

Operating Manual STWA2AH

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Operating manual, Quick guide, Datasheet, Connection diagram, CAD Data
Firmwareupdates, FAQ, Videos about installation and settings, Certificates

- Electronic Current-Transducer with Analog Output



Table of contents

1	General Notes	2
2	Application and short description.....	2
3	Overview of functions	2
4	Connecting diagram	3
5	Detailed Description	3
6	Important Information	3
7	Installation	3
8	Technical data	4
9	Housing Type H.....	6
10	Disposal	6

1 General Notes

Compliance with the following instructions is mandatory to ensure the functionality and safety of the product. If the following instructions given especially but not limited for general safety, transport, storage, mounting, operating conditions, commissioning and disposal / recycling are not observed, the product may not operate safely and may cause a hazard to the life and limb of users and third parties.

Deviations from the following requirements may therefore lead both to the loss of the statutory material defect liability rights and to the liability of the buyer for the product that has become unsafe due to the deviation from the specifications.

2 Application and short description

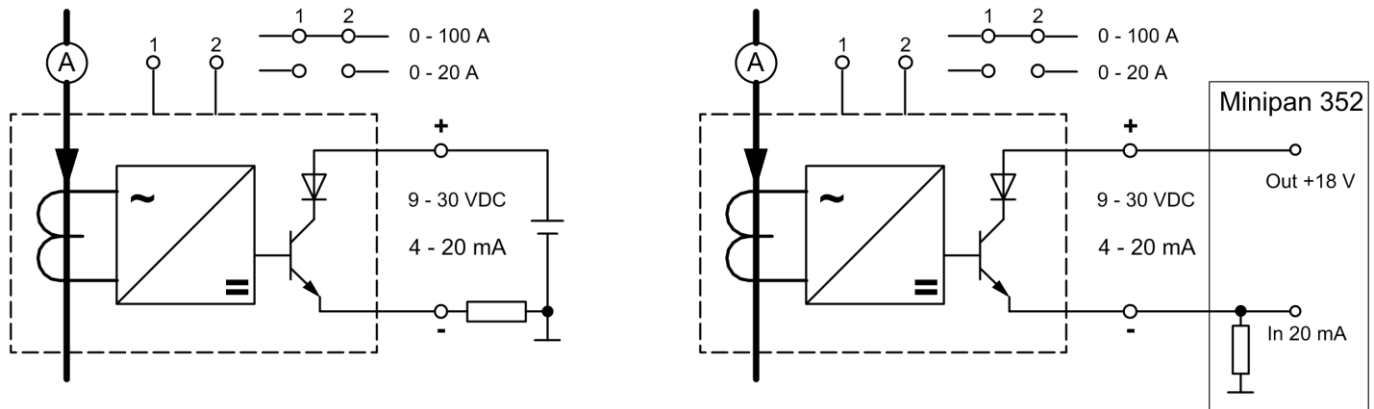
The STWA2AH is a current-transducer for AC currents 0...20/100 A. With the STWA2AH the value of a current can be evaluated very economically and space-saving.

The output-signal 4...20 mA can be evaluated or displayed with components with analog inputs, e.g. PLCs or ZIEHL digital displays type MINIPAN ®

3 Overview of functions

- current-proportional analog output DC 4...20 mA according to AC-measuring range
- measuring range (20/100 A) can be changed with bridge
- insulated analog output
- supply DC 9-30 V (via 4-20 mA-loop)
- electrical connection via screwless pluggable terminals
- DIN-rail-mount or with screws
- plug-in current transformer (Ø 11 mm)
- max. overload 100 A continuously, 300 A max. 10 s

4 Connecting diagram



5 Detailed Description

The current-transformer STWA2AH is a measuring-transducer in the housing of a transformer. It has an analog output 4...20 mA corresponding with AC 0...20 or 0...100 A current through the transformer. Multiple loops of the conductor through the transformer reduce the range accordingly, for instance to 0...5 A with 4 loops. For monitoring of currents of any value, the STWA2AH is simply looped into the secondary circuit of a big current transformer (cable 4x through STWA2AH). The range corresponds to the primary current of the transformer, e.g. 0... 100 A at a transformer with 100/5 A.

The STWA2AH is a 2-wire transmitter and requires a supply voltage between DC 9 and 30 V. The analog output is insulated.

Attention!

There may be only one conductor through the transformer!

6 Important Information

To use the equipment flawless and safe, transport and store properly, install and start professionally and operate as directed.

Only let persons work with the equipment who are familiar with installation, start and use and who have appropriate qualification corresponding to their function. They must observe the contents of the instructions manual, the information which are written on the equipment and the relevant security instructions for the setting up and the use of electrical units.

The equipment is built according to DIN VDE/EN/IEC and checked and leave the plant according to security in perfect condition. If, in any case the information in the instructions manual is not sufficient, please contact our company or the responsible representative.

In order to maintain this status, you must observe the safety regulations entitled "caution" in this operating manual. Failures to follow the safety regulations can result in death, personal injury or property damage to the device itself and to other devices and facilities.

To maintain this condition, you must observe the safety instructions in this instruction manual titled "Important Information". Failure to follow the safety instructions may result in death, personal injury, or property damage to the equipment itself and other equipment and facilities.

Instead of the industrial norms and regulations written in this instruction manual valid for Europe, you must observe out of their geographical scope the valid and relevant regulations of the corresponding country.

7 Installation

The STWA2AH 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 assorting to the connection-plan or the type plate.

**DANGER!**

The current transformer STWA is suitable for current detection in insulated cables. At applications with non-insulated conductors the operator must take care for touch safety. The insulation of the connection cables of the STWA must not be damaged. When laying the cable, make sure that there is sufficient distance to not isolated live parts (such as busbars). If necessary, use an additional electric insulation hose.

8 Technical data

Rated supply voltage U_s	DC 9 ... 30 V
Analog Output	
Monitoring range	0...20 A / 0...100 A alterable with bridge
Analog output	DC 4...20 mA reverse-voltage protected, insulated depending on supply-voltage 9...30 VDC
Load	max. at 9 V: 100 Ω , at 24 V: 800 Ω , at 30 V: 1100 Ω output-current is limited to max. app.. 32 mA
Adjustment time	<0,5 s
Error (from 10 % / $I_{nominal}$)	<5% of FS
Temperature coefficient	0...60 °C: < 0,06 %/K (-25...0 °C: <0,5 %/K)
Frequency	
Nominal frequency	50/60 Hz
Functional range	30 ... 400 Hz
Error	≤ 0.1 % / Hz (30 - 50 Hz) ≤ 0.05 % / Hz (60 - 400 Hz)
Overload Capacity	
continuously	range 0... 20 A max. 63 A AC range 0...100 A max. 100 A AC
Test conditions	
Rated impulse voltage	4000 V
Overtoltage category	III
Pollution degree	2
Rated insulation voltage U_i	300 V
On-period	100 %
EMC-tests	
Emission	EN 61326-1; CISPR 11 class B
Immunity	EN 61326-1 industrial environment
Electrical fast transient/Burst	EN 61000-4-4 ± 4 kV Pulse 5/50 ns, f = 5 kHz, t = 15 ms, T = 300 ms
SURGE immunity	IEC 61000-4-5 ± 2 kV
Electrostatic discharge	IEC 61000-4-2 ± 6 kV contact discharge, ± 8 kV over air

Reliability – failure rate	EN 61709/ SN29500		
Ambient conditions	Local operation in dry rooms		
Operation time 24/7/365	8760 h/y		
Failure rate (FIT)	Tu = 40 °C	Tu = 60°C	Tu = 80°C
Tu = Tref (component not in operation)	79 FIT	180 FIT	441 FIT
	100 (1447) years	100 (636) years	100 (259) years

Installation conditions

Permissible ambient temperature	-25 °C ... +60 °C
Permissible storage temperature	-25 °C ...+70 °C
Installation height	< 2000 m over N.N.
Climatic conditions	5-85% rel. F., no condensation
Permissible wiring temperature	-5 °C ...+60 °C
Vibration resistance EN 60068-2-6	2 ... 25 Hz ±1,6mm
	25 ... 150 Hz 5 g

Contact termination

Spring-type terminal

Protection class terminals	IP20
Actuation type	lever
Number of levels	1
Solid conductor	1 x 0,08 mm ² ... 1,5 mm ² / AWG 28 ... 16
Fine-stranded conductor	1 x 0,08 mm ² ... 1,5 mm ² / AWG 28 ... 16
Strip length	>4 mm

Housing

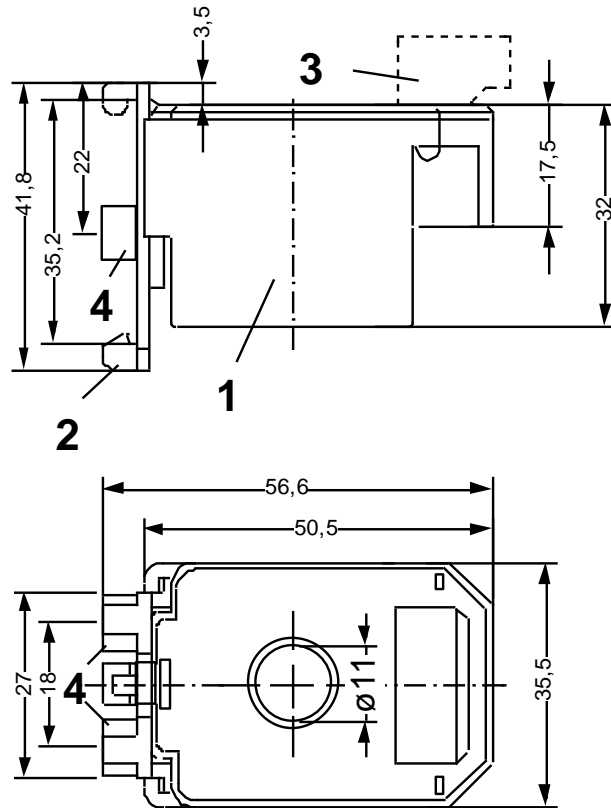
Type H

Dimensions (W x H x D)	36 x 50 x 56 mm
Width	2 M
Protection class housing	IP54
Mounting	Snap mounting on 35 mm standard rail EN60715 Or M4 screws
Mounting position	various
Weight	app. 90 g

Subject to technical changes

9 Housing Type H

Dimension in mm



- 1 - Bottom
- 2 - snap-mounting
- 3 - Terminal
- 4 - Wall mounting (M4)

10 Disposal



Disposal should be carried out properly and in an environmentally friendly manner in accordance with legal provisions.
ZIEHL is registered with the EAR Foundation under WEEE no.: DE 49 698 543.