

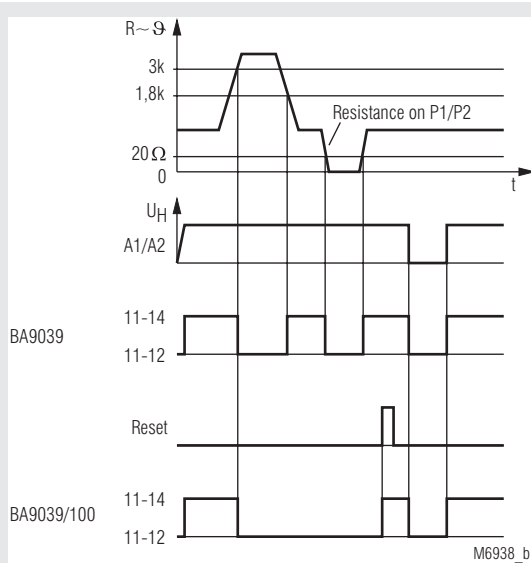
VARIMETER Thermistor Motor Protection Relay BA 9039

Translation
of the original instructions



- According to IEC/EN 60947-8
- 1 input for PTC-resistors
- Broken wire and short circuit detection in sensor circuit
- Optionally with no-voltage reclosing interlock
- Closed circuit operation
- 2 changeover contacts
- Green LED to indicate no-fault state
- Red LED to indicate operational mode
- Width 45 mm

Function Diagram



Approvals and Markings



Applications

To protect against thermal overload of motors caused by high switching frequency, heavy duty starting, phase failure on one phase, bad cooling, high ambient temperature.

Notes

The DC 24 V model has no galvanic separation between auxiliary supply (A1, A2) and measuring circuit (P1, P2).

Technical Data

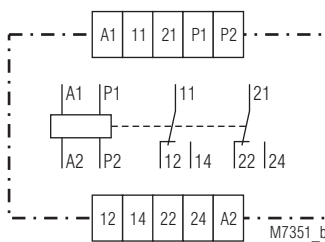
Input

- Response value:** 3 kΩ ± 500 Ω
- Release value:** 1.8 kΩ ± 200 Ω
- Number of sensors:** 1 ... 6 pcs
- Loading of measuring circuit:** < 3 mW (at R = 1.5 kΩ)
- Measuring voltage:** 2 V (at R = 1.5 kΩ)

Auxiliary Circuit

- Auxiliary voltage U_H:** AC 24, 42, 110 ... 127, 220 ... 240 V
DC 24 V
- Voltage range:** AC 0.8 ... 1.1 U_H
At 10 % residual ripple: DC 0.9 ... 1.25 U_H
At 48 % residual ripple: DC 0.9 ... 1.1 U_H
- Nominal frequency:** 50 / 60 Hz
- Frequency range:** ± 5 % of nominal frequency
- Nominal consumption:** AC: 4 VA
DC: 1.2 W

Circuit Diagram



Connection Terminals

Terminal designation	Signal description
A1, A2	Operating voltage
P1, P2	Measuring input
11, 12, 14	Contact relay 1
21, 22, 24	Contact relay 2

Output

- Contacts:**
BA 9039.11: 1 changeover contact
BA 9039.12: 2 changeover contacts
- Thermal current I_{th}:** 5 A
- Switching capacity**
To AC 15:
NO contact: 3 A / AC 230 V IEC/EN 60947-5-1
NC contact: 1 A / AC 230 V IEC/EN 60947-5-1
To DC 13:
1 A / DC 24 V IEC/EN 60947-5-1
- Electrical life**
At 3 A, AC 230 V cos φ = 1: 8 x 10⁵ switching cycles
- Short-circuit strength**
max. fuse rating: 4 A gG / gL IEC/EN 60947-5-1
- Mechanical life:** 30 x 10⁶ switching cycles

Technical Data

General Data

Operating mode: Continuous operation

Temperature range

Operation: - 20 ... 60 °C

Storage: - 20 ... 60 °C

Altitude: < 2000 m

Clearance and creepage distances

Rated impulse voltage / pollution degree: 4 kV / 2 IEC 60664-1

EMC
Electrostatic discharge: 8 kV (air) IEC/EN 61000-4-2

HF irradiation 80 MHz ... 2,7 GHz: 10 V / m IEC/EN 61000-4-3

Fast transients: 2 kV IEC/EN 61000-4-4

Surge voltages

Between wires for power supply: 1 kV IEC/EN 61000-4-5

Between wire and ground: 2 kV IEC/EN 61000-4-5

HF wire guided: 10 V IEC/EN 61000-4-6

Interference suppressions: Limit value class B EN 55011

Degree of protection

Housing: IP 40 IEC/EN 60529

Terminals: IP 20 IEC/EN 60529

Housing:

Thermoplastic with V0 behaviour according to UL subject 94

Vibration resistance: Amplitude 0.35 mm, IEC/EN 60068-2-6

frequency 10 ... 55 Hz

Climate resistance: 20 / 060 / 04 IEC/EN 60068-1

Terminal designation: EN 50005

Wire connection: 2 x 2.5 mm² solid or 2 x 1.5 mm² stranded wire with sleeve

DIN 46228-1/-2/-3/-4

Wire fixing: Plus-minus terminal screws M3,5 with self-lifting clamping piece IEC/EN 60999-1

10 mm

Stripping length: Max. 0.8 Nm

Fixing torque: DIN rail IEC/EN 60715

Mounting: 300 g

Weight:

Dimensions

Width x height x depth: 45 x 73.2 x 119.8 mm

Standard Type

BA 9039.12/100 DC 24 V

Article number: 0036482

- With manual reset, no-voltage safe according to VDE 0113 § 5.5.2
- Output: 2 changeover contacts
- Auxiliary voltage U_H : DC 24 V
- Width: 45 mm

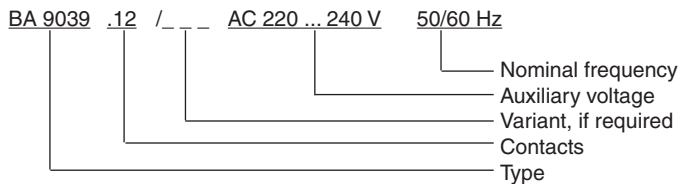
Variants

BA 9039.12: With hysteresis

BA 9039.12/100:

With additional electromechanical reset facility. When the unit detects overtemperature or short circuit the output relay deenergises. The reset facility is no-voltage safe i.e. also after voltage failure the actual state remains stored. The output relay can only be resetted with the reset button when the failure has been removed and the unit is connected to auxiliary supply (A1, A2).

Ordering example for variants



Application Examples

