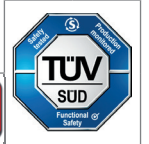




Pressure Transmitter HDA 4700

Relative pressure

Accuracy 0.25 %

Functional Safety
PL d, Cat 3

Increased Functional Safety

Description:

This version of the pressure transmitter series HDA 4700 has been specially developed for use in safety circuits / safety functions as part of the functional safety of machinery and equipment up to PL d - Cat 3 (in accordance with ISO 13849).

The pressure transmitters are designed with two channels. Each channel consists of a sensor element and evaluation electronics. As a result, the pressure transmitter develops two separate and independent output signals in proportion to the pressure.

The safety function is tested by evaluating and comparing the two analogue output signals in a higher-level system.

The main fields of application are as sensor elements in mobile, safety-oriented systems such as load torque displays, load torque limitation in truck-mounted cranes or working platforms and much more.

Technical data:

Input data

Measuring ranges signal 1	bar	25	40	60	100	160	250	400	600
Measuring ranges signal 2	bar	25/40	40/60	60/100	100/160	160/250	250/400	400/600	600/1000
Overload pressures	bar	80	80	120	200	320	500	800	1200
Burst pressure	bar	200	200	300	500	800	1250	2000	2000
Mechanical connection	G $\frac{1}{4}$ A ISO 1179-2 with 0.5 mm orifice								
Tightening torque, recommended	20 Nm								
Parts in contact with fluid ¹⁾	Mech. connection: Stainless steel (2 x thin-film strain gauge)								
	Seal: FKM								

Output data

Output signal 1 ²⁾	4 .. 20 mA, 3-conductor
Output signal 2 ²⁾	4 .. 20 mA, 3-conductor
Accuracy acc. to DIN 16086, terminal based	$\leq \pm 0.25$ % FS typ. $\leq \pm 0.5$ % FS max.
Accuracy, B.F.S.L.	$\leq \pm 0.15$ % FS typ. $\leq \pm 0.25$ % FS max.
Temperature compensation	$\leq \pm 0.008$ % FS / °C typ.
Zero point	$\leq \pm 0.015$ % FS / °C max.
Temperature compensation	$\leq \pm 0.008$ % FS / °C typ.
Span	$\leq \pm 0.015$ % FS / °C max.
Non-linearity acc. to DIN 16086, terminal based	$\leq \pm 0.3$ % FS max.
Hysteresis	$\leq \pm 0.1$ % FS max.
Repeatability	$\leq \pm 0.05$ % FS
Rise time	≤ 2 ms
Long-term stability	$\leq \pm 0.1$ % FS typ. / year

Environmental conditions

Compensated temperature range	-25 .. +85 °C
Operating temperature range (fail safe) ³⁾	-40 .. +85 °C / -25 .. +85 °C
Storage temperature range	-40 .. +85 °C
Medium temperature range ³⁾	-40 .. +85 °C / -25 .. +85 °C
CE-mark	EN 61000-6-1 / 2 / 3 / 4
Vibration resistance acc. to DIN EN 60068-2-6 at 5 .. 2000 Hz	≤ 20 g
Shock resistance acc. to DIN EN 60068-2-27	≤ 100 g / 6 ms
Protection class ⁴⁾ acc. to DIN EN 60529 ISO 20653	IP 67 / IP 69 (with attached mating connector) IP 6K9K

Safety-related data

Performance level

Based on	DIN EN ISO 13849-1:2008
PL	d
Architecture	Category 3

Other data

Supply voltage	7 .. 35 V DC (max. load resistance 250 Ω) 12 .. 35 V DC (max. load resistance 500 Ω)
Residual ripple of supply voltage	≤ 5 %
Current consumption	≤ 50 mA
Life expectancy	> 10 million cycles, 0 .. 100 % FS
Weight	~ 180 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

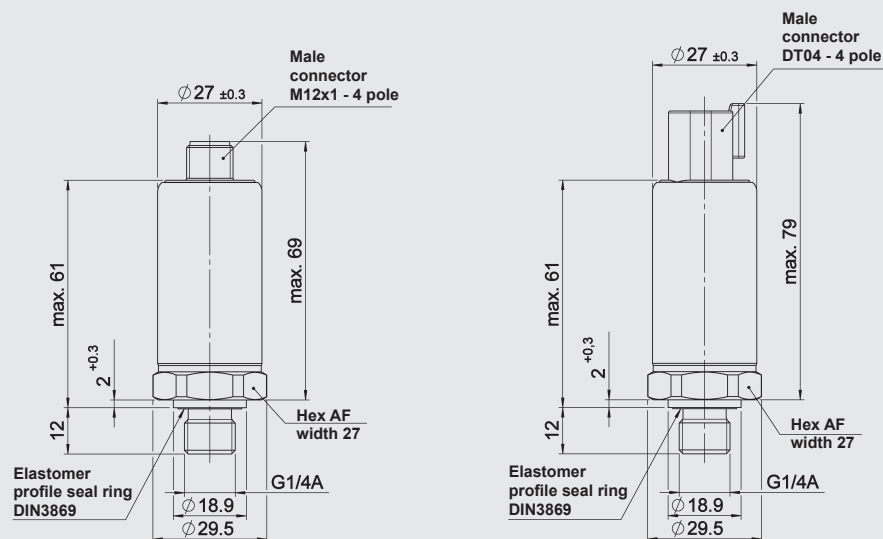
¹⁾ Other seal materials on request

²⁾ Other output signals on request

³⁾ -25 °C with FKM seal, -40 °C on request

⁴⁾ With mounted mating connector in corresponding protection class

Dimensions:



Model code:

HDA 4 7 4 X - C C - XXXX - XXXX - Pd - 000

Mechanical connection

4 = G1/4 A ISO 1179-2

Electrical connection

6 = male M12x1, 4 pole
(mating connector not supplied)
V = male Deutsch DT04, 4 pole
(mating connector not supplied)

Output signal 1

C = 4 .. 20 mA, 3-conductor

Output signal 2

C = 4 .. 20 mA, 3-conductor

Measuring ranges signal 1 in bar (max. operating pressure)

0025; 0040; 0060; 0100; 0160; 0250; 0400; 0600

Measuring ranges signal 2 in bar

0025; 0040; 0060; 0100; 0160; 0250; 0400; 0600; 1000

Measuring range signal 2 = Measuring range signal 1
or max. 1 pressure range higher

Functional safety

Pd = PL d – Cat 3 acc. to DIN EN 13849-1

Modification number

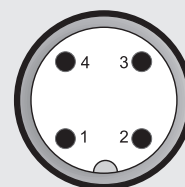
000 = standard

Accessories:

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

Pin connections:

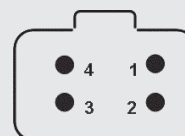
M12x1



Pin HDA 4746-CC

1	+U _B
2	Signal 2
3	0 V
4	Signal 1

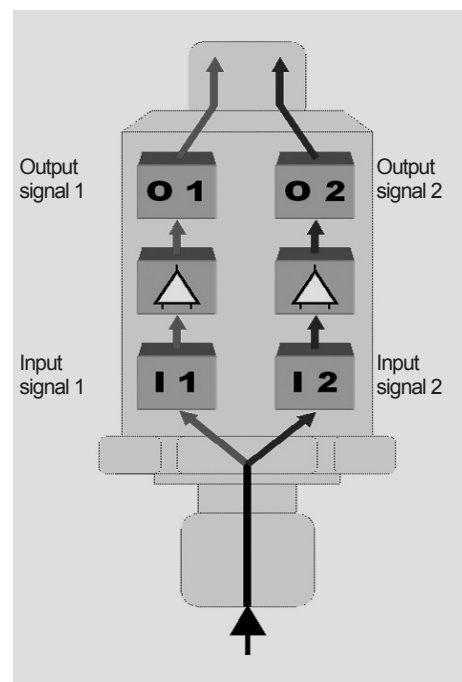
DT04



Pin HDA 474V-CC

1	+U _B
2	0 V
3	Signal 2
4	Signal 1

Block circuit diagram:



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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