

## HPSA

### Industrial pressure transducers/transmitters with ceramic sensor element

- Measurement ranges 0 ... 0.1 bar to 0 ... 600 bar
- Absolute and gauge pressure
- 3 Accuracy classes: 0.1 %, 0.15 %, 0.25 %
- Supply voltage 10 ... 32 VDC / 13 ... 32 VDC
- Output 4 ... 20 mA, 0 ... 5 V, 0 ... 10 V, 0 ... 200 mV



Series HPSA for pressure measurement is offering superb chemical and corrosion resistance. Various models are available: two wire, 4 ... 20 mA output transmitters; four wire, millivolt output transducers; three wire, amplified voltage output transducers

Gauge or Absolute pressure is detected using a four active arm strain gauge bridge sensor, fused to a high-purity ceramic diaphragm. Available in three classes of accuracy and compensation specified below, with ranges from 100 mbar to 600 bar or scaled to customer requirements.

#### ■ MoreFeatures

- Stainless steel housing
- Rugged construction
- Excellent linearity
- Excellent long term stability
- Wide temperature range
- Intrinsically safe versions available

#### ■ Specifications

##### Data for all Models

Measurement ranges:	0 ... 0.1 bar to 0 ... 600 bar, (absolute pressure available for ranges >250 mbar only; ranges up to 400 mbar with accuracy class C only)
Safe over-range pressure:	1.5 x rated range
Burst pressure:	3 x rated range min. or 900 bar, whichever is less
Pressure type:	Absolute and gauge pressure
Supply voltage:	10 ... 32 VDC unregulated, (Model with output 0 ... 10 V: 13 ... 32 VDC)
Lang term stability, typical:	0.1 % / 12 months
Operating temperature range:	-20 ... +125 °C
Wetted materials:	Stainless steel, alumina ceramic, Viton (other O-ring materials available)
Shock, max.:	According to IEC68-2-32. Procedure 1; twice free fall of height 1 m onto concrete, all 3 axes, without damage

## Data by Models

### Model 2-wire: HPSA-A (4 ... 20 mA), HPSA-K (4 ... 20 mA, EEx)

Parameter	Class A	Class B	Class C
Combined error*:	±0.1 % of span	±0.15 % of span	±0.25 % of span
Output zero:	4 mA ±0.5 % of span	4 mA ±1 % of span	4 mA ±1 % of span
Output span:	16 mA ±0.5 %	16 mA ±1 %	16 mA ±1 %
Compensated temperature range:	-20 ... +125 °C	0 ... +100 °C	0 ... +80 °C
Thermal zero shift:	0...100°C: ±0.01% span/K <0°C and >100°C: ±0.015% span/K	±0.015% span/K	±0.04% span/K
Thermal span shift, typical:	±0.015% reading/K	±0.015% reading/K	±0.015% reading/K
Loop resistance	1.1 kΩ max. @ 32 VDC supply	1.1 kΩ max. @ 32 VDC supply	1.1 kΩ max. @ 32 VDC supply

\* Non-linearity, hysteresis and repeatability, best fit straight line

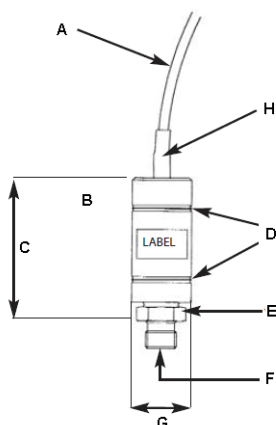
### Models 3-wire: HPSA-B5 (0 ... 5 V), HPSA-B6 (1 ... 6 V), HPSA-B10 (0 ... 10 V) and HPSA-C (0 ... 200 mV)

Parameter	Class A	Class B	Class C
Combined error*:	±0.1 % of span	±0.15 % of span	±0.25 % of span
Output zero:	0 V or 1 V ±0.5 % of span	0 V or 1 V ±1 % of span	0 V or 1V ±1 % of span
Output span:	200 mV, 5 V or 10 V ±0.5 %	200 mV, 5 V or 10 V ±1 %	200 mV, 5 V or 10 V ±1 %
Compensated temperature range:	-20 ... +125 °C	0 ... +100 °C	0 ... +80 °C
Thermal zero shift:	0...100°C: ±0.01% span/K <0°C and >100°C: ±0.015% span/K	±0.015% span/K	±0.04% span/K
Thermal span shift, typical:	±0.015% reading/K	±0.015% reading/K	±0.015% reading/K

\* Non-linearity, hysteresis and repeatability, best fit straight line

## ■ Dimensions and Electrical Connections

### Cable IP65 (Code C)



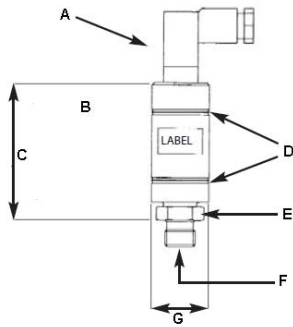
<b>A</b>	4-core black PTFE cable
<b>B</b>	Case and cover material stainless steel 316L
<b>C</b>	75 mm (ranges up to 50 bar) 81 mm (ranges 100 to 200 bar) 85 mm (ranges >200 bar)
<b>D</b>	TIG welds
<b>E</b>	Hex 18 A/F Hex 27 (ranges >200 bar)
<b>F</b>	G1/4 pressure port, other sizes available
<b>G</b>	Ø25 mm Ø27 mm (ranges >200 bar)
<b>H</b>	Cable outlet, sleeved and bonded

All dimensions in mm, approx. values.

These drawings are for information only and not intended for construction purpose.

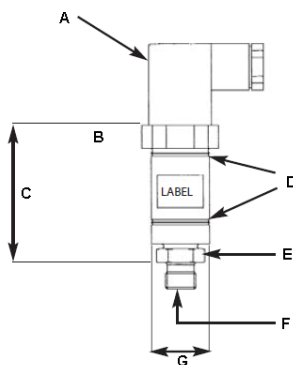
Please ask for detailed drawings.

### DIN 40050 Plug and Socket, IP65 (Code D)



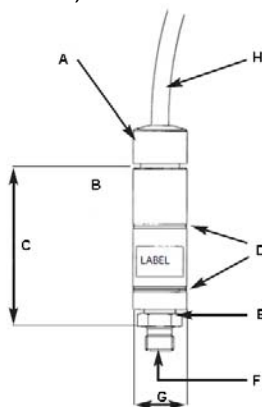
<b>A</b>	Mini DIN connector DIN40050
<b>B</b>	Case and cover material stainless steel 316L 75 mm (ranges up to 50 bar) 81 mm (ranges 100 to 200 bar) 84.5 mm (ranges >200 bar)
<b>C</b>	TIG welds
<b>D</b>	Hex 18 A/F Hex 27 (ranges >200 bar)
<b>E</b>	G1/4 pressure port, other sizes available
<b>F</b>	Ø25 mm Ø27 mm (ranges >200 bar)
<b>G</b>	

### DIN 43650 Plug and Socket, IP65 (Code H)



<b>A</b>	DIN43650 connector
<b>B</b>	Case and cover material stainless steel 316L <b>Model HPSA-C...</b> 60 mm (ranges up to 50 bar) 66 mm (ranges 100 to 200 bar) 61 mm (ranges >200 bar)
<b>C</b>	<b>All other Models:</b> 75 mm (ranges up to 50 bar) 81 mm (ranges 100 to 200 bar) 90 mm (ranges >200 bar)
<b>D</b>	TIG welds
<b>E</b>	Hex 18 A/F Hex 27 (ranges >200 bar)
<b>F</b>	G1/4 pressure port, other sizes available
<b>G</b>	Ø25 mm Ø27 mm (ranges >200 bar)

### Glanded Cable IP68 (Code I)



<b>A</b>	Gland IP68 to 10 bar
<b>B</b>	Case and cover material stainless steel 316L 90 mm (ranges up to 50 bar) 96 mm (ranges 100 to 200 bar) 101 mm (ranges >200 bar)
<b>C</b>	TIG welds
<b>D</b>	Hex 18 A/F Hex 27 (ranges >200 bar)
<b>E</b>	G1/4 pressure port, other sizes available
<b>F</b>	Ø25 mm Ø27 mm (ranges >200 bar)
<b>G</b>	
<b>H</b>	4 core cable with vent tube and strain wire

All dimensions in mm, approx. values.  
These drawings are for information only and not intended for construction purpose.  
Please ask for detailed drawings.

## Wiring:

### Model HPSA-A...

Pin 1 / black	- supply voltage
Pin 3 / red	+ supply voltage
GND Pin	Connected to case (not connected with EEx model)

### Models HPSA-B... , HPSA-C...

Pin 1 / green	+ output signal
Pin 2 / black	common / GND
Pin 3 / red	+ supply voltage
GND Pin / white	Not connected
Screen	Not connected

## Ordering Information

### Ordering Codes

HPSA - [ ] [ ] [ ] [ ] [ ] - [ ] [ ]

#### Output Signal

<b>A</b>	4 ... 20 mA
<b>B5</b>	0 ... 5 V
<b>B6</b>	1 ... 6 V
<b>B10</b>	0 ... 10 V
<b>C</b>	0 ... 200 mV
<b>K</b>	4 ... 20 mA EEx

#### Electr. Connection

<b>C</b>	Cable IP65
<b>D</b>	Connector IP65, DIN 40050
<b>H</b>	Connector IP65, DIN 43650
<b>I</b>	Glanded cable IP68

#### O-Ring Material

<b>V</b>	Viton
<b>E</b>	EPDM
<b>H</b>	HNBR
<b>C</b>	Chemraz

#### Pressure Port

<b>A</b>	G $\frac{1}{4}$ " male, 316L stainless steel
<b>B</b>	$\frac{1}{4}$ " NPT male, 316L stainless steel
<b>D</b>	$\frac{1}{2}$ " BSP male, 316L stainless steel
<b>E</b>	$\frac{1}{2}$ " male, gauge thread, 316L stainless steel
<b>Q</b>	M24 x 2 flush, 316L stainless steel

#### Accuracy Classes

<b>A</b>	NLH $<\pm 0.1$ % of span
<b>B</b>	NLH $<\pm 0.15$ % of span
<b>C</b>	NLH $<\pm 0.25$ % of span

#### Pressure Types

<b>G</b>	Gauge
<b>A</b>	Absolute

#### Measurement Ranges

<b>0001</b>	100 mbar
<b>0004</b>	400 mbar
<b>001</b>	1 bar
<b>002</b>	2 bar
<b>003</b>	3 bar
<b>005</b>	5 bar
<b>010</b>	10 bar
<b>020</b>	20 bar
<b>050</b>	50 bar
<b>100</b>	100 bar
<b>200</b>	200 bar
<b>400</b>	400 bar
<b>600</b>	600 bar

#### Example:

**HPSA-ADVAB-200-G** is a pressure transmitter with 4 ... 20 mA 2-wire output signal, connector DIN40050, Viton O-ring,  $\frac{1}{4}$ " pressure port, accuracy class B 0.15 % and a range of 200 bar gauge pressure

Due to continual product development, ALTHEN and partners reserve the right to vary the foregoing details without prior notice.