HYDAC INTERNATIONAL

# Pressure Transmitter
# HDA 7446

**Relative pressure** | **Accuracy 0.5 %**

## Features

- Accuracy ≤ ± 0.5 % FS typ.
- Extremely small and compact design
- Exceptional temperature and EMC properties

## Description

The pressure transmitter series HDA 7400 for the measurement of relative pressures in the high-pressure range has a stainless steel sensor cell with a thin-film strain gauge, which forms the basis for a robust and long-life pressure transmitter.

The device series combines excellent technical data with a very small and compact design.

Various pressure ranges between 0 .. 40 bar and 0 .. 1000 bar can be supplied to suit the particular application.

For the implementation of controls (e.g. PLC) the analogue signals 4 .. 20 mA or 0 .. 10 V are available.

Further pressure ranges and output signals are available on request.

## Fields of application

The HDA 7446 pressure transmitter series has been specially designed for series use, particularly where space is limited.

# Technical data

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Input data** | | | | | | | | |
| Measuring ranges | bar | 40 | 60 | 100 | 250 | 400 | 600 | 1000 |
| Overload pressures | bar | 80 | 120 | 200 | 500 | 800 | 1000 | 1600 |
| Burst pressure | bar | 200 | 300 | 500 | 1250 | 2000 | 2000 | 3000 |
| Mechanical connection | | G1/4 A ISO 1179-2 | | | | | | |
| Tightening torque, recommended | | 20 Nm | | | | | | |
| Parts in contact with fluid | | Connector: Stainless steel<br>Seal: FKM | | | | | | |
| **Output data** | | | | | | | | |
| Output signal, permitted load resistance | | 4 .. 20 mA, 2-conductor<br>$R_{Lmax} = (U_B - 8\ V) / 20\ mA\ [k\Omega]$<br>0 .. 10 V, 3-conductor<br>$R_{Lmin} = 2\ k\Omega$ | | | | | | |
| Accuracy acc. to DIN 16086,<br>Terminal based [1] | | ≤ ± 0.5 % FS typ.<br>≤ ± 1.0 % FS max. | | | | | | |
| Accuracy at minimum value setting<br>(B.F.S.L.) | | ≤ ± 0.25 % FS typ.<br>≤ ± 0.5 % FS max. | | | | | | |
| Temperature compensation<br>zero point | | ≤ ± 0.015 % FS / °C typ.<br>≤ ± 0.025 % FS / °C max. | | | | | | |
| Temperature compensation<br>span | | ≤ ± 0.015 % FS / °C typ.<br>≤ ± 0.025 % FS / °C max. | | | | | | |
| Rise time | | ≤ 2 ms | | | | | | |
| Long-term drift | | ≤ ± 0.3 % FS typ. / year | | | | | | |
| **Environmental conditions / Approvals / Tests** | | | | | | | | |
| Compensated temperature range | | -25 .. +85 °C | | | | | | |
| Operating temperature range [2] | | -40 .. +85 °C / -25 .. +85 °C | | | | | | |
| Storage temperature range | | -40 .. +100 °C | | | | | | |
| Fluid temperature range [2] | | -40 .. +100 °C / -25 .. +100 °C | | | | | | |
| EMC | | 2014/30/EU<br>EN 61006-6-1 / 2 / 3 / 4 | | | | | | |
| Vibration resistance | | DIN EN 60068-2-6 | | | | ≤ 200 m/s² (10 .. 500 Hz) | | |
| Shock resistance | | DIN EN 60068-2-27 | | | | 100 g / 6 ms | | |
| Protection type [3] | | DIN EN 60529 | | | | IP 67 | | |
| CE / UKCA conformity | | Provided | | | | | | |
| cULus approval [4] | | Provided | | | | | | |
| **Other data** | | | | | | | | |
| Supply voltage<br><br>when applied acc. to UL specifications | | 8 .. 30 V DC 2-conductor<br>12 .. 30 V DC 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 | | | | | | |
| Life expectancy [5] | | > 10 million load cycles (0 .. 100 % FS) | | | | | | |
| Weight | | ~ 60 g | | | | | | |

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] Including non-linearity, hysteresis, offset and final value deviation

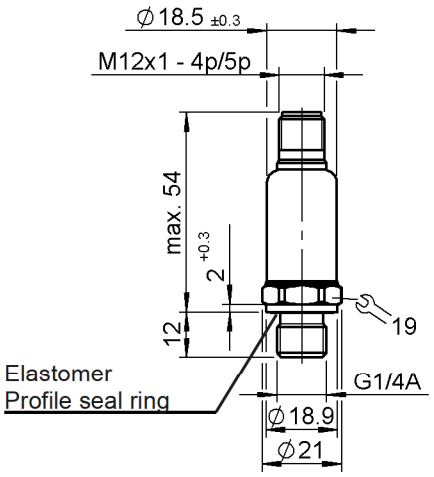
[2] In the standard up to -25 °C with FKM seal, -40 °C on request

[3] With mounted mating connector in corresponding protection type

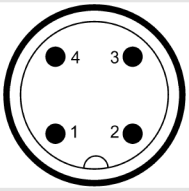
[4] Environmental conditions acc. to 1.4.2 UL 61010-1; C22.2 no. 61010-1

[5] Measuring ranges ≥ 1000 bar: > 1 million load cycles (0 .. 100 % FS)

## Dimensions




## Pin connections

| M12x1, 4 pole | Pin | Output signal A | Output signal B |
|---|---|---|---|
|  | 1 | Signal + | $+U_B$ |
| | 2 | n.c. | n.c. |
| | 3 | Signal - | 0 V |
| | 4 | n.c. | Signal |



## Model code

**HDA 7 4 4 6 - X - XXX - 000**

**Mechanical connection**
4 = G1/4 A ISO 1179-2

**Electrical connection**
6 = Plug connector M12x1, 4 pole (without mating connector)

**Output signal**
A = 4 .. 20 mA, 2-conductor
B = 0 .. 10 V, 3-conductor

**Measuring ranges in bar**
040; 060; 100; 250; 400; 600; 1000

**Modification number**
000 = Standard

**Accessories:**

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

## Note

The information in this brochure relates to the operating conditions and applications described.
For applications and/or operating conditions not described please contact the relevant technical department.
Subject to technical modifications.