

HESCH

AUTOMATION



Zone 22

HE 5411

Differential Pressure
Measuring Transducer
with limit value signal

CHARACTERISTICS

The differential pressure measuring transducer measures the differential, positive and negative pressure between the two pressure inputs and converts the measured value into a linear or square root output signal of 0(4)...20 mA or 0...10 V. The 4-digit 7-segment display also allows the indication of negative pressures.

Measuring range (mbar):

± 1,25 / ± 2,5 / ± 5 / ± 10 / ± 25 / ± 50 / ± 100 / ± 1000

The adequate device configuration for every budget and every application!

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



- ✓ Exact capture of differential pressures for dry, non-aggressive gases
- ✓ Usage in dusty environments (ATEX-approval)
- ✓ Ideal for filter control
- ✓ Optimale adaptation of the measuring range
- ✓ Adjustment of zero point possible
- ✓ Quick commissioning by easy assembly and easily accessible connection areas
- ✓ Silicone free¹

	HE 5411 LITE	HE 5411 BASIC	HE 5411 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		✓	✓
LED-limit value signal			✓
Limit value contact (switch-off delayed and pick-up delayed)			✓
Key operated			✓
PC software for configuration	✓	✓	✓
Setting of measuring range (linear / square root extracted) via coding switch	✓	✓	✓
ATEX-approval	Zone 2 + 22*	Zone 2 + 22*	Zone 22

* Approval for Zone 2 only for 19 ... 36 V DC / except for the ± 1.25 mbar measuring range

Accessories: dp connection adapter with seal and filter insert



Item no. #54990001

SCOPE OF DELIVERY:

- Closing plugs for 6 and 8 mm connection
- Drilling template and assembly instructions
- 4 × O-ring to fix the screws
- 4 × mounting screws

Spare parts such as filter inserts and seals can be obtained from HESCH.

Technical Specifications

More differential pressure technology at:
www.hesch-automation.com/en

Electric supply

Voltage	19 – 36 VDC	100 – 240 VAC
Power consumption	max. 2W	

Sensor system




Measuring range (mbar)	± 1,25, ± 2,5, ± 5, ± 10, ± 25, ± 50, ± 100, ± 1000 according to information on the type plate				
Max. differential pressure	± 1,25 mbar < 1 bar	± 2,5... ± 10 < 0,35 bar	± 25 < 0,5 bar	± 50... ± 100 < 1 bar	± 1000 < 5 bar
Medium	Air and dry, non-aggressive gases				
Measuring system	Thermal (Bypass Technology)	Piezoresistive	Piezoresistive	Piezoresistive	Piezoresistive
Measuring ranges (mbar)	± 1,25	± 2,5 ... ± 10	± 25 ... ± 100	± 350 ... ± 1000	
Basic accuracy	-	± 1,25 % FSO T = 25° C	± 1 % FSO T = 25° C	± 0,5 % FSO T = 25° C	
Total error	± 3 % FSO T = -20...85° C	± 2 % FSO T = 0...60° C	± 1,5 % FSO T = 0...60° C	± 1 % FSO T = 0...60° C	
Pressure connection	Push-in bulkhead fittings for 6 mm hose – outer diameter (4 mm with reduction)				

FSO = Full scale Output

Input/Output

Analog output	0...10 V	0(4)...20 mA
Max. permissible load	RL ≥ 1 kΩ	RA ≤ 500 Ω
Relay output	1 changeover contact 250 VAC, 5 A as limit value relay	
Service interface	UUSB / TTL adapter HE 5851 required	

Housing

Type	Dust-tight polycarbonate housing (IP 65)	
Dimensions / Mounting	113 × 80 × 60 mm (B × H × T) 113 × 110 × 60 mm (B × H × T) inkl. connection coupling Wall-mounted, vertical mounting position	
Cable gland	1 × M20 × 1,5 N (for cable diameters 6-12 mm) with multiple sealing insert for 2 x cables Ø 6 mm	
Connection type	push-in-spring connection or optionally via M12 connector (for 24 V DC devices only)	
Special characteristics	Silicone free ¹	
Device identification/ explosion protection	HE 5411 Lite, Basic and Premium 100 ... 240 V AC  II3D Ex tc IIIC T135° Dc except measuring range ± 1,25 mbar	HE 5411 Lite and Basic 19 ... 36 V DC  II3D Ex tc IIIC T135° Dc  II3G Ex nR IIC T4 Gc except measuring range ± 1,25 mbar

Climatic environmental conditions

Operation	-20° C ... +55° C in EX zone: -20° C ...+ 40° C
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* without destroying the sensor, the measuring accuracy can be impaired if the measuring range is exceeded.
 1 Silicone is not used in the production process



HE 5411 - differential pressure measuring transducer in use

FIELDS OF APPLICATION

- ✓ Building automation / Building technology
- ✓ Spray lacquer booths (ATEX zone 2)
- ✓ Medical engineering
- ✓ Cleanroom and laboratory equipment
- ✓ Environmental technology
- ✓ Firing technology
- ✓ Extraction units

APPLICATIONS

- ✓ Self-sustaining filter control (police filter)
- ✓ Pressure and extraction regulation (pressure booths)
- ✓ Positive and negative pressure measurement
- ✓ Volumetric flow measurement and control
- ✓ Fill level measurement (bubbling-through method)
- ✓ Fine draft measurement
- ✓ Precision air flow measurement
- ✓ Cleanroom pressure equalisation
- ✓ Negative pressure measurement for burners
- ✓ Recirculating air control for ovens

LED-color change at limit value signal



All types with 0...10 V & 0(4)...20 mA analog output



The HE 5411 differential pressure measuring transducer is also approved for usage in EX-Zone 2 and 22. (Zone 2 only for HE 5411 Lite and Basic*)

* Approval for Zone 2 only for 19 ... 36 V DC / except for the ± 1.25 mbar measuring range

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