



## Pressure Transmitter for Low Pressure Applications HDA 4100 / HDA 4300

### Description

The pressure transmitter series HDA 4100 and 4300 have a ceramic pressure measurement cell with a thick-film strain gauge which has been specially developed for use at low pressures. The output signals 4 .. 20 mA and 0 .. 10 V allow all HYDAC measurement and control units as well as other standard control and monitoring instruments to be connected.

The main areas of application are in low pressure applications in hydraulics and pneumatics, particularly in refrigeration and air-conditioning technology, the food and pharmaceutical industries.

### Special features

- Accuracy  $\leq \pm 0.5\%$  FS typ.
- Low temperature error
- Excellent EMC characteristics
- Small, compact construction
- Persuasive price / performance ratio

### Technical specifications

#### Input data

Measuring ranges	absolute	1; 2.5 bar
Measuring ranges	relative	1; 2.5; 4; 6; 10; 16; 25; 40 bar -1 .. 5 bar; -1 .. 9 bar
Overload pressure		300 % FS
Burst pressure		400 % FS
Mechanical connection		G 1/4 A DIN 3852; G 1/2 B DIN-EN 837
Torque value		20 Nm (G1/4, 1/4-18NPT), 45 Nm (G1/2)
Parts in contact with media		ceramic, stainless steel, seal: copper (G1/2)/FPM / EPDM (according to order code)

#### Output data

Curve deviation at max. setting to DIN 16086 (accuracy class)	$\leq \pm 0.5\%$ FS typ. $\leq \pm 1\%$ FS max.
Curve deviation at min. setting (B.F.S.L.)	$\leq \pm 0.25\%$ FS typ. $\leq \pm 0.5\%$ FS max.
Temperature compensation	$\leq \pm 0.02\%$ FS/°C typ.
Zero point	$\leq \pm 0.03\%$ FS/°C max.
Temperature compensation	$\leq \pm 0.02\%$ FS/°C typ.
Over range	$\leq \pm 0.03\%$ FS/°C max.
Linearity at max. setting to DIN 16086	$\leq \pm 0.5\%$ FS max.
Hysteresis	$\leq \pm 0.25\%$ FS max.
Repeatability	$\leq \pm 0.1\%$ FS
Rise time	approx. 2 ms
Long-term drift	$\leq \pm 0.3\%$ FS typ. / year

#### Ambient conditions

Nominal temperature range	0 .. +80 °C
Operating temperature range	-25 .. +85 °C
Storage temperature range	-40 .. +100 °C
Fluid temperature range	-40 .. +100 °C

#### CE mark

Vibration resistance to IEC 68-2-6 at 10 .. 500Hz	$\leq 20$ g (196.2 m/s <sup>2</sup> )
Protection class to DIN 40050	IP 65 (Hirschmann connection DIN 43650 and Binder connection 714 M 18) IP 67 (M12x1 connection when using an IP 67 connector)

#### Other data

Supply voltage 2-conductor, 4 .. 20 mA	10 .. 30 V DC
Supply voltage 3-conductor, 0 .. 10 V	12 .. 30 V DC
Residual ripple supply voltage	$\leq 5\%$
Current consumption 3-conductor	approx. 25 mA
Reverse polarity protection of the supply voltage, excess voltage, override and short circuit protection	provided
Life expectancy	>10 million cycles (0 .. 100 %FS)
Weight	approx. 150 g

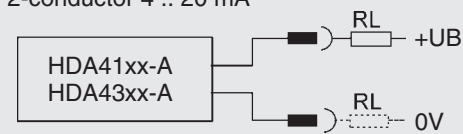
Note: **FS (Full Scale)** = relative to the complete measuring range

**B.F.S.L.** = **B**est **F**it **S**traight **L**ine

Other models available on request

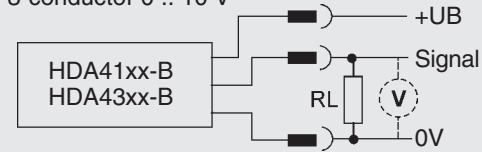
## Electrical connection

2-conductor 4 .. 20 mA



$$RL_{max.} = \frac{UB - 10 V}{0.02 A} \quad [\Omega]$$

3-conductor 0 .. 10 V



$RL_{min.} = 2K\Omega$

### Note

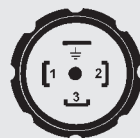
The load resistance RL is produced by the measuring resistance inside the evaluation unit and the line resistance of the connection line.

## Pin connections (in the HDA 4100 / 4300)

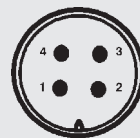
HDA 41X4  
HDA 43X4



HDA 41X5  
HDA 43X5



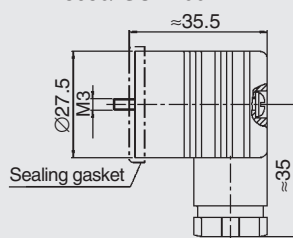
HDA 41X6  
HDA 43X6



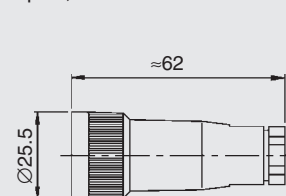
	Pin 1	Pin 2	Pin 3	Pin 4
HDA 41X4-A HDA 43X4-A	free	+UB	0V	free
HDA 41X4-B HDA 43X4-B	+UB	Signal	0V	free
HDA 41X5-A HDA 43X5-A	+UB	0V	free	$\perp$
HDA 41X5-B HDA 43X5-B	+UB	0V	Signal	$\perp$
HDA 41X6-A HDA 43X6-A	+UB	free	0V	free
HDA 41X6-B HDA 43X6-B	+UB	free	0V	Signal

## Electrical accessories

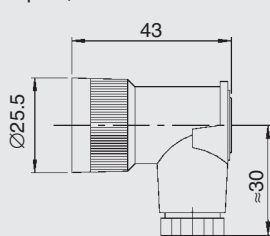
ZBE 01 right-angle connector,  
3 pole + earth  
DIN 43650/ISO 4400



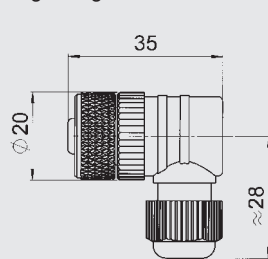
ZBE 02 Binder connector  
4 pole, series 714M18



ZBE 03 right-angled  
Binder connector  
4 pole, series 714M18

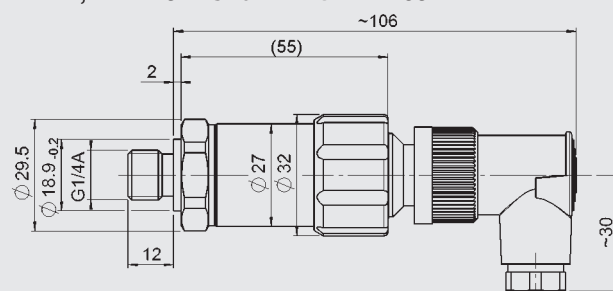


ZBE 06 (4 pole)  
Right-angled connector M12x1



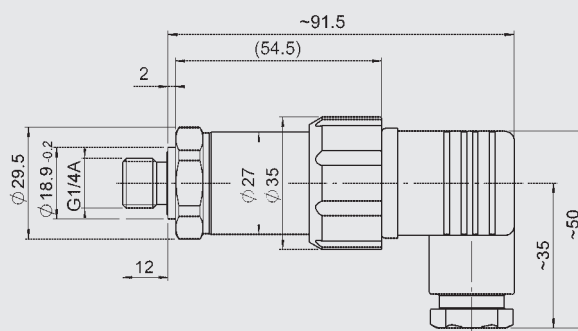
## Dimensions

HDA 4144, HDA 4344 shown with ZBE 03

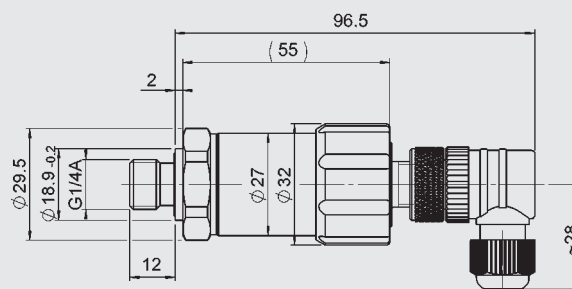


Dimension X with right-angled connector ZBE 03: 106 mm  
Dimension X with Binder connector ZBE 02: ≈125 mm

HDA 4145, HDA 4345 shown with ZBE 01

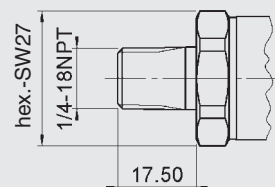


HDA 4146, HDA 4346 shown with ZBE 06

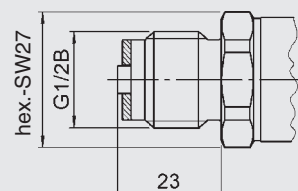


## Other mechanical connection options

1/4-18 NPT



G1/2B DIN-EN 837



## Model code

HDA 4 X X X - X - XXXX - 000 - X 1

### Type of technology

- 1 = ceramic absolute
- 3 = ceramic relative

### Type of connection, mechanical

- 1 = G1/2 B DIN-EN 837 (male)
- 4 = G1/4 A DIN 3852 (male)
- 8 = 1/4-18 NPT (male)

### Type of connection, electrical

- 4 = 4 pole Binder, 714 M18 (w/o connector)
- 5 = 3 pole + earth, DIN 43650 (connector supplied)
- 6 = M12x1, 4 pole (w/o connector)

### Signal technology

- A = 2 conductor, 4 .. 20 mA
- B = 3 conductor, 0 .. 10 V

### Pressure ranges in bar

For model "1" (ceramic absolute)

01.0 / 02.5 bar

for model "3" (ceramic relative)

01.0 / 02.5 / 04.0 / 06.0 / 0010 / 0016 / 0025 / 0040 bar

0005 (-1 .. +5 bar) / 0009 (-1 .. +9 bar)

### Modification number

- 000 = standard

### Seal material (in contact with fluid)

- F = FPM seal (e.g.: for hydraulic oils)
- E = EPDM seal (e.g.: for refrigerants)

### Connector material (in contact with fluid)

- 1 = stainless steel

### Important:

On units with a different modification number, please read the label or the technical amendment details supplied with the unit.

## Note

The information in this brochure relates to the operating conditions and applications described.

For applications or operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.