

## Thermistor monitoring S1MN



The S1MN thermistor monitoring relay is used as a protection device in temperature monitoring circuits in accordance with EN 44081. It protects motors, generators, storage areas, etc. from overheating.

### Approvals

	S1MN
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UL approval only for unit types up to 240 VAC

### Unit features

- ▶ For DC and AC supplies
- ▶ Normally energised mode
- ▶ Monitors sensor short circuits
- ▶ Fault latching or automatic reset
- ▶ Manual reset via internal or external reset button

### Description

The thermistor monitoring relay is enclosed in an S-95 slimline housing. Different versions are available for AC operation and one version is available for AC and DC operation.

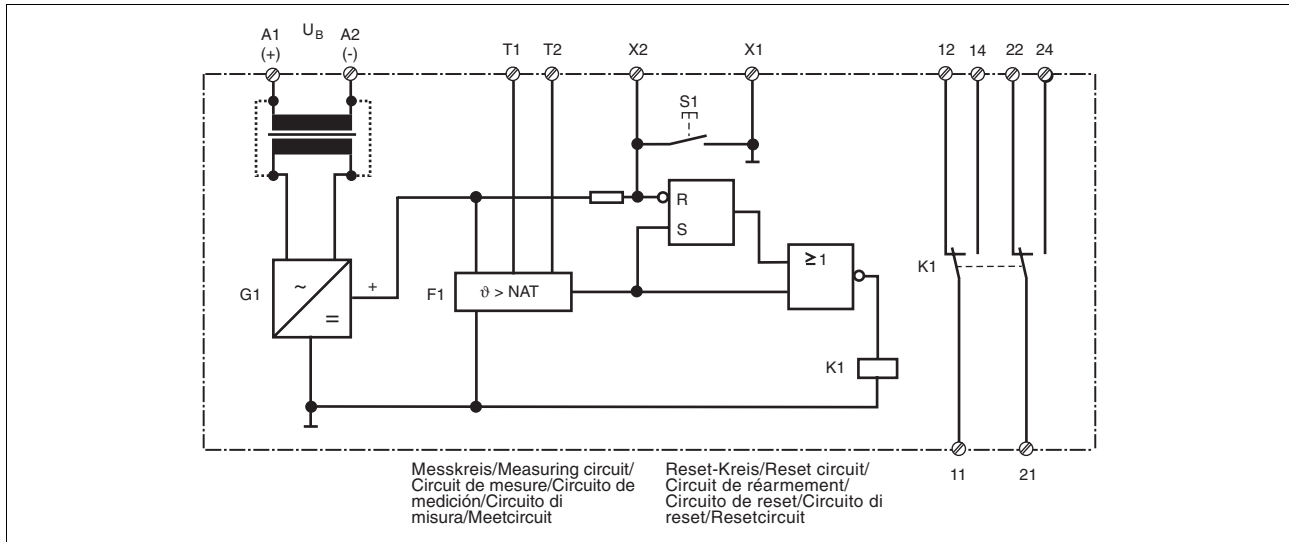
#### Features:

- ▶ Relay outputs: 2 auxiliary contacts (2 C/O)
- ▶ Measuring circuit for connecting a temperature sensor (PTC resistor)
- ▶ Monitors the temperature sensor for short circuit
- ▶ LED for supply voltage and fault

A temperature sensor is connected to the S1MN measuring circuit. If the temperature exceeds a defined value, i.e. the resistance of the temperature sensor reaches the response value, the output contacts switch. If the temperature then falls again, i.e. the resistance of the temperature sensor reaches the release value, the auxiliary contacts switch again if automatic reset is selected. The unit is ready for operation. If manual reset is selected, an internal/external button must be operated. The unit can also be reset by interrupting the supply voltage.

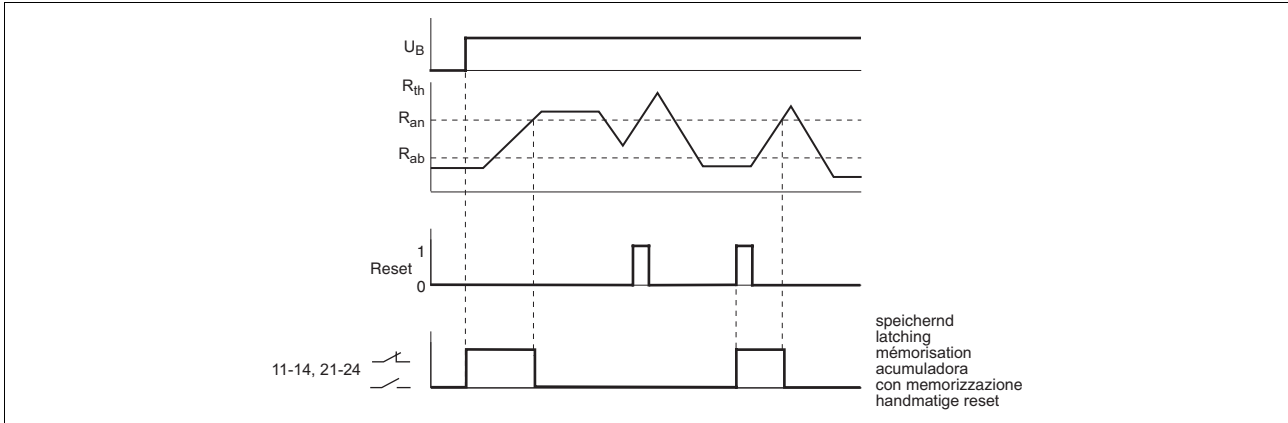
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### Internal wiring diagram



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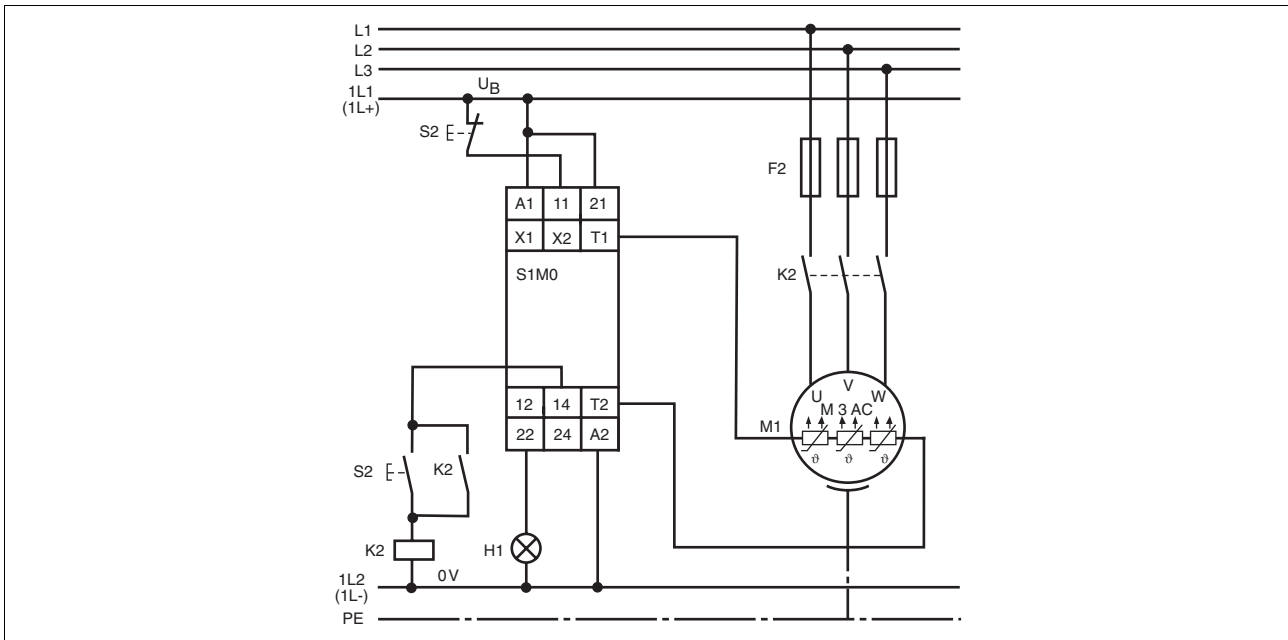
### Timing diagram



### Key

- ▶  $U_B$  Supply voltage
- ▶  $R_{on}$  Response value
- ▶  $R_{off}$  Release value
- ▶  $R_{th}$  PTC resistor

### Connection example



## Thermistor monitoring S1MN

Technical details	S1MN
<b>Electrical data</b>	
Supply voltage	AC: 48, 110, 230, 240, 400 V AC/DC: 24 V
Tolerance	85 ... 110 %
Frequency range AC	50 ... 60 Hz
Power consumption	AC: ca. 3.5 VA, DC: 2 W
Utilisation category in accordance with EN 60947-4-1	AC1: 240 V/0.1 ... 5 A/1200 VA DC1: 24 V/0.1 ... 5 A/120 W
EN 60947-5-1	AC15: 230 V/2 A; DC13: 24 V/1.5 A
Output contacts	2 auxiliary contacts (2 C/O)
Contact material	AgCdO, 3 µm gold plating for low load range 1-50 V/1-100 mA
Contact fuse protection in accordance with EN 60947-5-1	Max. 6 A quick or max. 4 A slow
<b>Measuring circuit</b>	
Response value in the case of sensor short circuit	ca. 25 Ω
Delay-on energisation	ca. 500 ms
Response value	3.6 kΩ ± 10 %
Release value	1.8 kΩ ± 10 %
Cold resistance at 20 °C	Max. 1.5 kΩ
<b>Environmental data</b>	
EMC	EN 60947-5-1, EN 61000-6-2
Vibration in accordance with EN 60068-2-6	Frequency: 10 ... 55 Hz Amplitude: 0.35 mm
Climatic suitability	EN 60068-2-78
Airgap creepage	EN 60947-1, EN 60079-15
Ambient temperature	-10 ... +55 °C
Storage temperature	-40 ... +85 °C
<b>Mechanical data</b>	
Cross section of external conductors	
1 core flexible	0.20 – 4.00 mm <sup>2</sup> , 24 – 10 AWG
2 core with the same cross section, flexible with crimp connectors, no plastic sleeve	0.20 – 2.50 mm <sup>2</sup> , 24 – 14 AWG
without crimp connectors or with TWIN crimp connectors	0.20 – 2.50 mm <sup>2</sup> , 24 – 14 AWG
Torque setting for connection terminals	0.6 Nm (screws)
Mounting position	Any
Housing material	
Housing	PPO UL 94 V0
Front	ABS UL 94 V0
Protection types	Mounting: IP54 Housing: IP40 Terminals: IP20
Marking	Ⓔ II (3) G/D [EEx nL] IIC
Dimensions (H x W x D)	87 x 22.5 x 121 mm
Weight	AC: 160 g; DC: 120 g

## Thermistor monitoring S1MN

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**Order reference**

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Type	U <sub>B</sub>	Order no.
S1MN	24 VAC/DC	839 400
S1MN	48 VAC	839 405
S1MN	110 VAC	839 410
S1MN	230 VAC	839 415
S1MN	240 VAC	839 420
S1MN	400 VAC	839 425

U<sub>B</sub>: Supply voltage

Additional versions on request