# Pressure Transmitter
## HDA 4800 for Iron and Steelworks

**Relative pressure** | **Accuracy 0.125 %**

Includes test certificate

## Description:

This high-precision pressure transmitter was specially developed and adapted for the sophisticated measurement demands of steelworks technology.

The instrument has a very robust sensor cell with a thin-film strain gauge on a stainless steel membrane.

Its outstanding specifications in respect of temperature effect (temperature drift for zero point and span are in each case max. ≤ ± 0.01 % FS / °C) and accuracy (≤ ± 0.125 % FS typ.) make it ideally suited for use in the environmental conditions found in steelworks.

The excellent EMC characteristics guarantee signal stability during the harshest high-frequency, electromagnetic interference.

Additional protection against humidity and vibrations is achieved by encapsulation. A heat shrink sleeving is used to protect the sensor from bending.

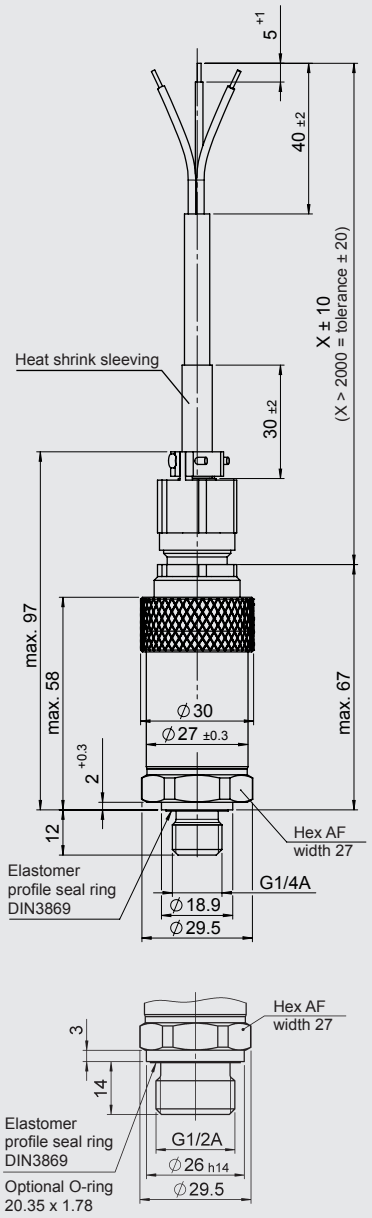
## Technical data:

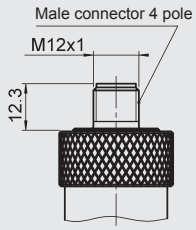
| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Input data** | | | | | | | | | | | | |
| Measuring ranges [1] | bar | 16 | 60 | 100 | 150 | 250 | 300 | 350 | 400 | 500 | 600 | 1000 |
| Overload pressures | bar | 32 | 120 | 200 | 500 | 800 | 900 | 900 | 900 | 1000 | 1000 | 1600 |
| Burst pressure | bar | 200 | 300 | 500 | 1000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 3000 |
| Mechanical connection [1] | | G 1/4A ISO 1179-2 with 0.5 mm orifice<br>G 1/2A ISO 1179-2 with 0.5 mm orifice | | | | | | | | | | |
| Tightening torque, recommended | | 20 Nm (G1/4); 45 Nm (G1/2) | | | | | | | | | | |
| Parts in contact with fluid | | Mech. connection: Stainless steel<br>Seal: FKM for G1/4, NBR for G1/2 | | | | | | | | | | |
| **Output data** | | | | | | | | | | | | |
| Output signal, permitted load resistance | | 4 .. 20 mA, 2-conductor<br>$R_{Lmax.} = (U_B - 10\ V) / 20\ mA\ [k\Omega]$<br>0 .. 20 mA, 3-conductor source<br>$R_{Lmax.} = (U_B - 4\ V) / 20\ mA\ [k\Omega]$ | | | | | | | | | | |
| Accuracy acc. to DIN 16086, terminal based | | ≤ ± 0.125 % FS typ.<br>≤ ± 0.25 % FS max. | | | | | | | | | | |
| Accuracy, B.F.S.L. | | ≤ ± 0.06 % FS typ.<br>≤ ± 0.125 % FS max. | | | | | | | | | | |
| Temperature compensation Zero point | | ≤ ± 0.005 % FS / °C typ.<br>≤ ± 0.01 % FS / °C max. | | | | | | | | | | |
| Temperature compensation Span | | ≤ ± 0.005 % FS / °C typ.<br>≤ ± 0.01 % FS / °C max. | | | | | | | | | | |
| Non-linearity acc. to DIN 16086, terminal based | | ≤ ± 0.15 % FS max.<br>(below 100 bar ± 0.2 % FS max.) | | | | | | | | | | |
| Hysteresis | | ≤ ± 0.1 % FS max. | | | | | | | | | | |
| Repeatability | | ≤ ± 0.05 % FS | | | | | | | | | | |
| Rise time | | ≤ 1.0 ms | | | | | | | | | | |
| Long-term drift | | ≤ ± 0.1 % FS typ. / year | | | | | | | | | | |
| **Environmental conditions** | | | | | | | | | | | | |
| Compensated temperature range | | -25 .. +85 °C | | | | | | | | | | |
| Operating temperature range [2] | | -25 .. +85 °C / -40 .. +85 °C | | | | | | | | | | |
| Storage temperature range | | -40 .. +100 °C | | | | | | | | | | |
| Fluid temperature range [2] | | -25 .. +100 °C / -40 .. +100 °C | | | | | | | | | | |
| CE mark | | EN 61000-6-1 / 2 / 3 / 4 | | | | | | | | | | |
| cULus mark [3] | | Certificate-No.: E318391 | | | | | | | | | | |
| Vibration resistance acc. to DIN EN 60068-2-6 at 10 .. 500 Hz | | ≤ 25 g | | | | | | | | | | |
| Protection class acc. to DIN EN 60529 | | IP 67 (M12x1 when an IP 67 mating connector is used)<br>IP 68 (jacketed cable) | | | | | | | | | | |
| **Other data** | | | | | | | | | | | | |
| Supply voltage when applied acc. to UL specifications | | 10 .. 30 V DC 2-conductor / 3-conductor<br>- limited energy - acc. to 9.3 UL 61010; Class 2;<br>UL 1310/1585; LPS UL 60950 | | | | | | | | | | |
| Residual ripple of supply voltage | | ≤ 5 % | | | | | | | | | | |
| Current consumption | | ≤ 25 mA | | | | | | | | | | |
| Additional protection against water, humidity and vibration | | Encapsulation of the device, cable outlet with strain relief, heat shrink sleeving | | | | | | | | | | |
| Life expectancy | | >10 million cycles (0 .. 100 % FS) | | | | | | | | | | |
| Weight | | ~180 g plus 90 g/m cable | | | | | | | | | | |

Note: Reverse polarity protection of the supply voltage, excess voltage, override and short circuit protection are provided.
**FS** (**F**ull **S**cale) = relative to complete measuring range
**B.F.S.L.** = **B**est **F**it **S**traight **L**ine

[1] 1000 bar only with mech. connection G1/2 A ISO1179-2 and vice versa
[2] -25 °C with FKM seal, -40 °C on request
[3] Environmental conditions acc. to 1.4.2 UL 61010-1; C22.2 No. 61010-1

## Dimensions:







## Model code:

**HDA 4 8 X X – X – XXXX – 424 (XXM)**

**Mechanical connection**
2 = G 1/2 A ISO 1179-2 (male)
4 = G 1/4 A DIN 3852 (male)

**Electrical connection**
0 = jacketed cable
6 = male M12x1, 4 pole
(mating connector not supplied)

**Output signal**
A = 4 .. 20 mA, 2-conductor
E = 0 .. 20 mA, 3-conductor

**Measuring ranges in bar**
0016; 0060; 0100; 0150; 0250; 0300; 0350; 0400; 0500; 0600;
1000 (only with mech. connection G1/2")

**Modification number**
424 = iron and steel works

**Cable length in metres**
06; 10; 15; 20; 25; 30

**Note:**
On instruments with a different modification number, please read the label or the technical amendment details supplied with the instrument.

## Cable assignment:

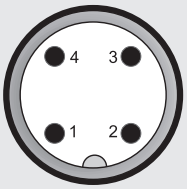
| Lead | HDA 48X0-A | HDA 48X0-E |
|---|---|---|
| black | n.c. | $+U_B$ |
| Brown | Signal + | Signal |
| Blue | Signal - | 0 V |

## Cable type:

Ölflon cable 3 x 0.75 mm² shielded.
Outer sheath FEP black
Outer diameter 5.9 ±0.15 mm

## Pin connections:

M12x1




| Pin | HDA 48X6-A | HDA 48X6-E |
|---|---|---|
| 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.

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