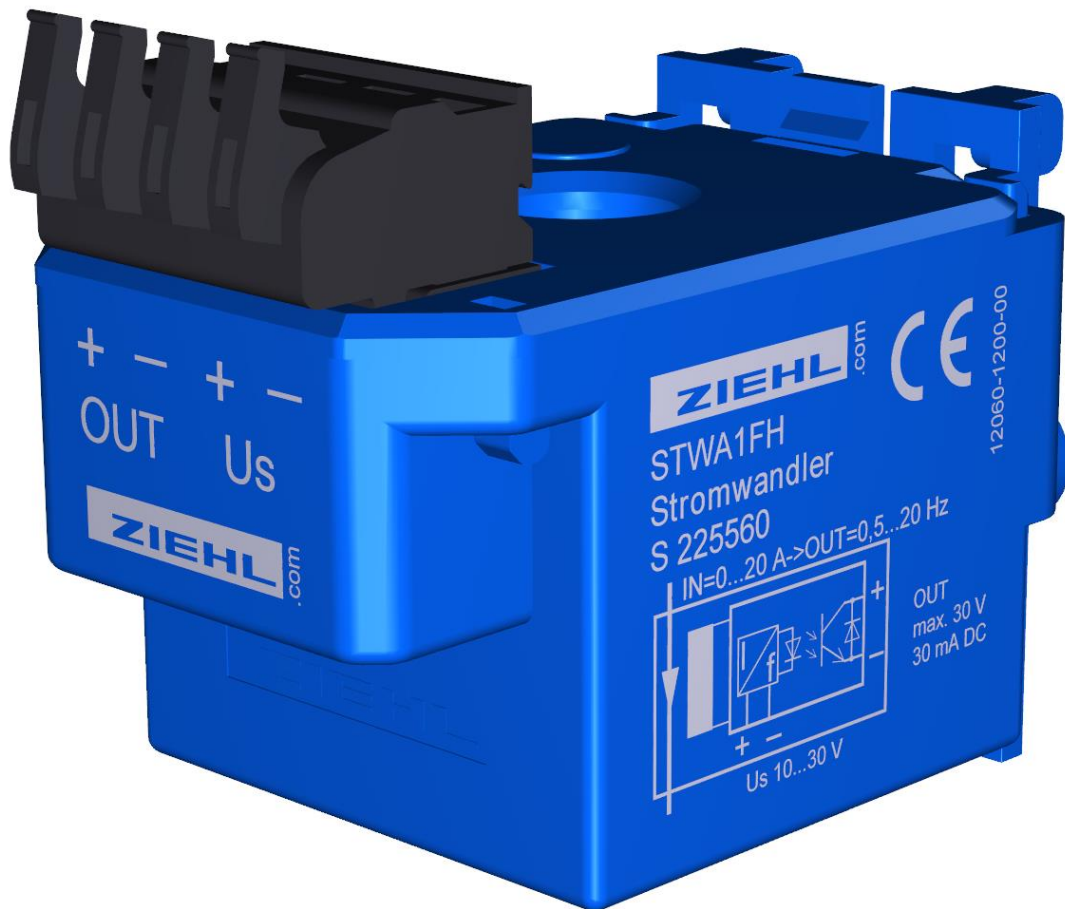


# Operating Manual STWA1FH

updated: 2016-04-26/Fu

## - Electronic Current-Transducer with Frequency Output



### Table of contents

1	Application and Short Description .....	2
2	Overview of Functions .....	2
3	Detailed Description .....	2
4	Assembly .....	2
5	Technical Data .....	3
6	Connection Plan .....	4
7	Design H.....	4

# 1 Application and Short Description

The STWA1FH is a current-transducer for AC current. With the STWA1FH the value of a current can be evaluated very economically and space-saving. The isolated (to signal and supply-voltage) frequency-output can be connected directly to a digital input of a PLC.

## 2 Overview of Functions

- current-proportional analog frequency-output 0,5...20 Hz = 0...20 A
- output max. DC 30 V / 30 mA, insulated with optocoupler
- direct connection to PLC possible
- supply-voltage DC 10...30 V
- integrated diode for reverse voltage protection
- electrical connection via screwless pluggable terminals
- DIN-rail-mount or with screws
- plug-in current transformer (Ø 11 mm)
- option: other current- or frequency-ranges

## 3 Detailed Description

The STWA1FH enables economical detection of the value of an AC-current with a digital input of a PLC. Costly analog inputs are not longer necessary.

The STWA1FH is particularly suitable to evaluate the current of heating elements or of electric motors. In machines e.g. saws, the feed can be regulated depending on the load of the motor.

### **Attention!**

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

## 4 Assembly

The device 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

### Supply-voltage Us

Ripple

DC 10 ... 30 V typ. <15 mA, max. 22 mA  
max. 5 %

### Output OUT

Switching voltage

Switching current

Transistor  
max. DC 30 V  
max. DC 30 mA

### Frequency of monitored current

Functional range

Nominal frequency

Error

50 ... 400 Hz

50 Hz

≤ 0.2 % / Hz

### Frequency Output

Monitoring range

Options:

0 ... 20 A → 0,5 ... 20 Hz

0 ... 40 A → 0,5 ... 40 Hz

0 ... 60 A → 0,5 ... 60 Hz

0 ... 80 A → 0,5 ... 60 Hz

0 ... 50 A → 10 ... 1000 Hz

maximum frequency  
at overcurrent

< 40 Hz

< 80 Hz

< 120 Hz

< 120 Hz

< 2000 Hz

Adjustment time

Error (from 10 % /  $I_{nom}$ )

Temperature coefficient

< 0.5 s

2 % from Range

< 0.06 % / K

### Overload Capacity

continuously

max. 10 s

$I_N+5\%$

200 A

### Test Conditions

Rated impulse withstand voltage

Overvoltage category

Pollution degree

Rated insulation voltage  $U_i$

On-period

Rated ambient temperature range

EMC-immunity

EMC-emission

Vibration resistance EN 60068-2-6

EN 61010

4000 V

III

2

250 V

100 %

0 ... 55 °C

EN 61326 (industrial electromagnetic environment)

EN 61326 CISPR 11 class B

2...25 Hz ±1.6 mm

25...150 Hz 5 g

### Housing

Line connection

Protection terminals

Mounting position

Weight

design H

each 1 x 0.08 mm<sup>2</sup> to 1.5 mm<sup>2</sup>

IP 20

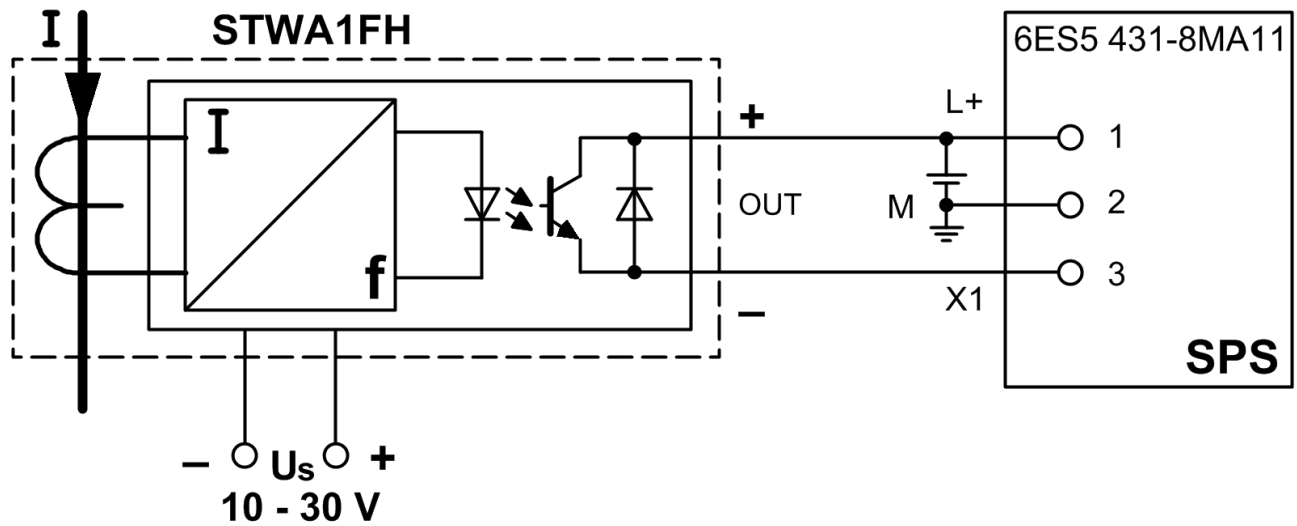
any

ca. 90 g

Subject to technical changes

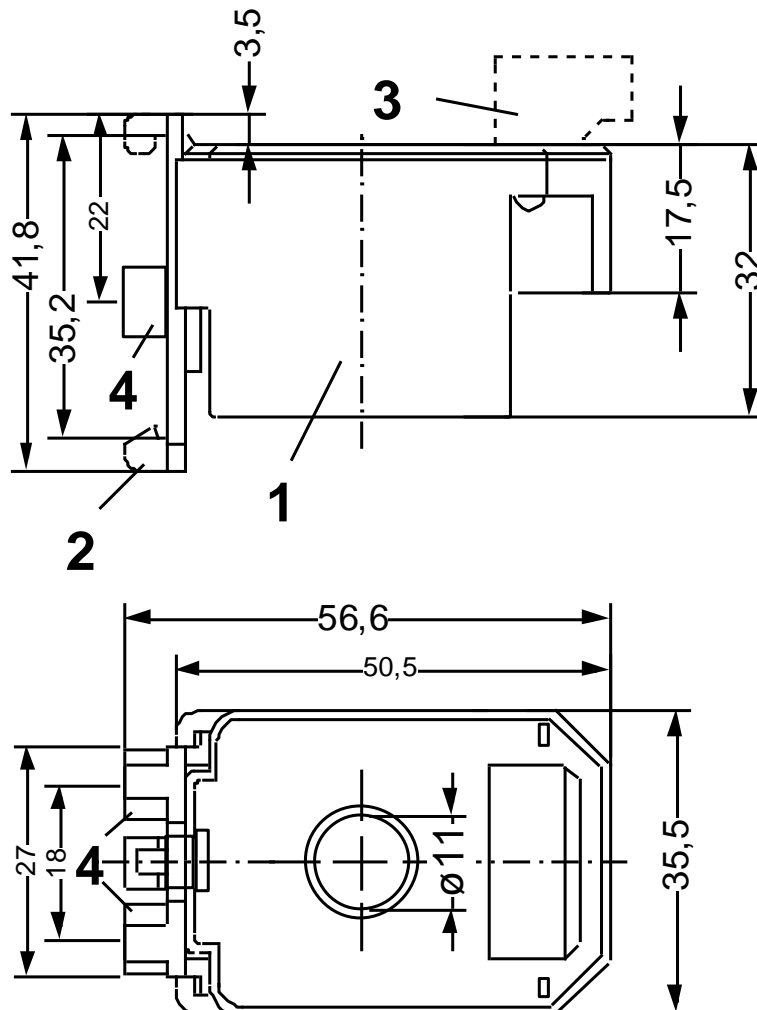
## 6 Connection Plan

Connection to a digital input of a PLC  
(e.g. Siemens 6ES5 431-8MA 11)



## 7 Design H

Dimensions in mm



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