HYDAC INTERNATIONAL

# Pressure Transmitter
# HDA 4300

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

## Features

- Accuracy ≤ ± 0.5 % FS typ.
- Measurement in the low-pressure range
- Minor temperature error
- Excellent EMC characteristics

## Description

The pressure transmitter series HDA 4300 have a ceramic thick layer pressure measurement cell, which has been specially developed for the measurement of relative pressures in the low-pressure range.

The output signals 4 .. 20 mA or 0 .. 10 V permit connection to all HYDAC ELECTRONIC GMBH measuring and control devices, as well as connection to standard evaluation systems.

## Fields of application

The main application fields are in the low-pressure ranges of hydraulics and pneumatics, particularly in industrial cooling and airconditioning applications as well as in pharmaceutical applications.

# Technical data

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Input data** | | | | | | | | | |
| Measuring ranges | bar | 1 | 2.5 | 4 | 6 | 10 | 16 | 25 | 40 |
| | bar | -1 .. 1 | -1 .. 5 | -1 .. 9 | | | | | |
| Overload pressures | bar | 3 | 8 | 12 | 20 | 32 | 50 | 80 | 120 |
| | bar | 3 | 20 | 32 | | | | | |
| Burst pressure | bar | 5 | 12 | 18 | 30 | 48 | 75 | 120 | 180 |
| | bar | 5 | 30 | 48 | | | | | |
| Mechanical connection | | G1/4 A ISO 1179-2<br>G1/2 B DIN EN 837 | | | | | | | |
| Tightening torque, recommended | | 20 Nm (G1/4 A); 45 Nm (G1/2 B) | | | | | | | |
| Parts in contact with fluid | | Connector: Stainless steel<br>Sensor cell: Ceramic<br>Seal ring: Copper (G1/2) / FKM / EPDM (acc. to model code) | | | | | | | |
| **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. | | | | | | | |
| Accurracy acc. to minimum value setting<br>(B.F.S.L.) | | ≤ ± 0.25 % FS typ.<br>≤ ± 0.5 % FS max. | | | | | | | |
| Temperature compensation<br>Zero point | | ≤ ± 0.02 % FS / °C typ.<br>≤ ± 0.03 % FS / °C max. | | | | | | | |
| Temperature compensation<br>Span | | ≤ ± 0.02 % FS / °C typ.<br>≤ ± 0.03 % FS / °C max. | | | | | | | |
| Rise time | | ≤ 1 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 ISO 60529 | | | | IP 65 (Binder 714 M18)<br>IP 67 (plug M12x1;<br>plug EN 175301-803) | | | |
| 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 | | > 10 million load cycles (0 .. 100 % FS) | | | | | | | |
| Weight | | ~ 150 g | | | | | | | |

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

**B.F.S.L.** = **B**est **F**it **S**traight **L**ine

**FS** (**F**ull **S**cale) = relative to complete measuring range

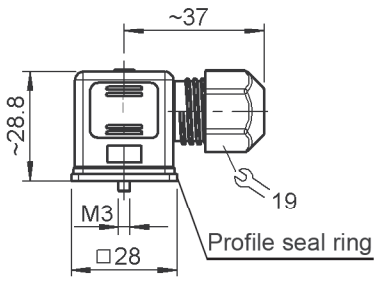
[1] Including non-linearity, hysteresis, offset and final value deviation

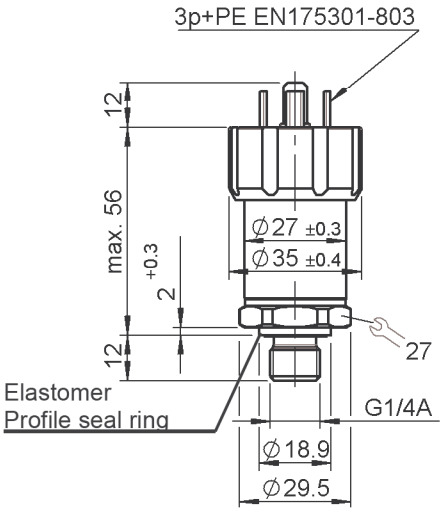
[2] In the standard up to -25 °C with FKM seal or EPDM seal, -40 °C on request

[3] With mounted mating connector in corresponding protection type

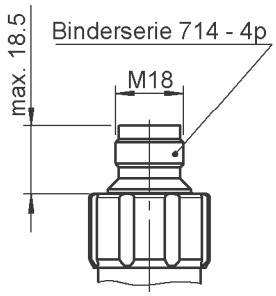
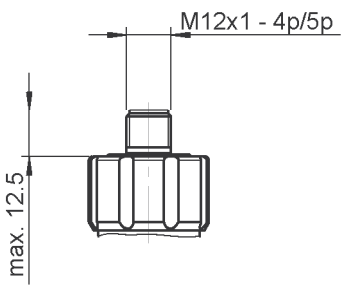
[4] Environmental conditions acc. to 1.4.2 UL 61010-1; C22.2 no. 61010-1

# Dimensions




## Electrical connection variants

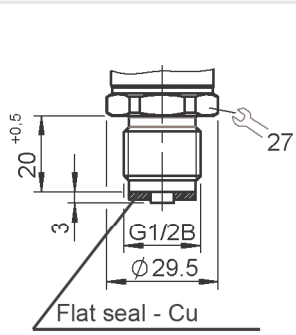
| Plug connector Binder series 714 M18, 4 pole | Plug connector M12x1, 4 pole |
|---|---|
|  |  |





## Mechanical connection variants

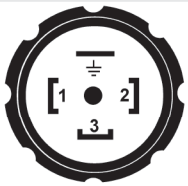
G1/2 B DIN EN 837 / external
Tightening torque, recommended: 45 Nm



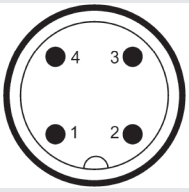
## Pin connections

| Binder series 714 M18, 4 pole | Pin | Output signal: A | Output signal: B |
|---|---|---|---|
|  | 1 | n.c. | $+U_B$ |
| | 2 | Signal + | Signal |
| | 3 | Signal - | 0 V |
| | 4 | n.c. | n.c. |
| | | | |



| EN 175301-803, 3 pole + PE | Pin | Output signal: A | Output signal B |
|---|---|---|---|
|  | 1 | Signal + | $+U_B$ |
| | 2 | Signal - | 0 V |
| | 3 | n.c. | Signal |
| | ⊥ | Housing | Housing |
| | | | |



| 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 4 3 X X - X - XXXX - 000 - X 1**

**Mechanical connection**
1 = G1/2 B DIN EN 837
4 = G1/4 A ISO 1179-2

**Electrical connection**
4 = Plug Binder series 714 M18, 4 pole (without mating connector)
5 = Plug connector EN175301-803, 3 pole + PE (with mating connector IP67)
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**
01.0; 02.5; 04.0; 06.0; 0010; 0016; 0025; 0040
0001 (-1 .. 1); 0005 (-1 .. 5); 0009 (-1 .. 9)

**Modification number**
000 = Standard

**Sealing material (in contact with fluid)**
E = EPDM seal (e.g. for cooling liquids)
F = FKM seal (e.g. for hydraulic oils)

**Connection material (in contact with fluid)**
1 = Stainless steel

**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.