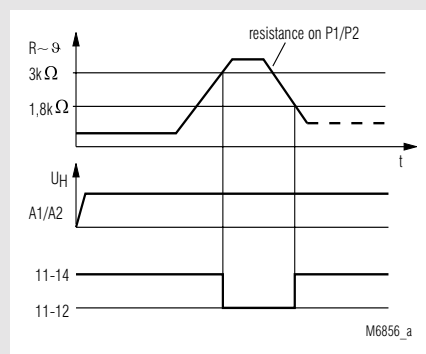


0225240

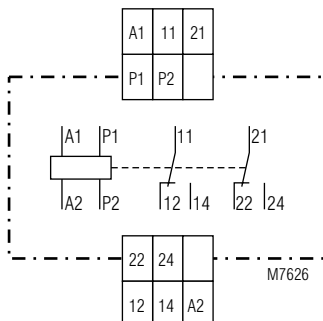


- According to IEC 255, EN 60 255, VDE 0435 part 303
- 1 input for PTC-resistors or bimetal contacts
- Broken wire detection in sensor circuit
- Optionally with no voltage reclosing interlock to VDE 0113 § 5.4.2
- Closed circuit operation
- 1 or 2 changeover contacts
- Width 22,5 mm

### Function diagram



### Circuit diagram



### Approvals and marking



### 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.

### 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.

### Technical data

#### Input

<b>Response value:</b>	≥ 3 kΩ
<b>Release value:</b>	≤ 1,8 kΩ
<b>Number of sensors:</b>	1 ... 6 pcs
<b>Loading of measuring circuit:</b>	approx. 1 mW (at R = 1,5 kΩ)
<b>Measuring voltage:</b>	approx. 1,2 V (at R = 1,5 kΩ)

#### Auxiliary circuit

<b>Auxiliary voltage <math>U_H</math>:</b>	AC 24, 42, 110, 127, 230, 240 V
<b>Voltage range of <math>U_H</math>:</b>	0,9 ... 1,1 $U_H$
<b>Nominal consumption:</b>	1,8 VA
<b>Nominal frequency of <math>U_H</math>:</b>	50 / 60 Hz

#### Output

#### Contacts

MK 9052.11:	1 changeover contact	
MK 9052.12:	2 changeover contacts	
<b>Operate delay:</b>	< 20 ms	
<b>Release delay:</b>	< 15 ms	
<b>Thermal current <math>I_{th}</math>:</b>	5 A	
<b>Switching capacity</b>		
to AC 15		
NO contact:	3 A / AC 230 V	EN 60 947-5-1
NC contact:	1 A / AC 230 V	EN 60 947-5-1
<b>Electrical life</b>		EN 60 947-5-1
to AC 15 at 3 A, AC 230 V:	8 x 10 <sup>5</sup> switching cycles	
<b>Short-circuit strength</b>		
<b>max. fuse rating:</b>	4 A gL	
<b>Mechanical life:</b>	> 20 x 10 <sup>6</sup> switching cycles	

## Technical data

### General data

<b>Operating mode:</b>	Continuous operation	
<b>Temperature range:</b>	- 20 ... + 60°C	
<b>Clearance and creepage distances</b>		
overvoltage category / contamination level:	4 kV / 2	IEC 60 664-1
<b>EMC</b>		
Electrostatic discharge:	8 kV (air)	EN 61 000-4-2
Fast transients:	2 kV	EN 61 000-4-4
Surge voltages between		
wires for power supply:	1 kV	EN 61 000-4-5
between wire and ground:	2 kV	EN 61 000-4-5
Interference suppressions:	Limit value class B	EN 55 011
<b>Degree of protection:</b>	Housing: IP 40	EN 60 529
	Terminals: IP 20	EN 60 529
<b>Housing:</b>	Thermoplastic with V0 behaviour according to UL subject 94	
<b>Vibration resistance:</b>	Amplitude 0,35 mm, frequency 10 ... 55 Hz, EN 60 068-2-6	
<b>Climate resistance:</b>	20 / 060 / 04 EN 60 068-1	
<b>Terminal designation:</b>	EN 50 005	
<b>Wire connection:</b>	2 x 2,5 mm <sup>2</sup> solid or 2 x 1,5 mm <sup>2</sup> stranded wire with sleeve DIN 46 228-1/-2/-3/-4	
<b>Wire fixing:</b>	Flat terminals with self-lifting clamping piece EN 60 999	
<b>Mounting:</b>	DIN rail EN 50 022	
<b>Weight:</b>	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		stock item
• Output:	1 changeover contact		
• Nominal voltage $U_N$ :	AC 230 V		
• Width:	22,5 mm		

### Variants

MK 9052. __ /60:	with CSA approval
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 Variants

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

## Application example

