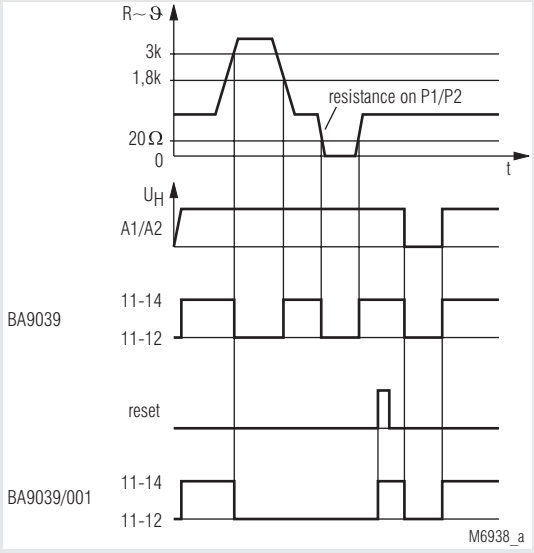
VARIMETER
Thermistor Motor Protection Relay
BA 9039

Translation of the original instructions

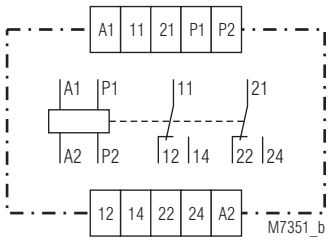
0225241

- 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



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

Approvals and Markings

CE

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

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		IEC/EN 60947-5-1
At 3 A, AC 230 V cos φ = 1:	8 x 10^5 switching cycles	
Short-circuit strength		
max. fuse rating:	4 A gG / gL	IEC/EN 60947-5-1
Mechanical life:	30 x 10^6 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, frequency 10 ... 55 Hz	IEC/EN 60068-2-6
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
Stripping length:	10 mm	
Fixing torque:	Max. 0.8 Nm	
Mounting:	DIN rail	IEC/EN 60715
Weight:	300 g	

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

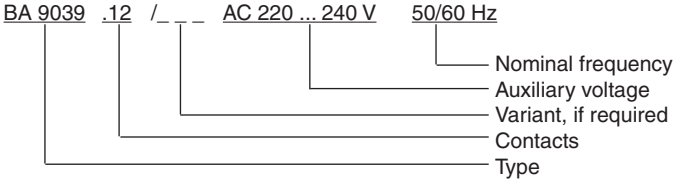
Variants

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