

## Standstill monitoring S1SW P



The S1SW P standstill monitoring relay is used to monitor standstill on DC and three-phase motors.

### Approvals

S1SW P	
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### Unit features

- ▶ Standstill monitoring with and without rundown time
- ▶ Standstill threshold can be set
- ▶ Run-down monitoring time can be set
- ▶ Normally de-energised mode
- ▶ Measuring circuits are galvanically isolated
- ▶ No speed sensor is required
- ▶ Suitable for use with a frequency converter

### Description

The standstill monitoring relay is enclosed in an S-99 slimline housing with plug-in terminals.

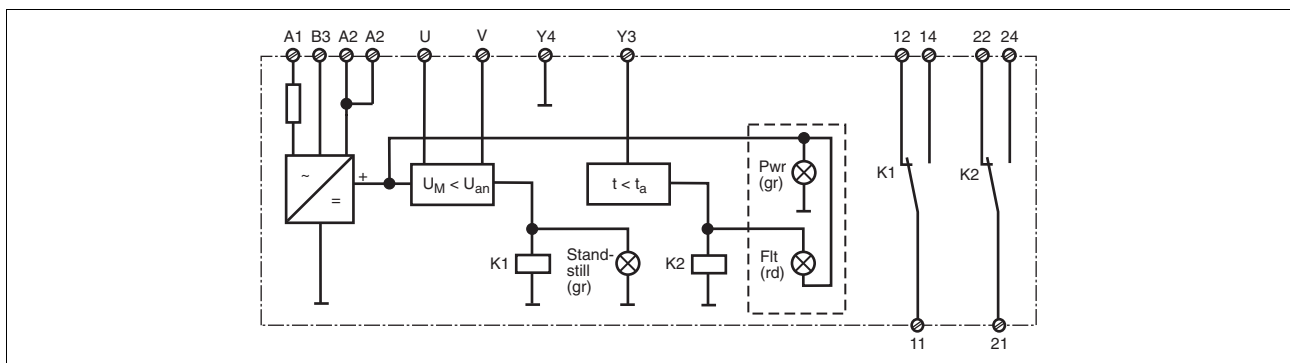
Features:

- ▶ Relay outputs:
  - Standstill: 1 auxiliary contact (C/O)
  - Fault: 1 auxiliary contact (C/O)
- ▶ Operating modes:
  - Standstill monitoring without rundown monitoring
  - Standstill and rundown monitoring
- ▶ Potentiometer to adjust the switch-on threshold and monitoring time

- ▶ Slide switch to double the measuring range
- ▶ LEDs for relay's switch status, fault status and supply voltage

The S1SW P monitors the rundown on a three-phase asynchronous machine with standstill detection. The regenerated voltage induced from the motor is measured; standstill is signalled (relay contact) if the value falls below a set threshold. A second relay signals a fault if the voltage does not fall below the set threshold within the set rundown monitoring time. The time measurement is started by closing a voltage-free start contact (N/C contact on the motor contactor at Y3, Y4). The slide switches can be used to switch the measuring ranges.

### Internal wiring diagram

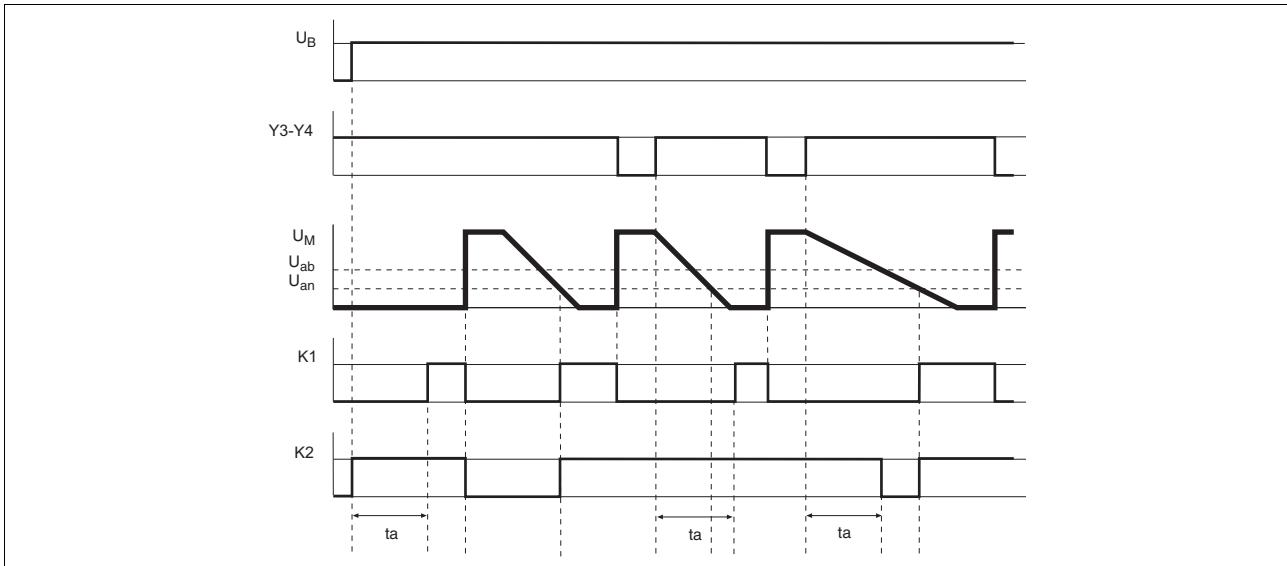


### Key

- ▶  $U_B$  at B3-A2: 24 VAC/DC
- ▶  $U_B$  at A1-A2: 42 ... 240 VAC/DC

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### Timing diagram



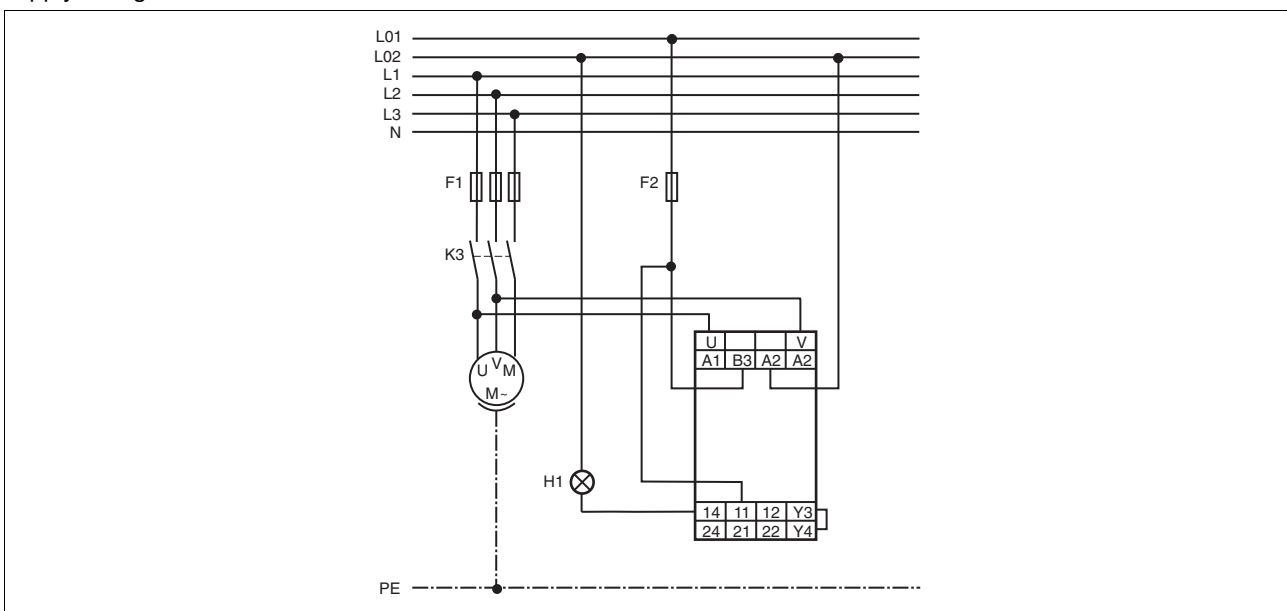
### Key

- ▶  $U_B$  Supply voltage
- ▶ Y3-Y4 Start contact

### Connection examples

#### Example 1

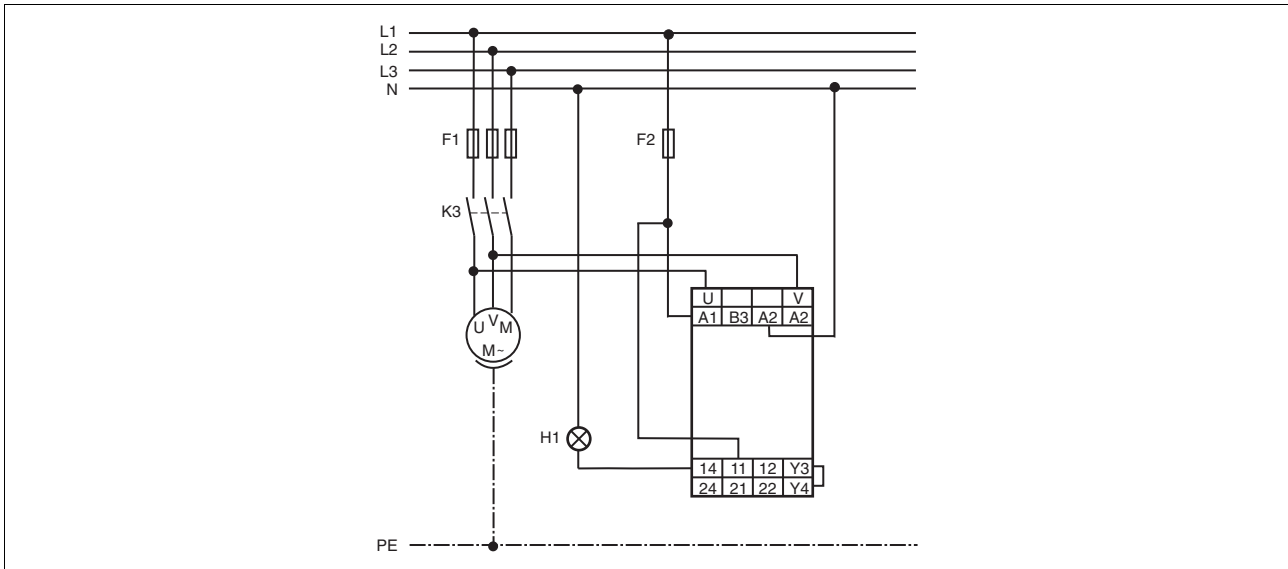
Rundown time is not monitored,  
supply voltage 24 V



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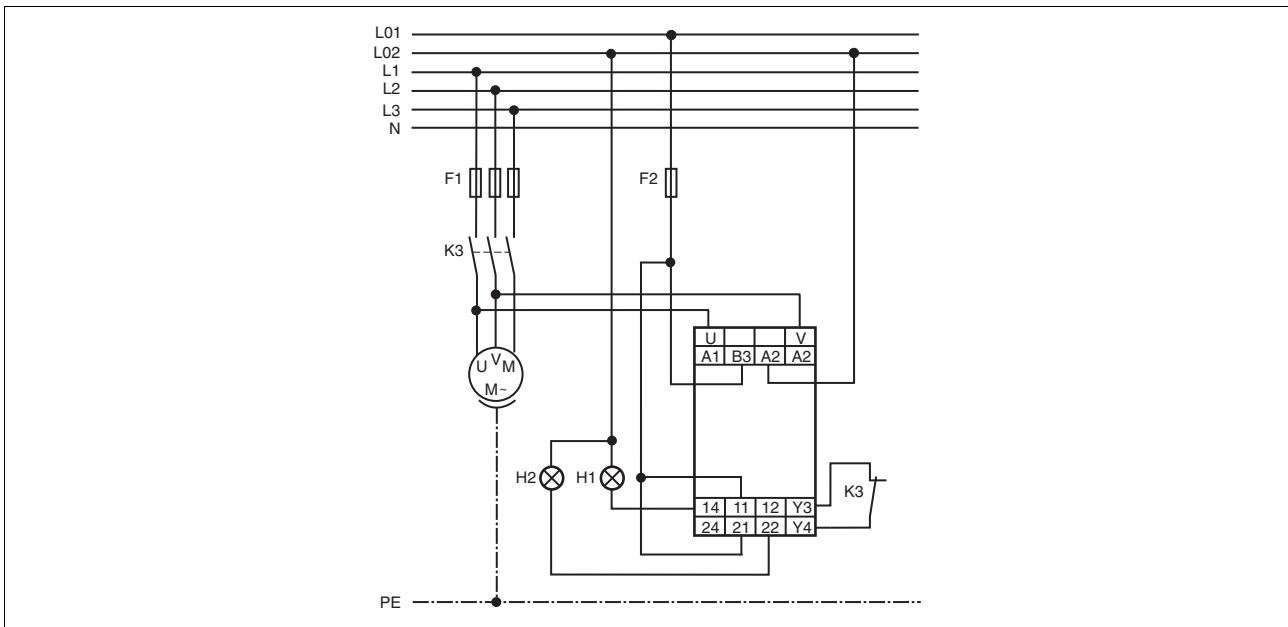
### Example 2

Rundown time is not monitored,  
supply voltage 42 V and higher



### Example 3

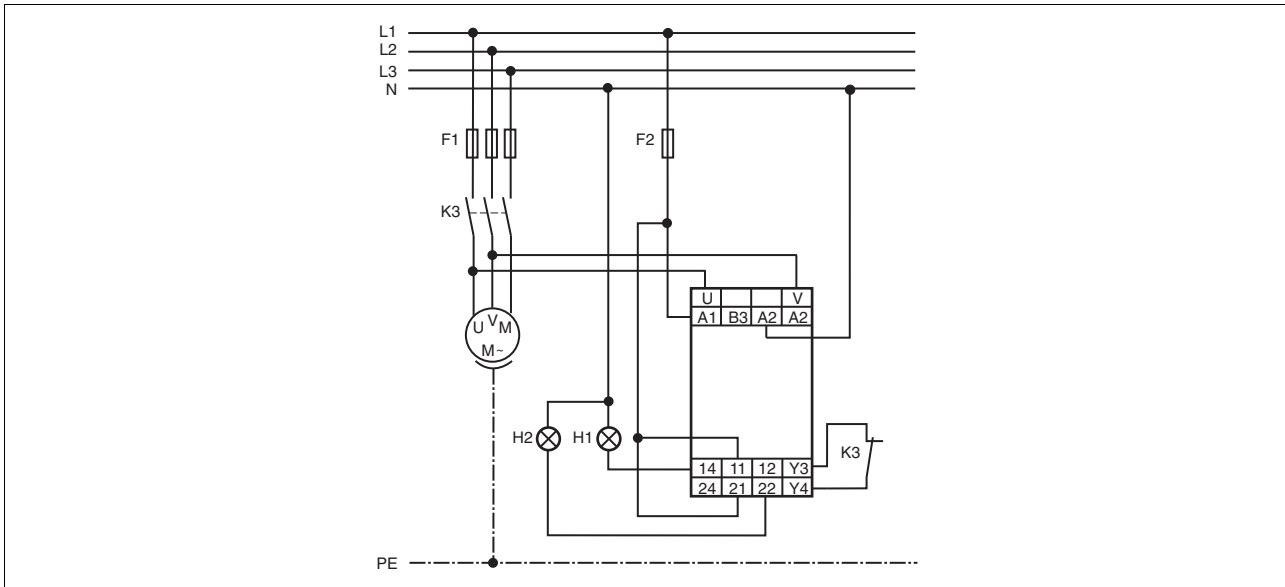
Rundown time is monitored,  
supply voltage 24 V



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### Example 4

Rundown time is monitored,  
supply voltage 42 V and higher



Technical details	S1SW P
<b>Electrical data</b>	
Supply voltage	AC/DC: 24 ... 240 V
Tolerance	85 ... 110 %
Frequency range AC	50 ... 60 Hz
Power consumption	AC: 5 VA, DC: 2.5 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 to EN 60947-5-1	Max. 6 A quick or max. 4 A slow
<b>Measuring circuit</b>	
Frequency range	0 ... 1000 Hz
Adjustable limit values for measuring ranges	0,02 ... 3 V 0,04 ... 6 V
Max. input voltage	AC/DC: 690 V
Impedance of the measuring inputs	5 MΩ
Rundown monitoring time	0 ... 30 s
<b>Environmental data</b>	
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
Ambient temperature	-10 ... +55 °C
Storage temperature	-40 ... +85 °C

## Standstill monitoring S1SW P

Mechanical data	
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
Dimensions (H x W x D)	94 x 22.5 x 121 mm
Weight	145 g

Order reference			
Type	U <sub>B</sub>	U <sub>M</sub>	Order no.
S1SW P	24 - 240 VAC/DC	690 VAC/DC	407 710

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

U<sub>M</sub>: Measuring voltage