



## Electronic Pressure Transmitter

### HDA 4400

#### Description:

The pressure transmitter series HDA 4400 has a pressure measurement cell with thin-film strain gauge on a stainless steel membrane.

The 4 .. 20 mA or 0 .. 10 V output signals enable connection to all HYDAC ELECTRONIC GMBH measurement and control devices as well as connection to standard evaluation systems (e.g. PLC controls).

The main areas of application are in the mobile or industrial sectors of hydraulics and pneumatics, particularly in applications with restricted installation space.

#### Special features:

- Accuracy  $\leq \pm 0.5\% \text{ FS B.F.S.L.}$
- Highly robust sensor cell
- Very small temperature error
- Excellent EMC characteristics
- Very compact design
- Competitive price / performance ratio

#### Technical data:

##### Input data

Measuring ranges <sup>1)</sup>	150, 500, 750, 1000, 1500, 3000, 5000, 6000, 9000, F1 €€€ psi
Overload pressures	290, 1160, 1740, 2900, 2900, 7250, 11600, 11600, 14500, 23200 psi
Burst pressures	1450, 2900, 4350, 7250, 7250, 14500, 29000, 29000, 29000, 43500 psi
Mechanical connection <sup>1)</sup>	9/16-18 UNF 2A (SAE 6 male) 7/16-20 UNF 2B (SF 250 CX20, Autoclave)
Torque value	15lb-ft(20Nm) - SAE 6 30lb-ft (40Nm) - SF 250 CX20
Parts in contact with medium	Mech. conn.: Stainless steel Seal: FPM

##### Output data

Output signal, permitted load resistance	4 .. 20 mA, 2 conductor $R_{L_{max}} = (U_B - 8 \text{ V}) / 20 \text{ mA} [\text{k}\Omega]$ 0 .. 10 V, 3 conductor $R_{L_{min}} = 2 \text{ k}\Omega$
Accuracy to DIN 16086	$\leq \pm 0.5\% \text{ FS typ.}$
Max. setting	$\leq \pm 1\% \text{ FS max.}$
Accuracy at min. setting (B.F.S.L.)	$\leq \pm 0.25\% \text{ FS typ.}$ $\leq \pm 0.5\% \text{ FS max.}$
Temperature compensation	$\leq \pm 0.0085\% \text{ FS}/^\circ\text{F typ.}$
Zero point	$\leq \pm 0.014\% \text{ FS}/^\circ\text{F max.}$
Temperature compensation	$\leq \pm 0.0085\% \text{ FS}/^\circ\text{F typ.}$
Over range	$\leq \pm 0.014\% \text{ FS}/^\circ\text{F max.}$
Non-linearity at max. setting to DIN 16086	$\leq \pm 0.3\% \text{ FS max.}$
Hysteresis	$\leq \pm 0.4\% \text{ FS max.}$
Repeatability	$\leq \pm 0.1\% \text{ FS}$
Rise time	$\leq 1 \text{ ms} (\leq 1.5 \text{ ms for 15000 psi range})$
Long-term drift	$\leq \pm 0.3\% \text{ FS typ. / year}$

##### Environmental conditions

Compensated temperature range	-13..+185°F
Operating temperature range	-13..+185°F
Storage temperature range	-40..+212°F
Fluid temperature range <sup>2)</sup>	-40..+212°F / -13..+212°F
CE mark	EN 61000-6-1 / 2 / 3 / 4
US mark <sup>3)</sup>	Certificate No. E318391
Vibration resistance to DIN EN 60068-2-6 at 10 .. 500 Hz	$\leq 20 \text{ g}$
Protection class to IEC 60529	IP 65 (for male EN175301-803 (DIN 43650)) IP 67 (for M12x1, when an IP 67 connector is used)

##### Other data

Supply voltage	8 .. 30 V DC, 2 conductor
for use acc. to UL spec.	12 .. 30 V DC, 3 conductor - limited energy - according to 9.3 UL 61010; Class 2; UL 1310/1585; LPS UL 60950
Residual ripple of supply voltage	$\leq 5\%$
Current consumption	$\leq 25 \text{ mA}$
Life expectancy	$> 10 \text{ million cycles}$ 0 .. 100 % FS
Weight	$\sim 145 \text{ g}$

Note: Reverse polarity protection of the supply voltage, excess voltage, override and short circuit protection are provided.

FS (Full Scale) = relative to complete measuring range

B.F.S.L. = Best Fit Straight Line

1) 15000 psi only with mechanical connection SF 250 CX20, Autoclave and vice versa

2) -13 °F with FPM seal, -40 °F on request

3) Environmental conditions in accordance with 1.4.2 UL 61010-1; C22.2 No 61010-1

**Model code:****HDA 4 4 X X - X - XXXX - 000 (PSI)****Mechanical connection**

7 = 9/16-18 UNF2A (SAE 6 male)  
 C = SF 250 CX20, Autoclave  
 (Only for "1500 psi" press. range)

**Electrical connection**

5 = Male, 3 pole + PE, EN175301-803  
 (DIN 43650) (connector supplied)  
 6 = Male M12x1, 4 pole  
 (connector not supplied)

**Signal**

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

**Pressure ranges in psi**

0150, 0500, 0750, 1000, 1500, 3000, 5000, 6000, 9000,  
 15000 (Only in conjunction with mechanical connection type "C")

**Modification number**

000 = Standard

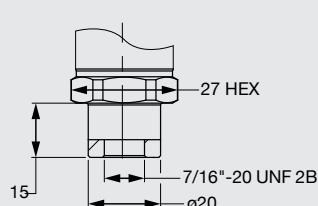
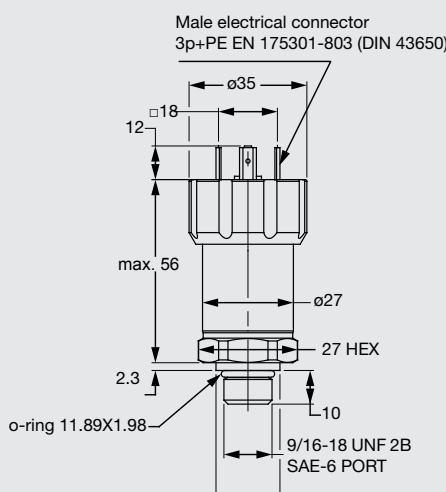
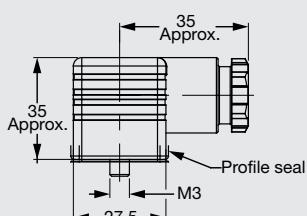
188 = Only for 15000 psi pressure range

**Version**

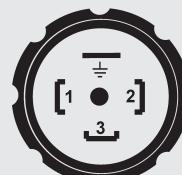
PSI = Pounds per square inch

**Accessories:**

Appropriate accessories, such as electrical connectors, can be found in the Accessories brochure.

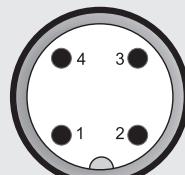
**Dimensions:****Pin connections:**

EN175301-803 (DIN 43650)



Pin	HDA 44X5-A	HDA 44X5-B
1	Signal+	+U <sub>B</sub>
2	Signal-	0 V
3	n.c.	Signal
4	Housing	Housing

M12x1



Pin	HDA 44X6-A	HDA 44X6-B
1	Signal+	+U <sub>B</sub>
2	n.c.	n.c.
3	Signal-	0 V
4	n.c.	Signal

**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.

For European mechanical connection and bar ranges see European Catalog

**HYDAC ELECTRONICS**

90 Southland Dr. Bethlehem, PA 18107  
 Telephone: 610.266.0100  
 E-mail: electronics@hydacusa.com  
 Website: www.hydac-na.com