



Electronic Pressure Transmitter HDA 4700

Description:

The pressure transmitter series HDA 4700 has a very accurate and robust sensor cell with a thin-film strain gauge on a stainless steel membrane. The 4 .. 20 mA or 0 .. 10 V output signals enable connection to all measurement and control devices of HYDAC ELECTRONIC GMBH as well as 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 $\leq \pm 0.25\% \text{ FS B.F.S.L.}$
Highly robust sensor cell
Very small temperature error
Excellent EMC characteristics
Very compact design
Competitive price / performance ratio

Technical data:

Input data

Measurement ranges ¹⁾	150, 500, 750, 1000, 1500, 3000, 5000, 6000, 9000, 15000, 20000, 30000 psi
Overload pressures	290, 1160, 1740, 2900, 2900, 7250, 11600, 11600, 14500, 23200, 38400, 43500 psi
Burst pressures	1450, 2900, 4350, 7250, 7250, 14500, 29000, 29000, 29000, 43500, 58000 psi
Mechanical connection ¹⁾	9/16-18 UNF 2A (SAE 6 male) 7/16-20-UNF 2B (SF 250 CX20, Autoclave) 9/16-18 UNF 2B (F 250 C, Autoclave)
Torque value, recommended	15lb·ft(20Nm) - SAE 6, F250C 11lb·ft(15Nm) - 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, Max. setting	$\leq \pm 0.25\% \text{ FS typ.}$ $\leq \pm 0.5\% \text{ FS max.}$
Accuracy at min. setting (B.F.S.L.)	$\leq \pm 0.15\% \text{ FS typ.}$ $\leq \pm 0.25\% \text{ FS max.}$
Temperature compensation	$\leq \pm 0.0045\% \text{ FS}/^\circ\text{F typ.}$ $\leq \pm 0.0085\% \text{ FS}/^\circ\text{F max.}$
Zero point	$\leq \pm 0.0045\% \text{ FS}/^\circ\text{F typ.}$ $\leq \pm 0.0085\% \text{ FS}/^\circ\text{F max.}$
Temperature compensation Over range	$\leq \pm 0.0045\% \text{ FS}/^\circ\text{F typ.}$ $\leq \pm 0.0085\% \text{ FS}/^\circ\text{F max.}$
Non-linearity at max. setting to DIN 16086	$\leq \pm 0.3\% \text{ FS max.}$
Hysteresis	$\leq \pm 0.1\% \text{ FS max.}$
Repeatability	$\leq \pm 0.05\% \text{ FS}$
Rise time	$\leq 1 \text{ ms} (\leq 1.5 \text{ ms} > 9000 \text{ psi})$
Long-term drift	$\leq \pm 0.1\% \text{ FS typ. / year}$

Environmental conditions

Compensated temperature range	-13 .. +185°F
Operating temperature range ²⁾	-40 .. +185°F/-13 .. +185°F
Storage temperature range	-40 .. +212°F
Fluid temperature range ²⁾	-40 .. +212°F/-13 .. +212°F
CE mark	EN 61000-6-1 / 2 / 3 / 4
UL us mark ³⁾	Certificate No. E318391
Vibration resistance to DIN EN 60068-2-6 at 10 .. 500 Hz	$\leq 20 \text{ g}$
Protection class to DIN EN 60529 ⁴⁾	IP 67

Other data

Supply voltage	8 .. 30 V DC 2 conductor 12 .. 30 V DC 3 conductor
for use acc. to UL spec.	- 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 ⁵⁾	> 10 million cycles (0 .. 100% FS)
Weight	$\geq 145 \text{ g}$

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
20000 and 30000 psi only with mechanical connection F250C, Autoclave and vice versa

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

³⁾ Environmental conditions according to 1.4.2 UL 61010-1; C22.2 No 61010-1

⁴⁾ With IP67 mating connector assembled

⁵⁾ Measuring ranges $\geq 15000 \text{ psi}$: > 1 million cycles (0 .. 100% FS)

Model code:

HDA 4 7 X X - X - XXXX - 000 PSI

Mechanical connection

- 7 = 9/16-18 UNF 2A male (SAE 6 male)
- B = F250C, Autoclave (only for 20000 and 30000 psi press. range)
- C = SF 250 CX20, Autoclave (only for "15000 psi" press. range)

Electrical connection

- 5 = Male, 3 pole + PE, EN175301-803 (IP67 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")
- 20000, 30000 (only in conjunction with mechanical connection type "B")

Modification number

000 = Standard

188 = Only for pressure ranges \geq 15000 psi

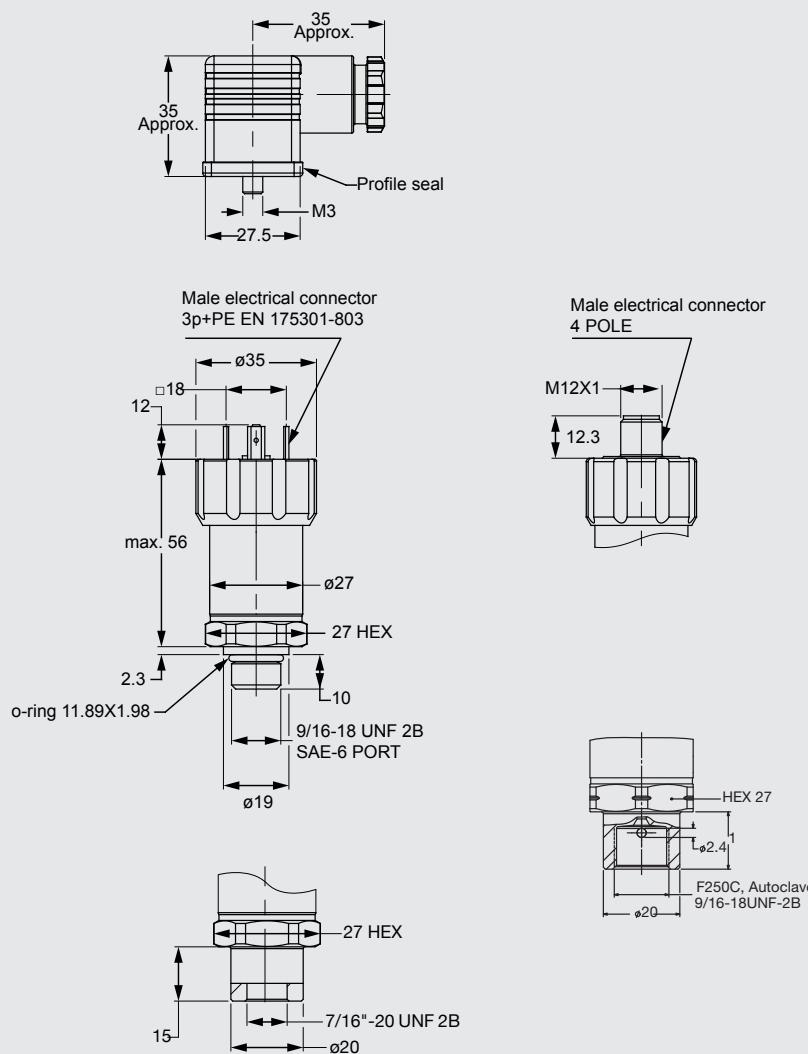
Version

PSI = Pounds per square inch

Accessories:

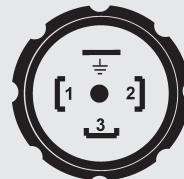
Appropriate accessories, such as electrical connectors, can be found in the Accessories brochure.

Dimensions:



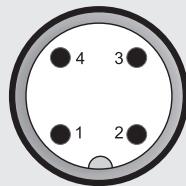
Pin connections:

EN175301-803



Pin	HDA 47X5-A	HDA 47X5-B
1	Signal+	+U _B
2	Signal-	0 V
3	n.c.	Signal
4	Housing	Housing

M12x1



Pin	HDA 47X6-A	HDA 47X6-B
1	Signal+	+U _B
2	n.c.	n.c.
3	Signal-	0 V
4	n.c.	Signal

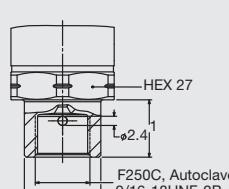
Note:

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