



# ***Instruction Manual***

## ***AZ01***

***Self-Supplying Plug-on Display for***

***4...20 mA Transmitter***



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# ***Safety Information***

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## ***General Instructions***

To ensure safe operation, the device should only be operated according to the specifications in the instruction manual. The requisite Health & Safety regulations for a given application must also be observed. This statement also applies to the use of accessories. Every person who is commissioned with the initiation or operation of this device must have read and understood the operating instructions and in particular the safety instructions!

The liability of the manufacturer expires in the event of damage due to improper use, non-observance of this operating manual, use of insufficiently qualified personnel and unauthorized modification of the device.

## ***Proper Usage***

The plug-in display of the AZ01 series is used for on-site display of a measured value from a 4 ... 20 mA output signal. Optionally, one or two switching points can be realized by this device. All other usage is regarded as being improper and outside the scope of the device.

The AZ01 devices should not be deployed as the sole agents to prevent dangerous conditions occurring in plant or machinery. Machinery and plant need to be designed in such a manner that faulty conditions and malfunctions do not arise that could pose a safety risk for operators.

## ***Qualified Personnel***

The AZ10 devices may only be installed by trained, qualified personnel who are able to mount the devices correctly. Qualified personnel are persons, who are familiar with assembling, installation, placing in service and operating these devices and who are suitably trained and qualified.

## ***Inward Monitoring***

Please check directly after delivery the device for any transport damages and deficiencies. Additional with reference to the accompanying delivery note the number of parts must be checked.

Claims for replacement or goods which relate to transport damage can only be considered valid if the delivery company is notified without delay.

# 1.0 Commissioning

## 1.1 Electrical connection

The electrical connection is made by the connector of the sensor. The pin assignments can be found in the drawings. Further connections and the required power supply are noted on the rating plate on the housing. The connection should only be carried out by skilled qualified personal. This personal has the experience and the knowledge of country-specific regulations, current standards and directives.

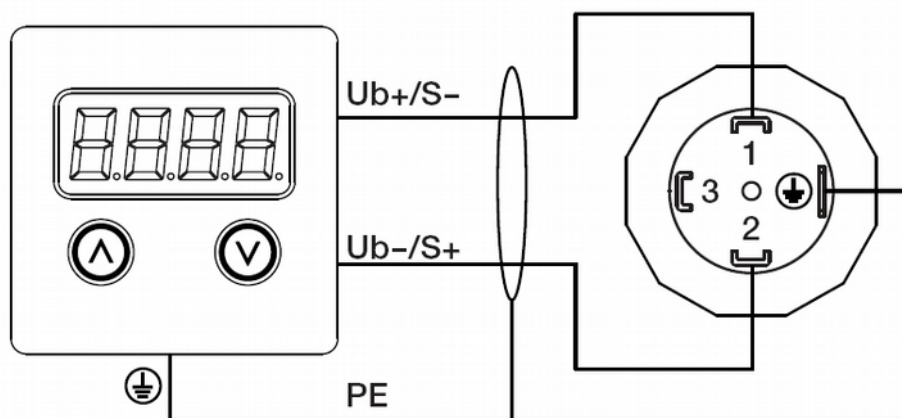
## 1.2 Electrical Data

No separate power supply is needed because the instruments is powered directly by the measuring current.

Power supply:  $U_b = 17 \dots 30 \text{ VDC}$

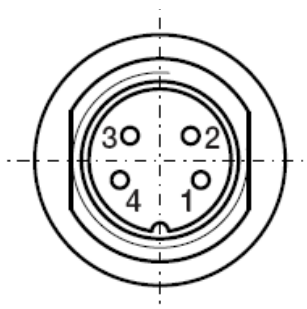
Analog-input signal:  $S = 4 \dots 20 \text{ mA} / 2\text{-wire}$

## 1.3 Connection Plan of sensor plug



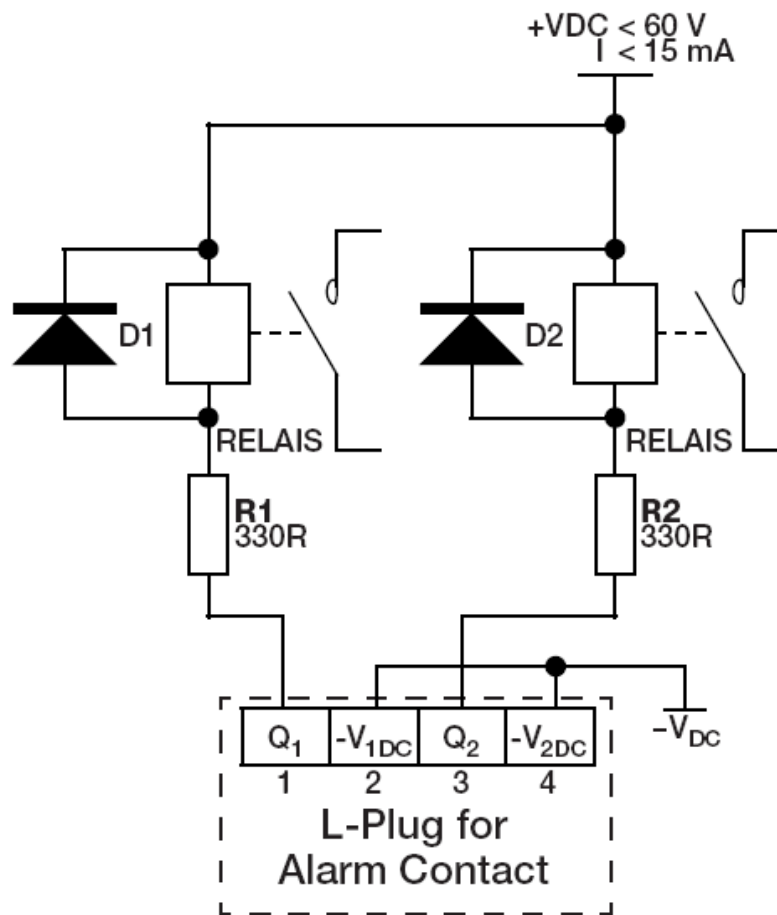
## 1.4 Connection plan for limit contacts

Angle plug of contact outputs

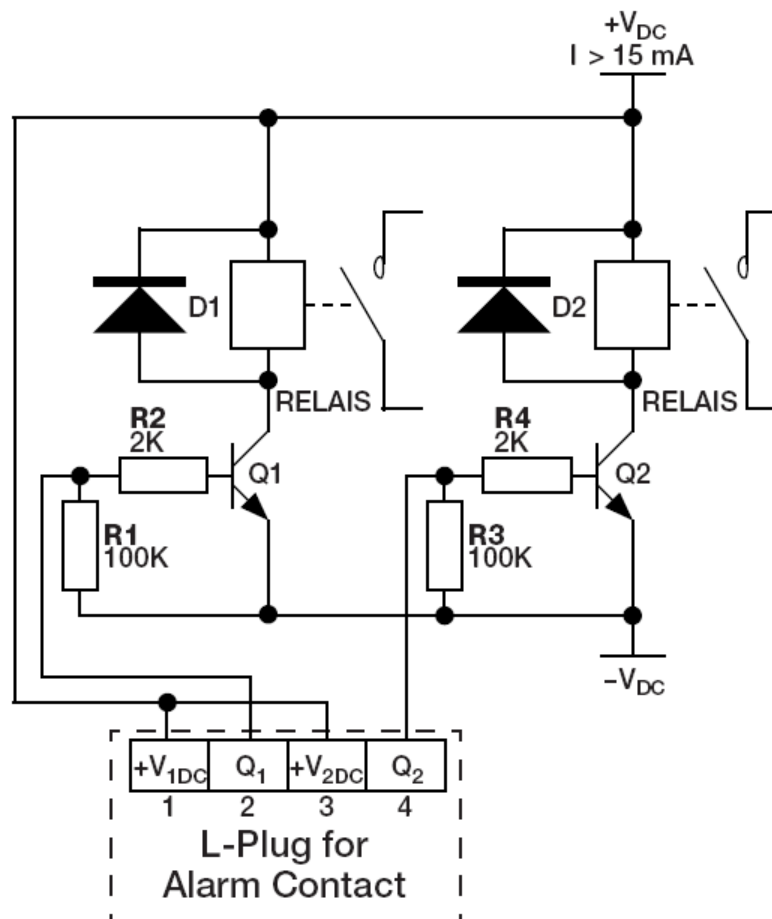


The relay or transistor amplifier stages shown below must be provided by the customer and are not included in the scope of delivery.

**Variant 1: elctrical connection of contact outputs: 60 VDC; I < 15 mA**




**Variant 2: elctrical connection of contact outputs: I > 15 mA**




## 2.0 Settings

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**2.1 In the description, the buttons are denote as follows**

A =  = move up the menu


B =  = move down the menu

**2.2 Opening and closing menu navigation**

A+B = press both at the same time

**2.3 Zero-point (value to be displayed for 4 mA)**


Press both A+B at the same time until  is displayed

Press both A+B at the same time again until  is displayed

Press A to move the cursor

Press B to change the value highlighted by the cursor

**Example 1**

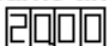
-100.0 kPa = 

Press A+B at the same time to confirm the setting and return to the menu item.

**2.4 Span (value to be displayed for 20mA)**

Press A until  is displayed


Press A+B at the same time to access this menu item

The Display show 

Press A to move the cursor


Press B to change the value highlighted by the cursor

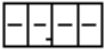
**Exemple 2**

100.0 kPa = 

Press A+B at the same time to confirm the setting and return to the menu item.

**2.5 Decimal point**

Press A until  is displayed

Press both A+B at the same time until  is displayed


Press A to move the decimal point to the left

Press B to move the decimal point to the right

Press A+B at the same time to confirm the setting and return to the menu item

**2.6 Damping**

Press A until  is displayed

Press both A+B at the same time again until  is displayed


Press A to move the cursor


Press B to change the value highlighted by the cursor

*(min. = 0 sec., max. = 20 sec., adjustable in steps of 0,5 sec.)*

Press A+B at the same time to confirm the setting and return to the menu item.

**2.7 Alarm ON / OFF**

Press A until  is displayed

Press both A+B at the same time until  is displayed

Press A or B to toggle between "off" and "on".

"on" = relay activ (indicated by the blinking of the last decimal point)

"off" = relay disabled.

Press A+B at the same time to confirm the setting and return to the menu item.

## 2.8 The first alarm point

Press **A** until **SEPL** is displayed

The setting are given in percentages, based on the entire measurement range.

## 2.9 The second alarm point

Press **A** until **SEPH** is displayed

The setting are given in percentages, based on the entire measurement range.

## 2.10 The direction of the first alarm point

Press **A** until **LDIR** is displayed

Press both **A+B** at the same time until **UP** is displayed

Press **A** or **B** to toggle between "up" and "dn"

"up" means that the relay is activated when the set value is exceeded

"dn" means the relay is activated when set value is undercut

Press **A+B** at the same time to confirm the setting and return to the menu item.

## 2.11 The direction of the second alarm point

Press **A** until **HDIR** is displayed

Press both **A+B** at the same time until **UP** is displayed

Press **A** or **B** to toggle between "up" and "dn"

"up" means that the relay is activated when the set value is exceeded

"dn" means the relay is activated when set value is undercut

Press **A+B** at the same time to confirm the setting and return to the menu item.

## 2.12 Delay

Press **A** until **DELA** is displayed

Press **A+B** at the same time to access this menu item

Press **A** to move the Cursor

Press **B** to change the value highlighted by the Cursor

*(min. = 0 sec., max. = 30 sec., adjustable in steps of 0,5 sec.)*

Press **A+B** at the same time to confirm the setting and return to the menu item.

Press **A** to close the settings menu and return to the operating display.

# AZ01

## Self-Supplying Plug-on Display for 4...20 mA Transmitter

- versatile on site display (LED, 4-digit)
- optional with up to 2 limit contacts
- no additional power supply necessary
- plug in connection according to EN 17530
- monitoring and filter function



### Description:

The AZ01 plug-in display is simply plugged in between the housing and the cubic plug of a 4-20 mA converter via a special adapter. This offers a simple and cost-effective option for digitally displaying a measured value on-site and provides to use the output signal without restriction.

Since the display unit takes its energy from the current loop of the transmitter, no additional auxiliary power is necessary.

Optionally, up to two limit contacts provide the possibility of a measured value monitoring and/or switching.

An activated digital measured value damping makes it possible to smooth high-frequency changes in the measured value for a steady display.

### Typical applications:

The plug-on display can be used universally in the entire process measuring technology.

For almost all measuring instruments with cube plug acc. to EN 17530, the plug-on display AZ01 can be installed as an on-site display and limit switch without additional power supply.



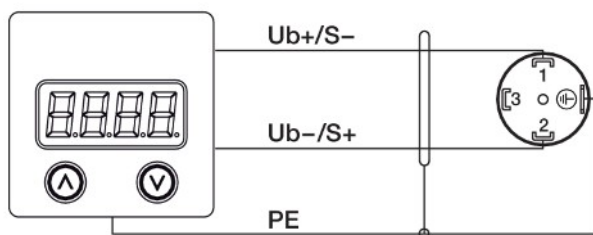
## Technical Data:

|                                    |   |
|------------------------------------|---|
| <b>Housing material:</b>           | plastic, ABS, black                                     |
| <b>Wiring:</b>                     | 2 x EN 175301-803 Form A                                |
| <b>Power supply:</b>               | 4...20 mA loop powered                                  |
| <b>Voltage drop:</b>               | ≤ 4,2 V   |
| <b>Signal input/output</b>         | 4...20 mA   |
| <b>Display:</b>                    | LED-display, 4-digit<br>height: 7 mm<br>2 measures/sec. |
| <b>Scale range:</b>                | -1.9.9.9. - 9.9.9.9.<br>adjustable                      |
| <b>Indicator delay:</b>            | adjustable, 0...30 s                                    |
| <b>Digital damping:</b>            | adjustable, 0...20 s                                    |
| <b>Short-circuit proof:</b>        | permanently   |
| <b>Reverse voltage protection:</b> | max. 200 mA   |
| <b>Power consumption:</b>          | $P_{\max}=0,048$ VA                                     |
| <b>Accuracy:</b>                   | 0,1 % +/- 1 digit                                       |
| <b>Working temperature:</b>        | -20...+70 °C  |
| <b>Storage temperature:</b>        | -30...+85 °C  |
| <b>Weight:</b>                     | 0,1 kg  |
| <b>Protection class:</b>           | front side IP65   |

## Alarm contacts (optional):

|                            |                            |
|----------------------------|----------------------------|
| <b>Contact rating:</b>     | max. 0,9 VA / 15 mA / 60 V |
| <b>Number of contacts:</b> | 1 or 2                     |

## Plug connection:

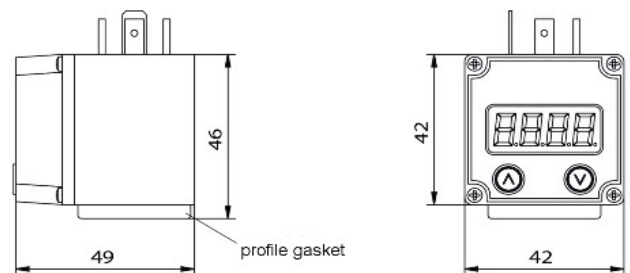


## Order Code:

|   |                   |
|---|-------------------|
| <b>Order number:</b>  | <b>AZ01. A. 0</b> |
| <b>Self-supplying plug-on display for 4-20 mA transmitter</b>   |                   |
| <b>Models:</b><br>A = analogue output (standard)<br>S1 = analogue output + 1 switching contact<br>S2 = analogue output + 2 switching contacts |                   |
| <b>Options:</b><br>0 = without<br>9 = please specify in plain text  |                   |

## Dimensions:

### without limit contacts:



### with limit contacts:

