

## HYDAC INTERNATIONAL



### Pressure Transmitter HDA 3800

#### Description

The pressure transmitter series HDA 3800 has a very accurate and robust sensor cell with a thin-film strain gauge on a stainless steel membrane. Outstanding technical specifications and robust construction make the HDA 3800 particularly suited to the field of test rig and diagnostic technology. It is also suitable for a broad range of applications in industry.

Since the accuracy of a pressure transmitter varies greatly with the temperature of the fluid, the unit offers outstanding characteristics on precisely this point. The output signals 4 .. 20 mA, 0 .. 10 V and 0 .. 20 mA (rising) are available as standard.

#### Special features

- Accuracy  $\leq \pm 0.15\%$  FS typ.
- Very robust sensor cell
- Very low temperature error
- Excellent EMC characteristics
- Good long-term stability

#### Technical specifications

Input data	HDA 3800
Measuring ranges	6; 16; 60; 100; 250; 400; 600 bar
Overload pressure	12; 32; 200; 200; 500; 800; 900 bar
Burst pressure	100; 200; 500; 500; 1000; 2000; 2000 bar
Mechanical connection	G1/4 A DIN 3852
Torque value	20 Nm
Parts in contact with media	stainless steel, FPM seal
<b>Output data</b>	
Curve deviation at max. setting to DIN 16086 (accuracy class))	$\leq \pm 0.15\%$ FS typ. $\leq \pm 0.3\%$ FS max.
Curve deviation at min. setting (B.F.S.L.)	$\leq \pm 0.1\%$ FS typ. $\leq \pm 0.2\%$ FS max.
Temperature compensation Zero point	$\leq \pm 0.05\%$ FS/10K typ. $\leq \pm 0.1\%$ FS/10K max.
Temperature compensation Over range	$\leq \pm 0.05\%$ FS/10K typ. $\leq \pm 0.1\%$ FS/10K max.
Linearity at max. setting to DIN 16086	$\leq \pm 0.1\%$ FS typ. $\leq \pm 0.2\%$ FS max. (from 100 bar $\leq \pm 0.15\%$ FS)
Hysteresis	$\leq \pm 0.05\%$ FS typ. $\leq \pm 0.1\%$ FS max.
Repeatability	$\leq \pm 0.05\%$ FS
Rise time	$\leq 0.5$ ms
Long-term drift	$\leq \pm 0.1\%$ FS typ. per year
<b>Ambient conditions</b>	
Nominal temperature range	-25 .. +85 °C
Operating temperature range	-40 .. +85 °C
Storage temperature range	-40 .. +100 °C
Fluid temperature range	-40 .. +100 °C
CE -mark	EN 50081-1, EN 50081-2 EN 50082-1, EN 50082-2
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
<b>Other data</b>	
Supply voltage 2-conductor	10 .. 30 V
Supply voltage 3-conductor	12 .. 30 V
Residual ripple supply voltage	$\leq 5\%$
Current consumption 3-conductor	approx. 15 mA
Reverse polarity protection of the supply voltage, excess voltage, override and short circuit protection	available
Life expectancy	>10 million cycles 0 .. 100 % FS
Weight	approx. 180 g

Note: **FS** (Full Scale) = relative to the complete measuring range  
**B.F.S.L.** = Best Fit Straight Line  
Other models available on request

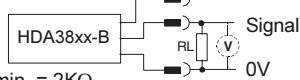
## Electrical connection

2-conductor 4 .. 20 mA



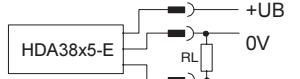
$$RL_{max} = \frac{UB - 10 V}{0.02 A} [\Omega]$$

3-conductor 0 .. 10 V



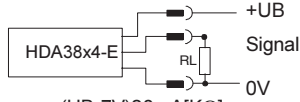
$$RL_{min} = 2K\Omega$$

3-conductor 0 .. 20 mA rising



$$RL_{max} = (UB - 7V)20mA[K\Omega]$$

3-conductor 0 .. 20 mA rising



$$RL_{max} = (UB - 7V)20mA[K\Omega]$$

### Note

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

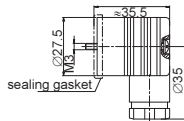
## Pin connections (HDA 3800)



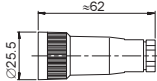
	Pin 1	Pin 2	Pin 3	Pin 4
HDA 3845-A	+UB	0V	free	⊥
HDA 3845-B	+UB	0V	Signal	⊥
HDA 3845-E	+UB	0V	Signal	⊥
HDA 3844-A	free	+UB	0V	free
HDA 3844-B	+UB	Signal	0V	free
HDA 3844-E	+UB	Signal	0V	free

## Electrical accessories

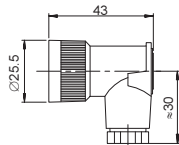
ZBE 01 right-angle plug, 3 pole + earth  
DIN 43650/ISO 4400



ZBE 02 Binder plug  
4 pole, Binder series 714M18

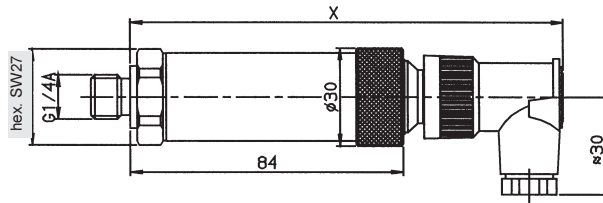


ZBE 03 right-angled plug  
4 pole, Binder series 714M18



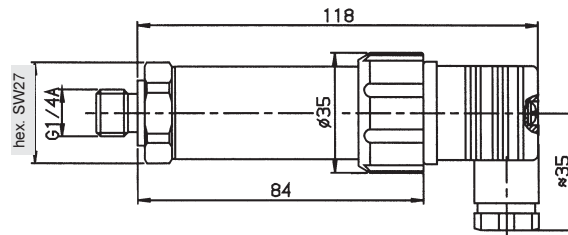
## Dimensions

HDA 3844, shown with ZBE 03



Dimension X with right-angled plug ZBE 03: 108 mm  
Dimension X with Binder plug ZBE 02: ≈127 mm

HDA 3845 shown with ZBE 01



## Model code

HDA 3 8 4 X - X - XXX - 000

### Type of connection, mechanical

4 = G1/4 A male thread

### Type of connection, electrical

4 = 4 pole Binder plug 714 M18 (without connector)  
plug connector ZBE 02 or ZBE 03  
must be ordered separately

5 = appliance plug 3 pole + earth, DIN 43650/ ISO 4400  
plug connector ZBE 01 included

### Signal technology

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

### Pressure ranges in bar

006; 016; 060; 100; 250; 400; 600

### Modification number

000 standard

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.