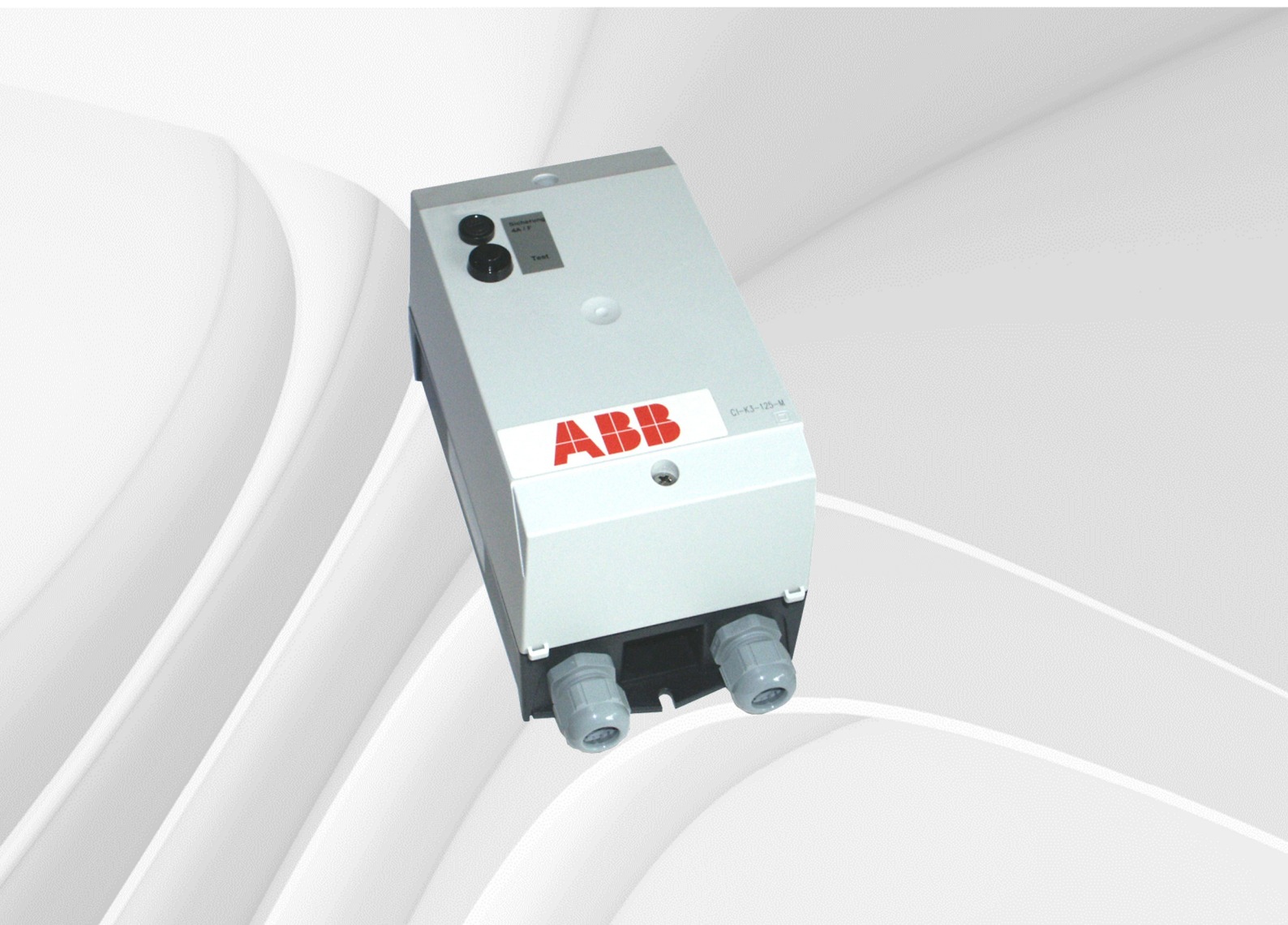


ABB MEASUREMENT & ANALYTICS | DATA SHEET

SD241-B (Contrac)

Motor temperature monitoring unit



For monitoring of the motor temperature of Contrac control actuators in explosion-proof design

Complies with PTB 01 ATEX 3218

Thermistor control unit for monitoring the motor temperature

Integrated contactor for interrupting the power supply

Plastic housing in IP rating IP 54

Test button on the front

Signal contact to monitor the trip function

Concept

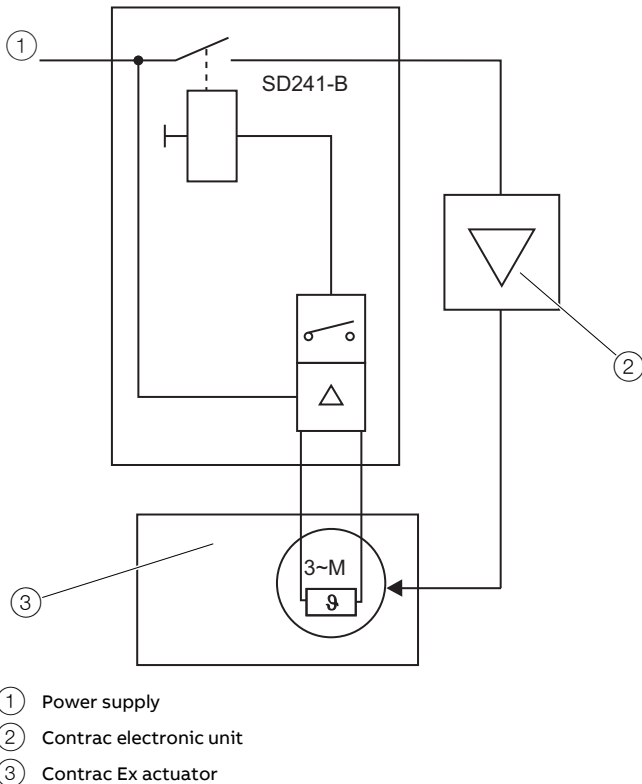


Figure 1: Switching concept

The PTCs integrated in the winding are calibrated to the max. permissible temperature limit of the motor. Once the rated operating temperature is reached, the PTCs suddenly increase their resistance.

The trigger circuit in the tripping unit responds to the new resistance and switches off the contactor activated during operation. The electronic unit and the motor are disconnected from the power supply.

The SD241-B (Contrac) monitoring unit works in accordance with the closed circuit principle. It monitors itself, the PTC and the connecting cable for wire breaks. The button (Open) in the housing cover can check the tripping unit for proper operation.

In addition, a resistance equivalent to the response threshold of the tripping unit can be set in the measuring line in order to simulate the operating temperature.

After tripping, the device is reset using the internal blue reset button.

Electrical connections

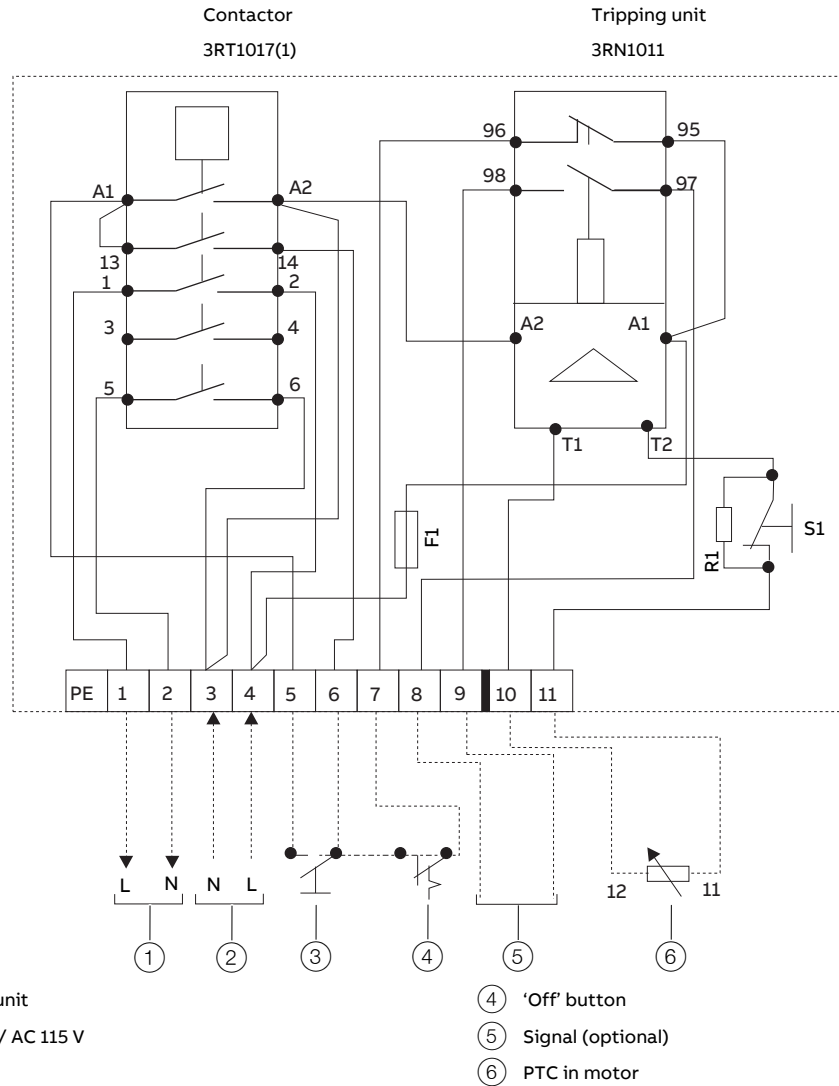


Figure 2: Circuit diagram

Information

- The line for temperature monitoring must not be routed through the supply voltage line of the motor.
- If extreme inductive or capacitive interference is expected, use shielded signal lines.
- Prior to commissioning, test the sensor resistance using a suited measuring device.
- The cumulative cold resistance may not up-scale 1.5 k Ω .
- For resistances < 50 Ω check for a short-circuit in the sensor circuit.
- Seal unused cable entries using suited sealing plugs.

Line lengths in sensor circuit

Cross section	Line length
2.5 mm ² (14 AWG)	2 × 2,800 m (9,185 ft)
1.5 mm ² (16 AWG)	2 × 1500 m (4920 ft)
0.5 mm ² (20 AWG)	2 × 500 m (1640 ft)

Specification

SD241-B	
Line voltage / control voltage	AC 230 V (196 to 253 V) AC 115 V (94 to 121 V) depending on design; see order information / name plate
Frequency	50/60 Hz
Backup fuse	16 A; time-lag
Fuse	4 A; fast-acting
Operating temperature	-25 to 60 °C (-13 to 140 °F)
Transport and storage temperature	-25 to 70 °C (-13 to 158 °F)
Relative humidity	75 % annual average 95% of 30 days; condensation not permitted
IP rating	IP 54

Ordering Information

RHDE / RSDE	Ordering number
Motor Temperature Monitoring Unit SD241-B	
for Contrac Ex-actuators, 230 V AC	8678007
for Contrac Ex-actuators, 115 V AC	8678052

Dimensions

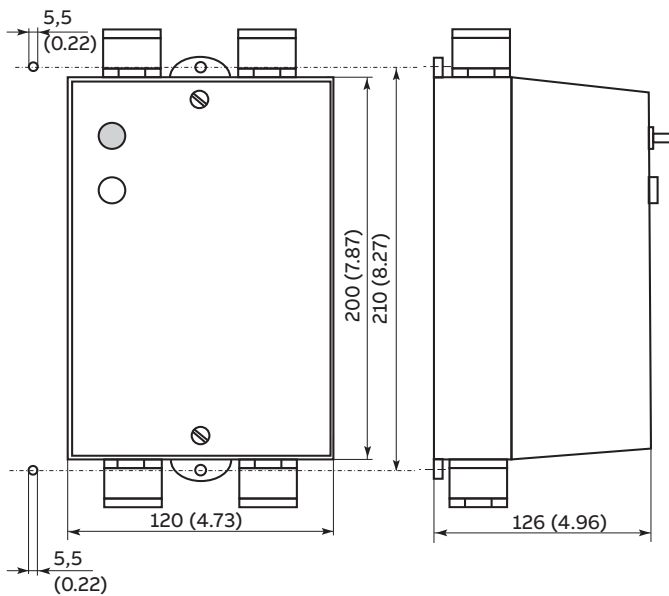


Figure 3: Dimensions in mm (in)

Notes

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