

## Single-phase current monitoring S1IM





The S1IM current monitoring relay is used to monitor the maximum current values for heaters, lamps etc.

### Features

- 12 measurement ranges can be selected from 0.002 to 15 A
- Reaction time can be set for up to 10 seconds
- Operates to normally energised or normally de-energised mode
- Galvanic isolation between measuring voltage and supply voltage
- UP version: Measuring inputs are not polarity-sensitive

### Approvals

	S1IM
	●
	●

Technical Details	S1IM
<b>Electrical data</b>	
Supply voltage	AC: 24, 42-48, 110-130, 230-240 V DC: 24 V
Tolerance	85 ... 110 %
Power consumption	AC: 2 VA, DC: 1 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	1 auxiliary contact (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 Safety cut-out 4 A, Characteristic B/C
<b>Measuring circuit</b>	
Frequency range	0, 40 ... 400 Hz
Adjustable measuring range limit values	0,1 A: 0,1; 0,05; 0,02; 0,01 A 2 A: 2; 1; 0,4; 0,2 A E: 50 A/25 A/10 A/5 A
Hysteresis	60 ... 95 % of the response value
Impedance of the measurement inputs	0,1 A: 2,5 Ω 2 A: 125 mΩ E: 5 mΩ
Max. overload	0,1 A: max. 0,2 A 2 A: max. 2,5 A E: 15 A/100 ED, 20 A/10 s, 50 A/2 s
Polarity of the measuring inputs	Polarised UP version: any
Reaction time	0,1 ... 10 s
Temperature variation	± 0,05% per+1°C
<b>Environmental data</b>	
Ambient temperature	-15 ... +55 °C
<b>Mechanical data</b>	
Max. cross section of external conductor	
Single-core conductor	1 x 4 mm <sup>2</sup> , 24 - 10 AWG
multi-core conductor with crimp connector	2 x 2,5 mm <sup>2</sup> , 24 - 14 AWG
Dimensions (H x W x D)	87 x 22,5 x 121 mm
Weight	130 g

The standards current on 2003-05 apply

### Description

The current monitoring relay is enclosed in an S-95 slimline housing. There are 8 versions available for AC operation and one for DC operation. Features:

- Relay output: 1 auxiliary contact (C/O)
- 3 measuring circuits for 0.1 A, 2 A and E each with 4 different ranges
- Response value can be set from 20% to 100% of the measuring range limit value

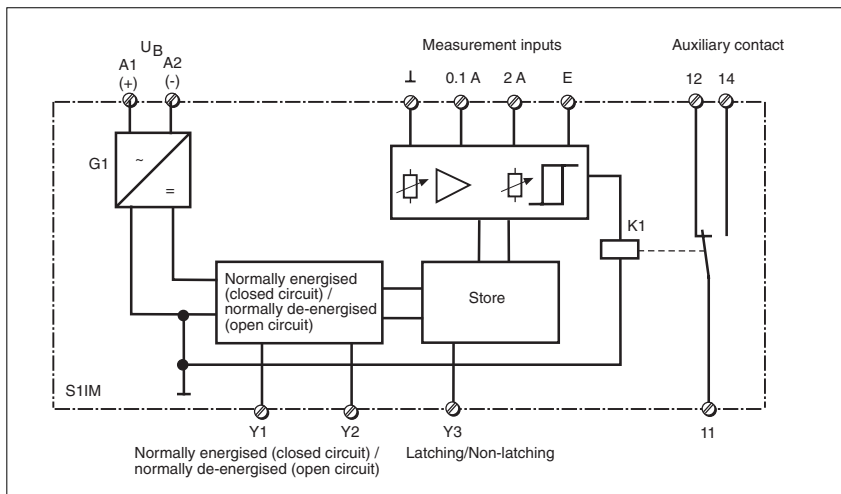
- Hysteresis factor can be set from 0.6 to 0.9 x I<sub>on</sub>
- Fault latching or automatic reset
- LEDs for switching status of the relay and supply voltage

(Description continued overleaf)

## Single-phase current monitoring S1IM

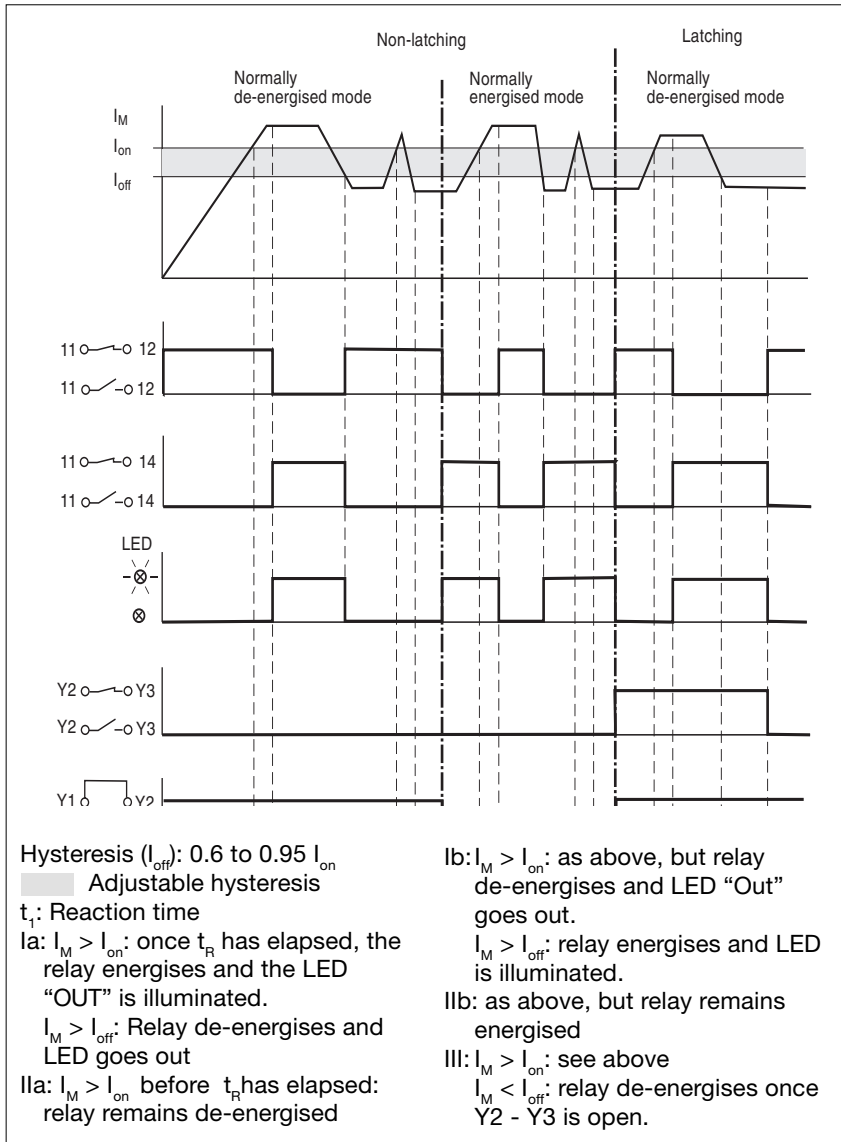
The S1IM monitors whether a set current value has been exceeded. On the UP version the measuring inputs are not polarity-sensitive. If the measured current reaches the response value  $I_{on}$ , the auxiliary contact 11-14 switches and the LED is illuminated. If the measured current falls below the hysteresis value  $I_{off}$  and automatic reset is selected, the auxiliary contact switches again and the LED goes out. The unit is once again ready for operation. If faults are latched, the unit is not ready for operation again until an external reset button is activated or the supply voltage has been switched off and on again.

### Internal wiring diagram



## Single-phase current monitoring S11M

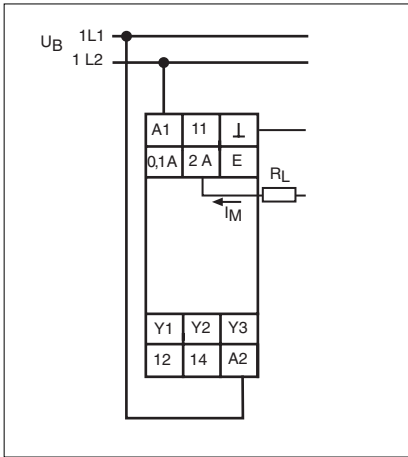
### Timing diagram



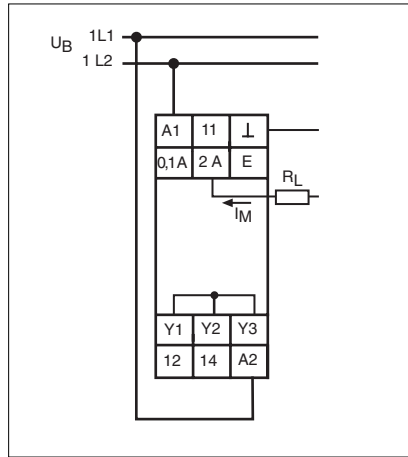
## Single-phase current monitoring S11M

### Connection examples

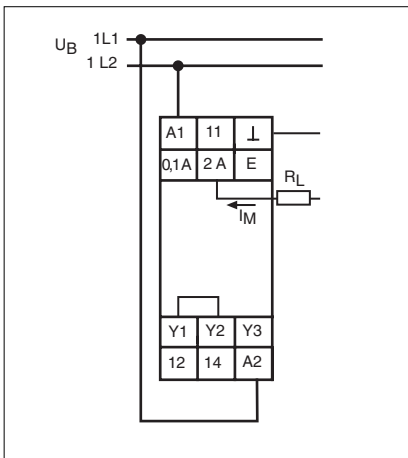
● Example 1  
Normally energised, non-latching



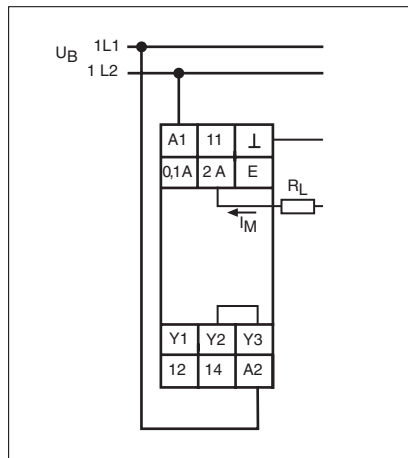
● Example 3  
Normally de-energised, latching



● Example 2  
Normally de-energised, non-latching



● Example 4  
Normally energised, latching



## Single-phase current monitoring S1IM

### 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	DIN VDE 0110-1
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	
Front	ABS UL 94 V0
Housing	PPO UL 94 V0
Protection types	
Mounting	IP54
Housing	IP40
Terminals	IP20

### Order reference

Type	U <sub>B</sub>	I <sub>M</sub>	Order no.
S1IM	24 V DC	15 A	828 010
S1IM	24 V AC	15 A	828 020
S1IM	42 V AC	15 A	828 030
S1IM	110-130 V AC	15 A	828 040
S1IM	230-240 V AC	15 A	828 050
S1IM UP	24 V DC	15 A	828 035

Additional versions available on request

#### Order references key

U<sub>B</sub> Supply voltage  
I<sub>M</sub> Measuring current