Thermistor monitoring
S1MS

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

Features

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

Approvals

	S1MS
TÜV PRODUCT SERVICE	●
c UL us LISTED	●*
CCC	●

* for versions up to 240 V AC

Technical Details	S1MS
Electrical data	
Supply voltage	AC: 48, 110, 230, 240, 400 V AC/DC: 24 V
Tolerance	-15 %/+10 %
Power consumption	AC: 3.5 VA, DC: 2 W
Usage 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	
Blow-out fuse quick acting	6 A
Blow-out fuse slow acting	4 A
Safety cut-out, 24 V AC/DC characteristic B/C	4 A
Measuring circuit	
Response value for sensor short-circuit	Approx. 25 Ohm
Delay on energisation	Approx. 500 ms
Response value	3.6 kOhm ± 10 %
Release value	1.8 kOhm± 10 %
Resistance at 20 °C	Max. 1.5 kOhm
Mechanical data	
Max. cable cross section of ext. conductor	
single core	1 x 4 mm², 24 - 10 AWG
multi-core with crimp connectors	2 x 2,5 mm², 24 - 14 AWG
Dimensions (H x W x D)	87 x 22.5 x 121 mm
Weight	AC: 160 g; DC: 120 g
Designation	Ⓔx II (3) G/D [EEx nL] IIC

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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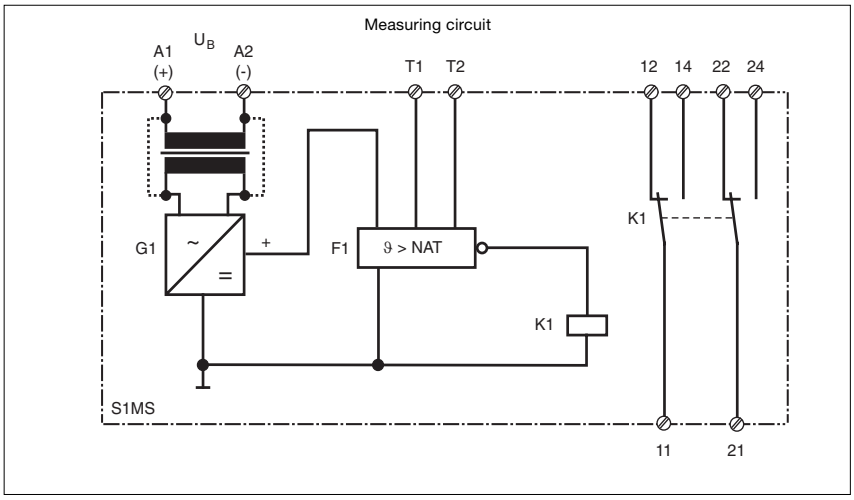
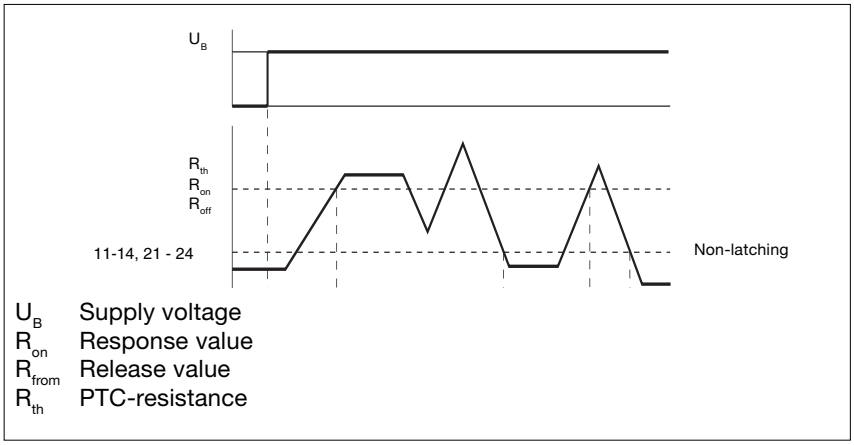
Internal wiring diagram



Timing diagram



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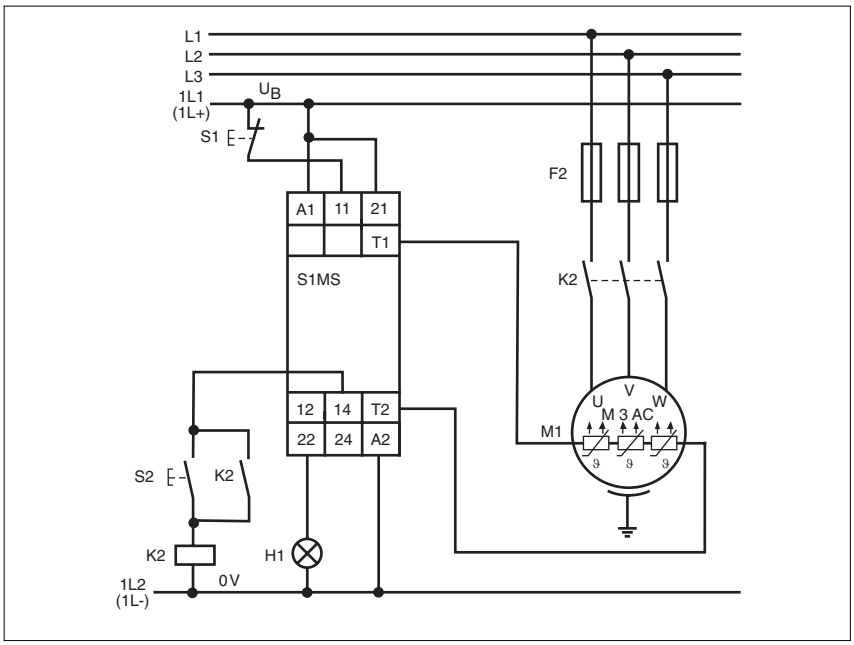
Connection example



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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 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
Mechanical data	
Torque setting for connection terminals (screws)	0.6 Nm
Mounting position	Any
Housing material	
Front	ABS UL 94 V0
Housing	PPO UL 94 V0
Protection types	
Mounting:	IP 54
Housing:	IP 40
Terminals:	IP 20
The version of the standards current at 2005-10 apply.	

Order references key
U_B Supply voltage

Order references

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

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