Thermistor monitoring
S1MS

Farnell codes: 4439259-9260-9272

The S1MS termistor monitoring relay is used in temperature monitoring circuits in accordance with EN 44081, 06/80 to protect motors, generators, storage areas etc. from overheating

Features

- For DC and AC supplies
- Normally energised mode
- Automatic reset

Approvals

	S1MS
PTB 3.53-PTC A	●
UL LISTED	● *
c UL LISTED	● *

* Pending for 400 V AC version

Technical Details	S1MS
Electrical data	
Supply voltage	AC: 48, 110, 120, 230, 400 V AC/DC: 24 V
Tolerance	85 ... 110 %
Power consumption	AC: approx. 3.5 VA, DC: 2 W
Switching capability in accordance with	
EN 60947-4-1, 10/91	AC1: 240 V/0.1 ... 5 A/1200 VA DC1: 24 V/0.1 ... 5 A/120 W
EN 60947-5-1, 10/91	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, 10/91	Max. 6 A quick or max. 4 A slow
Measuring circuit	
Delay on energisation	Approx. 500 ms
Response value	3.6 kΩ ± 10 %
Release value	1.8 kΩ ± 10 %
Resistance at 20 °C	max. 1.5 kΩ
Mechanical data	
Max. cable cross section of ext. conductor	1 x 4 mm^2 or 2 x 1.5 mm^2 single core or multi-core with crimp connectors
Dimensions (H x W x D)	87 x 22.5 x 122 mm
Weight	AC: 180 g; DC: 130 g

Description

The thermistor monitoring relay is enclosed in an S-95 slimline housing. There are 5 AC versions available and one version for AC/DC operation.
Features:

- Relay outputs: 2 auxiliary contacts (2 C/O)
- Measuring circuit for connecting a temperature sensor (PTC-resistor) up to R_{max} 1.5 kΩ)
- Automatic reset
- LED display for supply voltage and fault

The S1MS meets the following safety requirements:

- Operates to normally energised mode
- Protecting the system to be monitored is guaranteed if the following cases occur:
  - voltage failure
  - coil defect
  - wire break

A temperature sensor is connected to the S1MS 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. Contacts 11-14 and 21-24 open, contacts 11-12 and 21-22 close. If temperature falls once more, i.e. the resistance of the temperature sensor reaches the release value, the auxiliary contacts automatically switch again. The unit is ready for operation.

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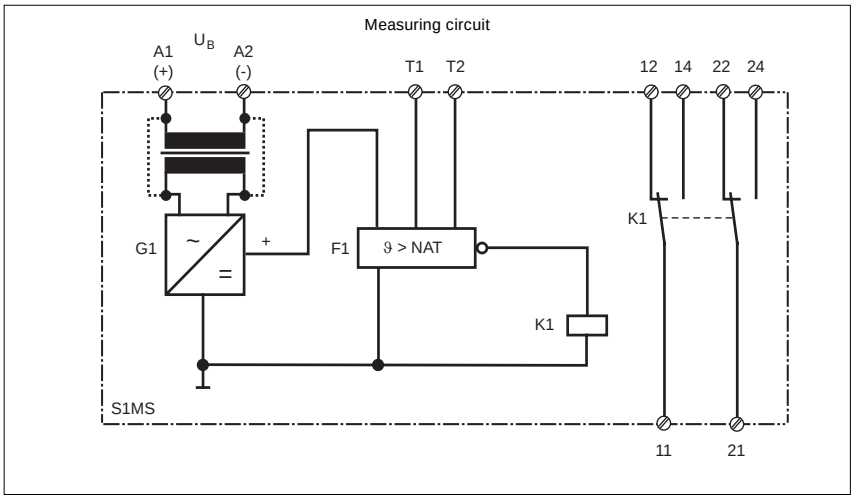
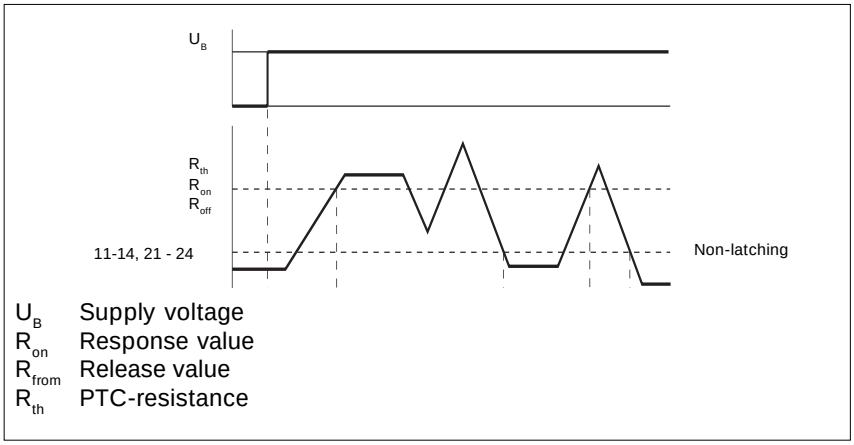
Internal wiring diagram



Timing diagram



U_B Supply voltage
R_{on} Response value
R_{from} Release value
R_{th} PTC-resistance

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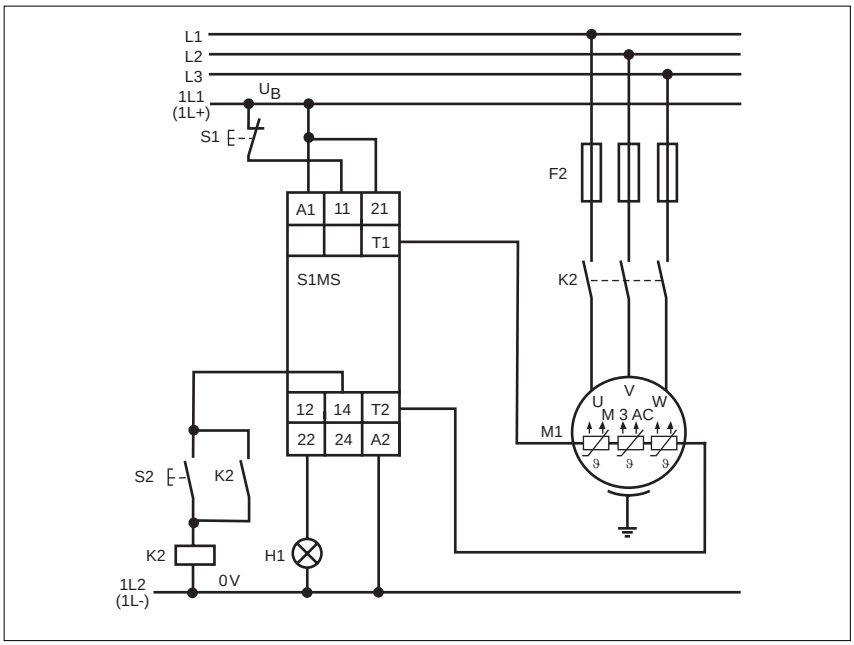
Connection examples



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General Details	
Unless stated otherwise in the technical details for the specific unit.	
Electrical data	
AC frequency range	50 ... 60 Hz
DC residual ripple	160 %
Contact material	AgCdO
Continuous duty	100 %
Environmental data	
EMC	EN 50081-1, 01/92; EN 50082-2, 03/95
Vibration in accordance with EN 60068-2-6, 04/95	Frequency: 10 ... 55 Hz Amplitude: 0.35 mm
Climatic suitability	IEC 60068-2-3, 1969
Airgap creepage	DIN VDE 0110-1, 04/97
Ambient temperature	-10 ... +55 °C
Storage temperature	-40 ... +85 °C
Mechanical data	
Torque setting for connection terminals	0.6 Nm (screws)
Mounting position	Any
Housing material	Thermoplastic Noryl SE 100
Protection types	Mounting: IP 54 Housing: IP 40 Terminals: IP 20

Order reference key
U_B Supply voltage

Order references

Type	U_B	Order no.	Farnell Codes
S1MS	24 V AC/DC	839 775	4439259
S1MS	48 V AC	839 725	
S1MS	110 V AC	839 740	4439260
S1MS	230 V AC	839 760	4439272
S1MS	240 V AC	839 765	
S1MS	400 V AC	839 770	

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