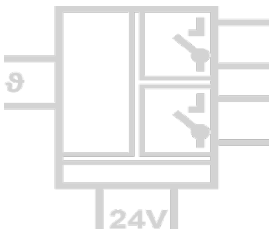
Thermistor Motor Protection Relay DG 3802



Reliable Protection against Over-Temperature with Thermistor/ PTC Resistor Sensor and Bimetal Breakers

The Thermistor Motor Protection Relay DG 3802 protects motors und machines against over-temperature caused by heavy starting duties, braking, under-voltage, over-voltage and high switching frequencies.

Additional applications include monitoring the temperature of transformers, pumps, centrifuges, motor bearings, gearboxes, oil and coolants and the avoidance of thermal overload in the event of impeded cooling and high ambient temperatures.

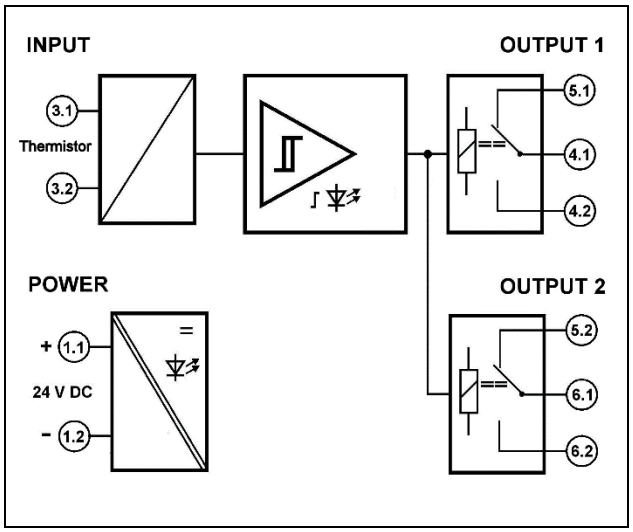
The temperature is monitored directly at the winding using thermistors or bimetal switches. Up to 6 sensors can be connected in series. When a certain resistance is reached, the output relays switch off. Restarting takes place after cooling down via auto-reset.

The motor protection relay works with open circuit operation and also detects broken wire in the sensor circuit. The monitoring state is indicated by a yellow LED. The relay changeover-contact switches high power loads up to 6 A.

The Protective Separation and the 24 V DC power supply makes the DG 3802 universally applicable for all measurement and industrial applications, as well as for building automation.

- **Reliable overtemperature protection**
  Up to 6 thermistors or bimetal switches, wire break detection in the sensor input
- **Fault message in closed-circuit operation**
  2 output relays not activated in the event of fault, restart via auto-reset
- **Status indication by LED**
  Easy monitoring and switching point adjustment
- **Protective 4-Port Separation acc. to EN 61010**
  Protects service personnel and downstream devices against impermissibly high voltage
- **High reliability and noise immunity**
  No microprocessor, no integrated software
- **Extremely slim design**
  12.5 mm slim housing for a simple and space saving DIN rail mounting
- **5 Years Warranty**
  Defects occurring within 5 years from delivery date shall be remedied free of charge at our plant

Block diagram



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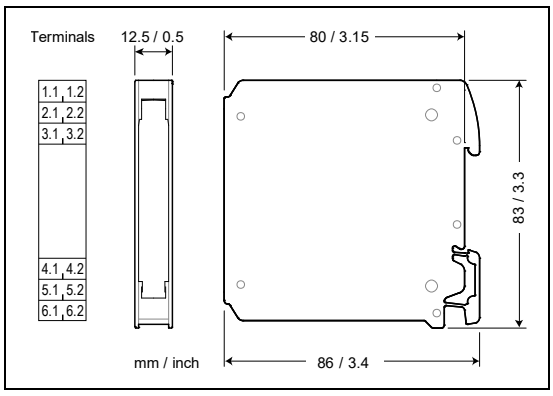
Technical Data

Input	
Monitoring sensors	Thermistor/ PTC Resistor Sensor and Thermical Bimetal Switches (breakers, e.g. Klixon)
Monitoring function	Over-temperature protection in open circuit operation, restart via auto-reset
Number of sensors	1 … 6 pcs
Sensor load	≤ 1 mA / 1 V / 1 mW
Threshold value	≥ 3 kΩ (relays drop out)
Release value	≤ 1,7 kΩ (relays pick up)
Output	
Contact type	2 isolated changeover relays (SPDT), synchronous switching
Switching capability AC max.	250 V / 6 A 1500 VA
Switching capability DC max.	250 V / 0.2 A 115 V / 0.3 A 30 V / 6 A
Recommended minimum load	300 mW / 5 V / 5 mA
Status indication	yellow LED
Response time	< 50 ms
General Data	
Switch error	< 5 %
Temperature coefficient[1)]	< 0,03 %/K
Test voltage	4 kV AC, 50 Hz, 1 min. input against power supply against both switching outputs 3 kV AC, 50 Hz, 1 min. switching output 1 against switching output 2
Working voltage (Basic Insulation)[2)]	1000 V AC/DC for overvoltage category II and 600 V AC/DC for overvoltage category III according to DIN EN 61010 with pollution degree 2 between input, power supply and both switching outputs. Furthermore 300 V AC/DC between output 1 and output 2.
Protection against electrical shock[2)]	Protective separation according to DIN EN 61140 by reinforced insulation according to DIN EN 61010 up to 600 V AC/DC at overvoltage category II and 300 V AC/DC at overvoltage category III at pollution degree 2 between input, power supply and both switching outputs. Furthermore 300 V AC/DC between output 1 and output 2.
Power supply	24 V DC, ± 15 %, approx. 0.7 W
Ambient temperature	Operation - 20 °C to + 60 °C (–4 to + 140 °F) Transport and storage - 35 °C to + 85 °C (–31 to + 185 °F)
EMC[3)]	EN 61326-1
MTBF (acc. to EN 61709 / SN 29500)	361,5 years ($T_{amb.}$40 °C, FIT 315,5)

1) Average TC related to full scale value in specified operating temperature range, reference temperature 23 °C
2) For applications with high working voltages, ensure there is sufficient spacing or isolation from neighboring devices and protection against electric shocks.
3) Minor deviations possible during interference

Dimensions



Construction
12.5 mm (0.5") housing, protection class IP 20
mounting on 35 mm DIN rail acc. to EN 60715
Weight 70 g

Connection
Captive plus-minus clamp screws
Wire cross-section max. 2.5 mm² / AWG 14
Stripped length 6 … 8 mm / 0.28 in
Screw terminal torque 0.8 Nm / 7 lbf in

Subject to change!

Product line

Device	Order No.
Thermistor Motor Protection Relay	DG 3802

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