

Monitoring Technique

VARIMETER

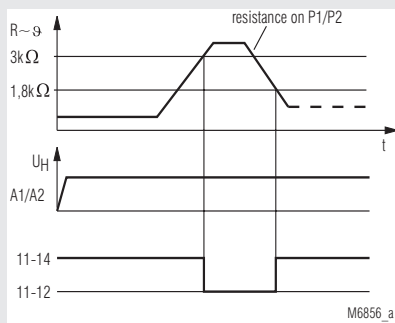
Thermistor Motor Protection Relay MK 9052

Translation
of the original instructions



- According to IEC/EN 60947-8
- 1 input for PTC-resistors or bimetal contacts
- Broken wire detection in sensor circuit
- Optionally with no voltage reclosing interlock to VDE 0113 § 5.4.2
- Closed circuit operation
- 1 or 2 changeover contacts
- Width 22.5 mm

Function Diagram



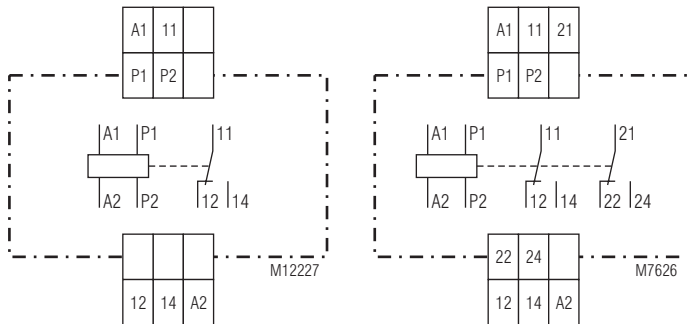
Approvals and Markings



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.

Circuit Diagrams



MK 9052.11

MK 9052.12

Function

The motor protection relay MK 9052 is used to detect thermal overload. Special PTC-resistors are used as sensors for motor protection. Up to 6 sensors can be connected in series. When reaching a certain resistance the output relay of the MK 9052 is switched off.

An LED indicates the contact state. The motor protection relay works with open circuit operation and also detects broken wire in the sensor circuit.

Connection Terminals

Terminal designation	Signal description
A1, A2	Operating voltage
P1, P2	Thermistor input
11, 12, 14; 21, 22, 24	Change over contacts

Technical Data

Input

Response value:	≥ 3 kΩ
Release value:	≤ 1.8 kΩ
Number of sensors:	1 ... 6 pcs
Loading of measuring circuit:	Approx. 1 mW (at R = 1.5 kΩ)
Measuring voltage:	Approx. 1.2 V (at R = 1.5 kΩ)

Auxiliary Circuit

Auxiliary voltage U_H:	AC 24, 42, 48, 110, 127, 230, 240 V
Voltage range of U_H:	0.9 ... 1.1 U _H
Nominal consumption:	1.8 VA
Nominal frequency of U_H:	50 / 60 Hz

Output

Contacts

MK 9052.11:	1 changeover contact
MK 9052.12:	2 changeover contacts
Operate delay:	< 20 ms
Release delay:	< 15 ms
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
Electrical life	IEC/EN 60947-5-1
To AC 15 at 3 A, AC 230 V:	8 x 10 ⁵ switching cycles
Short-circuit strength	
max. fuse rating:	4 A gG / gL
Mechanical life:	> 20 x 10 ⁶ switching cycles

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 ... 1.0 GHz:	10 V / m IEC/EN 61000-4-3
1.0 GHz ... 2.0 GHz:	3 V / m IEC/EN 61000-4-3
2.0 GHz ... 2.7 GHz:	1 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 mm ² solid or 2 x 1.5 mm ² stranded wire with sleeve DIN 46228-1/-2/-3/-4
Wire fixing:	Flat terminals with self-lifting clamping piece IEC/EN 60999-1
Fixing torque:	0.4 Nm
Mounting:	DIN rail IEC/EN 60715
Weight:	145 g

Dimensions

Width x height x depth:	22.5 x 82 x 99 mm
--------------------------------	-------------------

Standard Type

MK 9052.11	AC 230 V 50 / 60 Hz
Article number:	0023171
• Output:	1 changeover contact
• Auxiliary Voltage U _H :	AC 230 V
• Width:	22.5 mm

Variant

MK 9052. __ /100:	With electro-magnetic reclosing interlock (manual reset function). When the response temperature is reached the output relay deenergizes and the push button on the relay front comes out immediately.
-------------------	---

Ordering example for variant

MK 9052 .11 / _ _ _ AC 230 V 50 / 60 Hz	
	Nominal frequency
	Auxiliary voltage
	Variant, if required
	Contacts
	Type

Application Examples

