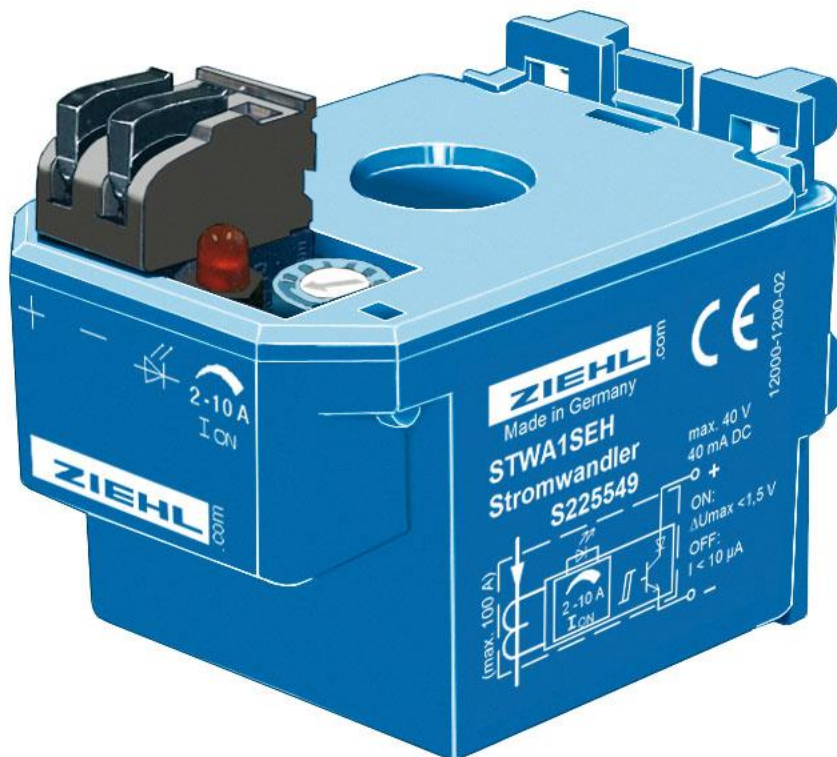


# Operating Manual STWA1SEH

updated: 2015-12-10/Fu

## - Electronic Current-Transformer with adjustable limit



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## 1 Application and Short Description

The STWA1SEH is used where current flow has to be detected, e.g. to report exceeding of a limit, to switch off a machine or just report the current flow.

The STWA1SEH has an integrated electronics with transistor-output.

The limit is adjustable 2 - 10 A with a potentiometer. A LED displays the state.

## 2 Overview of Functions

- adjustable switching point 2-10 A
- built-in LED displays state of the output
- isolated transistor-output max. DC 40 V / 40 mA
- output can be directly connected to a digital input of a PLC
- integrated diode for reverse voltage protection
- electrical connection via screwless pluggable terminals
- 2-wire, no supply voltage required
- DIN-rail-mount or with screws
- plug-in current transformer (Ø 11 mm)
- max. overload 100 A continuously, 300 A max. 10 s.

## 3 Detailed Description

Electronic current transformers type STWA 1 are simply pushed over the conductor. At the output a transistor switched and can be easily evaluated with a digital input of a PLC. The switching-point is adjustable 2-10 A. Above the switching point the transistor is conductive and the LED is on, below the transistor cuts off (LED off). The hysteresis is 5-30 %, depending on the switching point. As a switching element it complies with a switch with a diode in series..

Multiple loops of the conductor through the transformer reduces the limit accordingly, for instance to 2 A with 4 loops.

For monitoring of currents of any value, the STWA1SEH is simply looped into the secondary circuit of a big current-transformer (cable 2x through STWA1SEH). The range corresponds to 20-100 % of the primary current of the transformer.

The electronics in the transformers is supplied from the signal of the transformer. Thus no extra supply-voltage is required.

For simultaneous evaluation of the current flow in several conductors, the STWA1SEH can be connected in series (AND-circuit) or in parallel (OR-circuit).

### **Attention!**

**There may be only one conductor through the transformer!**

## 4 Assembly

The STWA1SEH can be assembled as follows:

- just push it over the monitored conductor without fixing it
- with the included mounting clip:
  - on 35 mm DIN-rail according to EN 60 715
  - surface-mount with 2 screws (M4)

The connection has to be made according to the connection-plan or the type plate.

### **NOTE:**

The devices may only be mounted by skilled workers. The according rules have to be obeyed.

## 5 Technical Data

### Output

Switching voltage	transistor
Switching current	max. DC 40 V
Voltage drop ( ON )	max. DC 40 mA
Leak current ( OFF )	max. 1,5 V
	max. 10 $\mu$ A

### Switching Point

Switch-on-point at $T_u = 25^\circ\text{C}$	2 ... 10 A $\pm 25\%$ (adjustable, red LED on)
Hysteresis	app. 5 ... 30 %
Repeat accuracy	$\pm 2\%$
Temperature factor	$< 0.06\% / \text{K}$
Switch-on delay	0,2 ... 2 s
Switch-off delay	$\leq 0,3$ s

### Frequency

Functional range	50 ... 60 Hz
Nominal frequency	50 Hz
Error	$\leq 3\% / \text{Hz}$

### Overload Capacity

continuously	100 A
max. 10 s	300 A

### Test Conditions

Rated impulse withstand voltage	EN 61010
Overvoltage category	4000 V
Pollution degree	III
Rated insulation voltage $U_i$	2
On-period	250 V
Rated ambient temperature range	100 %
EMC-immunity	0 ... 55 $^\circ\text{C}$
EMC-emission	EN 61326 (industrial electromagnetic environment)
Vibration resistance EN 60068-2-6	EN 61326 CISPR 11 class B
	2...25 Hz $\pm 1,6$ mm
	25...150 Hz 5 g

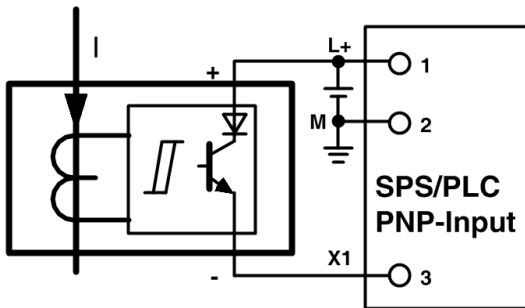
### Housing

Line connection	design H
protection terminals	each 1 x 0,08 mm <sup>2</sup> to,5 mm <sup>2</sup>
Mounting position	IP 20
Weight	any
	ca. 90 g

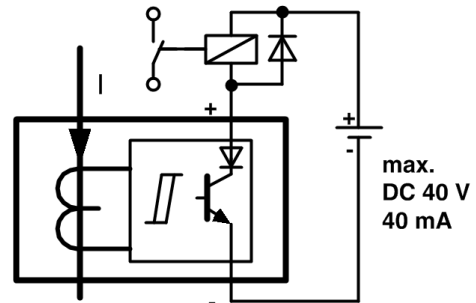
Subject to technical changes

## 6 Examples for connection

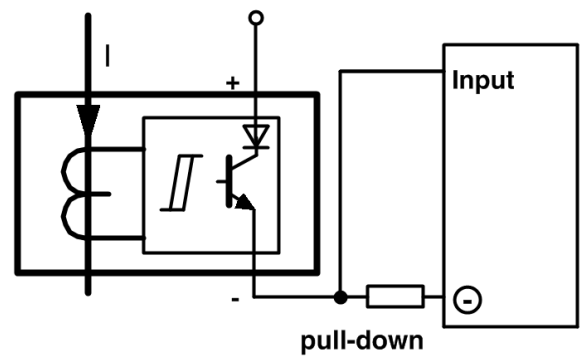
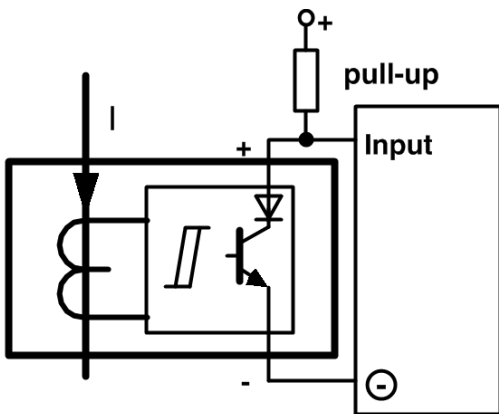
### Connection to a PLC



### Connection to a relay



### Connection to a digital input



## 7 Design H

Dimension in mm

- 1 - Base
- 2 - Clip for DIN-rail
- 3 - Terminal (pluggable)
- 4 - Surface-mount (M4)

