

# HE 5411

 **ENGINEERING**  
made in Germany

## Differential pressure transmitter

with limit value indication – In a robust IP65 housing and versatile in use



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AUTOMATION



HE 5411 – for use in dust extraction systems and building automation

# Precise differential pressure measurement under demanding ambient conditions

For **precise** and **reliable** differential pressure measurement, especially with very small measured values in the millibar range, the **shortest possible measuring lines** are crucial. Installing the transmitter close to the measuring point prevents falsification of the measurement results, which can be caused by dust deposits or condensation in the lines.

In practice, it is often difficult to select the optimum installation location. Ambient conditions such as dust, extreme temperatures or humidity often restrict the selection of suitable locations for optimum installation in terms of measurement technology.

## The solution in robust IP65 housing

Available in Lite, Basic and Premium versions, the HE 5411 differential pressure transmitter offers the **right solution for almost any requirement**, as it can also be used in environments with briefly occurring explosive atmospheres (zone 2 + 22).

**Outdoor installation** is also permitted, as condensation on the electronics is prevented by the special IP65 housing. The wide permissible ambient temperature range of -20 to +55 °C offers many possible applications.

## Versatile use depending on requirements and field of application

The HE 5411 not only monitors filter systems in dust extraction systems, but also controls volume flows in ventilation and air conditioning systems, measures fill levels in liquid containers (bubbling-through) and carries out overpressure measurements in clean rooms. It is also used in spray and paint booths.





## Precise detection of differential pressures and optimum adjustment of the measuring range

The HE 5411 **accurately measures** the differential, positive and negative pressure between two pressure inputs and converts the values into a linear or square root output signal of 0(4)...20 mA or 0...10 V.

The **4-digit 7-segment display** (Basic and Premium versions) also allows the measured value to be displayed on site in the measuring ranges from  $\pm 1.25$  mbar to  $\pm 1000$  mbar or  $\pm 125$  Pa to 10,000 Pa.

Even the **smallest pressure deviations** are recorded **quickly** and **with long-term stability**.



Can be used in  
ATEX zone 2 + 22



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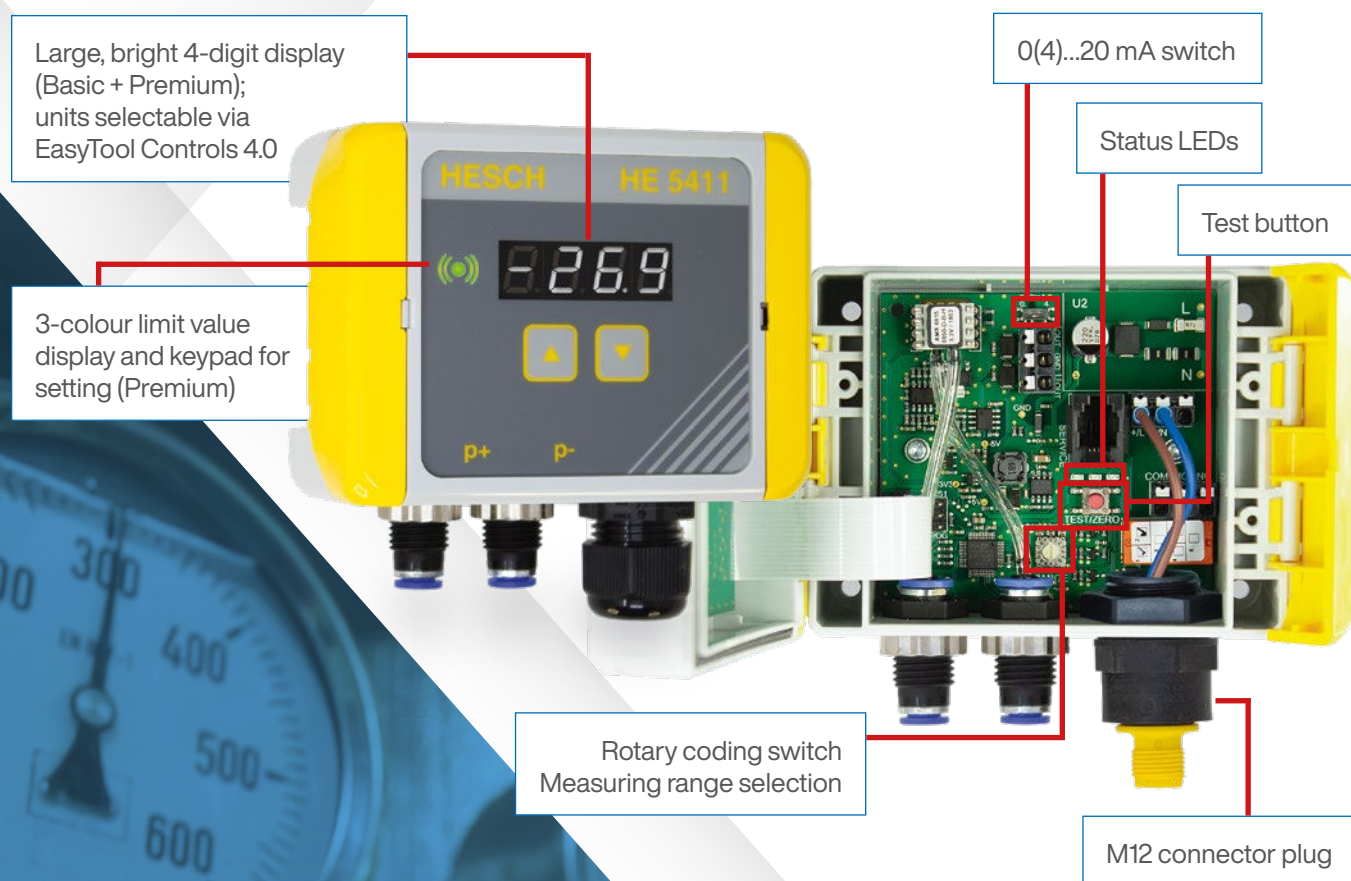
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## The details

There are 3 variants to choose from for different requirements – **Lite**, **Basic** und **Premium**. Each device version can be opened with screwless hinge technology to carry out settings such as measuring ranges, zero point, test mode (output of a 50 % measured value signal) and the PC connection.

Depending on the application, the following measuring ranges can be ordered:  
 $\pm 1.25$  (without ATEX approval) /  $\pm 2.5$  /  $\pm 5$  /  $\pm 10$  /  $\pm 25$  /  $\pm 50$  /  $\pm 100$  /  $\pm 350$  /  $\pm 1000$  mbar.

The pressure connection is made via 6 mm quick-release couplings. An M12 connector plug can also be selected for the electrical connection instead of the straight-through cable gland.



### The advantages at a glance

- ✓ **Quick commissioning and installation**  
thanks to space-saving design, tool-free connector plugs and screwless housing (hinge technology)
- ✓ **Quick-release fasteners**  
for a secure hold of the pressure hoses
- ✓ **2 versions for suitable voltage supply:**  
24 V DC and 100...240 V AC
- ✓ **EasyTool Controls 4.0 with wired or wireless data transmission**  
for extended and customised setting options
- ✓ **Compact design in IP65 housing**  
– also for outdoor use
- ✓ **Use in explosive environments ATEX zone 2 + 22\***
- ✓ **Limit value signal via relay output**  
straight-through cable gland or 24V digital output (M12 connector plug optional for Premium version)

\*5411 Lite and Basic with 19...36 V DC supply voltage can be used with a closed housing for use in ATEX zone 2 and 22.  
HE 5411 Lite, Basic and Premium with 100...240 V AC and Premium with 19...36 V DC supply voltage are only suitable for use in ATEX zone 22 with a closed housing.  
Devices with a measuring range of  $\pm 125$  mbar (regardless of the device variant) must not be used in areas with potentially explosive atmosphere.

## The right appliance version for every budget and application!

Depending on the purpose and the field of application, the differential pressure measuring transmitter is available with or without a display for pressure indication.

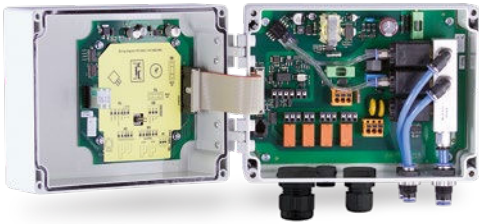


Specifications	Lite	Basic	Premium
0...10 V analog output	✓	✓	✓
0...20 mA / 4...20 mA switchable analog output	✓	✓	✓
Zero point switch	✓	✓	✓
Commissioning help: test output signal (50%)	✓	✓	✓
4-digit differential pressure display	X	✓	✓
LED-limit value signal	X	X	✓
Limit value contact (switch-off delayed and pick-up delayed)	X	X	✓
Key operated	X	X	✓
PC software for configuration	✓	✓	✓
Setting of measuring range (linear/square root extracted) via rotary coding switch	✓	✓	✓
EX zone	2 + 22*	2 + 22*	22



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# Combination products & accessories



## For very difficult cases – HE 5422MR

The HE 5422MR with **measuring hose cleaning** is ideal for gases with a high dust content or condensate build-up in the measuring hoses. This is connected to compressed air and blows the measuring line free at regular intervals. HE 5422MR covers differential pressure ranges from 0...35 mbar, 0...90 mbar or 0...450 mbar.



## FREE unlimited TEST

You can find the freely available software for testing on our website at [>>>Downloads](#)

## EasyTool Controls 4.0

Detailed and in-depth settings are made using the EasyTool Controls 4.0 software. This allows approx. 40 parameters to be set, saved and loaded onto any number of devices. The connection requires a USB adapter (wireless or wired).

Article number #61000011



### USB-TTL adapter HE 5851

Article number #58513101



### HE Wireless-TTL adapter

Article number #58513009

## Examples of functions:

- **Units** such as: mbar, kPa, psi, inchH<sub>2</sub>O,
- **Measuring ranges, limit values, damping**
- **Creep suppression**
- **Update** of the device software and display of the device information
- **Process data recording**
- **Save and load device parameters** (e.g. as a factory parameter set)
- **Output device parameters in PDF**
- **View the front of the device** with process data and a lot more.



Article number #54990001

## Differential pressure connection adapter

### Scope of delivery:

- Sealing plugs for 6 and 8 mm connection
- Drilling template
- installation instructions
- 4 × O-ring for fixing the screws
- 4 × mounting screws



## Valve cable

Incl. tightly moulded valve plug and wire end ferrules, pre-assembled and already connected.

- Cable length:
- 0.65 m Article number #63500006
  - 2.5 m Article number #63500002
  - 7.5 m Article number #63500007

Other spare parts such as filter inserts and seals can be ordered from AXXERON HESCH electronics.

**Technical data HE 5411**

Supply voltage	19 ... 36 V DC; 100 ... 240 V AC					
Power consumption	Max. 2 W					
Analogue output Max. permissible load	0 ... 10 V (RL ≥ 1 kΩ); 0(4) ... 20 mA (RA ≤ 500 Ω)					
Relay output	1 changeover contact 250 V AC, 5 A as limit value relay					
Serviceschnittstelle	USB / TTL adapter HE 5851 or HE Wireless-TTL adapter required					
Housing	Dust-proof polycarbonate housing (IP65)					
Dimensions	113 × 80 × 60 mm (W × H × D); 113 × 110 × 60 mm (W × H × D) incl. connection screw fitting Wall mounting, vertical installation position					
Cable gland	1 × M20 × 1.5 N (for cable diameters of 6-12 mm) with multiple sealing insert 2 x connections Ø 6 mm					
Special characteristics	Silicone-free (silicone is not used in the production process)					
Electrical connection	Push-in spring connection or optionally via M12 connector plug (only for 24 V DC devices)					
Environmental conditions	Storage	Transport	Operation			
Climatic	-20 ... +60 °C	-20 ... +85 °C	-20 ... +55 °C, in EX zone: -20 °C ...+40 °C			
Sensor system						
Measuring range (mbar)	± 1.25, ± 2.5, ± 5, ± 10, ± 25, ± 50, ± 100, ± 350, ± 1000 (Switchable to other units via EasyTool Controls 4.0)					
max. measuring range (mbar)	± 1.25	± 2.5 ... ± 10	± 25	± 50 ... ± 100	± 350	± 1000
Overpressure**	< 1 bar	< 0.35 bar	< 0.5 bar	< 1 bar		< 5 bar
Medium	Air as well as dry, non-aggressive gases					
Pneumatic connection type	Push-in connection for 6 mm outer hose diameter					
Device identification						
	HE 5411 Lite 19...36 V DC	HE 5411 Basic 19...36 V DC	HE 5411 Premium 19...36 V DC	HE 5411 Measuring range ± 1.25 mbar		
						
						
	HE 5411 Lite 100...240 V AC	HE 5411 Basic 100...240 V AC	HE 5411 Premium 100...240 V AC	HE 5411 Lite Measuring range ± 1.25 mbar		
						

\* \*\*The overpressure is defined as the maximum pressure that may be applied to a pressure connection so that the sensor maintains the specifications as soon as the pressure is within the operating pressure range again. Higher pressures can lead to lasting damage on the product.

Subject to errors and technical modifications

**APPLICATIONS**

- Independent filter monitoring (police filter)
- Pressure/suction control fans (pressure cabins)
- Overpressure and underpressure measurement
- Volume flow measurement/control
- Level measurement (bubbling-through)
- Air duct measurements
- Clean room pressure equalisation
- Burner vacuum measurement
- Furnace pressure
- Atmospheric pressure industrial furnace

**FIELDS OF APPLICATION**

- Extraction systems
- Spray and paint booths (ATEX Zone 2)
- Clean room/laboratory technology
- Environmental technology
- Firing technology
- Building automation / building services engineering





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