

## 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, $R_{Lmax} = (U_B - 10V) / 20 \text{ mA}$ [kΩ]<br>0 to 10 VDC, 3 wire, $R_{Lmin} = 2 \text{ kΩ}$<br>0 to 20 mA, 3 wire, $R_{Lmin} = (U_B - 7V) / 20 \text{ mA}$ [kΩ] |
| 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<br>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)

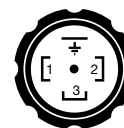
### Modification Number

000 = Standard

\*Other options available upon request

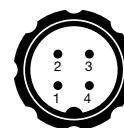
## Pin Connections

### DIN 43650



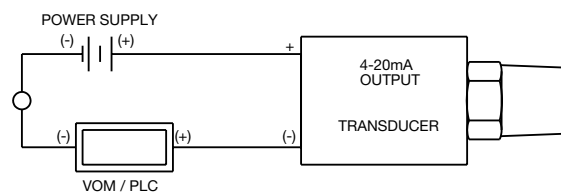
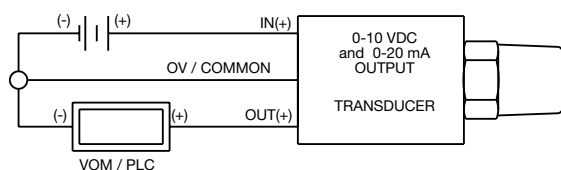
| Pin | 3845-A   | 3845-B / E      |
|-----|----------|-----------------|
| 1   | Signal + | +U <sub>B</sub> |
| 2   | Signal - | 0 V             |
| 3   | nc       | Signal          |
| 4   | PE       | PE              |

### Binder 714 M18

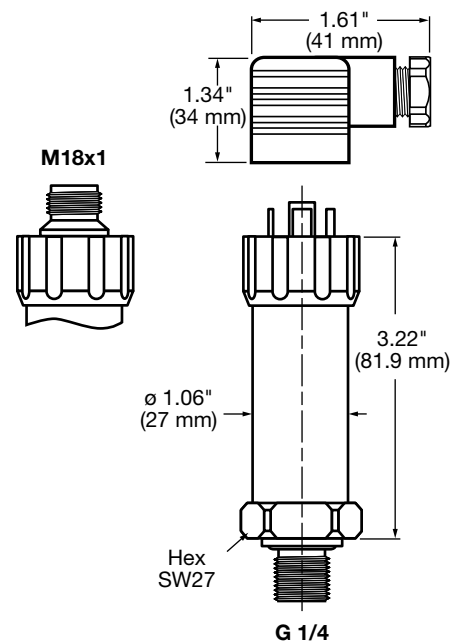


| Pin | 3844-A   | 3844-B / E      |
|-----|----------|-----------------|
| 1   | nc       | +U <sub>B</sub> |
| 2   | Signal + | Signal          |
| 3   | Signal - | 0 V             |
| 4   | nc       | nc              |

## Circuit Diagram



## Dimensions



### Adapter

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

