

# HE 5410

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Differential pressure transmitter



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## Operating instructions

(Original German version)

## Legal notice

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## Document history

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# 1 Legal provisions

## Manufacturer

AXXERON HESCH electronics GmbH, Boschstraße 8, 31535 NEUSTADT, GERMANY

## Intended use

- The differential pressure transmitter HE 5410 is suitable for a 10...36 V DC connection.
- The device can be operated within the operating and environmental conditions approved in these operating instructions without impairing its safety.
- The manufacturer is not liable for improper use and any resulting personal injury or material damage; the risk is borne solely by the user. Failure to comply with the above criteria for intended use will result in the expiry of the warranty and liability for the device.

## Personnel qualification

All work on the device may only be carried out by qualified electricians with sufficient knowledge in the field of electrical engineering.

## Device safety

The device has been constructed and tested in accordance with VDE 0411 / EN 61010-1 and has left the factory in perfect safety condition. To maintain this condition and ensure safe operation, the user must follow all instructions and warnings in these operating instructions.

## Declarations of Conformity

The valid declaration of conformity is available in the download centre of our website <https://www.hesch-automation.com/en/support/download-center/>. Click on the tab

**Declarations of Conformity** to select your device.

## 2 Safety information

### 2.1 Symbols and Basic Safety Instructions

This chapter contains important safety regulations and notes. To protect against personal injury and material damage, it is necessary to read this chapter carefully before working with the device.

#### Symbols used

The following symbols are used in this manual. All safety instructions have a uniform structure.



#### Personal injury warning!

The severity of the danger is indicated by the respective signal word.

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#### High voltage warning!

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#### Warning of material damage caused by electrostatic charge!

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#### Material damage warning!

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#### Note!

Identifies possible malfunctions and indicates optimum operating conditions.

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### 2.2 Signal words

#### DANGER!

Indicates an imminently hazardous *high* risk situation, which, if not avoided, will result in death or serious injury.

#### WARNING!

Indicates a potentially hazardous *medium* risk situation, which, if not avoided, could result in death or serious injury.

#### CAUTION!

Indicates a hazardous *low* risk situation, which, if not avoided, could result in minor or moderate injury.

## 2.3 Safety in the individual operating phases

When installing the device and during operation, the following safety instructions must be observed:



### **Danger of Electrocutation!**

Before working on the device, switch off all power supplies used. The electrical cables must be laid according to the respective national regulations (in Germany VDE 0100). The measuring lines must be laid separately from the power lines. Connect the protective earth connector (in the respective equipment carrier) to the protective earth conductor.

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### **Danger of Electrocutation!**

Any interruption of the protective earth in the equipment carrier can result in the device becoming a hazard. Intentional interruptions are not permitted. If it can be assumed that safe operation is no longer possible, put the device out of operation and secure it against unintentional operation.

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### **Danger of Electrocutation!**

Do **not** open the device while under voltage! When opening the devices or removing covers and parts, live parts may be exposed. Connection points can also be live!

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### **Attention!**

**Never** put the device into operation despite visible damage!

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### **Attention!**

During installation, commissioning, maintenance and troubleshooting, observe the accident prevention regulations applicable to your system, e.g. DGUV<sup>1</sup> Regulation 3 "Electrical installations and equipment".

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### **Troubleshooting!**

At the beginning of troubleshooting, all possible sources of faults on additional devices or supply lines (measuring lines, wiring, downstream devices) should be taken into consideration. If you have not found the fault after checking these points, we recommend sending the device to AXXERON HESCH electronics GmbH.

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### **Decommissioning!**

Switch off the power supply on all poles, if the device is to be decommissioned. Secure the device against being unintentionally switched on!

If the device is linked to other devices and/or equipment, consider the impacts and take appropriate precautions before switching it off.

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<sup>1</sup> Abbreviation for **D**eutsche **G**esetzliche **U**nfallversicherung (German Social Accident Insurance)

### 3 Technical data

Measuring ranges and pressures		
Measuring range [mbar]: 0...	25, 50, 100	250
Max. differential pressure [mbar]:	750	2000
Max. pressure against environment [mbar]:	1000	2000
Basic accuracy:	± 1% of final value	
Temperature drift:	± 0.05% / K of final value	
Hysteresis:	± 0.5% of final value	
Miscellaneous		
Measuring system:	Semiconductor sensor	
Medium:	Air as well as dry, non-aggressive gases	
Auxiliary energy:	U <sub>b</sub> = 10...36 V DC	
Analogue output:	4...20 mA, two-wire system	
Max. permissible load:	R <sub>A</sub> ≤ (U <sub>b</sub> -9V) / 0.02 A	
Pneumatic connection:	Push-in bulkhead fittings for 6 mm outer hose diameter (option: 4 mm)	
Dimensions:	22.5 × 113 × 115 mm ( B × H × T)	
Installation:	Standard rail, vertical installation position, pneumatic connections at the bottom	
Connection technology:	Plug-in screw terminals for 0.2 ...1.5 mm <sup>2</sup>	
Protection classification:	IP 20	
Weight:	125 g	
Climatic application class:	KWF according to DIN 40040 ( ≤ 75 % rel. humidity, no condensation)	
Ambient temperature for operation:	-20 °C...+55 °C	

Subject to technical changes!

#### 3.1 Device identification



Figure 1. Name plate exemplary with 0...25 mbar

## 4 Mounting



### Note!

Please make sure that there is a space of 8 cm above and below the device. Thus, you have enough room for mounting and dismounting the device.

To mount the device, simply swivel it onto the standard rail from above. To dismount it, pull the foot latch downwards using a slotted screwdriver and swivel the device upwards out of the rail (see Figure 2).

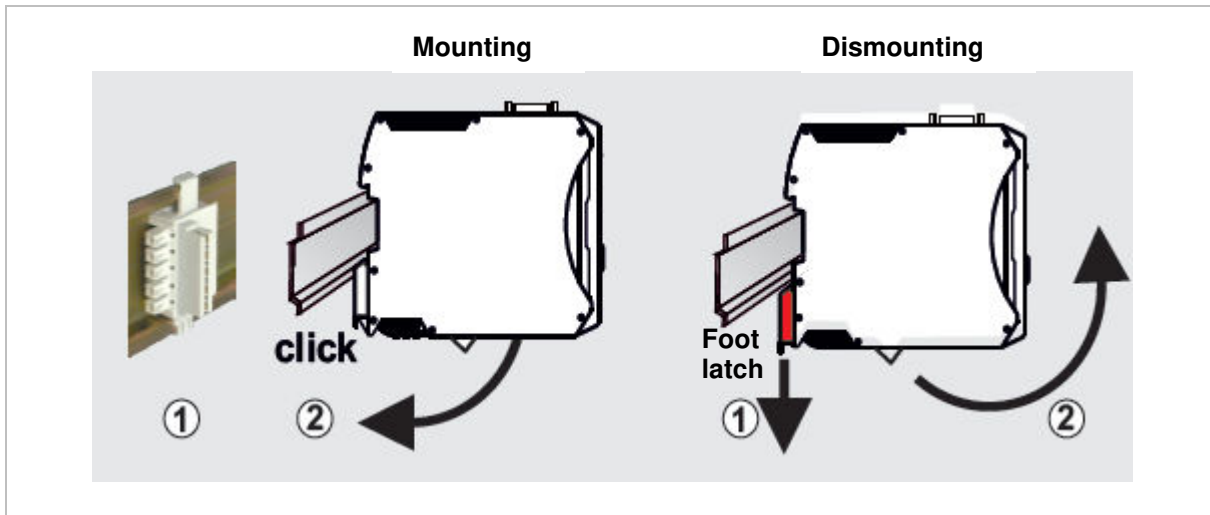


Figure 2. Mounting / Dismounting

Do **not** mount the device near heat sources. The temperature indications in *chapter 3 Technical data* must be observed.

Ensure that the installation position is vertical. The pressure inlets must be at the bottom. Connect the pressure inlets using the shortest possible hoses. The following must apply: p+ greater than p-.



### Note!

Do not connect any other loads to the terminals. This may distort the measuring current (see also Figure 3)!

### Scope of delivery

- HE 5410 differential pressure transmitter
- Operating instructions



### Note!

Check the delivery upon receipt for completeness and visible defects. In the event of a complaint, contact your responsible representative at AXERON HESCH electronics GmbH immediately.



## 5 Electrical commissioning

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### **Danger of Electrocution!**

Electrical commissioning must be carried out when the **power is disconnected**.

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### **Property damage caused by electrostatic charge!**

Observe the safety measures according to DIN EN 61340-51/-3 to avoid electrostatic discharge!

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### **Property damage due to incorrect supply voltage!**

The device is suitable for a 10...36 V DC connection. Please observe the correct value of the supply voltage. If the wrong voltage is connected, the device may be destroyed.

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### **Note!**

Please check the electrical connections before commissioning!

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### **Note!**

The temperature limitations specified for the use of the device must be complied with before and during operation.

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### **Note!**

Do not connect any other loads to the terminals. This may distort the measuring current (*see also Figure 3*)!

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## 5.1 Connections

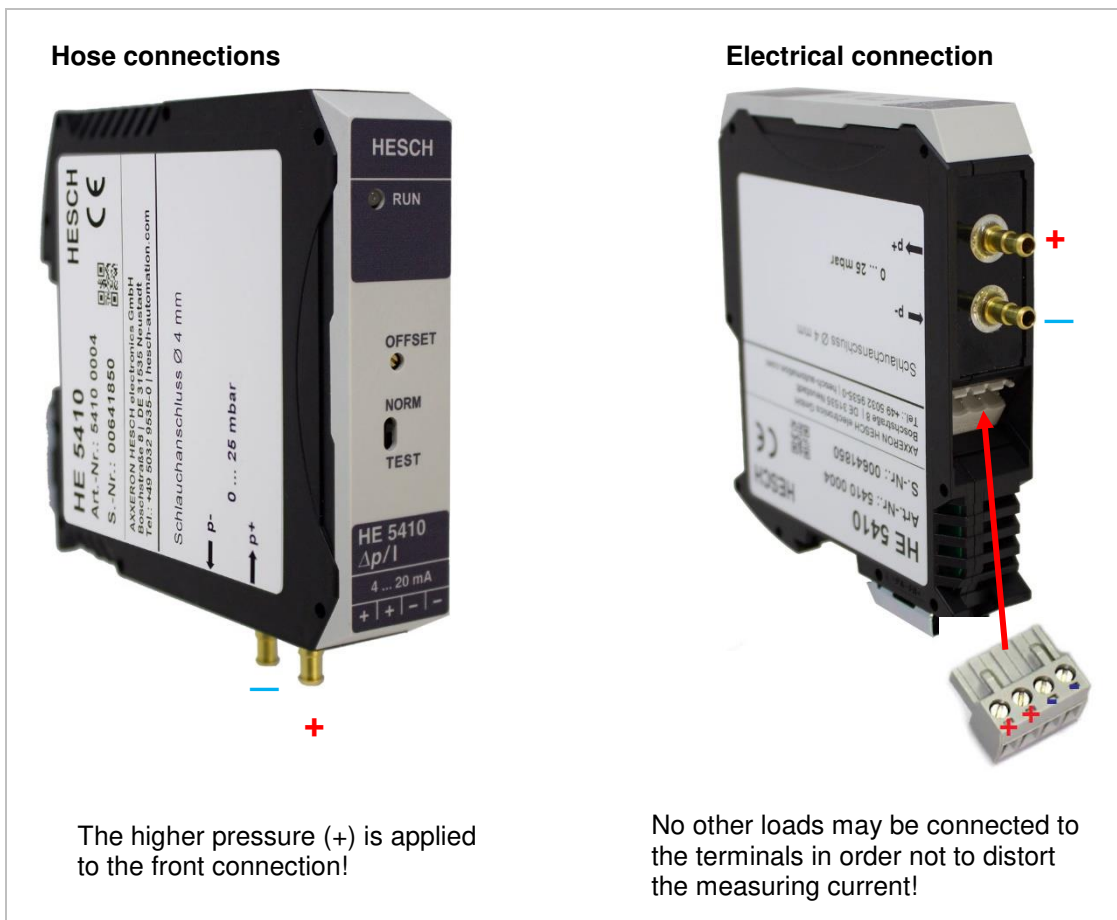


Figure 3. Connections (pneumatical and electrical)

## 5.2 Connection scheme

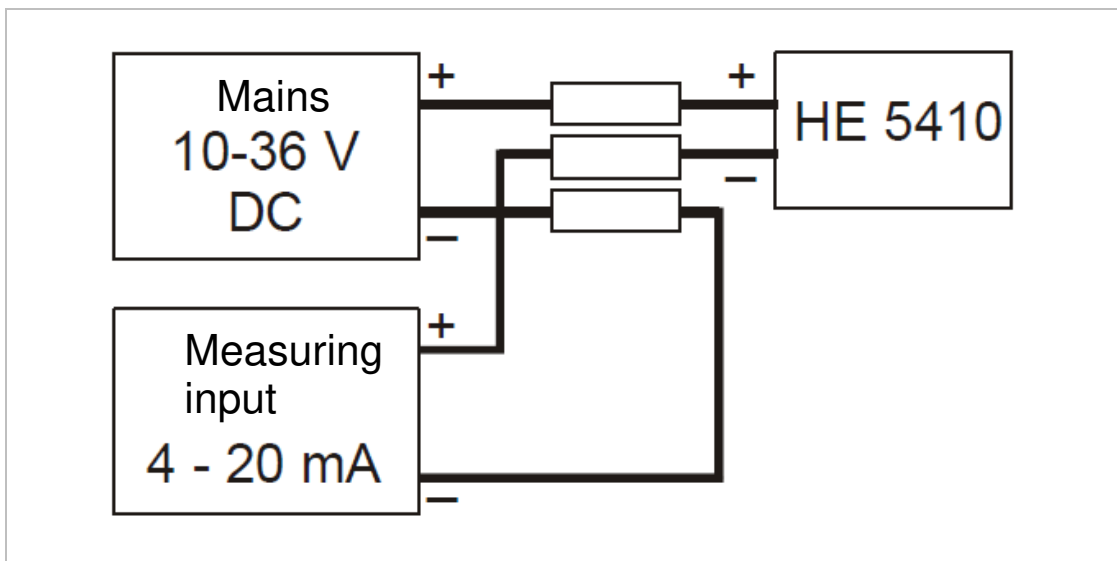


Figure 4. Connection scheme

## 6 Indication and operating elements

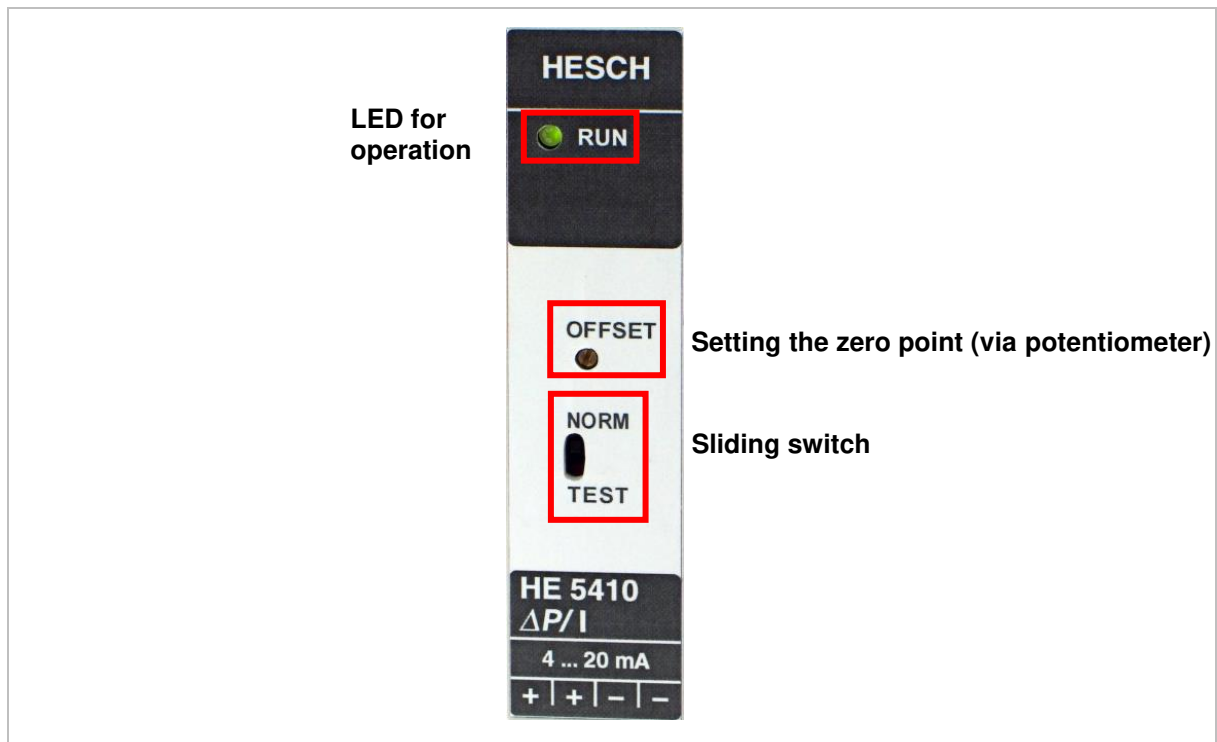






Figure 5. Indication and operating elements

Indication / operating element	Meaning
 	<p><b>LED Operation</b></p> <p>Indicates the device mode, which can be set via the sliding switch.</p> <p>LED lights up <b>green</b>, when the sliding switch was set to normal operation (NORM). The device runs in normal operation, i.e. the current consumption is equal to the differential pressure.</p> <p>LED lights up <b>red</b>, when the sliding switch was set to test mode (TEST), e.g. for commissioning, i.e. the current consumption is set to 10 mA.</p>
<p><b>NORM</b></p>  <p><b>TEST</b></p>	<p><b>Sliding switch</b></p> <p>Set the switch to <b>NORM</b>, if the device is supposed to run in normal operating mode.</p> <p>Set the switch to <b>TEST</b>, if the device is supposed to run in test mode, e.g. for commissioning. In test mode, a signal of 10 mA is generated on the supply lines in order to check the signal processing.</p>
<p><b>OFFSET</b></p> 	<p><b>OFFSET</b> is used to set the zero point of the device to 4 mA. The device was set to the correct value at the manufacturer and does not need to be adapted. In case the zero point must be set for some reason, please observe the <b>30 minute</b> warmup time of the device and contact the service of AXZERON HESCH electronics GmbH, if necessary (see chapter 7 Maintenance and Service).</p>

## 7 Maintenance and Service

### **Maintenance, repair**

The device must be cleaned regularly to avoid an increased formation of dust on the device.

### **Disposal**

Dispatch metals and plastics for recycling. Electrical and electronic components must be collected separately and disposed of properly. Dispose of assembled printed circuit boards properly.

### **Service**

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