

# Electronic pressure transducer type DT 2

## Assembly instructions



Two-wire system with current output, three-wire system with voltage output, housing made of plastic/stainless steel



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## 1 Preliminary note

### Symbols used

- ▶ Instruction
- Cross-reference



#### NOTE

Malfunctions or disturbances are possible in case of non-compliance.

## 2 Safety instructions

- Read this document before commissioning the device. Make sure that the product is suitable for the applications in question without restriction.
- Disregarding application instructions or technical information can lead to property damage and/or personal injury.
- Improper or unintended use may result in malfunction of the device or undesirable effects in your application. For this reason, installation, electrical connection, commissioning, operation and maintenance of the device may only be carried out by trained specialist personnel authorised by the system operator.
- In order to guarantee proper condition of the device for the operating time, it is necessary to use the device only for media against which the materials that contact the media are sufficiently resistant (→ [Oil recommendations](#))
- The responsibility for ensuring that the measuring instruments are suitable for the respective purpose lies with the operator. The manufacturer assumes no liability for consequences of misuse by the operator. This pressure sensor is maintenance-free. Repairs are to be carried out exclusively by the manufacturer.

### 3 Intended use

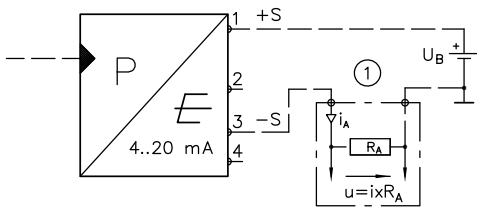
The pressure sensor is used to measure pressure. The measured pressure is output as an electrical signal.

The output signal of a pressure sensor may be above the nominal maximum signal value if no signal limit is set. Likewise, the output signal may be below the nominal minimum signal value. This undefined condition can cause a fault in the customer's machine (software). The signal limit restricts the output signal to a minimum or maximum value to be defined by the customer.

#### Connection diagram

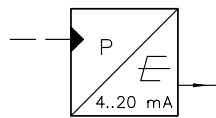
##### Electronic pressure transducer DT(S) 2-... (4 – 20 mA)

###### Two-wire system



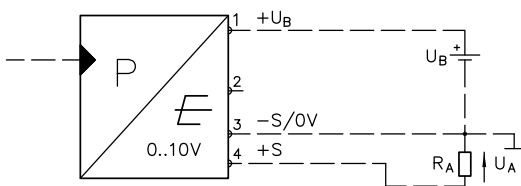
1 Stromeingang

###### Simplified circuit symbol

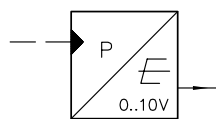


##### Electronic pressure transducer DT(S) 2 V-... (0 – 10 V)

###### Three-wire system

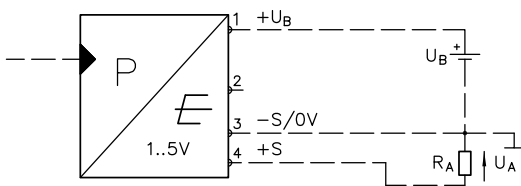


###### Simplified circuit symbol

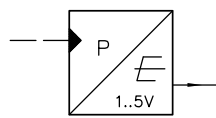


##### Electronic pressure transducer DTS 2 V4-4 (1 ... 5 V)

###### Three-wire system



###### Simplified circuit symbol



Use the pressure sensor only in applications that are within its technical performance limits (for example, maximum ambient temperature, material compatibility, ...).

The device is designed and constructed exclusively for the intended purpose described here and may only be used accordingly.

Claims of any kind due to improper use are excluded.

### 3.1 Area of application

- Pressure type: Relative pressure

		DT 2V-1 DT 2-1	DT 2V-2 DT(S) 2-2	DTS 2V4-4 DT(S) 2V-4 DT(S) 2-4	DT 2V-6 DT 2-6
Measuring range	$p_{\text{range}}$ [bar]	0 ... 100	0 ... 250	0 ... 400	0 ... 600
Admissible overload pressure	$p_{\text{max}}$ [bar]	200	500	800	1200
Bursting pressure	$p_{\text{burst}}$ [bar]	800	1200	1700	2400

**! NOTE**  
 Static and dynamic overpressures exceeding the specified compressive strength must be prevented by appropriate measures. The specified bursting pressure must not be exceeded. Even if the bursting pressure is only exceeded briefly, the device can be destroyed.  
 CAUTION: Risk of injury!

**! NOTE**  
**Pressure Equipment Directive (PED):**  
 Devices with a compressive strength  $\leq 1000$  bar comply with the Pressure Equipment Directive, are designed for fluid group 2 media and are manufactured according to good engineering practice.

**! NOTE**  
**Personal injury, damage to property and the environment caused by hazardous substances**  
 In case of contact with dangerous measuring media (for example, oxygen, acetylene, flammable or toxic substances), hazardous measuring media (for example, corrosive, toxic, carcinogenic, radioactive substances) as well as in refrigeration systems, compressors there is a risk of personal injury, property damage and environmental damage.

- ▶ In the event of a fault, aggressive measuring media at extreme temperatures and under high pressure or vacuum may be present on the device.
- ▶ These measuring media must comply with the relevant regulations in addition to the general rules.
- ▶ Wear necessary protective equipment

### 4.1 Assembling devices

Requirements at the assembly site

**The assembly site must fulfil the following conditions:**

- Sufficient space for a safe electrical installation.
- Permitted ambient and medium temperatures remain within the performance limits. Consider possible restrictions of the ambient temperature range based on the mating connector used.



**NOTE**

Before installation and removal of the device: Ensure that the system is depressurised.

- ▶ Insert the device into a process connection G 1/4 A (BSPP) (DIN ISO EN 1179-2).
- ▶ Tighten. Recommended tightening torque: 26 Nm

### 4.2 Electrically connecting devices

Requirements for power supply

Output signal	Supply voltage
4 ... 20 mA	DC 10 ... 36 V
0 ... 10 V	DC 14 ... 36 V
1 ... 5 V	DC 8 ... 16 V

**Requirements for electrical connection**

- Cable diameter fits the cable gland of the mating connector.
- Cable fitting and seals of the mating connector are correctly seated

**Requirement for shielding and earthing**

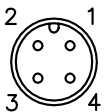
The pressure sensor must be shielded and earthed in accordance with the system's earthing concept.

According to EN 61326-1, external installations must take into account interference due to surge voltages. To protect the device, the connection must be made with a shielded cable. The shield of the cable must be connected on at least one side to earth or a suitable reference potential. Optionally, a suitable external measure to protect against surge voltages can be provided.

## 5 Electrical connection

**! NOTE**

The device may only be installed by an electrically qualified person.  
The national and international regulations for the installation of electrical equipment must be followed.

Round plug M12x1		2-wire (4 – 20 mA)	3-wire (1 – 5 V / 0 ... 10 V)
	U+	1	1
	U-	3	3
	S+	--	4

Legend

- U+ Positive supply connection
- U- Negative supply connection
- S+ Analogue output

## 6 Technical data and dimensional drawing

<b>Technical data</b>	DT 2	
<b>Measuring range</b>	See order documents	
<b>Overload protection</b>	2-way	
<b>Output signal</b>	See order documents	
<b>Load</b>	4 ... 20 mA	$\leq (\text{Auxiliary energy} - 10 \text{ V}) / 0.02 \text{ A}$
	DC 0 ... 10 V	$> 5 \text{ k}\Omega$
	DC 1 ... 5 V	$> 2.5 \text{ k}\Omega$
<b>Auxiliary energy (depending on output signal)</b>	4 ... 20 mA	DC 10 ... 36 V
	DC 0 ... 10 V	DC 14 ... 36 V
	DC 1 ... 5 V	DC 8 ... 36 V
<b>Current consumption (depending on output signal)</b>	4 ... 20 mA	$< 30 \text{ mA}$
	DC 0 ... 10 V	$< 10 \text{ mA}$
	DC 1 ... 5 V	$< 10 \text{ mA}$
<b>Protection class</b>	Round plug M12x1 (4-pin)	IP 67
<b>Vibration resistance</b>	20 g (according to IEC 60068-2-6, at resonance)	
<b>Shock resistance</b>	500 g (according to IEC 60068-2-27, mechanical)	
<b>Permissible temperature ranges</b>	Surrounding area	-40 ... +100°C
	Measuring media	-40 ... +125°C
	Storage	-40 ... +100°C
<b>Materials</b>	Parts that contact measuring media	Austenitic stainless steel
	Parts that do not contact measuring media	Highly resistant, glass fibre reinforced plastic (PBT) / stainless steel
<b>CE conformity</b>	Pressure Equipment Directive	

Further information under [www.hawe.com](http://www.hawe.com)