



## Pressure Transmitter HDA 4400 shipping applications

Relative pressure

Accuracy 0.5 %



### Description:

This pressure transmitter has been specially developed for shipbuilding applications and is based on the HDA 4000 series.

The HDA 4400 is designed to measure relative pressures in the high pressure range by means of its sensor measurement cell with thin-film strain gauge on a stainless steel membrane.

The evaluation electronics converts the measured pressure into a proportional analogue signal of 4 .. 20 mA.

The electronic module is completely potted to protect it against humidity, vibrations and shock, and is enclosed in a solid stainless steel housing.

For use in the shipping industry, these pressure transmitters have been approved by the following organisations.

### Approvals:

- American Bureau of Shipping
- Lloyds Register of Ships
- Det Norske Veritas/ Germanischer Lloyd
- Bureau Veritas



Other approvals on request

### Technical data:

#### Input data

Measuring ranges	bar	6	16	40	60	100	250	400	600	1000 <sup>1)</sup>	1600 <sup>1)</sup>
Overload pressures	bar	15	32	80	120	200	500	800	1000	1600	2400
Burst pressure	bar	100	200	200	300	500	1000	2000	2000	3000	3000

Mechanical connection

G1/4 A ISO 1179-2  
G1/2 B DIN EN 837

Tightening torque, recommended

20 Nm (G1/4), 45 Nm (G1/2)

Parts in contact with fluid

Mech. connection: Stainless steel  
Seal: FKM

#### Output data

Output signal, permitted load resistance	4 .. 20 mA, 2-conductor $R_{L,max} = (U_B - 10 V) / 20 \text{ mA} \text{ [k}\Omega\text{]}$	
Accuracy acc. to DIN 16086, terminal based	$\leq \pm 0.5 \%$ FS typ. $\leq \pm 1 \%$ FS max.	
Accuracy, B.F.S.L.	$\leq \pm 0.25 \%$ FS typ. $\leq \pm 0.5 \%$ FS max.	
Temperature compensation	$\leq \pm 0.015 \%$ FS / °C typ.	
Zero point	$\leq \pm 0.025 \%$ FS / °C max.	
Temperature compensation	$\leq \pm 0.015 \%$ FS / °C typ.	
Span	$\leq \pm 0.025 \%$ FS / °C max.	
Non-linearity acc. to DIN 16086, terminal based	$\leq \pm 0.3 \%$ FS max.	
Hysteresis	$\leq \pm 0.4 \%$ FS max.	
Repeatability	$\leq \pm 0.1 \%$ FS	
Rise time	$\leq 1 \text{ ms}$	
Long-term drift	$\leq \pm 0.3 \%$ FS typ. / year	

#### Environmental conditions

Compensated temperature range	-25 .. +85 °C
Operating temperature range <sup>2)</sup>	-40 .. +85 °C / -25 .. +85 °C
Storage temperature range	-40 .. +100 °C
Fluid temperature range <sup>2)</sup>	-40 .. +100 °C / -25 .. +100 °C
CE mark	EN 61000-6-1 / 2 / 3 / 4

Vibration resistance acc. to DIN EN 60068-2-6 at 5 .. 500 Hz  $\leq 20 \text{ g}$

Protection class acc. to DIN EN 60529 <sup>3)</sup> IP 67

#### Other data

Supply voltage	10 .. 32 V DC
Residual ripple of supply voltage	$\leq 5 \%$
Life expectancy <sup>4)</sup>	> 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

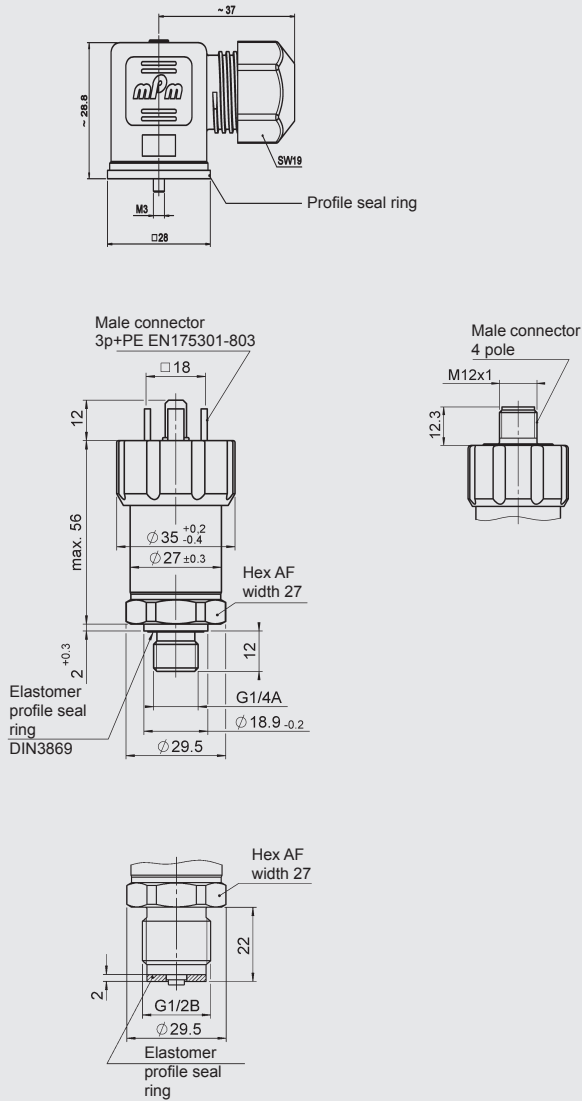
<sup>1)</sup> Measuring ranges: approval for Lloyds Register on request

<sup>2)</sup> -25 °C with FKM seal, -40 °C on request

<sup>3)</sup> With mounted mating connector in corresponding protection class

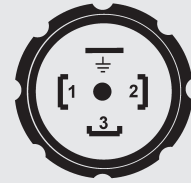
<sup>4)</sup> Measuring ranges  $\geq 1000 \text{ bar}$ : > 1 million cycles (0 .. 100 % FS)

## Dimensions:



## Pin connections:

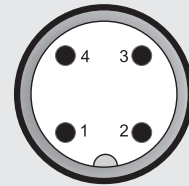
EN175301-803



Pin HDA 44X5-A

1	Signal +
2	Signal -
3	n.c.
L	Housing

M12x1



Pin HDA 44X6-A

1	Signal +
2	n.c.
3	Signal -
4	n.c.

## Model code:

**HDA 4 4 X X - A - XXXX - S00**

### Mechanical connection

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

### Electrical connection

- 5 = male, EN175301-803, 3 pole + PE (IP 67 mating connector supplied)
- 6 = male M12x1, 4 pole (mating connector not supplied)

### Output signal

- A = 4 .. 20 mA, 2-conductor

### Measuring ranges in bar

- 0006; 0016; 0040; 0060; 0100; 0250; 0400; 0600
- 1000; 1600 bar (only with mech. connection code "1")

### Modification number

- S00 = with approvals for shipping

### 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 or operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.

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