

## HYDAC INTERNATIONAL



### Electronic Pressure Transmitter HDA 4700 with Flush Membrane

#### Description:

Pressure transmitter HDA 4700 with a flush membrane was designed specifically for applications in which a standard pressure connection could become blocked, clogged or frozen by the particular medium used. Further applications include processes where the medium changes regularly and any residues could cause mixing or contamination of the media.

Like the standard model, the HDA 4700 with flush membrane has a stainless steel measurement cell with a thin film strain gauge for relative pressure measurement in the high pressure range.

The pressure connection is achieved with a fully-sealed stainless steel front membrane filled internally with a pressure transfer fluid. The process pressure is transmitted hydrostatically to the measurement cell via the pressure transfer fluid.

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

#### Special features:

- Pressure connection has a flush membrane
- Accuracy  $\leq 0.25\%$  FS B.F.S.L.
- Highly robust sensor cell
- Very small temperature error
- Excellent EMC characteristics
- Small, compact design

#### Technical data:

<b>Input data</b>	
Measuring ranges	500, 750, 1000, 1500, 3000, 5000, 6000, 9000 psi
Overload pressures	1160, 1740, 2900, 2900, 7250, 11600, 11600, 13050 psi
Burst pressures <sup>1)</sup>	2900, 4350, 7250, 7250, 14500, 29000, 29000, 29000 psi
Mechanical connection	G1/2 A DIN 3852 G1/2 with add. front O-ring seal G1/2 with add. front O-ring seal and cooling section
Pressure transfer fluid	Silicone-free oil
Torque value	33lb-ft (45 Nm)
Parts in contact with medium <sup>2)</sup>	Mech. conn.: Stainless steel Seal: FPM O-ring: FPM
<b>Output data</b>	
Output signal, permitted load resistance	4 .. 20 mA, 2 conductor $R_{Lmax} = (U_B - 8 V) / 20 \text{ mA}$ [kΩ] 0 .. 10 V, 3 conductor $R_{Lmin} = 2 \text{ kΩ}$
Accuracy to DIN 16086	$\leq \pm 0.25\%$ FS typ.
Max. setting	$\leq \pm 0.5\%$ FS max.
Accuracy at min. setting (B.F.S.L.)	$\leq \pm 0.15\%$ FS typ. $\leq \pm 0.25\%$ FS max.
Temperature compensation	$\leq \pm 0.0045\%$ FS / °F typ.
Zero point	$\leq \pm 0.0085\%$ FS / °F max.
Temperature compensation Over range	$\leq \pm 0.0045\%$ FS / °F typ. $\leq \pm 0.0085\%$ FS / °F max.
Non-linearity at max. setting to DIN 16086	$\leq \pm 0.3\%$ FS max.
Hysteresis	$\leq \pm 0.1\%$ FS max.
Repeatability	$\leq \pm 0.05\%$ FS max.
Rise time	$\leq 1 \text{ ms}$
Long-term drift	$\leq \pm 0.1\%$ FS typ. / year
<b>Environmental conditions</b>	
Compensated temperature range	-13...+185 °F
Operating temperature range <sup>3)</sup>	-40...+185 °F / -13...+185 °F
Storage temperature range	-40...+212 °F
Fluid temperature range <sup>3)</sup>	-40...+212 °F / -13...+212 °F -40...+302 °F / -13...+302 °F for G1/2 with cooling section
CE mark	EN 61000-6-1 / 2 / 3 / 4
UL mark <sup>4)</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 EN175301-803 (DIN 43650)) IP 67 (for M12x1, when an IP 67 female connector is used)
<b>Other data</b>	
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	> 10 million cycles (0 .. 100 % FS)
Weight	~ 150 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

<sup>1)</sup> G1/2 with additional front O-ring seal max. 21750 psi

<sup>2)</sup> Other seal materials on request

<sup>3)</sup> -13 °F with FPM seal, -40 °F on request

<sup>4)</sup> Environmental conditions according to 1.4.2 UL 61010-1; C22.2 No. 61010-1

## Model code:

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

### Mechanical process connection

Z = Flush membrane

### Electrical connection

5 = Male, 3 pole + PE, EN175301-803 (DIN 43650)  
(female connector supplied)

6 = Male M12x1, 4 pole  
(female connector not supplied)

### Signal

A = 4 ... 20 mA, 2 conductor

B = 0 ... 10 V, 3 conductor

### Pressure ranges in psi

0500, 0750, 1000, 1500, 3000, 5000, 6000, 9000

### Mechanical connection

G01 = G1/2 A, DIN 3852

G02 = G1/2 with additional front O-ring seal

G12 = G1/2 with additional front O-ring seal and cooling section

### Modification number

000 = Standard

### Version

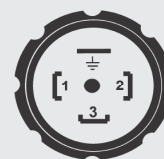
PSI = Pounds per square inch

### Accessories:

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

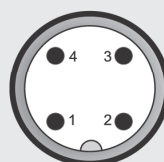
## Pin connections:

EN175301-803 (DIN 43650)



Pin	HDA 47Z5-A	HDA 47Z5-B
1	Signal+	+U <sub>B</sub>
2	Signal-	0V
3	n.c.	Signal
⊥	Housing	Housing

M12x1



Pin	HDA 47Z6-A	HDA 47Z6-B
1	Signal+	+U <sub>B</sub>
2	n.c.	n.c.
3	Signal-	0V
4	n.c.	Signal

## Dimensions:

