

## HDA 4100 Series Absolute Pressure Transducer



### Applications



### Description

The pressure transmitter series HDA 4100 has a ceramic pressure measurement cell (with a thickfilm strain gauge) which has been specially developed for measuring absolute pressure in the low pressure range.

The output signals 4 to 20 mA or 0 to 10 V allow for all HYDAC electronic measurement and control devices to be connected, as well as industry standard control and monitoring instruments.

The main areas of application are low pressure applications in hydraulics and pneumatics, particularly in refrigeration and air conditioning technology, the food and pharmaceutical industries.

### Special Features

- Accuracy  $\leq \pm 0.5\%$  BFSL
- Very small temperature error
- Excellent EMC characteristics
- Very compact design
- Excellent price / performance ratio

### Approvals

**CE** CE mark is a mandatory conformity mark on many products placed on the single market in the European Economic Area

### Technical Details

Sensor Specifications	
Measuring ranges - psi	15, 50
Overload pressure - psi	45, 100
Burst pressure - psi	70, 150
Mechanical connection	G1/4A DIN 3852 male ( <i>bar ranges only</i> ) 1/4"-18 NPT male ( <i>psi ranges only</i> ) other connections upon request
Tightening torque	G1/4: 15 lb-ft (20 Nm) 1/4" NPT: 30 lb-ft (40 Nm)
Parts in contact with media	Ceramic, FPM or EPDM seal, stainless steel
Accuracy (B.F.S.L.) including linearity, hysteresis, and repeatability	$\leq \pm 0.5\%$ BFSL
Temperature compensation zero point	$\leq \pm 0.012\%$ / °F typ. $\leq \pm 0.017\%$ / °F max.
Temperature compensation over range	$\leq \pm 0.012\%$ / °F typ. $\leq \pm 0.017\%$ / °F max.
Rise time	$\leq 1$ ms
Long-term drift	$\leq \pm 0.3\%$ FS typ. / year
Life expectancy	10 million load cycles (0 to 100% FS)
Weight	Approximately 145 g
Output signal	4 to 20 mA, 2 wire, $R_{Lmax} = (UB - 10V) / 20 \text{ mA}$ [k $\Omega$ ] 0 to 10 V, 3 wire, $R_{Lmin} = 2 \text{ k}\Omega$
Environmental Condition	
Compensated temperature range	32° to 176°F (0° to 80°C)
Operating temperature range	-13° to 185°F (-25° to 85°C)
Storage temperature range	-40° to 212°F (-40° to 100°C)
Media temperature range	-40° to 212°F (-40° to 100°C)
CE mark	EN 61000-6-1 / 2 / 3 / 4
Vibration resistance to DIN EN 60068-2-6 at 10 to 500 Hz	$\leq 20g$
Environmental protection	IP 65 ( <i>DIN 43650 and M18x1 connectors</i> ) IP 67 ( <i>ZBE 06 molded cable</i> )
Electrical Specifications	
Supply voltage, 2-wire	10 to 30 VDC
Supply voltage, 3-wire	12 to 30 VDC
Residual ripple supply voltage	$\leq 5\%$
Max supply current, 3-wire	approximately 25 mA
Reverse polarity protection of the supply voltage, excess voltage, override and short circuit protection	Standard

## Model Code

HDA 4 1 X X - X - XXXX - 000 - X1 (PSI)

### Mechanical Connection\*

- 4 = G1/4A DIN 3852 male (bar ranges only)
- 8 = 1/4-18 NPT, male (psi ranges only)

### Electrical Connection\*

- 4 = 4 pole plug M18x1 (connector not included)
- 5 = DIN 43650/ISO 4400 plug, 3 pole + ground (connector ZBE 01 included)
- 6 = M12x1 plug, 4-pole (connector not included)

### Output Signal\*

- A = 2 conductor, 4-20 mA
- B = 3 conductor, 0-10 VDC

### Pressure Range

for HDA 418X only (1/4-18 NPT)  
0015, 0050 psi

### Modification Number

000 = Standard

### Seal material (in contact with fluid)

- F1 = FPM-seal (hydraulic oil)
- E1 = EPDM-seal (water, coolant, ammonia)

### (psi)

psi version (leave blank for bar version)

\*Other options upon request

## Pin Connections

### Binder Series 714 M18

Pin	HDA 41x4-A	HDA 41x4-B
1	nc	+U <sub>B</sub>
2	Signal +	Signal
3	Signal -	0 V
4	nc	nc

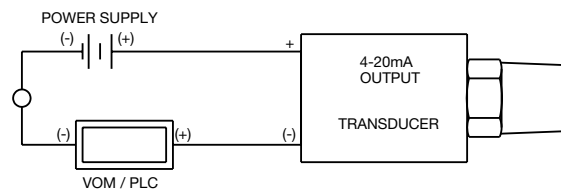
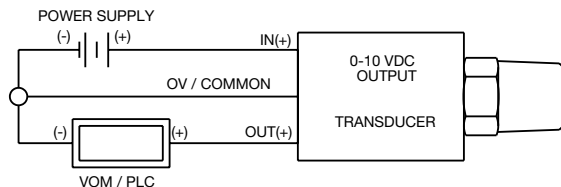
### DIN 43650

Pin	HDA 41x5-A	HDA 41x5-B
1	Signal +	+U <sub>B</sub>
2	Signal -	0 V
3	nc	Signal
4	PE	PE

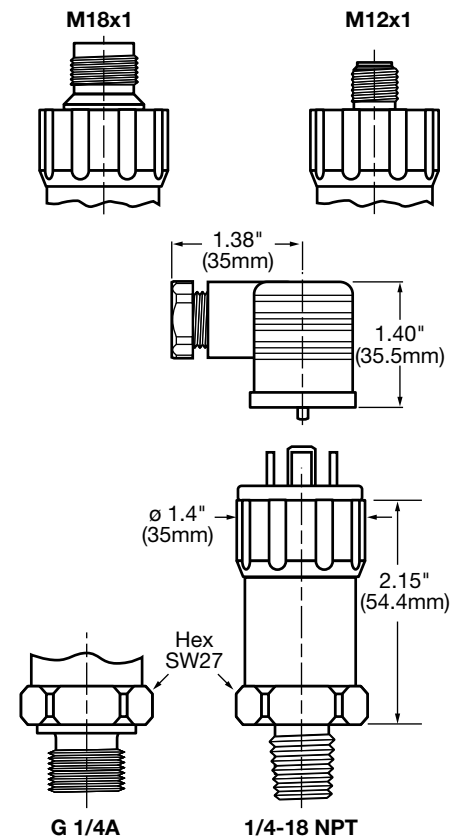
### M12x1

Pin	HDA 41x6-A	HDA 41x6-B
1	Signal +	+U <sub>B</sub>
2	nc	nc
3	Signal -	0 V
4	nc	Signal

## Circuit Diagram



## Dimensions



## HDA 4300 Series Low Pressure Transducer



### Applications



### Description

The pressure transmitter series HDA 4300 has a ceramic pressure measurement cell (with a thickfilm strain gauge) which has been specially developed for use at low pressures.


The output signals 4 to 20 mA or 0 to 10 V allow for all HYDAC electronic measurement and control devices as well as other standard control and monitoring instruments to be connected.

The main areas of application are low pressure applications in hydraulics and pneumatics, particularly in refrigeration and air conditioning technology, the food and pharmaceutical industries.

### Special Features

- Accuracy  $\leq \pm 0.5\%$  BFSL
- Very small temperature error
- Excellent EMC characteristics
- Very compact design
- Excellent price / performance ratio

### Approvals

 CE mark is a mandatory conformity mark on many products placed on the single market in the European Economic Area

### Technical Details

Sensor Specifications	
Measuring ranges - psi	-14.5 to 135.5, 15, 50, 100, 150, 250, 500
Overload pressure - psi	450, 45, 150, 290, 450, 725, 1500
Burst pressure - psi	650, 70, 250, 400, 650, 1000, 2500
Mechanical connection	G1/4A DIN 3852 male ( <i>bar ranges only</i> ) 1/4"-18 NPT male ( <i>psi ranges only</i> ) other connections upon request
Tightening torque	G1/4: 15 lb-ft (20 Nm) 1/4" NPT: 30 lb-ft (40 Nm)
Parts in contact with media	Ceramic, FPM or EPDM seal, Stainless steel
Accuracy (B.F.S.L.) including linearity, hysteresis, and repeatability	$\leq \pm 0.5\%$ BFSL
Temperature compensation zero point	$\leq \pm 0.012\%$ / °F typ. $\leq \pm 0.017\%$ / °F max.
Temperature compensation over range	$\leq \pm 0.012\%$ / °F typ. $\leq \pm 0.017\%$ / °F max.
Rise time	$\leq 1$ ms
Long-term drift	$\leq \pm 0.3\%$ FS typ. / year
Life expectancy	10 million load cycles (0 to 100% FS)
Weight	Approximately 145 g
Output signal	4 to 20 mA, 2 wire, $R_{Lmax} = (UB - 10V) / 20 \text{ mA}$ [k $\Omega$ ] 0 to 10 V, 3 wire, $R_{Lmin} = 2 \text{ k}\Omega$
Environmental Condition	
Compensated temperature range	32° to 176°F (0° to 80°C)
Operating temperature range	-13° to 185°F (-25° to 85°C)
Storage temperature range	-40° to 212°F (-40° to 100°C)
Media temperature range	-40° to 212°F (-40° to 100°C)
CE mark	EN 61000-6-1 / 2 / 3 / 4
Vibration resistance to DIN EN 60068-2-6 at 10 to 500 Hz	$\leq 20g$
Environmental protection	IP 65 ( <i>DIN 43650 and M18x1 connectors</i> ) IP 67 ( <i>ZBE 06 molded cable</i> )
Electrical Specifications	
Supply voltage, 2-wire	10 to 30 VDC
Supply voltage, 3-wire	12 to 30 VDC
Residual ripple supply voltage	$\leq 5\%$
Max supply current, 3-wire	approximately 25 mA
Reverse polarity protection of the supply voltage, excess voltage, override and short circuit protection	Standard

## Model Code

HDA 4 3 X X - X - XXXX - 000 X1 (PSI)

### Mechanical Connection\*

- 4 = G1/4A DIN 3852 male (bar ranges only)
- 8 = 1/4-18 NPT, male (psi ranges only)

### Electrical Connection\*

- 4 = 4 pole plug M18x1 (connector not included)
- 5 = DIN 43650/ISO 4400 plug, 3 pole + ground (connector ZBE 01 included)
- 6 = M12x1 plug, 4-pole (connector not included)

### Output Signal\*

- A = 2 conductor, 4-20 mA
- B = 3 conductor, 0-10 VDC

### Pressure Range

for HDA 438X only (1/4-18 NPT)  
0135 (-14.5 to 135.5 psi), 0015, 0030, 0050, 0100, 0150, 0250, 0500 psi

### Modification Number

000 = Standard

### Seal material (in contact with fluid)

- F1 = FPM-seal (hydraulic oil)
- E1 = EPDM-seal (water, coolant, ammonia)

### (psi)

psi version (leave blank bar version)

\*Other options upon request

## Pin Connections

### Binder Series 714 M18

Pin	HDA 43x4-A	HDA 43x4-B
1	nc	+U <sub>B</sub>
2	Signal +	Signal
3	Signal -	0 V
4	nc	nc

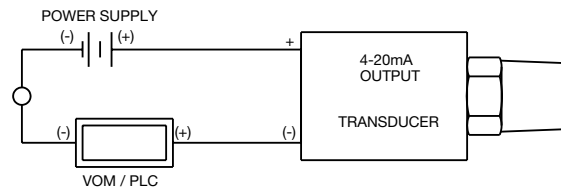
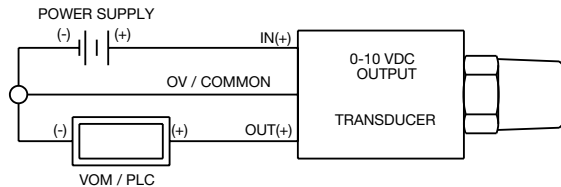
### DIN 43650

Pin	HDA 43x5-A	HDA 43x5-B
1	Signal +	+U <sub>B</sub>
2	Signal -	0 V
3	nc	Signal
4	PE	PE

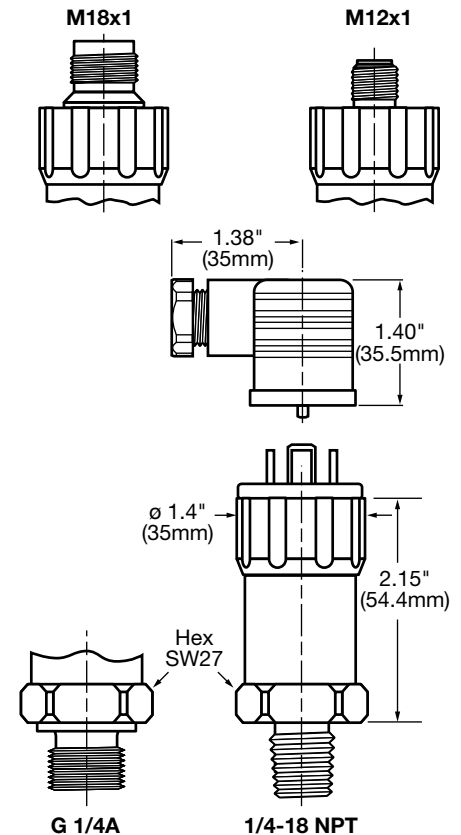
### M12x1

Pin	HDA 43x6-A	HDA 43x6-B
1	Signal +	+U <sub>B</sub>
2	nc	nc
3	Signal -	0 V
4	nc	Signal

## Circuit Diagram



## Dimensions



## HDA 4400 Series High Pressure Transducer, Medium Accuracy



### Applications



### Description

The pressure transmitter series HDA 4400 has a very accurate and robust sensor cell with a thin-film strain gauge on a stainless steel membrane.

The output signals 4 to 20 mA or 0 to 10 V allow for all HYDAC ELECTRONIC measurement and control devices as well as standard evaluation systems (e.g. PLC controls) to be connected.

The main areas of application are in the mobile or industrial sectors of hydraulics and pneumatics, particularly in applications with restricted installation space.

### Special Features

- Accuracy  $\pm 0.5\%$  BFSL
- Highly robust sensor cell
- Very small temperature error
- Excellent EMC characteristics
- Very compact design
- Excellent price / performance ratio

### Approvals

**CE** CE mark is a mandatory conformity mark on many products placed on the single market in the European Economic Area

### Technical Details

Sensor Specifications	
Measuring ranges - psi	150, 500, 750, 1000, 1500, 3000, 6000, 9000
Overload pressure - psi	290, 1160, 1160, 2900, 2900, 7250, 11600, 14500
Burst pressure - psi	1450, 2900, 2900, 7250, 7250, 14500, 29000, 29000
Mechanical connection	G1/4A DIN 3852 male (bar ranges only) SAE 6 9/16-18 UNF 2A (psi ranges only) other connections upon request
Tightening torque	15 lb-ft (20 Nm)
Parts in contact with media	Stainless Steel, FPM seal
Accuracy (B.F.S.L.) including linearity, hysteresis, and repeatability	$\leq \pm 0.5\%$ BFSL
Temperature compensation zero point	$\leq \pm 0.0085\%$ FS / °F typ. $\leq \pm 0.014\%$ FS / °F max.
Temperature compensation over range	$\leq \pm 0.0085\%$ FS / °F typ. $\leq \pm 0.014\%$ FS / °F max.
Rise time	$\leq 1$ ms
Long-term drift	$\leq \pm 0.3\%$ FS typ. / year
Life expectancy	10 million load cycles (0 to 100% FS)
Weight	Approximately 145 g
Output signal	4 to 20 mA, 2 wire, $R_{Lmax} = (UB - 10V) / 20 \text{ mA}$ [k $\Omega$ ] 0 to 10 V, 3 wire, $R_{Lmin} = 2 \text{ k}\Omega$
Environmental Condition	
Compensated temperature range	32° to 158°F (0° to 70°C)
Operating temperature range	-13° to 185°F (-25° to 85°C)
Storage temperature range	-40° to 212°F (-40° to 100°C)
Media temperature range	-40° to 212°F (-40° to 100°C)
CE mark	EN 61000-6-1 / 2 / 3 / 4
Vibration resistance to DIN EN 60068-2-6 at 10 to 500 Hz	$\leq 20$ g
Environmental protection	IP 65 (DIN 43650 and M18x1 connectors) IP 67 (ZBE 06 molded cable)
Electrical Specifications	
Supply voltage, 2-wire	10 to 30 VDC
Supply voltage, 3-wire	12 to 30 VDC
Residual ripple supply voltage	$\leq 5\%$
Max Supply current, 3-wire	approximately 25 mA
Reverse polarity protection of the supply voltage, excess voltage, override and short circuit protection	Standard

## Model Code

HDA 4 4 X X - X - XXXX - 000 - (PSI)

### Mechanical Connection\*

- 4 = G1/4A DIN 3852 male (*bar ranges only*)
- 7 = SAE 6 9/16-18 UNF2A (*psi ranges only*)

### Electrical Connection\*

- 4 = 4 pole plug M18x1, Binder Series (*connector not included*)
- 5 = DIN 43650 / ISO plug, 3 pole + ground (*connector ZBE 01 included*)
- 6 = M12x1 plug, 4 pole (*connector not included*)

### Output Signal\*

- A = 4-20mA, 2-wire
- B = 0-10VDC, 3-wire

### Pressure Range

for HDA 447X only (SAE 6 9/16-18 UNF 2A)  
0150, 0500, 0750, 1000, 1500, 3000, 5000, 6000, 9000 psi

### Modification Number

000 = Standard

### (psi)

psi version (*leave blank for bar version*)

\*Other options available upon request

## Pin Connections

### Binder Series 714 M18



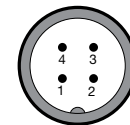
Pin	HDA 44x4-A	HDA 44x4-B
1	nc	+U <sub>B</sub>
2	Signal +	Signal
3	Signal -	0 V
4	nc	nc

### DIN 43650



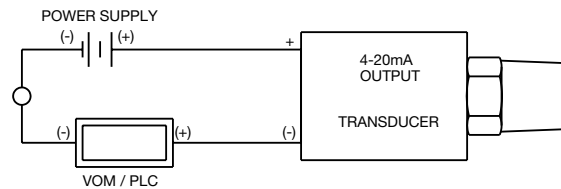
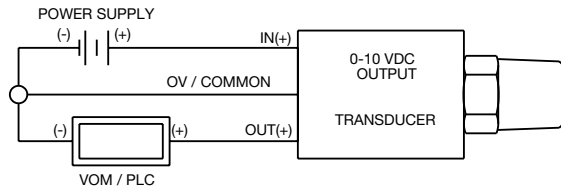
Pin	HDA 44x5-A	HDA 44x5-B
1	Signal +	+U <sub>B</sub>
2	Signal -	0 V
3	nc	Signal
4	PE	PE

### M12x1

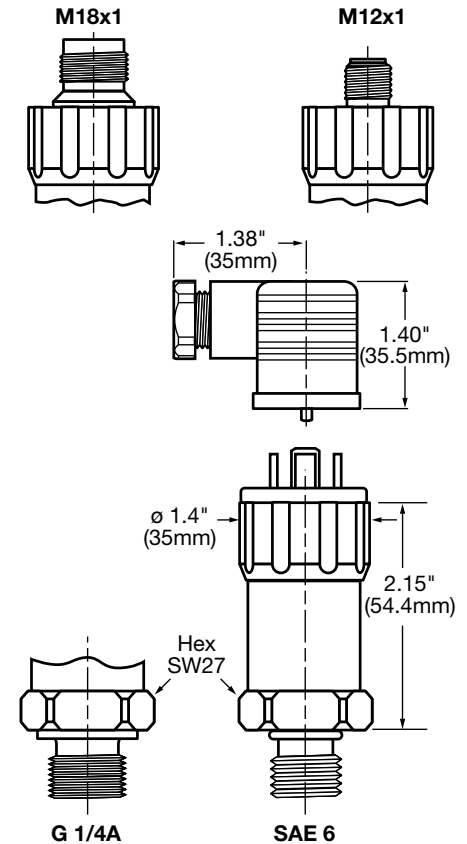


Pin	HDA 44x6-A	HDA 44x6-B
1	Signal +	+U <sub>B</sub>
2	nc	nc
3	Signal -	0 V
4	nc	Signal

## Circuit Diagram



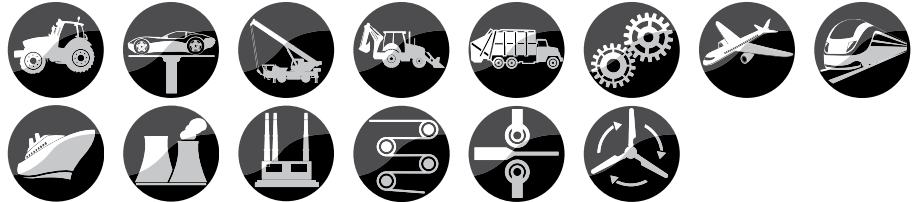
## Dimensions



## HDA 4700 Series High Pressure Transducer, High Accuracy



### Applications



### Description

The pressure transmitter series HDA 4700 has a very accurate and robust sensor cell with a thin-film strain gauge on a stainless steel membrane.

The output signals 4 to 20 mA or 0 to 10 V allow for all HYDAC ELECTRONIC measurement and control devices as well as standard evaluation systems (e.g. PLC controls) to be connected.

The main areas of application are in the mobile or industrial sectors of hydraulics and pneumatics, particularly in applications with restricted installation space.

### Special Features

- Accuracy  $\leq \pm 0.25\%$  BFSL
- Highly robust sensor cell
- Very small temperature error
- Excellent EMC characteristics
- Very compact design
- Excellent price / performance ratio

### Approvals



CE mark is a mandatory conformity mark on many products placed on the single market in the European Economic Area

### Technical Details

Sensor Specifications	
Measuring ranges - psi	150, 500, 750, 1000, 1500, 3000, 6000, 9000
Overload pressure - psi	290, 1160, 1160, 2900, 2900, 7250, 11600, 14500
Burst pressure - psi	1450, 2900, 2900, 7250, 7250, 14500, 29000, 29000
Mechanical connection	G1/4A DIN 3852 male ( <i>bar ranges only</i> ) SAE 6 9/16-18 UNF 2A ( <i>psi ranges only</i> ) other connection upon request
Tightening torque	15 lb-ft (20 Nm)
Parts in contact with media	Stainless Steel, FPM seal
Accuracy (B.F.S.L.) including linearity, hysteresis, and repeatability	$\leq \pm 0.25\%$ BFSL
Temperature compensation zero point	$\leq \pm 0.0045\%$ FS / °F typ. $\leq \pm 0.0085\%$ FS / °F max.
Temperature compensation over range	$\leq \pm 0.0045\%$ FS / °F typ. $\leq \pm 0.0085\%$ FS / °F max.
Rise time	$\leq 1$ ms
Long-term drift	$\leq \pm 0.1\%$ FS typ. / year
Life expectancy	10 million load cycles (0 to 100% FS)
Weight	Approximately 145 g
Output signal	4 to 20 mA, 2 wire, $R_{Lmax} = (UB - 10V) / 20 \text{ mA}$ [k $\Omega$ ] 0 to 10 V, 3 wire, $R_{Lmin} = 2 \text{ k}\Omega$
Environmental Condition	
Compensated temperature range	-13° to 185°F (-25° to 85°C)
Operating temperature range	-40° to 185°F (-40° to 85°C)
Storage temperature range	-40° to 212°F (-40° to 100°C)
Media temperature range	-40° to 212°F (-40° to 100°C)
CE mark	EN 61000-6-1 / 2 / 3 / 4
Vibration resistance to DIN EN 60068-2-6 at 10 to 500 Hz	$\leq 20g$
Environmental protection	IP 65 ( <i>DIN 43650 and M18x1 connectors</i> ) IP 67 ( <i>ZBE 06 molded cable</i> )
Electrical Specifications	
Supply voltage, 2-wire	10 to 30 VDC
Supply voltage, 3-wire	12 to 30 VDC
Residual ripple supply voltage	$\leq 5\%$
Max supply current, 3-wire	approximately 25 mA
Reverse polarity protection of the supply voltage, excess voltage, override and short circuit protection	Standard



## Model Code

HDA 4 7 X X - X - XXXX - 000 (PSI)

### Mechanical Connection\*

- 4 = G 1/4 A DIN 3852, male (*bar ranges only*)
- 7 = SAE 6, 9/16-18 UNF 2A male (*psi ranges only*)

### Electrical Connection\*

- 4 = 4 pole plug M18x1 (*connector not included*)
- 5 = DIN 43650/ISO 4400 plug, 3 pole + ground (*connector ZBE 01 included*)
- 6 = M12x1 plug, 4-pole (*connector not included*)

### Output Signal\*

- A = 2 conductor, 4-20 mA
- B = 3 conductor, 0-10 VDC

### Pressure Range

For HDA 477X only (SAE 6 9/16-18 UNF2A male)  
0150, 0500, 0750, 1000, 1500, 3000, 5000, 6000, 9000 psi

### Modification Number

000 = Standard

(psi)

psi version (*Leave blank for bar version*)

\*Other options available upon request

## Pin Connections

### Binder Series 714 M18

	Pin HDA 47x4-A	HDA 47x4-B
	1 nc	+U <sub>B</sub>
	2 Signal +	Signal
	3 Signal -	0 V
	4 nc	nc

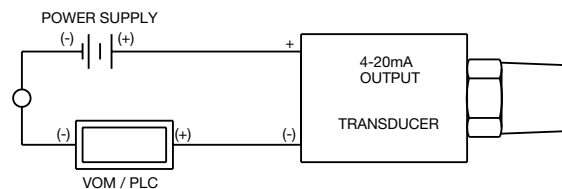
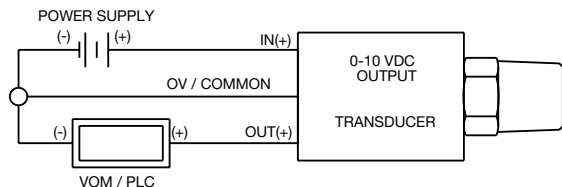
### DIN 43650

	Pin HDA 47x5-A	HDA 47x5-B
	1 Signal +	+U <sub>B</sub>
	2 Signal -	0 V
	3 nc	Signal
	4 PE	PE

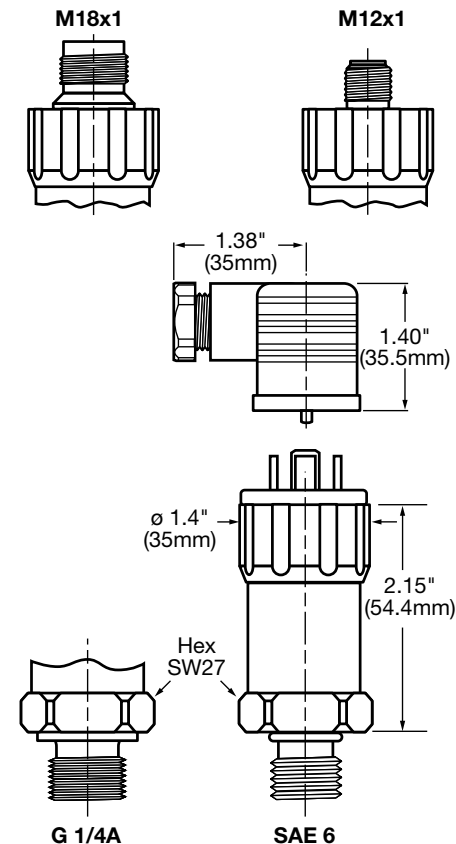
### M12x1

	Pin HDA 47x6-A	HDA 47x6-B
	1 Signal +	+U <sub>B</sub>
	2 nc	nc
	3 Signal -	0 V
	4 nc	Signal

## Circuit Diagram



## Dimensions

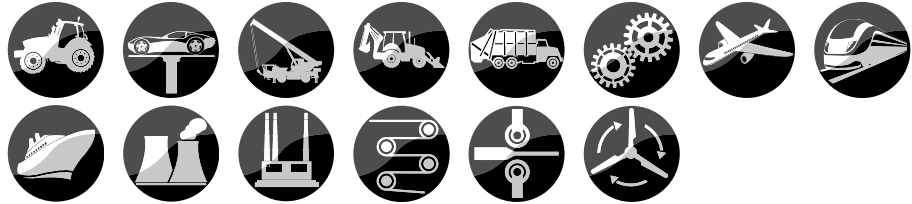




## HDA 4700 Series CANopen Pressure Transducer



### Applications



### Description

The HDA 4700 CAN is a digital pressure transmitter which is used to measure relative pressures in hydraulics and pneumatics. The measured pressure value is digitized and made available to the CAN field bus system via CANopen protocol. The unit parameters can be viewed and configured by the user via the CANopen object directory using standard CAN software.

This pressure transmitter, which is based on the HDA 4700, has a very accurate and robust sensor cell with a thin-film strain gauge on a stainless steel membrane.

Due to their outstanding temperature and EMC characteristics, together with their compact dimensions, these units can be used in a wide range of applications in the mobile and industrial sectors.

### Special Features

- CANopen interface
- Accuracy  $\leq \pm 0.25\%$  BFSL
- Robust thin-film cell
- Excellent EMC characteristics
- Very compact design

### Approvals



CE mark is a mandatory conformity mark on many products placed on the single market in the European Economic Area

### Technical Details

Sensor Specifications	
Measuring ranges - psi	500, 750, 1000, 1500, 3000, 6000, 9000
Overload pressure - psi	1160, 1160, 2900, 2900, 7250, 11600, 14500
Burst pressure - psi	2900, 2900, 7250, 7250, 14500, 29000, 29000
Mechanical connection	G1/4A DIN 3852 male (standard for bar ranges only) SAE 6 9/16-18 UNF 2A (standard for psi ranges only) other connections upon request
Tightening torque	Approx. 15 lb-ft (20 Nm)
Parts in contact with media	Stainless-Steel, FPM seal
Accuracy (B.F.S.L.) including linearity, hysteresis, and repeatability	$\leq \pm 0.25\%$ BFSL
Temperature compensation zero point	$\leq \pm 0.0045\%$ FS/°F typ. $\leq \pm 0.0085\%$ FS/°F max.
Temperature compensation over range	$\leq \pm 0.0045\%$ FS/°F typ. $\leq \pm 0.0085\%$ FS/°F max.
Rise time	$\leq 1$ ms
Long-term drift	$\leq \pm 0.1\%$ FS typ./year
Life expectancy	10 million load cycles (0 to 100% FS)
Weight	Approximately 145 g
Environmental Condition	
Compensated temperature range	-13° to 185°F (-25° to 85°C)
Operating temperature range	-40° to 185°F (-40° to 85°C)
Storage temperature range	-40° to 212°F (-40° to 100°C)
Media temperature range	-40° to 212°F (-40° to 100°C)
CE mark	EN 61000-6-1 / 2 / 3 / 4
Vibration resistance to DIN EN 60068-2-6 at 10 to 500 Hz	$\leq 20g$
Environmental protection	IP 67 (ZBE 06 molded cable)
Electrical Specifications	
Supply voltage	10 to 35 VDC
Residual ripple supply voltage	$\leq 5\%$
Max supply current	approximately 25 mA
Reverse polarity protection of the supply voltage, excess voltage, override and short circuit protection	Standard
Communication profile	DS301 V4.02
Device profile	DS404.V1.2
Baud rates	10 kbit. 1 Mbit coressp. to DS305 V1.1
Transmission services -PDO -Transfer	Measured value as 16/32 bit, status synchronous, asynchronous, cyclical, measured value change, exceeding boundaries.
Node ID/Baudrate	Can be set via manufacturer specific profile

## Model Code

**HDA 4 7 X 8 - K - XXXX - 000 (PSI)**

### Mechanical Connection

- 4 = G1/4A DIN 3852 male (*bar ranges only*)
- 7 = SAE 6 9/16-18 UNF2A (*psi ranges only*)

### Electrical Connection

- 8 = M12x1 plug, 5 pole (connector not included)

### Output Signal

- K = CANopen

### Pressure Range

for HDA 4778 only (*SAE 6 9/16-18 UNF2A*)  
0500, 0750, 1000, 1500, 3000, 5000, 6000, 9000 psi

### Modification Number

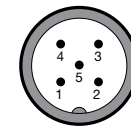
- 000 = Standard

### (psi)

psi version (*leave blank for bar version*)

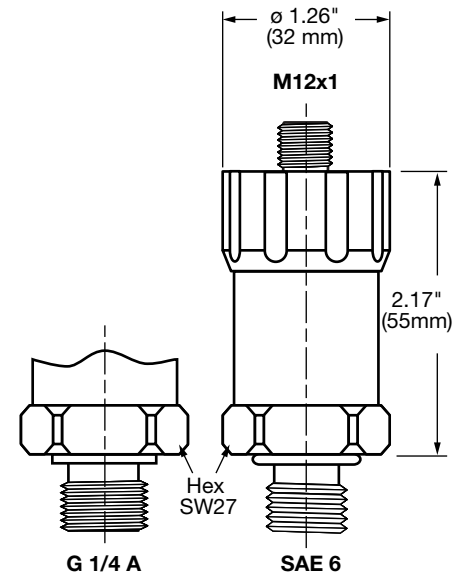
## Pin Connections

M12x1



<b>Pin 1</b>	PE	shield/housing
<b>Pin 2</b>	+U <sub>B</sub>	supply +
<b>Pin 3</b>	0 V	supply -
<b>Pin 4</b>	CAN_H	bus line dominant high
<b>Pin 5</b>	CAN_L	bus line dominant low

## Dimensions



## HDA 4100 Series Absolute Pressure Transducer Shipbuilding & Offshore



### Applications



### Description

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

The HDA 4100 has a ceramic measurement cell with thick-film strain gauge for measuring absolute pressure in the low pressure range. The evaluation electronics converts the measured pressure into a proportional analog signal of 4 to 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

**CE** CE mark is a mandatory conformity mark on many products placed on the single market in the European Economic Area

**ABS** American Bureau of Shipping

**GL** German Lloyd - GL

**Bureau Veritas**

**LRS** Lloyds Register of Shipping - LRS

**DNV** Det Norske Veritas - DNV

### Technical Details

Sensor Specifications	
Measuring ranges - psi	15, 50
Overload pressure - psi	45, 100
Burst pressure - psi	70, 150
Mechanical connection	G1/4A DIN 3852 male (standard for bar ranges only) 1/4"-18 NPT male (standard for psi ranges only) other connections upon request
Tightening torque	G1/4: 15 lb-ft (20 Nm) 1/4" NPT: 30 lb-ft (40 Nm)
Parts in contact with media	Ceramic, FPM or EPDM seal, Stainless Steel
Accuracy (B.F.S.L.) including linearity, hysteresis, and repeatability	≤ ±0.5% BFSL
Temperature compensation zero point	≤ ±0.012%/°F typ. ≤ ±0.017%/°F max.
Temperature compensation over range	≤ ±0.012%/°F typ. ≤ ±0.017%/°F max.
Rise time	≤ 1 ms
Long-term drift	≤ ±0.3%FS typ./year
Life expectancy	10 million load cycles (0 to 100% FS)
Weight	Approximately 150 g
Output signal	4 to 20 mA, 2 wire, $R_{Lmax} = (UB - 10V) / 20 \text{ mA}$ [kΩ]
Environmental Condition	
Compensated temperature range	-32° to 176°F (0° to 80°C)
Operating temperature range	-13° to 185°F (-25° to 85°C)
Storage temperature range	-22° to 212°F (-30° to 100°C)
Media temperature range	-13° to 212°F (-25° to 100°C)
CE mark	EN 61000-6-1 / 2 / 3 / 4
Vibration resistance to DIN EN 60068-2-6 at 10 to 500 Hz	≤ 20g
Environmental protection	IP 65 (DIN 43650 connectors) IP 67 (ZBE 06 molded cable)
Other Data	
Supply voltage, 2-wire	10 to 30 VDC
Residual ripple supply voltage	≤ 5%
Reverse polarity protection of the supply voltage, excess voltage, override and short circuit protection	Standard

## Model Code

HDA 4 1 X X - X - XXXX - S00 X1 (PSI)

### Mechanical Connection\*

- 4 = G1/4A DIN 3852 male (bar ranges only)
- 8 = 1/4"-18 NPT (psi ranges only)

### Electrical Connection\*

- 5 = DIN 43650 / ISO plug, 3 pole + ground (connector ZBE 01 included)
- 6 = M12x1 plug, 4 pole (connector not included)

### Output Signal

- A = 4-20mA, 2-wire

### Pressure Range

For HDA 418X only (1/4"-18 NPT)  
0015, 0050 psi

### Modification Number

- S00 = with Shipbuilding approvals

### Seal Material

- F1 = FPM Seal (hydraulic oil)
- E1 = EPDM Seal (coolant, ammonia, water)

### (psi)

psi version (leave blank for bar version)

\*Other options available upon request

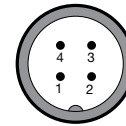
## Pin Connections

### DIN 43650



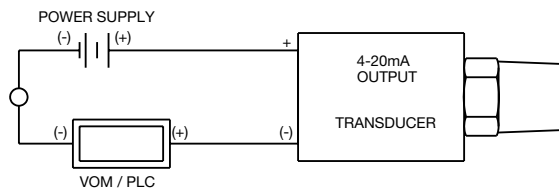
Pin	HDA 41X5-A
1	Signal +
2	Signal -
3	nc
4	PE

### M12x1

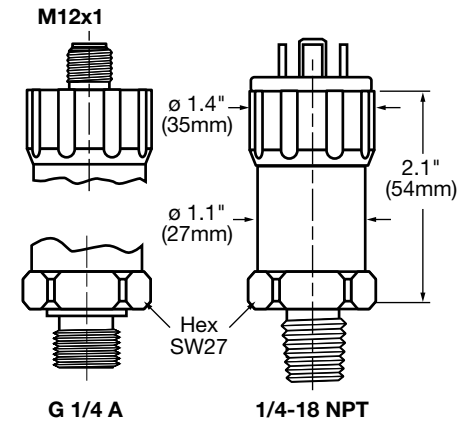
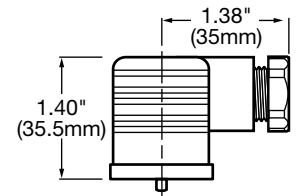


Pin	HDA 41X6-A
1	Signal +
2	nc
3	Signal -
4	nc

## Circuit Diagram



## Dimensions



## HDA 4300 Series Low Pressure Transducer Shipbuilding & Offshore



### Applications



### Description

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

With its ceramic measurement cell (*with thick-film strain gauge*) the HDA 4300 is designed to measure relative pressures in the low pressure range.

The evaluation electronics converts the measured pressure into a proportional analog signal of 4 to 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

**CE** CE mark is a mandatory conformity mark on many products placed on the single market in the European Economic Area

**ABS** American Bureau of Shipping

**GL** German Lloyd - GL

**Bureau Veritas**

**Lloyds Register of Shipping - LRS**

**Det Norske Veritas - DNV**

### Technical Details

Sensor Specifications	
Measuring ranges - psi	15, 30, 50, 100, 150, 250, 500
Overload pressure - psi	45, 100, 150, 290, 450, 725, 1500
Burst pressure - psi	70, 150, 250, 400, 650, 1000, 2500
Mechanical connection	G1/4A DIN 3852 male ( <i>standard for bar ranges only</i> ) 1/4"-18 NPT male ( <i>standard for psi ranges only</i> ) other connections upon request
Tightening torque	G1/4: 15 lb-ft (20 Nm) 1/4" NPT: 30 lb-ft (40 Nm)
Parts in contact with media	Ceramic, FPM or EPDM seal, Stainless Steel
Accuracy (B.F.S.L.) including linearity, hysteresis, and repeatability	≤ ±0.5% BFSL
Temperature compensation zero point	≤ ±0.012%/°F typ. ≤ ±0.017%/°F max.
Temperature compensation over range	≤ ±0.012%/°F typ. ≤ ±0.017%/°F max.
Rise time	≤ 1 ms
Long-term drift	≤ ±0.3% FS typ./year
Life expectancy	10 million load cycles (0 to 100% FS)
Weight	Approximately 150 g
Output signal	4 to 20 mA, 2 wire, $R_{Lmax} = (UB - 10V) / 20 \text{ mA}$ [kΩ]
Environmental Condition	
Compensated temperature range	32° to 176°F (0° to 80°C)
Operating temperature range	-13° to 185°F (-25° to 85°C)
Storage temperature range	-22° to 212°F (-30° to 100°C)
Media temperature range	-13° to 212°F (-25° to 100°C)
CE mark	EN 61000-6-1 / 2 / 3 / 4
Vibration resistance to DIN EN 60068-2-6 at 10 to 500 Hz	≤ 20g
Environmental protection	IP 65 ( <i>DIN 43650 connectors</i> ) IP 67 ( <i>ZBE 06 molded cable</i> )
Electrical Specifications	
Supply voltage, 2-wire	10 to 30 VDC
Residual ripple supply voltage	≤ 5%
Reverse polarity protection of the supply voltage, excess voltage, override and short circuit protection	Standard

## Model Code

HDA 4 3 X X - X - XXXX - S00 X1 (PSI)

### Mechanical Connection\*

- 4 = G1/4A DIN 3852 male (bar ranges only)
- 8 = 1/4"-18 NPT (psi ranges only)

### Electrical Connection\*

- 5 = DIN 43650 / ISO plug, 3 pole + ground (connector ZBE 01 included)
- 6 = M12x1 plug, 4 pole (connector not included)

### Output Signal

- A = 4-20mA, 2-wire

### Pressure Range

For HDA 438X only (1/4"-18 NPT)  
0015, 0030, 0050, 0100, 0150, 0250, 0500 psi

### Modification Number

- S00 = with Shipbuilding approvals

### Seal Material

- F1 = FPM Seal (hydraulic oil)
- E1 = EPDM Seal (coolant, ammonia, water)

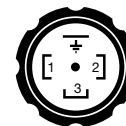
### (psi)

psi version (leave blank for bar version)

\*Other options available upon request

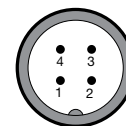
## Pin Connections

### DIN 43650



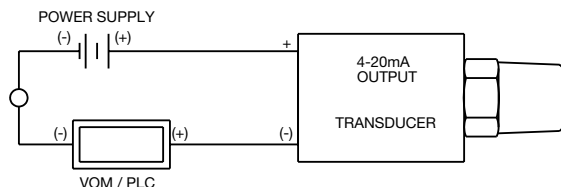
Pin	HDA 43X5-A
1	Signal +
2	Signal -
3	nc
4	PE

### M12x1

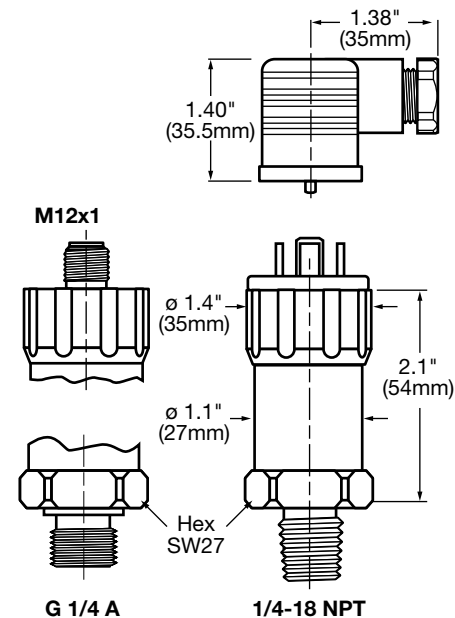


Pin	HDA 43X6-A
1	Signal +
2	nc
3	Signal -
4	nc

## Circuit Diagram



## Dimensions



## HDA 4400 Series High Pressure Transducer, Medium Accuracy Shipbuilding & Offshore



### Applications



### Description

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

With its stainless steel measurement cell and thin-film strain gauge, the HDA 4400 is designed to measure relative pressures in the high pressure range. The evaluation electronics converts the measured pressure into a proportional analog signal of 4 to 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

**CE** CE mark is a mandatory conformity mark on many products placed on the single market in the European Economic Area

**ABS** American Bureau of Shipping

**GL** German Lloyd - GL

**Bureau Veritas**

**Lloyds Register of Shipping - LRS**

**Det Norske Veritas - DNV**

### Technical Details

Sensor Specifications	
Measuring ranges - psi	150, 500, 750, 1000, 1500, 3000, 6000, 9000
Overload pressure - psi	290, 1160, 1160, 2900, 2900, 7250, 11600, 14500
Burst pressure - psi	1450, 2900, 2900, 7250, 7250, 14500, 29000, 29000
Mechanical connection	G1/4A DIN 3852 male (standard for bar ranges only) SAE 6 9/16-18 UNF 2A (standard for psi ranges only) other connections upon request
Tightening torque	15 lb-ft (20 Nm)
Parts in contact with media	Stainless Steel, FPM seal
Accuracy (B.F.S.L.) including linearity, hysteresis, and repeatability	≤ ±0.5% BFSL
Temperature compensation zero point	≤ ±0.0085%/°F typ. ≤ ±0.014%/°F max.
Temperature compensation over range	≤ ±0.0085%/°F typ. ≤ ±0.014%/°F max.
Rise time	≤ 1 ms
Long-term drift	≤ ±0.3% FS typ./year
Life expectancy	10 million load cycles (0 to 100% FS)
Weight	Approximately 150 g
Output signal	4 to 20 mA, 2 wire, $R_{Lmax} = (UB - 10V) / 20 \text{ mA}$ [kΩ]
Environmental Condition	
Compensated temperature range	-13° to 185°F (-25° to 85°C)
Operating temperature range	-13° to 185°F (-25° to 85°C)
Storage temperature range	-40° to 212°F (-40° to 100°C)
Media temperature range	-13° to 212°F (-25° to 100°C)
CE mark	EN 61000-6-1 / 2 / 3 / 4
Vibration resistance to DIN EN 60068-2-6 at 10 to 500 Hz	≤ 20g
Environmental protection	IP 65 (DIN 43650 connectors) IP 67 (ZBE 06 molded cable)
Electrical Specifications	
Supply voltage, 2-conductor	10 to 30 VDC
Residual ripple supply voltage	≤ 5%
Reverse polarity protection of the supply voltage, excess voltage, override and short circuit protection	Standard



## Model Code

HDA 4 4 X X - X - XXXX - S00 (PSI)

### Mechanical Connection\*

- 4 = G1/4A DIN 3852 male (bar ranges only)
- 7 = SAE 6 9/16-18 UNF2A (psi ranges only)

### Electrical Connection\*

- 5 = DIN 43650 / ISO plug, 3 pole + ground (connector ZBE 01 included)
- 6 = M12x1 plug, 4 pole (connector not included)

### Output Signal

- A = 4-20mA, 2-wire

### Pressure Range

For HDA 447X only (SAE 6 9/16-18 UNF2A)  
0150, 0500, 0750, 1000, 1500, 3000, 5000, 6000, 9000 psi

### Modification Number

S00 = with Shipbuilding approvals

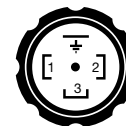
(psi)

psi version (leave blank for bar version)

\*Other options available upon request

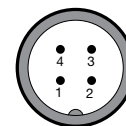
## Pin Connections

DIN 43650



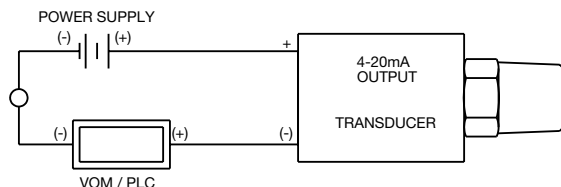
Pin	HDA 44X5-A
1	Signal +
2	Signal -
3	nc
4	PE

M12x1

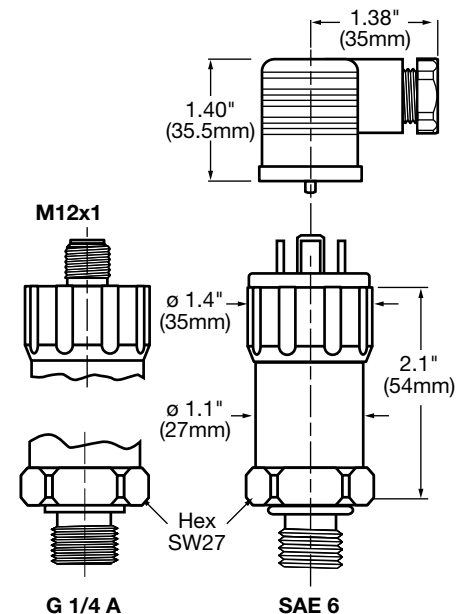


Pin	HDA 44X6-A
1	Signal +
2	nc
3	Signal -
4	nc

## Circuit Diagram



## Dimensions



## HDA 4700 Series High Pressure Transducer, High Accuracy Shipbuilding & Offshore



### Applications



### Description

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

With its stainless steel measurement cell and thin-film strain gauge, the HDA 4400 is designed to measure relative pressures in the high pressure range. The evaluation electronics converts the measured pressure into a proportional analog signal of 4 to 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

**CE** CE mark is a mandatory conformity mark on many products placed on the single market in the European Economic Area

**ABS** American Bureau of Shipping

**GL** German Lloyd - GL

**Bureau Veritas**

**Lloyds Register of Shipping - LRS**

**Det Norske Veritas - DNV**

### Technical Details

Sensor Specifications	
Measuring ranges - psi	150, 500, 750, 1000, 1500, 3000, 6000, 9000
Overload pressure - psi	290, 1160, 1160, 2900, 2900, 7250, 11600, 14500
Burst pressure - psi	1450, 2900, 2900, 7250, 7250, 14500, 29000, 29000
Mechanical connection	G1/4A DIN 3852 male (standard for bar ranges only) SAE 6 9/16-18 UNF 2A (standard for psi ranges only)
Tightening torque	15 lb-ft (20 Nm)
Parts in contact with media	Stainless Steel
Accuracy (B.F.S.L.) including linearity, hysteresis, and repeatability	≤ ±0.25% BFSL
Temperature compensation zero point	≤ ±0.0045%/°F typ. ≤ ±0.0085%/°F max.
Temperature compensation over range	≤ ±0.0045%/°F typ. ≤ ±0.0085%/°F max.
Rise time	≤ 1 ms
Long-term drift	≤ ±0.1% FS typ./year
Life expectancy	10 million load cycles (0 to 100% FS)
Weight	Approximately 150 g
Output signal	4 to 20 mA, 2 wire, $R_{Lmax} = (UB - 10V) / 20 \text{ mA}$ [kΩ]
Environmental Condition	
Compensated temperature range	-13° to 185°F (-25° to 85°C)
Operating temperature range	-13° to 185°F (-25° to 85°C)
Storage temperature range	-40° to 212°F (-40° to 100°C)
Media temperature range	-13° to 212°F (-25° to 100°C)
CE mark	EN 61000-6-1 / 2 / 3 / 4
Vibration resistance to DIN EN 60068-2-6 at 10 to 500 Hz	≤ 20g
Environmental protection	IP 65 (DIN 43650 connectors) IP 67 (ZBE 06 molded cable)
Electrical Specifications	
Supply voltage, 2-wire	10 to 30 VDC
Residual ripple supply voltage	≤ 5%
Reverse polarity protection of the supply voltage, excess voltage, override and short circuit protection	Standard

## Model Code

HDA 4 7 X X - X - XXXX - S00 (PSI)

### Mechanical Connection\*

- 4 = G1/4A DIN 3852 male (bar ranges only)
- 7 = SAE 6 9/16-18 UNF2A (psi ranges only)

### Electrical Connection\*

- 5 = DIN 43650 / ISO plug, 3 pole + ground (connector ZBE 01 included)
- 6 = M12x1 plug, 4 pole (connector not included)

### Output Signal

- A = 4-20mA, 2-wire

### Pressure Range

For HDA 477X only (SAE 6 9/16-18 UNF2A)  
0150, 0500, 0750, 1000, 1500, 3000, 5000, 6000, 9000 psi

### Modification Number

- S00 = with Shipbuilding approvals

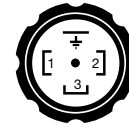
### (psi)

psi version (leave blank for bar version)

\*Other options available upon request

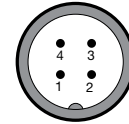
## Pin Connections

### DIN 43650



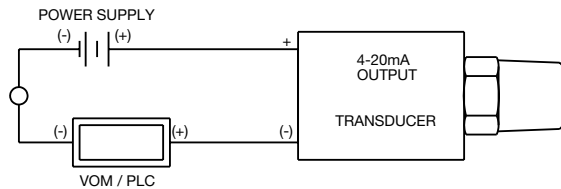
Pin	HDA 47X5-A
1	Signal +
2	Signal -
3	nc
4	PE

### M12x1

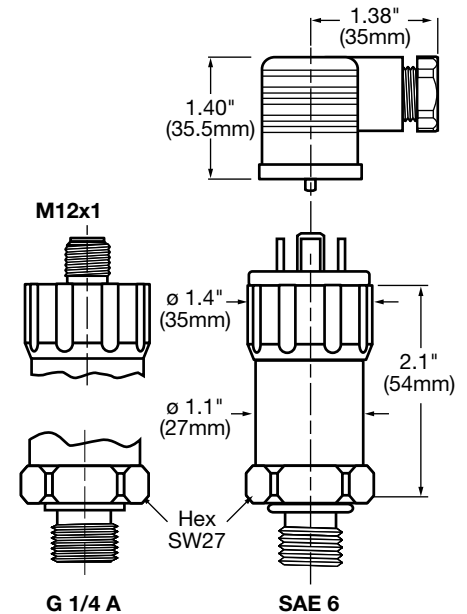


Pin	HDA 47X6-A
1	Signal +
2	nc
3	Signal -
4	nc

## Circuit Diagram



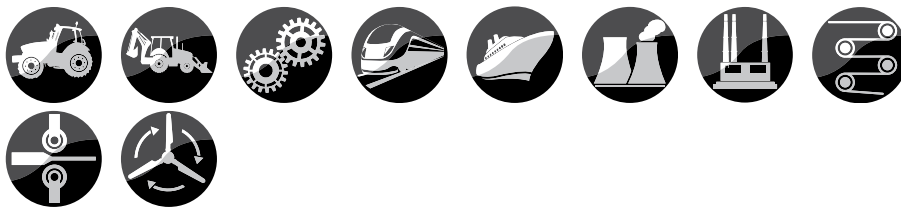
## Dimensions



## HDA 7400 Series Compact Pressure Transducer



### Applications



### Description

The pressure transmitter series HDA 7000 combines excellent technical specifications with a very compact design.

The HDA 7400 was specifically developed for OEM applications e.g. in mobile applications. A stainless steel sensor cell with thin-film strain gauge is the basis of a robust, longlife pressure transmitter.

Various pressure ranges between 0 to 500 psi and 0 to 9000 psi provide versatility when adapting to particular applications.

For integration into modern controls (e.g. with PLC) standard analog output signals are available.

### Special Features

- Accuracy  $\leq \pm 0.5\%$  BFSL
- Highly robust sensor cell
- Highly compact design
- Very small temperature error
- Excellent EMC characteristics
- Excellent long-term characteristics

### Approvals



CE mark is a mandatory conformity mark on many products placed on the single market in the European Economic Area

### Technical Details

Sensor Specifications	
Measuring ranges - psi	300, 500, 750, 1000, 1500, 3000, 6000, 9000
Overload pressure - psi	1160, 1160, 1160, 2900, 2900, 7250, 11600, 14500
Burst pressure - psi	2900, 2900, 2900, 7250, 7250, 14500, 29000, 29000
Mechanical connection	G1/4A DIN 3852 male (standard for bar ranges only) SAE 6 9/16-18 UNF 2A (standard for psi ranges only)
Tightening torque	15 lb-ft (20 Nm)
Parts in contact with media	Stainless Steel; FPM seal
Accuracy (B.F.S.L.) including linearity, hysteresis, and repeatability	$\leq \pm 0.5\%$ BFSL
Temperature compensation zero point	$\leq \pm 0.0085\%$ FS/ $^{\circ}$ F typ. $\leq \pm 0.017\%$ FS/ $^{\circ}$ F max.
Temperature compensation over range	$\leq \pm 0.0085\%$ FS/ $^{\circ}$ F typ. $\leq \pm 0.017\%$ FS/ $^{\circ}$ F max.
Rise time	$\leq 2$ ms
Long-term drift	$\leq \pm 0.3\%$ FS typ./year
Life expectancy	10 million load cycles (0 to 100% FS)
Weight	Approximately 60 g
Output signal	4 to 20 mA, 2 wire, $R_{Lmax} = (UB - 10V) / 20$ mA [k $\Omega$ ] 0 to 10 V, 3 wire, $R_{Lmin} = 2$ k $\Omega$
Environmental Condition	
Compensated temperature range	-32 $^{\circ}$ to 158 $^{\circ}$ F (0 $^{\circ}$ to 70 $^{\circ}$ C)
Operating temperature range	-13 $^{\circ}$ to 185 $^{\circ}$ F (-25 $^{\circ}$ to 85 $^{\circ}$ C)
Storage temperature range	-40 $^{\circ}$ to 212 $^{\circ}$ F (-40 $^{\circ}$ to 100 $^{\circ}$ C)
Media temperature range	-40 $^{\circ}$ to 212 $^{\circ}$ F (-40 $^{\circ}$ to 100 $^{\circ}$ C)
CE mark	EN 61000-6-1 / 2 / 3 / 4
Vibration resistance to DIN EN 60068-2-6 at 10 to 500 Hz	$\leq 20$ g
Environmental protection	IP 67 (ZBE 06 molded cable or integrated open ended cable)
Electrical Specifications	
Supply voltage, 2-wire	10 to 30 VDC
Supply voltage, 3-wire	12 to 30 VDC
Residual ripple supply voltage	$\leq 5\%$
Max supply current, 3-wire	approximately 25 mA
Reverse polarity protection of the supply voltage, excess voltage, override and short circuit protection	Standard

## Model Code

HDA 7 4 X X - X - XXXX - 000 (PSI)

### Mechanical Connection\*

- 4 = G1/4A DIN 3852 male (bar ranges only)
- 7 = SAE 6 9/16-18 UNF2A (psi ranges only)

### Electrical Connection\*

- 6 = M12x1 plug, 4 pole (connector not included)  
Cable version available upon request

### Output Signal\*

- A = 4-20mA, 2-wire
- B = 0-10VDC, 3-wire

### Pressure Range

For HDA 7476 only (SAE 6 9/16-18 UNF2A)  
0300, 0500, 0750, 1000, 1500, 3000, 5000, 6000, 9000 psi

### Modification Number

- 000 = Standard

### (psi)

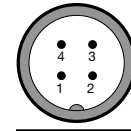
psi version (leave blank for bar version)

\*Other options available upon request

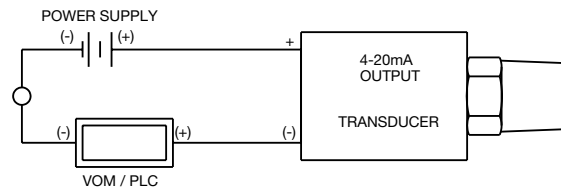
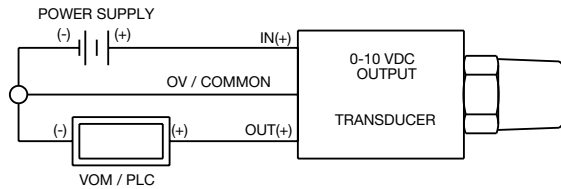
## Pin Connections

M12x1

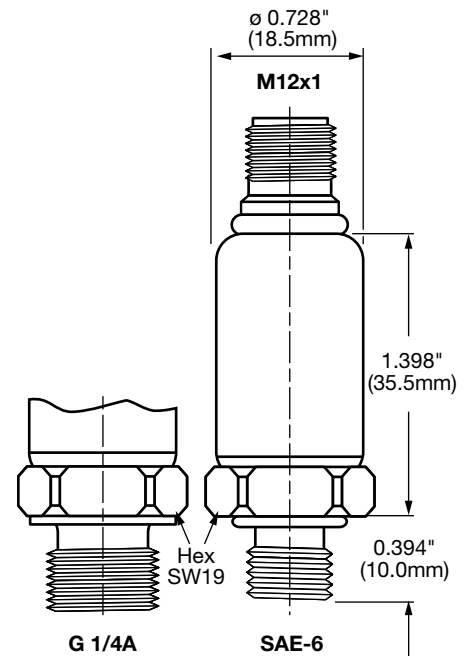
Pin	7446-A	7446-B
1	Signal +	+U <sub>B</sub>
2	nc	nc
3	Signal -	0 V
4	nc	Signal



## Circuit Diagram



## Dimensions



## HDA 3800 Series Pressure Transducer, Very High Accuracy



### Applications



### Description

The pressure transmitter series HDA 3800 has a very accurate and robust sensor cell with a thin-film strain gauge on a stainless steel membrane.

Outstanding technical specifications and robust construction make the HDA 3800 particularly suited to the field of test rig and diagnostic technology. It is also suitable for a broad range of applications in industry.

Since the accuracy of a pressure transmitter varies greatly with the temperature of the fluid, the unit offers outstanding characteristics on precisely this point. The output signals 4 to 20 mA, 0 to 10 V and 0 to 20 mA (rising) are available as standard.

### Special Features

- Accuracy  $\leq \pm 0.15\%$  BFSL
- Highly robust sensor cell
- Very small temperature error
- Excellent EMC characteristics
- Excellent long term stability

### Approvals

**CE** CE mark is a mandatory conformity mark on many products placed on the single market in the European Economic Area

### Technical Details

Sensor Specifications	
Measuring ranges - bar	6, 16, 60, 100, 250, 400, 600
Overload pressure - bar	15, 32, 120, 200, 400, 800, 100
Burst pressure - bar	100, 200, 300, 500, 1000, 2000, 2000
Mechanical connection	G1/4A DIN 3852 male
Tightening torque	Approx. 15 lb-ft (20 Nm)
Parts in contact with media	Stainless steel, FPM seal
Accuracy (B.F.S.L.) including linearity, hysteresis, and repeatability	$\leq \pm 0.15\%$ BFSL
Temperature compensation zero point	$\leq \pm 0.003\%$ / °F typ. $\leq \pm 0.006\%$ / °F max.
Temperature compensation over range	$\leq \pm 0.003\%$ / °F typ. $\leq \pm 0.006\%$ / °F max.
Rise time	$\leq 0.5$ ms
Long-term drift	$\leq \pm 0.1\%$ FS typ. / year
Life expectancy	10 million load cycles (0 to 100% FS)
Weight	Approximately 180 g
Output signal	4 to 20 mA, 2 wire, $R_{Lmax} = (U_B - 10V) / 20 \text{ mA}$ [k $\Omega$ ] 0 to 10 VDC, 3 wire, $R_{Lmin} = 2 \text{ k}\Omega$ 0 to 20 mA, 3 wire, $R_{Lmin} = (U_B - 7V) / 20 \text{ mA}$ [k $\Omega$ ]
Environmental Condition	
Compensated temperature range	-13° to 185°F (-25° to 85°C)
Operating temperature range	-40° to 185°F (-40° to 85°C)
Storage temperature range	-40° to 212°F (-40° to 100°C)
Media temperature range	-40° to 212°F (-40° to 100°C)
CE mark	EN 61000-6-1 / 2 / 3 / 4
Vibration resistance to DIN EN 60068-2-6 at 10 to 500 Hz	$\leq 20g$
Environmental protection	IP 65
Electrical Specifications	
Supply voltage	2-wire: 10 to 30 VDC 3-wire: 12 to 30 VDC
Residual ripple supply voltage	$\leq 5\%$
Max supply current, 3-wire	approximately 15 mA
Reverse polarity protection of the supply voltage, excess voltage, override and short circuit protection	Standard

## Model Code

HDA 3 8 4 X - X - XXXX - 000

### Mechanical Connection

4 = G1/4A DIN 3852 male  
(SAE 6 available with adapter)

### Electrical Connection\*

4 = 4 pole plug M18x1, Binder Series (connector not included)  
5 = DIN 43650 / ISO plug, 3 pole + ground  
(connector ZBE 01 included)

### Output Signal\*

A = 2 conductor, 4 to 20 mA  
B = 3 conductor, 0 to 10 VDC  
E = 3 conductor, 0 to 20 mA sourcing

### Pressure Range

For HDA 387X only (G1/4A DIN 3852)  
006, 016, 060, 100, 250, 400, 600 bar (8.7, 232, 870, 1450, 3625, 5800, 8700 psi)

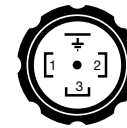
### Modification Number

000 = Standard

\*Other options available upon request

## Pin Connections

### DIN 43650



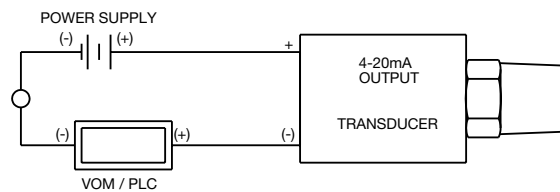
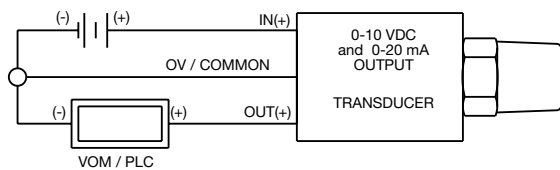
Pin	3845-A	3845-B / E
1	Signal +	+U <sub>B</sub>
2	Signal -	0 V
3	nc	Signal
4	PE	PE

### Binder 714 M18

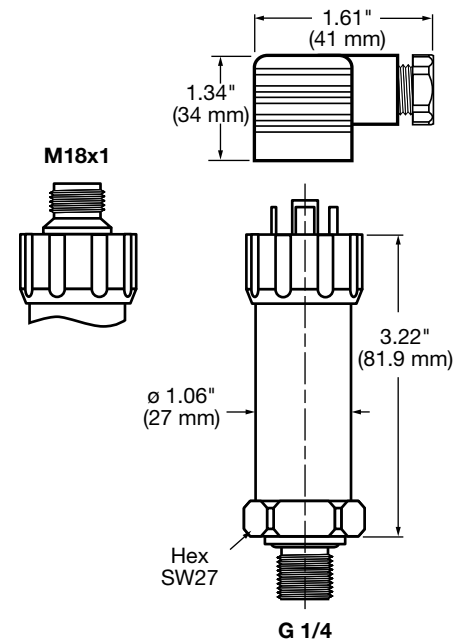


Pin	3844-A	3844-B / E
1	nc	+U <sub>B</sub>
2	Signal +	Signal
3	Signal -	0 V
4	nc	nc

## Circuit Diagram

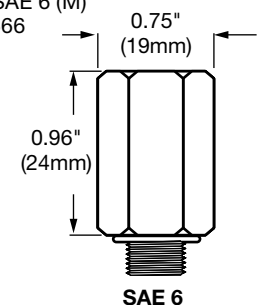


## Dimensions



### Adapter

G 1/4" (F) to SAE 6 (M)  
Part #02055566





## HDA 3800 Series

### Pressure Transducer, Very High Accuracy

### Steel Works



### Applications



### Description

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

The unit 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 range are in each case max.  $\leq \pm 0.01\%$  FS/ $^{\circ}$ C) and accuracy ( $\leq \pm 0.15\%$  BFSL) make it ideally suited for use in the ambient conditions found in steelworks.

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

### Special Features

- Accuracy  $\leq \pm 0.15\%$  BFSL
- Specially designed for use in steelworks
- Highly robust sensor cell
- Very small temperature error
- Excellent EMC characteristics
- Excellent long term stability

### Approvals

CE mark is a mandatory conformity mark on many products placed on the single market in the European Economic Area

### Technical Details

Sensor Specifications	
Measuring ranges - psi	150, 500, 750, 1000, 1500, 3000, 6000, 9000
Overload pressure - psi	290, 1160, 1160, 2900, 2900, 7250, 11600, 14500
Burst pressure - psi	1450, 2900, 2900, 7250, 7250, 14500, 29000, 29000
Mechanical connection	G 1/4 A DIN 3852 ( <i>bar ranges only</i> ) G 1/2 A DIN 3852 ( <i>bar ranges only</i> ) SAE 6 9/16-18 UNF 2A male ( <i>psi ranges only</i> )
Tightening torque	G 1/4 A DIN 3852: 15 lb-ft (20 Nm) G 1/2 A DIN 3852: 33 lb-ft (45 Nm) SAE 6 9/16-18 UNF 2A male: 15 lb-ft (20 Nm)
Parts in contact with media	Stainless Steel, Viton seal (G 1/4 A) Stainless Steel, NBR O-ring (G 1/2 A)
Accuracy (B.F.S.L.) including linearity, hysteresis, and repeatability	$\leq \pm 0.15\%$ BFSL
Temperature compensation zero point	$\leq \pm 0.003\%$ / $^{\circ}$ F typ. $\leq \pm 0.006\%$ / $^{\circ}$ F max.
Temperature compensation over range	$\leq \pm 0.003\%$ / $^{\circ}$ F typ. $\leq \pm 0.006\%$ / $^{\circ}$ F max.
Rise time	$\leq 0.5$ ms
Long-term drift	$\leq \pm 0.1\%$ FS typ. / year
Life expectancy	10 million load cycles (0 to 100% FS)
Weight	Approximately 210 g
Output signal	4 to 20 mA, 2 wire, $R_{Lmax} = (U_B - 10V) / 20$ mA [k $\Omega$ ] 0 to 20 mA, 3 wire, $R_{Lmin} = (U_B - 7V) / 20$ mA [k $\Omega$ ]
Environmental Condition	
Compensated temperature range	-13 $^{\circ}$ to 185 $^{\circ}$ F (-25 $^{\circ}$ to 85 $^{\circ}$ C)
Operating temperature range	-40 $^{\circ}$ to 185 $^{\circ}$ F (-40 $^{\circ}$ to 85 $^{\circ}$ C)
Storage temperature range	-40 $^{\circ}$ to 212 $^{\circ}$ F (-40 $^{\circ}$ to 100 $^{\circ}$ C)
Media temperature range	-40 $^{\circ}$ to 212 $^{\circ}$ F (-40 $^{\circ}$ to 100 $^{\circ}$ C)
CE mark	EN 61000-6-1 / 2 / 3 / 4
Vibration resistance to DIN EN 60068-2-6 at 10 to 500 Hz	$\leq 25$ g
Environmental protection	IP 68
Electrical Specifications	
Supply voltage, 2-wire	10 to 30 VDC
Residual ripple supply voltage	$\leq 5\%$
Max supply current, 3-wire	approximately 25 mA
Electrical connection	PG gland with open ended cable, silicon-free
Reverse polarity protection of the supply voltage, excess voltage, override and short circuit protection	Standard

## Model Code

HDA 3 8 X X - X - XXXX - 124 (PSI) XXM

### Mechanical Connection

- 0 = G1/2 A male thread (*bar ranges only*)
- 4 = G1/4A DIN 3852 male (*bar ranges only*)
- 7 = SAE 6 9/16-18 UNF2A (*psi ranges only*)

### Electrical Connection

- 0 = Open ended cable (*Teflon cable, silicone free*) with cable gland

### Output Signal

- A = 4-20mA, 2-wire
- E = 0-20mA, 3-wire

### Pressure Range

For HDA 387X (SAE 6 9/16-18 UNF2A only)  
0150, 0500, 0750, 1000, 1500, 3000, 6000, 9000 psi

### Modification Number

- 124 = Standard

### (psi)

psi version (*leave blank for bar version*)

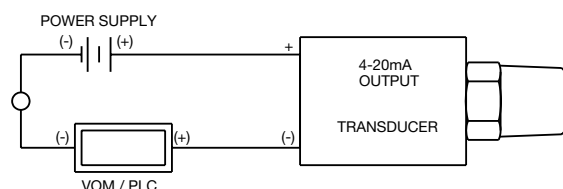
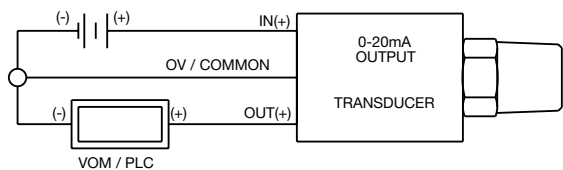
### Cable Length

- 06M = 6 meters
- 10M = 10 meters
- 15M = 15 meters
- 25M = 25 meters
- 30M = 30 meters

## Pin Connections

Wire	HDA 38x0-A	HDA 38x0-E
black	nc	+U <sub>B</sub>
brown	Signal +	Signal
blue	Signal -	0 V
green / yellow	nc	nc

## Circuit Diagram



## Dimensions

Length per Model Code

