

# SINGLE AND DUAL PRESSURE SWITCHES

High Reliability, Repetitive Accuracy within  $\pm 1\%$



On the **SERIES 1620** our old faithful switch design is still best where highest precision combined with diaphragm sealed leak proof construction and mounting simplicity are required. Model 1626 and 1627 differential pressure switches are identical in design and construction except that Model 1626 has a single electric switch and Model 1627 has dual electric switches. Model 1627 can therefore provide dual control when required. It can be set to open or close two independent electrical circuits, each preset for its own actuation pressure. Both units have diaphragm sealed motion take outs providing maximum protection against leakage.

## FEATURES/BENEFITS

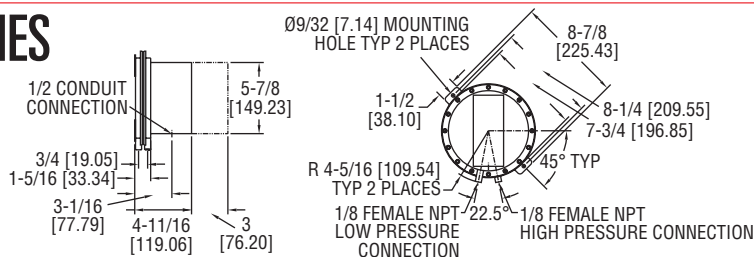
- Single or dual action switches support consistent designs with similar models, but with the ability to match specific application needs
- Sealed diaphragm provides leak-proof construction for high accuracy and precision control

## APPLICATIONS

- Damper positioning
- Duct air control

## MODEL CHART

| Model   | Operating Range in w.c. | Approximate Deadband |                | Adj. Diff. Between Set Points |
|---------|-------------------------|----------------------|----------------|-------------------------------|
|         |                         | Min. Set Point       | Max. Set Point |                               |
| 1626-1  | .15 to 1.5              | .10                  | .20            | -                             |
| 1626-5  | .5 to 6.0               | .15                  | .35            | -                             |
| 1626-10 | 2.0 to 11               | .25                  | .65            | -                             |
| 1626-20 | 8.0 to 24               | .50                  | 1.20           | -                             |
| 1627-1  | .15 to 1.5              | .10                  | .20            | 0.5                           |
| 1627-5  | .5 to 6.0               | .15                  | .35            | 1.2                           |
| 1627-10 | 2.0 to 11               | .25                  | .65            | 2.3                           |
| 1627-20 | 8.0 to 24               | .50                  | 1.20           | 5.0                           |



## SPECIFICATIONS

**Service:** Air and non-combustible, compatible gases.

**Wetted Materials:** Consult factory.

**Temperature Limits:** -30 to 130°F (-34.4 to 54.4°C).

**Pressure Limits:** Max. 50 in w.c. (12.44 kPa) continuous, 2 psig (13.79 kPa) surge.

**Switch Type:** 1626 SPDT; 1627, (2) SPDT.

**Repeatability:**  $\pm 1\%$ .

**Electrical Rating:** 15 A @ 120-480 VAC, 60 Hz. Resistive, 1/8 HP @ 125 VAC, 1/4 HP @ 250 VAC, 60 Hz.

**Electrical Connections:** 3 screw type, common, normally open and normally closed.

**Process Connections:** 1/8" female NPT.

**Mounting Orientation:** Diaphragm in vertical position. Consult factory for other position orientations.

**Set Point Adjustment:** Screw adjustment.

**Weight:** Model 1626, 3 lb, 9.8 oz (1.64 kg); Model 1627, 3 lb, 11.8 oz (1.69 kg).

**Agency Approvals:** CE.

## ACCESSORIES

| Model    | Description  |
|----------|--|
| A-489    | 4" straight static pressure tip with flange  |
| A-302F-A | 303 SS static pressure tip with mounting flange; for 3/16" ID rubber or plastic tubing; 4" insertion depth; includes mounting screws |

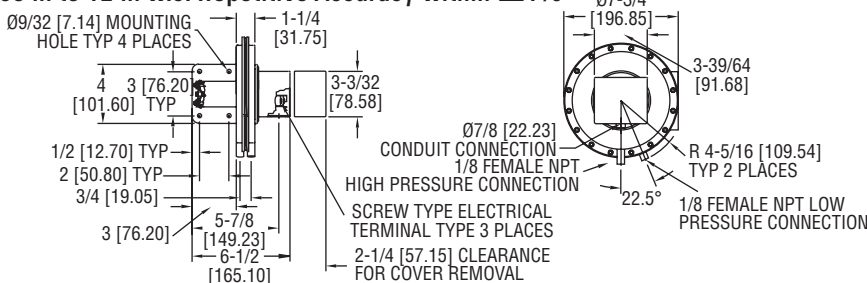
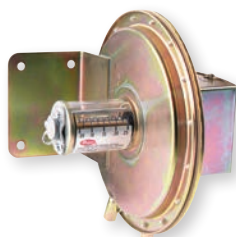
## OPTION

| To order add suffix: | Description                    |
|----------------------|--------------------------------|
| -MIL                 | MIL environmental construction |

## SERIES 1630

# LARGE DIAPHRAGM PRESSURE SWITCHES

Visual Set Point Adjustment in 5 Standard Ranges, 0.05 in to 12 in w.c. Repetitive Accuracy within  $\pm 1\%$



On the **SERIES 1630** our highest precision conventional large diaphragm pressure switch provides maximum dependability. In addition, it incorporates a visible set point indicator for maximum convenience. UL and CSA listed, FM approved for general service. Electrical capability of 15 amps handles most small electrical loads. For use only with air or compatible gases.

## FEATURES/BENEFITS

- Visible set point indicator simplifies operation and trouble shooting
- Large diaphragm provides low range accuracy providing precise control
- Current loads of up to 15 amps supports most small electrical loads supporting a broader range of HVAC and Process applications without the need for additional relays and components

## APPLICATIONS

- Damper positioning
- Duct air control
- Air conditioning
- Industrial service

## MODEL CHART

| Model   | Operating Range in w.c. | Approximate Deadband |                |
|---------|-------------------------|----------------------|----------------|
|         |                         | Min. Set Point       | Max. Set Point |
| 1638-0  | 0.05 to 0.25            | 0.04                 | 0.05           |
| 1638-1  | 0.20 to 1.0             | 0.04                 | 0.06           |
| 1638-2  | 1.0 to 3.0              | 0.06                 | 0.08           |
| 1638-5  | 2.0 to 6.0              | 0.07                 | 0.25           |
| 1638-10 | 3.0 to 12               | 0.11                 | 0.30           |

## SPECIFICATIONS

**Service:** Air and non-combustible, compatible gases.

**Wetted Materials:** Consult factory.

**Temperature Limits:** -30 to 110°F (-34.4 to 43.3°C).

**Pressure Limits:** 10 psig (68.95 kPa) continuous, 25 psig (172.4 kPa) surge.

**Switch Type:** SPDT.

**Repeatability:**  $\pm 1\%$ .

**Electrical Rating:** 15 A @ 120-480 VAC, 60 Hz. Resistive 1/8 HP @ 125 VAC, 1/4 HP @ 250 VAC, 60 Hz.

**Electrical Connections:** 3 screw type, common, normally open and normally closed.

**Process Connections:** 1/8" female NPT. **Mounting Orientation:** Diaphragm in vertical position. Consult factory for other position orientations.

**Set Point Adjustment:** Screw type with enclosed scale.

**Weight:** 4 lb 14 oz (2.21 kg).

**Agency Approvals:** CSA, FM, UL.

## ACCESSORIES

| Model    | Description  |
|----------|--|
| A-489    | 4" straight static pressure tip with flange  |
| A-302F-A | 303 SS static pressure tip with mounting flange; for 3/16" ID rubber or plastic tubing; 4" insertion depth; includes mounting screws |

## OPTION

### MIL Environmental Construction

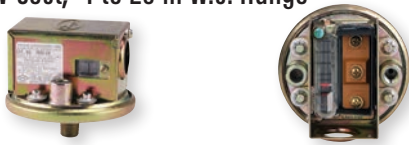
Unlisted Model 1635 can be furnished with a special sealed snap switch for protection against high humidity, fungus and/or military applications. Similar to Model 1638 except deadband is slightly greater and some lower setpoints may not be available.

**Note:** To order, specify Model 1635-(Range No.)-MIL and required set point.

Process Tubing Options: See page 489 (Gage Tubing Accessories)

# GAS PRESSURE SWITCHES

Compact, Low Cost, 4 to 20 in w.c. Range



Reliable and convenient, the **SERIES 1996** Gas Pressure Switches serve as a compact, low cost switch for gas fired furnaces and equipment. Pressure ranges for both models are ideal for high or low gas pressure interlock. Visible set point and on-off indicators add convenience in servicing. Use either NO or NC contacts on SPDT switch. Bottom connection has both 1/8" female and 1/4" male threads for pipe nipple or coupling. Top connection vents diaphragm chamber to outside or to furnace combustion chamber. Mount switch with diaphragm in a horizontal position and gas pressure connection at bottom. Used with natural, manufactured or LP gas. **●●**

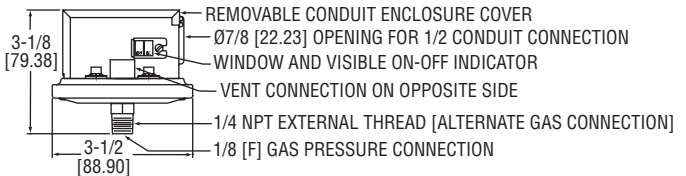
## FEATURES/BENEFITS

- Visible set point and on-off indicator simplifies operation and trouble shooting
- Compact size and low cost make it ideal for gas fired or gas equipment OEM applications

## APPLICATIONS

- Gas furnaces
- Natural, manufactured or LP gas applications

| MODEL CHART |                 |         |                 |
|-------------|-----------------|---------|-----------------|
| Model       | Range (in w.c.) | Model   | Range (in w.c.) |
| 1996-5      | 1.4 to 5.5      | 1996-20 | 4 to 20         |



## SPECIFICATIONS

**Service:** Air, natural & manufactured gas, LP gas.  
**Wetted Materials:** Consult factory.  
**Temperature Limits:** 32 to 110°F (0 to 43.3°C). -30 to 110°F (-34.4 to 43.3°C) for dry gas or dry air.  
**Pressure Limits:** 45 in w.c. (11.2 kPa) continuous; 10 psig (68.95 kPa) surge.  
**Switch Type:** SPDT.  
**Electrical Rating:** 15A @ 120-480 VAC, 60 Hz. Resistive 1/8 H.P. @ 125 VAC, 1/4 H.P. @ 250 VAC 60 Hz.  
**Electrical Connections:** 3 screw type, common, normally open, normally closed.

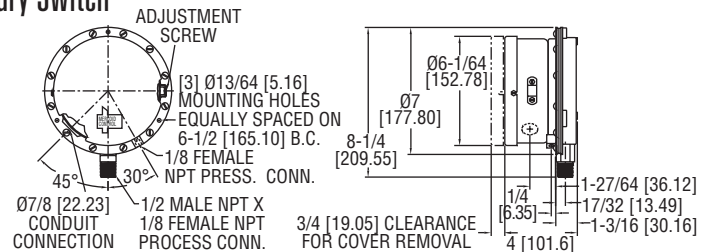
**Process Connections:** 1/8" female NPT or 1/4" male NPT.  
**Vent Connection:** 1/8" female NPT.  
**Mounting Orientation:** Diaphragm in horizontal position. Consult factory for other position orientations.  
**Set Point Adjustment:** Screw type with visible indicator, inside conduit enclosure.  
**Weight:** 1 lb 2.3 oz (349 g).  
**Agency Approvals:** CE, CSA, FM, UL.

Process Tubing Options: See page 489 (Gage Tubing Accessories)  
**●** Explosion-Proof Alternative: See page 56 (Series 1950)  
**●** Explosion-Proof Alternative: See page 56 (Series 1950G)

## SERIES PG | MERCOID BY DWYER

# GAS PRESSURE/DIFFERENTIAL PRESSURE SWITCHES

External Adjustment, Visible Dial, Hermetically Sealed Snap or Mercury Switch



Large sensitive diaphragm and reliable, time proven mechanical design are combined in **SERIES PG** pressure/differential pressure switches. For use with air and other compatible gases, they feature excellent  $\pm 1\%$  of full scale repeatability, clear easy-to-read scale and convenient external set point adjustment. Application flexibility is assured by a large variety of switching options including SPST, SPDT, DPST and DPDT; opening or closing on increasing pressure, vacuum or differential. PR and PRL models add manual reset operation on increasing or decreasing pressure. Mercury switches or hermetically sealed snap switches are available where high humidity would be a problem. If vibration or other factors preclude the use of mercury, snap switches can be provided. Standard housing is NEMA 1. Optional enclosures can be supplied for weather resistant and explosion-proof requirements.

## FEATURES/BENEFITS

- Clear easy-to-read scale and external set point adjustment simplifies operation and trouble shooting
- Large diaphragm provides accuracy for precise control
- Multiple switching options meet the design of applications

## APPLICATIONS

- Natural, manufactured or LP gas applications

| MODEL CHART |                             |                        |               |                  |                             |                     |                                      |
|-------------|-----------------------------|------------------------|---------------|------------------|-----------------------------|---------------------|--------------------------------------|
| Model       | Range                       | Max. Deadband          | Switch Type   | Model            | Range                       | Max. Deadband       | Switch Type                          |
| PG-153-P1   | 1-30 in w.c. (.25-7.47 kPa) | 1.9 in w.c. (0.47 kPa) | SPDT mercury  | PG-7000-153-P1   | 1-30 in w.c. (.25-7.45 kPa) | 4 in w.c. (1.0 kPa) | SPDT snap                            |
| PG-153-P2   | 0.5-5 psid (0.3-.345 bar)   | 0.4 psid (0.38 bar)    | SPDT mercury  | PG-7000-153-P2   | 0.5-5 psid (.03-.345 bar)   | .5 psid (.035 bar)  | SPDT snap                            |
| PG-3-P1     | 1-30 in w.c. (.25-7.47 kPa) | 1.3 in w.c. (0.32 kPa) | SPST mercury* | PG-7000-153HS-P1 | 1-30 in w.c. (.25-7.47 kPa) | 4 in w.c. (1.0 kPa) | SPDT hermetically sealed silver snap |
| PG-3-P2     | 0.5-5 psid (.03-.345 bar)   | 0.3 psid (0.21 kPa)    | SPST mercury* | PG-7000-153HG-P1 | 1-30 in w.c. (.25-7.47 kPa) | 4 in w.c. (1.0 kPa) | SPDT hermetically sealed gold snap   |

\*SPST switches shown are close on increase of pressure.

For open on increase of pressure replace 3 in middle of model number with 2. **Example:** PG-2-P1.

## SPECIFICATIONS

**Wetted Materials:** Fairprene, brass, steel, and aluminum.  
**Temperature Limits:** -10 to 180°F (-23 to 82°C).  
**Pressure Limit:** Single pressure use on high side: Sustained pressure: 15 psig (1.0 bar); Surge limit: 20 psig (1.4 bar). Differential pressure use: Sustained pressure, range P1: 2 psig (.14 bar); Sustained pressure, range P2: 10 psig (0.7 bar).  
**Enclosure Rating:** General purpose. Weatherproof and explosion-proof optional.  
**Repeatability:**  $\pm 1\%$  of full range.  
**Switch Type:** SPST mercury switch, SPDT mercury switch, SPDT snap switch, or SPDT hermetically sealed snap switch. Optional DPDT.  
**Electrical Rating:** SPDT mercury: 4A @ 120 VAC/VDC, 2A @ 240 VAC/VDC. SPST mercury: 6A @ 120 VAC/VDC, 3A

@ 240 VAC/VDC. SPDT Snap: 15A @ 120 VAC, 8A @ 240 VAC, 0.5A @ 120 VDC, 0.25A @ 240 VDC. SPDT H.S. Silver Snap: 5A @ 125/250 VAC, 30 VDC resistive. SPDT H.S. Gold Snap: 1A @ 125 VAC, 30 VDC resistive.  
**Electrical Connections:** Screw type.  
**Conduit Connection:** 7/8" (22.23 mm) hole for 1/2" (12.7 mm) conduit hub.  
**Process Connection:** 1/2" male NPT and 1/8" female NPT used for single positive pressure or high differential pressure, 1/8" female NPT used for single vacuum or low differential pressure.  
**Mounting Orientation:** Vertical.  
**Set Point Adjustment:** External screw.  
**Weight:** 4.5 lb (2 kg).  
**Deadband:** See model chart.  
**Agency Approvals:** FM, UL for mercury switch models. UL only on snap switch models.

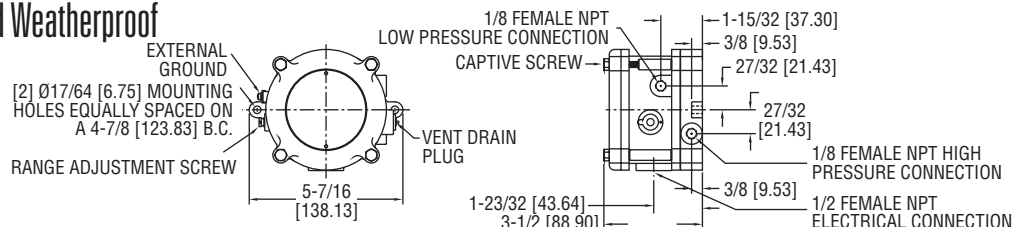
Dwyer

SERIES 1950



# EXPLOSION-PROOF DIFFERENTIAL PRESSURE SWITCH

Compact, Low Cost, Explosion-proof and Weatherproof



**SERIES 1950** Explosion-proof Differential Pressure Switch combines the best features of the popular Dwyer® Series 1900 Pressure Switch with an integral explosion-proof and weatherproof housing, making it an exceptional value for either application. It is CE, UL and CSA listed, FM approved for use in Class I, Div 1, Groups C and D, Class II Groups E, F, and G and Class III hazardous atmospheres NEMA 7 & 9. Rain tight NEMA 3 (IP54), weatherproof features include a drain plug and O-ring seal in cover. Electrical connections are easily made by removing front cover. For convenience the set point adjustment screw is located on the outside of the housing. Twelve models offer set points from .03 to 20 in w.c. (0.0075 to 5 kPa) and from .5 to 60 psi (0.035 to 3.5 bar). The unit is very light and compact - about half the weight and bulk of other explosion-proof or weatherproof switches with separate enclosures. **CAUTION:** For use only with air or compatible gases. Applications with hazardous atmospheres and a single positive pressure may require special venting.

## FEATURES/BENEFITS

- Explosion-proof and weatherproof housing provides device protection for outdoor use or harsh environment operation
- External set point screw provides easy access that simplifies making adjustments without opening or disassembling enclosure
- Easily accessible electrical connection simplifies the installation

## APPLICATIONS

- HVAC applications
- Process applications
- All-weather applications

## MODEL CHART

| Model       | Range, psid | Approximate Deadband |                | Model*      | Range*     | Approximate Deadband |                | Model      | Range, in w.c. | Approximate Deadband |                |
|-------------|-------------|----------------------|----------------|-------------|------------|----------------------|----------------|------------|----------------|----------------------|----------------|
|             |             | Min. Set Point       | Max. Set Point |             |            | Min. Set Point       | Max. Set Point |            |                | Min. Set Point       | Max. Set Point |
| 1950P-2-2F  | 0.5 to 2    | 0.3                  | 0.3            | 1950P-50-2F | 15 to 50   | 1.0                  | 1.5            | 1950-1-2F  | .4 to 1.6      | .15                  | .20            |
| 1950P-8-2F  | 1.5 to 8    | 1.0                  | 1.0            | 1950-02-2S  | .03 to .10 | .025                 | .05            | 1950-5-2F  | 1.4 to 5.5     | .30                  | .40            |
| 1950P-15-2F | 3 to 15     | 0.9                  | 0.9            | 1950-00-2F  | .07 to .15 | .04                  | .05            | 1950-10-2F | 3 to 11        | .40                  | .50            |
| 1950P-25-2F | 4 to 25     | 0.7                  | 0.7            | 1950-0-2F   | .15 to .50 | .10                  | .15            | 1950-20-2F | 4 to 20        | .40                  | .60            |

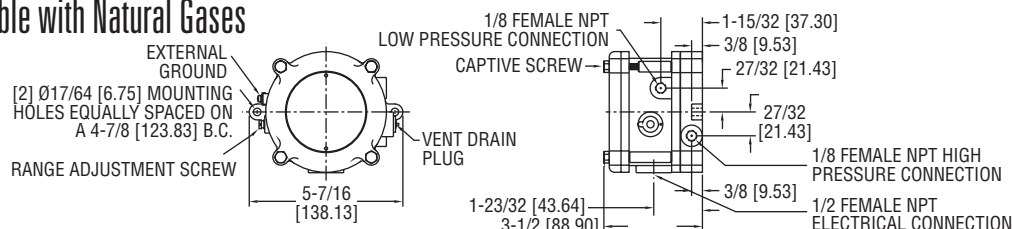
\*P=PSID range models. Other ranges in w.c.

**Caution:** For use only with air or compatible gases. Applications with hazardous atmospheres and a single positive pressure may require special venting.

## SERIES 1950G

# EXPLOSION-PROOF DIFFERENTIAL PRESSURE SWITCH

Explosion-proof, Weatherproof, Compatible with Natural Gases



**SERIES 1950G** Explosion-Proof Switch combines the best features of the popular Dwyer® Series 1950 Pressure Switch with the benefit of natural gas compatibility. Units are rain-tight for outdoor installations, and are UL listed for use in Class I, Groups A, B, C, & D; Class II, Groups E, F, & G and Class III atmospheres, Directive 2014/34/EU (ATEX) Compliant for CE Ex II 2G Exd IIB+H2 T6, CSA & FM approved for Class I, Div. 1, Groups B, C, D; Class II, Div. 1, Groups E, F, G and Class III atmospheres IECEx Ex d IIB+H2 T6 (-40°C < Ta < +60°C). The 1950G is very compact, about half the weight and bulk of equivalent conventional explosion-proof switches. Easy access to the SPDT relay and power supply terminals is provided by removing the top plate of the aluminum housing. A supply voltage of 24 VDC, 120 or 240 VAC is required. A captive screw allows the cover to swing aside while remaining attached to the unit. Adjustment to the set point of the switch can be made without disassembly of the housing.

## FEATURES/BENEFITS

- Compatible with natural gas making it suitable for use in those applications
- External set point screw provides easy access that simplifies making adjustments without opening or disassembling enclosure
- Easily accessible electrical connection simplifies the installation

## APPLICATIONS

- Natural gas applications
- Process applications
- All-weather applications

## SPECIFICATIONS

**Service:** Air and compatible combustible gases.  
**Wetted Materials:** Contact factory.  
**Temperature Limits:** 0 to 140°F (-17 to 60°C). **Note:** Set point drift may occur with ambient temperature changes.  
**Pressure Limits:** 45 in w.c. (11.2 kPa) continuous; 10 psig (68.95 kPa) surge.  
**Enclosure Rating:** NEMA 3 (IP54), NEMA 7 & 9.  
**Switch Type:** 1 Form C relay (SPDT).  
**Electrical Rating:** 10 A, 120/240 VAC, 28 VDC. Resistive 50 mA, 125 VDC.

**Power Requirements:** 24 VDC ±10%. 120 or 240 VAC ±10% optional.  
**Electrical Connections:** Internal terminal block.  
**Process Connections:** 1/8" female NPT.  
**Mounting Orientation:** Diaphragm in vertical position. Consult factory for other position orientations.  
**Set Point Adjustment:** Screw type on top of housing.  
**Weight:** 2 lb 15.7 oz (1.35 kg).  
**Agency Approvals:** ATEX, CE, CSA, FM, IECEx, UL.

## MODEL CHART

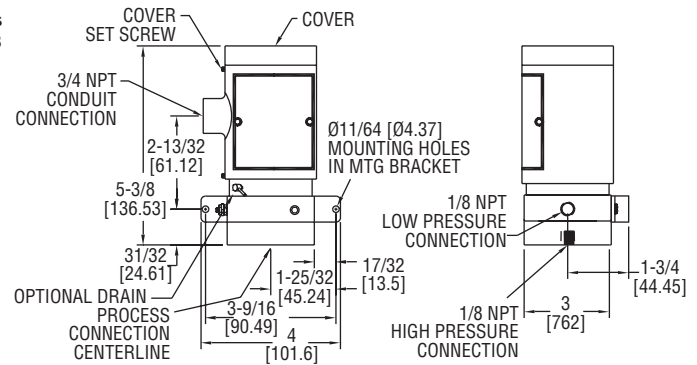
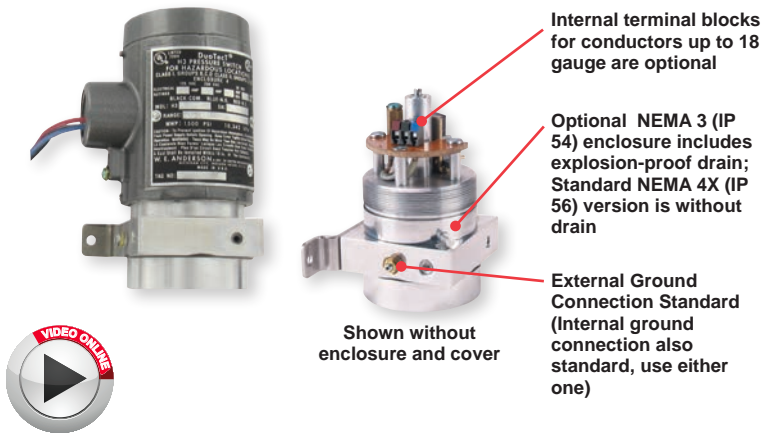
| UL, CSA, FM Model | ATEX Model    | Range in w.c. | Approximate Deadband |                |
|-------------------|---------------|---------------|----------------------|----------------|
|                   |               |               | Min. Set Point       | Max. Set Point |
| 1950G-00-B-24-NA  | 1950G-00-B-24 | .07 to .15    | .04                  | .06            |
| 1950G-0-B-24-NA   | 1950G-0-B-24  | .15 to .50    | .06                  | .11            |
| 1950G-1-B-24-NA   | 1950G-1-B-24  | .4 to 1.6     | .11                  | .29            |
| 1950G-5-B-24-NA   | 1950G-5-B-24  | 1.4 to 5.5    | .4                   | .9             |
| 1950G-10-B-24-NA  | 1950G-10-B-24 | 3 to 11       | .9                   | 1.8            |
| 1950G-20-B-24-NA  | 1950G-20-B-24 | 4 to 20       | 1.2                  | 3.0            |

240 VAC Models: 1950G-XX-B-240-NA; 120 VAC Models: 1950G-XX-B-120-NA



## EXPLOSION-PROOF DIFFERENTIAL PRESSURE SWITCHES

Setpoints from 10 in w.c. to 200 psid, Rated 1500 psig, Weatherproof



Explosion-proof **SERIES H3**, heavy duty, industrial unit has a unique new design which provides sensitivity to differential pressures as low as 10 inches of water (254 mm w.c.), yet handles total pressure of 1500 psi (103 bar). Unlike common differential pressure switches that use a piston-type motion transfer, the Series H3 utilizes a rotary motion transfer shaft that prevents a change in total pressure from causing a setpoint shift. Unit yields deadbands approximately 5% of range, with zero setpoint shift due to variation in working pressures. Friction is minimized and repeatability increased by allowing range spring to act directly on diaphragm plate. Rolling diaphragm design maintains constant effective area to further reduce friction. Diaphragm is allowed to "seat", allowing application of full rated pressure, up to 1500 psi (103 bar), on either high or low pressure port, without damage. Special over-travel feature prevents overtightening of range adjust screw. Choose optional 316SS chamber for water and water-based fluids or harsher applications.

## FEATURES/BENEFITS

- Rotary motion design prevents set point shifts
- Explosion-proof housing for use in applications where protection of process and personnel is needed
- Option for use with water and water-based solution makes this a versatile switch

## SPECIFICATIONS

**Wetted Materials:** See pressure chamber and diaphragm material in model chart.  
**Temperature Limit:** -4 to 220°F (-20 to 104°C), ATEX: -20 to 90°C (-4 to 194°F).  
**Pressure Limit:** 1500 psig (103 bar).  
**Enclosure Rating:** Standard meets NEMA 4X (IP56), drain option meets NEMA 3 (IP54). For hazardous use see the hazardous location ratings chart.  
**Switch Type:** SPDT or DPDT snap switch.  
**Electrical Rating:** 5 A @ 125/250 VAC, 30 VDC.  
**Electrical Connections:** See model chart.  
**Conduit Connection:** 3/4" female NPT.  
**Process Connection:** 1/8" female NPT.  
**Mounting Orientation:** Vertical.  
**Set Point Adjustment:** Internal screw.  
**Weight:** 4 lb 2 oz (2 kg).  
**Deadband:** Approximately 5% of range.  
**Agency Approvals:** ATEX, CE, CSA, UL see ratings chart.

## MODEL CHART

| Example  | H3 | S                | -2 | S      | C           | -MV                | H3S-2SC-MV  |
|--|----|------------------|----|--------|-------------|--------------------|---|
| Series   | H3 |                  |    |        |             |                    | Explosion-proof differential pressure switch  |
| Pressure Chamber & Diaphragm Material (Wetted) |    | A<br>S           |    |        |             |                    | Aluminum chamber with Nitrile diaphragm<br>316 SS chamber with Fluoroelastomer diaphragm  |
| Adjustable Operating Range                     |    | 1<br>2<br>3<br>4 |    |        |             |                    | 10-180 in. w.c. (2.48-44.78 kPa)<br>0.5-15 psid (0.03-1 bar)<br>5-70 psid (.34-4.8 bar)<br>10-200 psid (.7-13.8 bar)  |
| Circuit (Switch) Options                       |    |                  |    | S<br>D |             |                    | SPDT snap action switch rated 5 A @ 125/250 VAC, 30 VDC<br>DPDT snap action switch rated 5 A @ 125/250 VAC, 30 VDC  |
| Electrical Connection                          |    |                  |    |        | L<br>T<br>C |                    | 18 AWG x 18 inch lead wires<br>UL, CSA approved internal terminal block<br>ATEX approved internal terminal block  |
| Options  |    |                  |    |        |             | Drain<br>MV<br>VIT | Enclosure with drain - allows condensate to be drained from inside (meets NEMA 3 instead of 4X)<br>Gold contacts on snap switch for dry circuits rated 1 A @ 125 VAC, 1A resistive or 0.5 A inductive @ 30 VDC<br>Fluoroelastomer diaphragm option where not standard |

## ACCESSORY

| Model | Description                            |
|-------|--|
| A-610 | Pipe mounting kit for 1-1/4 to 2" pipe |

## HAZARDOUS LOCATION RATINGS

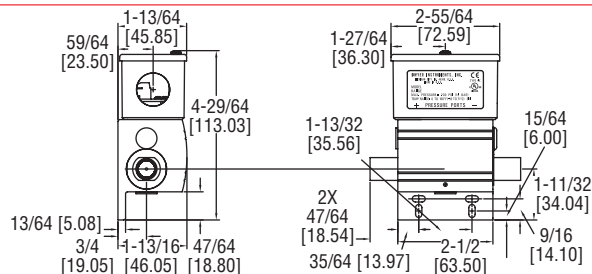
| Model            | UL  | CSA                                       | Directive 2014/34/EU ATEX Compliant   |
|------------------|---|---|---|
| H3 _ _ _ C       | -   | -   | CE 0344 Ex II 2 G EEx d IIB -20°C ≤ T amb ≤ 75°C T6<br>EC-Type Certificate No. KEMA 03ATEX 2584 |
| H3 _ _ _ L       | Cl. I, Gr.B, C & D<br>Cl. II, Gr.E, F & G | Cl. I, Gr.B, C & D<br>Cl. II, Gr.E, F & G | -   |
| H3 _ _ _ T       | Cl. I, Gr.B, C & D<br>Cl. II, Gr.E, F & G | Cl. I, Gr.B, C & D<br>Cl. II, Gr.E, F & G | -   |
| H3 _ _ _ C-DRAIN | -   | -   | CE 0344 Ex II 2 G EEx d IIB -20°C ≤ T amb ≤ 75°C T6<br>EC-Type Certificate No. KEMA 03ATEX 2584 |
| H3 _ _ _ L-DRAIN | Cl. I, Gr.B, C & D<br>Cl. II, Gr.E, F & G | -   | -   |



**Dwyer**  
SERIES DX

# WET/WET DIFFERENTIAL PRESSURE SWITCH

## NEMA 4X Enclosure, Low Differential Set Points



The **SERIES DX** is a differential pressure switch that makes a contact output based on the differential between two pressure sources. Wetted materials of brass and fluoro-elastomer are suitable for use with most gases and water based solutions. The switch can be used for low differential pressure indication with set point on a decrease of pressure as low as 1 psid (0.07 bar). Differential set point ranges are available from 2.5 to 75 psid (0.17 to 5.17 bar) on increasing differential pressure and 1.0 to 67 psid (0.07 to 4.62 bar) on decreasing differential pressure. Unit features a high static pressure rating of 200 psig (13.8 bar). Weatherproof, UL type 4X, enclosure for dust laden, outdoor, or wash-down installation environments. Externally adjustable set point, integral mounting flange and a removable electrical terminal block for quick and easy installation.

### FEATURES/BENEFITS

- Differential pressure switch that is suitable for most gas and water-based applications allows multiple uses in the most sophisticated designs
- Weatherproof housing provides protection in the harsh, wet or dirty environments ensuring switch's long-service life
- Removable terminal block reduces installation time

### APPLICATIONS

- Indicating filter differential pressure
- Proof of flow indicator monitoring
- Proving flow through a pump
- Proving flow through a chiller
- Proving flow through a heat pump or AC unit

| OPTION                       |             |
|------------------------------|-------------|
| To order add suffix:         | Description |
| -PRESET                      | Preset unit |
| Example: DXW-11-153-1-PRESET |             |

### SPECIFICATIONS

**Service:** Compatible gases and liquids.  
**Wetted Materials:** Connection: Brass; Diaphragm: Fluoroelastomer.  
**Temperature Limits:** 30 to 140°F (-1 to 60°C).  
**Pressure Limits:** 200 psig (13.8 bar). Continuous single side only pressure should not exceed 1.25 x full differential range.  
**Enclosure Rating:** Weatherproof UL type 4X (IP65).  
**Repeatability:** ±2% of full range.  
**Switch Type:** SPDT snap switch.  
**Electrical Rating:** 5 A @ 125/250 VAC (~), 5 A res. @ 30 VDC (---).  
**Electrical Connection:** Removable terminal block.  
**Conduit Connection:** 0.871" diameter hole for 1/2" conduit fitting.

**Process Connection:** 1/4" NPT female.  
**Mounting Orientation:** Ports on horizontal plane, ±10°.  
**Set Point Adjustment:** External screw.  
**Housing Materials:** Body: Aluminum; Housing: Polycarbonate; Cover: 300 SS.  
**Vibration and Shock:** Set point repeats after 2.5 Gs, 5 to 500 Hz. Set point repeats after a 15 Gs, 10 millisecond duration.  
**Altitude Limit:** 6560 ft (2000 m).  
**Humidity Limit:** 80% (non-condensing).  
**Pollution Degree:** 2.  
**Environment:** Intended for indoor and outdoor use.  
**Weight:** 1 lb 3 oz (0.54 kg).  
**Agency Approvals:** CE, cULus.

### MODEL CHART

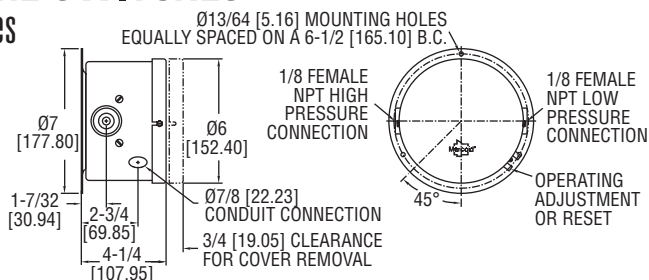
| Model        | Adjustable Differential Range (on increase) [psid (bar)] | Fixed Deadband [psid (bar)] |                |
|--------------|--|-----------------------------|----------------|
|              |  | Low Set Point               | High Set Point |
| DXW-11-153-1 | 2.5 to 10 (0.17 to 0.69)                                 | 1.5 (0.10)                  | 2.5 (0.17)     |
| DXW-11-153-2 | 10 to 25 (0.69 to 1.72)                                  | 2.5 (0.17)                  | 3.5 (0.24)     |
| DXW-11-153-3 | 25 to 50 (1.72 to 3.45)                                  | 3.5 (0.24)                  | 6.0 (0.41)     |
| DXW-11-153-4 | 50 to 75 (3.46 to 5.17)                                  | 6.0 (0.41)                  | 8.0 (0.55)     |

Note: Set points on decrease will be the range minus the deadband.

## SERIES DP | MERCOID BY DWYER

# DOUBLE BELLOWS DIFFERENTIAL PRESSURE SWITCHES

## Visible Setpoints, Adjustable or Fixed Deadband, High Pressure Ranges



Two opposing bellows combine maximum sensitivity and vibration resistance at a moderate cost in the **SERIES DP** differential pressure switches. Both set and reset points are easily adjustable through non-interactive, externally accessible controls. Visible setpoint indicators simplify changes. SPDT snap action switch, 316 stainless steel or brass bellows, flanged steel housing. Rated pressures to 600 psig.

### FEATURES/BENEFITS

- Bellows switch design provides sensitivity to pressure changes but resists vibration preventing out of range switching
- External access to set and reset controls makes for easy adjustments
- Visible set point indicators simplify changes

### APPLICATIONS

- Accurate switch triggers in high pressure applications

### SPECIFICATIONS

**Wetted Materials:** Brass on ranges 61, 62, 63 or 316 SS on ranges 62E, 64E, 65E.  
**Temperature Limits:** -10 to 180°F (-23 to 82°C).  
**Pressure Limit:** Maximum pressure of the operating range.  
**Enclosure Rating:** General purpose. Weatherproof or explosion-proof optional.  
**Switch Type:** Snap switch. (Contact factory for mercury switch).  
**Electrical Rating:** See model chart.  
**Electrical Connection:** Screw terminal.

**Conduit Connection:** General purpose: 1/2" hole for conduit hub; Weatherproof: 1/2" conduit hub; Explosion-proof: 3/4" female NPT.  
**Process Connection:** General purpose and weatherproof: 1/8" female NPT, explosion-proof: 1/4" male NPT.  
**Mounting Orientation:** Vertical.  
**Set Point Adjustment:** Thumbscrew.  
**Weight:** General purpose: 5 lb (2.3 kg), weatherproof: 7 lb (3 kg), explosion-proof: 25 lb (11 kg).  
**Deadband:** See model chart.  
**Agency Approvals:** CE, cULus.

### MODEL CHART

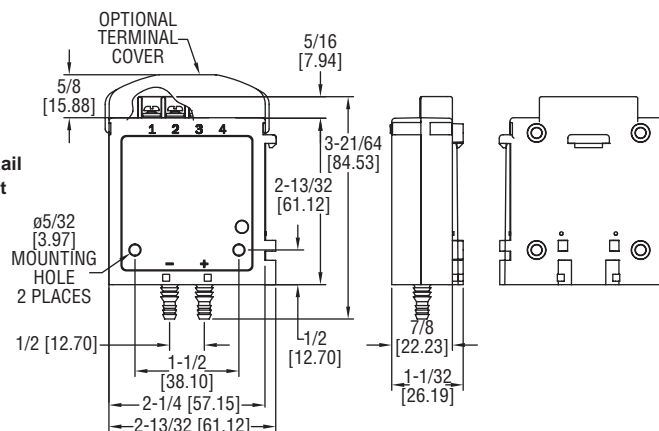
| Bellows Material | Range, psid (bar) | Max. Press, psig (bar) | Adjustable Deadband  |                  | Fixed Deadband        |                  |
|------------------|-------------------|------------------------|----------------------|------------------|-----------------------|------------------|
|                  |                   |                        | Min. D.B. psid (bar) | Model            | Fixed D.B. psid (bar) | Model            |
| Brass            | 0-10 (0-0.7)      | 50 (3.5)               | 1.5 (.10)            | DPA-7033-153-61  | 0.5 (.03)             | DPS-7233-153-61  |
| Brass            | 0-20 (0-1.4)      | 100 (6.9)              | 2.5 (.17)            | DPA-7033-153-62  | 1.0 (.07)             | DPS-7233-153-62  |
| Brass            | 0-30 (0-2.1)      | 300 (20.7)             | 6.0 (.41)            | DPA-7033-153-64  | 1.5 (.10)             | DPS-7233-153-64  |
| 316SS            | 0-20 (0-1.4)      | 100 (6.9)              | 3.0 (.21)            | DPA-7043-153-62E | 1.5 (.10)             | DPS-7243-153-62E |
| 316SS            | 0-30 (0-2.1)      | 300 (20.7)             | 6.0 (.41)            | DPA-7043-153-64E | 2.0 (.14)             | DPS-7243-153-64E |
| 316SS            | 0-80 (0-5.5)      | 600 (41.4)             | 20 (1.4)             | DPA-7043-153-65E | 6.0 (.41)             | DPS-7243-153-65E |

### OPTIONS

| To order add suffix:      | Description               |
|---------------------------|---------------------------|
| W                         | Weatherproof enclosure    |
| Example: DPAW-7033-153-61 |                           |
| E                         | Explosion-proof enclosure |
| Example: DPAE-7033-153-61 |                           |

# DIFFERENTIAL PRESSURE TRANSMITTER $\pm 0.25$ , $\pm 1$ , OR $\pm 2\%$ ACCURACY

## One-Touch® Digital Push-Button Calibration Technology



The **SERIES 616KD** Differential Pressure Transmitters with One-Touch® Digital Push-Button Calibration Technology are designed for simplicity, making them the ideal choice for installers and maintenance professionals. These instruments not only alleviate cumbersome turn pots typically found in most transmitters, but eliminate entirely the need to span the instruments during calibration. With a single digital push button, both ZERO AND SPAN are calibrated properly, nothing else is required. No additional reference pressure sources or separate calibration devices are necessary.

### FEATURES AND BENEFITS

- Simple calibration push-button sets back zero and span, saving time installing and over the service life
- Cost effective and compact device suitable for OEM applications where space, simplicity, and value are key
- Ranges and accuracy selection cover a wide range of applications minimizing components and determining standardizing on design

### APPLICATIONS

- Air handlers
- Duct pressure
- Variable air volume
- Filter monitoring

| MODEL CHART |       |    |      |  |
|-------------|-------|----|------|--|
| Example     | 616KD | -A | -12  | -AT  |
| Series      | 616KD |    |      | 616KD-A-12-AT  |
| Accuracy    |       | A  |      | Differential pressure transmitter                                      |
|             |       | B  |      | 0.25% full-scale accuracy  |
|             |       |    |      | 1.0% full-scale accuracy   |
|             |       |    |      | 2.0% full-scale accuracy   |
| Range       |       |    | 00   | 0 to 1 in w.c.   |
|             |       |    | 01   | 0 to 2 in w.c.   |
|             |       |    | 02   | 0 to 3 in w.c.   |
|             |       |    | 03   | 0 to 5 in w.c.   |
|             |       |    | 04   | 0 to 10 in w.c.  |
|             |       |    | 05   | 0 to 15 in w.c.  |
|             |       |    | 06   | 0 to 20 in w.c.  |
|             |       |    | 07   | 0 to 25 in w.c.  |
|             |       |    | 08   | 0 to 40 in w.c.  |
|             |       |    | 10   | 0 to 250 Pa  |
|             |       |    | 11   | 0 to 500 Pa  |
|             |       |    | 12   | 0 to 750 Pa  |
|             |       |    | 13   | 0 to 1250 Pa   |
|             |       |    | 14   | 0 to 2500 Pa   |
|             |       |    | 15   | 0 to 5000 Pa   |
|             |       |    | 50   | 0 to $\pm 1$ in w.c.   |
|             |       |    | 51   | 0 to $\pm 2$ in w.c.   |
|             |       |    | 57   | 0 to $\pm 3$ in w.c.   |
|             |       |    | 52   | 0 to $\pm 5$ in w.c.   |
|             |       |    | 53   | 0 to $\pm 10$ in w.c.  |
|             |       |    | 54   | 0 to $\pm 250$ Pa  |
|             |       |    | 55   | 0 to $\pm 500$ Pa  |
|             |       |    | 56   | 0 to $\pm 750$ Pa  |
|             |       |    | 58   | 0 to $\pm 1250$ Pa   |
| Options     |       |    | AT   | Aluminum tag   |
|             |       |    | FC   | Factory calibration  |
|             |       |    | NIST | NIST certification   |
|             |       |    | TC   | Terminal cover   |
|             |       |    | V    | Voltage output 0 to 5, 1 to 5, 0 to 10, 2 to 10 VDC (field selectable) |

**Note:** 0.25% FS accuracy is not available in the following ranges 00, 01, 10, 11.

### SPECIFICATIONS

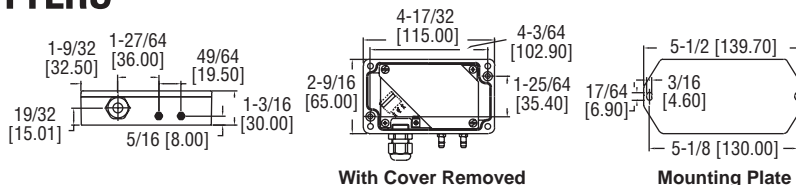
**Service:** Air and non-combustible, compatible gases.  
**Wetted Materials:** Consult factory.  
**Accuracy:** 616KD-A:  $\pm 0.25\%$  FS; 616KD-B:  $\pm 1\%$  FS, 616KD:  $\pm 2\%$  FS.  
**Stability:**  $\pm 1\%$  FS/year.  
**Temperature Limits:** 0 to 140°F (-17.8 to 60°C).  
**Compensated Temperature Range:** 20 to 122°F (-6.67 to 50°C).  
**Pressure Limits:** 2 psig (ranges 5 in w.c. or lower); 5 psig (ranges 10 to 40 in w.c.).  
**Thermal Effect:** 616KD-A:  $\pm 0.02\%$  FS/°F; 616KD-B:  $\pm 0.04\%$  FS/°F; 616KD:  $\pm 0.06\%$  FS/°F, includes zero and span.  
**Power Requirements:** 4-20 mA output: 10 - 35 VDC (2 wire) or 12-26 VAC (4 wire); 5V output: 10 - 35 VDC (3 wire) or 12-26 VAC (4 wire).  
**Output Signal:** 4 to 20 mA or option with field selectable 0-10, 0-5, 2-10, 1-5 volts.  
**Zero and Span Adjustments:** Push button.  
**Loop Resistance:** 4-20 mA output (DC): 0 - 1250  $\Omega$  max.  $R_{max} = 50(V_{psDC} - 10) \Omega$ ; 4-20 mA output (AC): 0 - 1200  $\Omega$  max.  $R_{max} = 50(1.4 V_{psAC} - 12) \Omega$ ; Voltage output: 5K  $\Omega$  minimum.  
**Current Consumption:** 24 mA max.  
**Warm Up time:** 20 minutes.  
**Electrical Connections:** Screw-type terminal block.  
**Process Connections:** Barbed, dual size to fit 1/8" & 3/16" (3 mm and 5 mm) ID rubber or vinyl tubing.  
**Enclosure Rating:** NEMA 1 (IP20).  
**Mounting Orientation:** Vertical with pressure connections pointing down.  
**Weight:** 1.8 oz (51 g).  
**Agency Approvals:** CE.

### ACCESSORY

| Model | Description           |
|-------|-----------------------|
| A-360 | Aluminum DIN rail 1 m |

## DIFFERENTIAL PRESSURE TRANSMITTERS

NEMA 4 Enclosure with Integral Mounting Bracket



**SERIES 677B** Differential Pressure Transmitters are designed to measure pressures as low as 0.1 in w.c. with  $\pm 0.4\%$  accuracy. Use Series 677B for building energy management systems, environmental pollution control, oven pressurization, lab and fume hood control, HVAC and VAV applications. The transmitter features 15 psid overpressure, reverse polarity protection and EMI/RFI protection. Internal regulation permits use with unregulated DC power supplies. The NEMA 4 housing allows for versatile mounting locations and integral mounting tabs simplify installation.

## FEATURES/BENEFITS

- NEMA 4 housing enables a range of use outdoor or indoor where water is present
- High accuracy at low pressure ranges provides exceptional measurement for insuring tight-control and minimizing costly out of specification conditions
- Use with unregulated DC power permits easy access to electrical supply reducing costly power conditioning and wiring

## APPLICATIONS

- Building energy management
- Environmental pollution control
- Lab and fume hood control
- Variable air volume

## MODEL CHART

| Model   | Range (in w.c.) | Model   | Range (in w.c.) |
|---------|-----------------|---------|-----------------|
| 677B-01 | 0 to 0.1        | 677B-08 | 0 to 25         |
| 677B-02 | 0 to 0.25       | 677B-11 | 0 to $\pm 0.05$ |
| 677B-03 | 0 to 0.5        | 677B-12 | 0 to $\pm 0.1$  |
| 677B-04 | 0 to 1          | 677B-13 | 0 to $\pm 0.25$ |
| 677B-05 | 0 to 2.5        | 677B-14 | 0 to $\pm 0.5$  |
| 677B-06 | 0 to 5          | 677B-15 | 0 to $\pm 1$    |
| 677B-07 | 0 to 10         |         |                 |

## SPECIFICATIONS

**Service:** Air and non-conductive, non-corrosive gases.  
**Wetted Materials:** 302 SS, glass, nickel, silicone rubber and brass.  
**Accuracy:**  $\pm 0.4\%$  FS\* at room temperature.  
**Stability:**  $\pm 1\%$  FS/yr.  
**Temperature Limits:** Operating and Compensated: 0 to 185°F (-18 to 85°C); Storage: -65 to 220°F (-54 to 105°C).  
**Pressure Limit:** 15 psi (100 kPa).  
**Thermal Effects:** (Includes zero and span)  $< 0.028\%$  FS/°F, 0 to 185°F (-18 to 85°C).

**Power Requirement:** 16 to 32 VDC.  
**Output:** 4 to 20 mA DC, 2-wire.  
**Zero and Span Adjustments:** Internally accessible potentiometers, non-interactive.  
**Response Time:** Approximately 10 ms.  
**Max. Loop Resistance:** DC: 0 to 800  $\Omega$ .  
**Process Connection:** 3/16" OD barbed brass pressure fitting.  
**Enclosure Rating:** NEMA 4 (IP65).  
**Weight:** 11.5 oz (330 g).  
**Agency Approvals:** CE.

\*RSS (Root Sum Square) includes non-linearity, hysteresis and non-repeatability.

## ACCESSORIES

| Model    | Description  |
|----------|--|
| A-489    | 4" straight static pressure tip with flange  |
| A-302F-A | 303 SS static pressure tip with mounting flange; for 3/16" ID rubber or plastic tubing; 4" insertion depth; includes mounting screws |

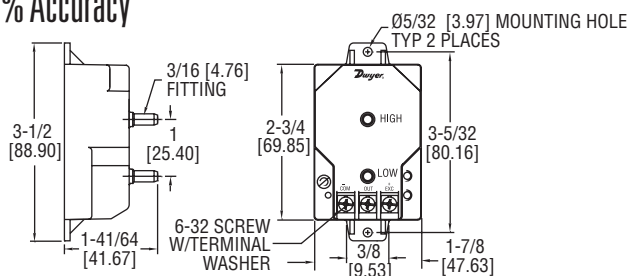
## OPTION

| Use order code: | Description                            |
|-----------------|--|
| NISTCAL-PT1     | NIST traceable calibration certificate |

Process Tubing Options: See page 489 (Gage Tubing Accessories)

## SERIES 668

## COMPACT DIFFERENTIAL PRESSURE TRANSMITTER

Ranges from 0 to 0.25 in w.c., Overpressure Protection to 10 psig,  $\pm 1\%$  Accuracy

Our low cost **SERIES 668** Differential Pressure Transmitter is capable of measuring low pressures with a  $\pm 1\%$  accuracy - ideally suited for proper building pressurization and air flow control. Transmitters can withstand up to 10 psig overpressure with no damage to the unit. Variable capacitance sensor design provides excellent sensitivity and long-term stability. Compact, lightweight design makes installation simple and easy. Units also feature reverse-polarity protection.

## FEATURES/BENEFITS

- Good accuracy at low pressure ranges provides exceptional value for ensuring control and minimizing costly out of specification conditions
- High overpressure rating eliminates possible damage to unit reducing unnecessary service time

## APPLICATIONS

- Variable air volume systems
- Building management
- HVAC

## MODEL CHART

| Model | Range             | Bi-Directional Model | Range                   |
|-------|-------------------|----------------------|-------------------------|
| 668-1 | 0 to 0.25 in w.c. | 668-10               | 0 to $\pm 0.1$ in w.c.  |
| 668-2 | 0 to 0.5 in w.c.  | 668-11               | 0 to $\pm 0.25$ in w.c. |
| 668-3 | 0 to 1 in w.c.    | 668-14               | 0 to $\pm 2.5$ in w.c.  |
| 668-4 | 0 to 2.5 in w.c.  | 668-17               | 0 to $\pm 25$ in w.c.   |
| 668-5 | 0 to 5.0 in w.c.  |                      |                         |
| 668-6 | 0 to 10 in w.c.   |                      |                         |
| 668-7 | 0 to 25 in w.c.   |                      |                         |
| 668-8 | 0 to 50 in w.c.   |                      |                         |
| 668-9 | 0 to 100 in w.c.  |                      |                         |

**Note:** To order unit with conduit cover, add C to model number.  
**Example:** 668C-1. Consult factory for additional information.

## SPECIFICATIONS

**Service:** Air and non-conductive gases.  
**Accuracy:**  $\pm 1\%$  of full-scale (RSS) (includes non-linearity, hysteresis, and non-repeatability).  
**Temperature Limits:** Operating: 0 to 150°F (-18 to 65°C); Storage: -40 to 185°F (-40 to 85°C).  
**Pressure Limits:** 10 psig (0.69 bar).  
**Compensated Temperature Range:** 0 to 150°F (-18 to 65°C).  
**Thermal Effects:** 0.033% FS/°F (0.018% FS/°C).  
**Supply Voltage:** 12 to 30 VDC.

**Output:** 4 to 20 mA, 2-wire.  
**Zero and Span Adjust:**  $\pm 1$  mA, non-interactive.  
**Response Time:**  $< 60$  ms.  
**Loop Resistance:** 0 to 800  $\Omega$ .  
**Electrical Connection:** Terminal strip.  
**Pressure Connection:** 3/16" OD fitting for 1/4" ID tubing.  
**Housing:** Fire retardant glass filled polyester.  
**Weight:** 3 oz (85 g).  
**Agency Approvals:** CE.

## ACCESSORIES

| Model    | Description  |
|----------|--|
| A-489    | 4" straight static pressure tip with flange  |
| A-302F-A | 303 SS static pressure tip with mounting flange; for 3/16" ID rubber or plastic tubing; 4" insertion depth; includes mounting screws |

## OPTION

| Use order code: | Description                            |
|-----------------|--|
| NISTCAL-PT1     | NIST traceable calibration certificate |

Process Tubing Options: See page 489 (Gage Tubing Accessories)



# COMPACT DIFFERENTIAL PRESSURE TRANSMITTER

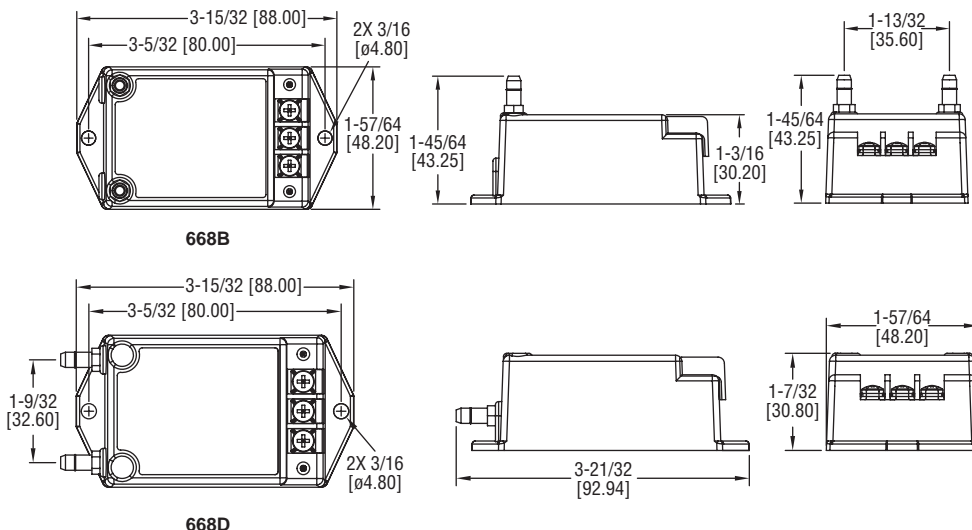
Ranges from 0.1 to 100 in w.c., Overpressure Protection to 15 psig,  $\pm 0.8\%$  Accuracy



668B



668D



Our low cost **SERIES 668B/D** Compact Differential Pressure Transmitters are capable of sensing differential gage pressure with  $\pm 0.8\%$  FS accuracy, and converts this pressure difference to a proportional high level analog output for both unidirectional and bi-directional pressure ranges. These transmitters can withstand up to 15 psig overpressure with no damage to the unit. The compact, lightweight design makes installation simple and easy. Units are protected against incorrect wiring, and include a protective terminal cover.

## FEATURES/BENEFITS

- Protection from 15 psi overpressure & incorrect wiring
- High accuracy at low pressure ranges
- Two package selections allows easy device mounting to best fit application pressure connections

## APPLICATIONS

- HVAC and VAV control
- Clean rooms and isolation rooms
- Duct static pressure measurement

## SPECIFICATIONS

**Service:** Air and non-conductive gases.  
**Accuracy:**  $\pm 0.8\%$  FS.  
**Temperature Limits:** Operating: 0 to 170°F (-18 to 77°C); Storage: -40 to 185°F (-40 to 85°C).  
**Pressure Limits:** 15 psig (1.0 bar).  
**Thermal Effects:**  $\pm 0.03\%$  FS/°F ( $\pm 0.054\%$  FS/°C).  
**Compensated Range:** From 40 to 170°F (4.4 to 77°C).  
**Power Requirements:** 12 to 32 VDC.  
**Output Signals:** 4 to 20 mA (2-wire), 0 to 10 VDC (3-wire), or 0 to 5 VDC (3-wire).  
**Zero Adjustment:** Accessible under the small terminal cover.  
**Electrical Connection:** Terminal strip.  
**Process Connection:** 3/16" OD barbed brass for 1/8" ID push-on tubing.  
**Enclosure:** Stainless steel and PC+ABS alloy, UL 94 V-0 rated.  
**Weight:** 4.0 oz (113 g).  
**Agency Approvals:** CE.

| MODEL CHART                    |     |    |     |   |
|--------------------------------|-----|----|-----|---|
| Example                        | 668 | B  | -08 | -1 668B-08-1                              |
| Series                         | 668 |    |     | Compact differential pressure transmitter |
| Connection                     |     | B  |     | Front                                     |
|                                |     | D  |     | Bottom                                    |
| Unidirectional Pressure Ranges |     | 01 |     | 0 to 0.1 in w.c.                          |
|                                |     | 21 |     | 0 to 0.2 in w.c.                          |
|                                |     | 02 |     | 0 to 0.25 in w.c.                         |
|                                |     | 22 |     | 0 to 0.4 in w.c.                          |
|                                |     | 03 |     | 0 to 0.5 in w.c.                          |
|                                |     | 04 |     | 0 to 1 in w.c.                            |
|                                |     | 05 |     | 0 to 2.5 in w.c.                          |
|                                |     | 06 |     | 0 to 5 in w.c.                            |
|                                |     | 07 |     | 0 to 10 in w.c.                           |
|                                |     | 08 |     | 0 to 25 in w.c.                           |
| Bi-directional Pressure Ranges |     | 09 |     | 0 to 50 in w.c.                           |
|                                |     | 10 |     | 0 to 100 in w.c.                          |
|                                |     | 12 |     | 0 to $\pm 0.1$ in w.c.                    |
|                                |     | 13 |     | 0 to $\pm 0.25$ in w.c.                   |
|                                |     | 14 |     | 0 to $\pm 0.5$ in w.c.                    |
|                                |     | 15 |     | 0 to $\pm 1$ in w.c.                      |
|                                |     | 16 |     | 0 to $\pm 2.5$ in w.c.                    |
|                                |     | 17 |     | 0 to $\pm 5$ in w.c.                      |
|                                |     | 18 |     | 0 to $\pm 10$ in w.c.                     |
|                                |     | 19 |     | 0 to $\pm 25$ in w.c.                     |
| Output                         |     | 1  |     | 4 to 20 mA                                |
|                                |     | 2  |     | 0 to 10 VDC                               |
|                                |     | 3  |     | 0 to 5 VDC                                |

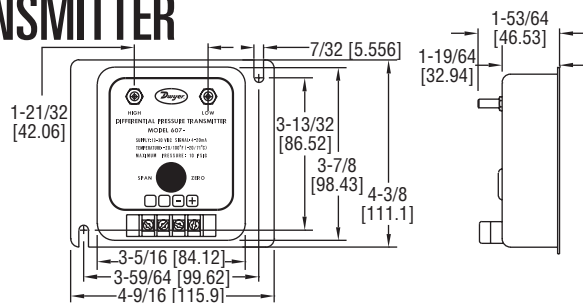
| ACCESSORY |                                       |
|-----------|---------------------------------------|
| Model     | Description                           |
| A-TC      | Replacement protective terminal cover |



| OPTION          |  |
|-----------------|--|
| Use order code: | Description                            |
| NISTCAL-PT1     | NIST traceable calibration certificate |

# LOW RANGE DIFFERENTIAL PRESSURE TRANSMITTER

$\pm 0.25\%$  or  $\pm 0.5\%$  Full Scale Accuracy, Ranges from 0 to 0.1 in w.c.



**SERIES 607** Differential Pressure Transmitter combines very low ranges with exceptional stability, reliability and either  $\pm 0.25\%$  or  $\pm 0.5\%$  accuracy for the most demanding applications. Ranges from 0-0.1" to 0-25 in w.c. Ultra-thin glass clad silicon diaphragm design resists shock and vibration, practically eliminates drift. Certification to NIST standards is included with each unit. Tough stainless steel housing is NEMA 2 rated to protect against moisture and dirt. Use with air and other compatible gases.

## FEATURES/BENEFITS

- High stability at low pressure ranges provides exceptional accuracy for ensuring tight-control and minimizing costly out of specification conditions
- Provides sensitivity to pressure changes but resists vibration preventing drift and less accurate readings
- Stainless steel housing meets standards for lab and clean room applications

## APPLICATIONS

- Leak detection
- Clean room control
- Lab and fume hood pressure control

## MODEL CHART

| Model   | Range (in w.c.) | Model   | Range (in w.c.) |
|---------|-----------------|---------|-----------------|
| 607-0   | 0 to .10        | 607-71* | 0 to $\pm 5.0$  |
| 607-01* | 0 to .10        | 607-8   | 0 to $\pm 10$   |
| 607-1   | 0 to .25        | 607-0B  | 0 to $\pm 10$   |
| 607-11* | 0 to .25        | 607-1B  | 0 to $\pm 25$   |
| 607-2   | 0 to .50        | 607-2B  | 0 to $\pm 50$   |
| 607-21* | 0 to .50        | 607-9   | 0 to 25         |
| 607-3   | 0 to 1.0        | 607-3B  | 0 to $\pm 1.0$  |
| 607-4   | 0 to 2.0        | 607-4B  | 0 to $\pm 2.0$  |
| 607-7   | 0 to 5.0        | 607-7B  | 0 to $\pm 5.0$  |

\*Models have a  $\pm 0.25\%$  FS accuracy.

## SPECIFICATIONS

**Service:** Air and non-conductive, non-corrosive gases.

**Wetted Materials:** Contact factory.

**Accuracy:**  $\pm 0.5\%$  or  $\pm 0.25\%$  FS.

**Stability:**  $\pm 0.5\%$  FS/yr.

**Temperature Limits:** -20 to 160°F

(-29 to 71°C), 10 to 95% RH.

**Pressure Limits:** 10 psig (0.69 bar).

**Compensated Temp. Range:** 35 to 135°F (2 to 57°C).

**Thermal Effects:**  $\pm 0.015\%$  FS/°F (zero and span).

**Power Requirements:** 12 to 36 VDC.

**Output Signal:** 4 to 20 mA DC, 2-wire.

**Zero & Span Adjustments:** Externally accessible potentiometers, non-interactive,  $\pm 10\%$  FS adjustment.

**Response Time:** 250 msec max.

**Loop Resistance:** 0 to 1045  $\Omega$

$V_{min} = 12V + [(0.22A)(RL)]$ .

**Current Consumption:** 3.6 mA (min).

**Electrical Connection:** Screw terminals.

**Process Connection:** Barbed stainless steel for 3/16" ID tubing.

**Housing:** 300 Series SS (NEMA 2, IP11).

**Weight:** 1.04 lb (472 g).

**Agency Approvals:** CE.

## ACCESSORY

| Model    | Description  |
|----------|--|
| A-302F-A | 303 SS static pressure tip with mounting flange; for 3/16" ID rubber or plastic tubing; 4" insertion depth; includes mounting screws |

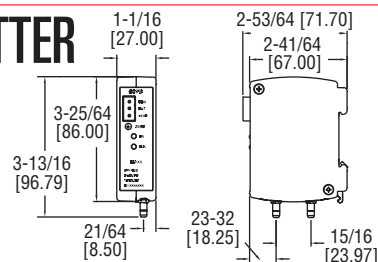
## OPTION

| Use order code: | Description                            |
|-----------------|--|
| NISTCAL-PT1     | NIST traceable calibration certificate |

## SERIES 607D

# DIN RAIL MOUNT DIFFERENTIAL PRESSURE TRANSMITTER

Mounts on 35 mm DIN Rail, LED Status Indication,  $\pm 0.25\%$  Full Scale Accuracy



**SERIES 607D** DIN Rail Mount Differential Pressure Transmitter senses the pressure of air and compatible gases and sends a standard 4 to 20 mA output signal. The 607D housing is specifically designed to mount on a 35 mm DIN rail in a panel. This mounting style allows for several units to be mounted closely together reducing required space. A wide range of models are available factory calibrated to 0.25% full scale accuracy in ranges from the very low 0.1 in w.c. to 25 in w.c. The span and zero controls are for field calibration. Units also include red/green LED status of proper transmitter operation. Versatile circuit design enables operation in 2-wire current loops.

## FEATURES/BENEFITS

- High accuracy at low pressure ranges provides exceptional measurement for insuring tight-control and minimizing costly out of specification conditions
- DIN mountable allows use in control panels for easy access to electrical supply reducing costly cabling
- Visual LED indicators provides quick status on transmitter operation saving troubleshooting time

## APPLICATIONS

- HVAC
- Clean room control
- Filter status

## MODEL CHART

| Model   | Range (in w.c.) | Model   | Range (in w.c.) |
|---------|-----------------|---------|-----------------|
| 607D-01 | 0 to 0.1        | 607D-08 | 0 to 25         |
| 607D-02 | 0 to 0.25       | 607D-11 | 0 to $\pm 0.05$ |
| 607D-03 | 0 to 0.5        | 607D-12 | 0 to $\pm 0.1$  |
| 607D-04 | 0 to 1          | 607D-13 | 0 to $\pm 0.25$ |
| 607D-05 | 0 to 2.5        | 607D-14 | 0 to $\pm 0.5$  |
| 607D-06 | 0 to 5          | 607D-15 | 0 to $\pm 1$    |
| 607D-07 | 0 to 10         |         |                 |

## SPECIFICATIONS

**Service:** Air and non-conductive, non-corrosive gases.

**Wetted Materials:** 302 SS, glass, nickel, silicone rubber and brass.

**Accuracy:**  $\pm 0.25\%$  FS\* at room temperature. \*RSS includes non-linearity, hysteresis and non-repeatability.

**Stability:**  $\pm 1\%$  FS/yr.

**Temperature Limits:** Operating and compensated: 0 to 170°F (-18 to 77°C);

Storage: -65 to 185°F (-54 to 85°C).

**Pressure Limits:** 15 psi (100 kPa).

**Thermal Effects:** (Includes zero and span)  $\pm 0.01$  FS/°F, 20 to 170°F (-7 to 77°C).

**Power Requirements:** 16 to 32 VDC.

**Output Signal:** 4 to 20 mA.

**Zero Adjustment:** Potentiometer for zero.

**Response Time:** Approximately 10 ms.

**Max. Loop Resistance:** DC: 0 to 800  $\Omega$ .

**Electrical Connections:** Screw-type removable terminal block.

**Process Connections:** Barbed fittings for 1/8" (3.12 mm) ID rubber or vinyl tubing.

**Mounting Orientation:** Vertical, on a 1.378" (35 mm) DIN rail.

**Weight:** 7.0 oz (198 g).

**Agency Approvals:** CE.

## ACCESSORY

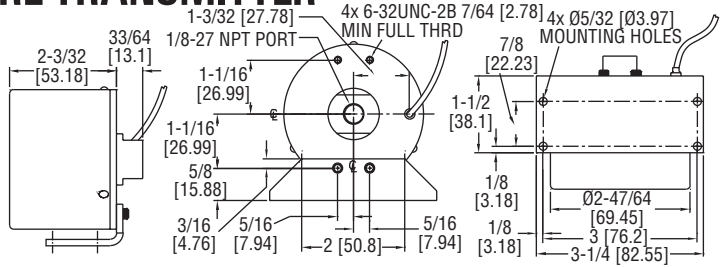
| Model | Description           |
|-------|-----------------------|
| A-360 | Aluminum DIN rail 1 m |

## OPTION

| Use order code: | Description                            |
|-----------------|--|
| NISTCAL-PT1     | NIST traceable calibration certificate |

# HIGH ACCURACY DIFFERENTIAL PRESSURE TRANSMITTER

±0.14% FS Accuracy, NIST Certificate Included



**SERIES HADP** Differential Pressure Transmitter combines low ranges with exceptional stability, reliability and an outstanding accuracy of ±0.14% FS. All models come with NIST certificates and are available in unidirectional and bi-directional ranges as low as 0 to 0.5 in w.c. and 0 to 5 psid. The Series HADP transmitters are extremely stable allowing for use in the most demanding applications.

## FEATURES/BENEFITS

- High stability at low pressure ranges provides exceptional accuracy for ensuring tight-control and minimizing costly out of specification conditions
- Fast warm-up and response means no lag in monitoring and control that can cause time consuming false alarm conditions

## APPLICATIONS

- Clean rooms
- Medical instruments
- Leak detection
- Energy management
- Environmental testing

| MODEL CHART          |                    |                        |                       |
|----------------------|--------------------|------------------------|-----------------------|
| Current Output Model | Range              | Max Pressure High Port | Max Pressure Low Port |
| HADP-UC-00           | 0 to 0.5 in w.c.   | 5 psi                  | 2.5 in w.c.           |
| HADP-UC-01           | 0 to 1 in w.c.     | 7 psi                  | 5 in w.c.             |
| HADP-UC-03           | 0 to 5 in w.c.     | 20 psi                 | 25 in w.c.            |
| HADP-UC-04           | 0 to 15 in w.c.    | 50 psi                 | 75 in w.c.            |
| HADP-BC-08           | 0 to ±0.25 in w.c. | 5 psi                  | 2.5 in w.c.           |
| HADP-BC-09           | 0 to ±0.5 in w.c.  | 7 psi                  | 5 in w.c.             |
| HADP-BC-10           | 0 to ±1 in w.c.    | 10 psi                 | 12.5 in w.c.          |
| HADP-BC-12           | 0 to ±7.5 in w.c.  | 50 psi                 | 75 in w.c.            |
| HADP-UC-06           | 0 to 5 psid        | 75 psi                 | 25 psi                |
| HADP-BC-14           | 0 to ±2.5 psid     | 75 psi                 | 25 psi                |

**Note:** For voltage output models change HADP-XC-XX to HADP-XV-XX.

## SPECIFICATIONS

**Service:** Compatible non-conducting air/gas.  
**Wetted Parts:** Consult factory.  
**Accuracy:** < ±0.14% FS.  
**Stability:** < ±0.1% FS over 6 months @ 70°F (21°C).  
**Pressure Limits:** See model chart.  
**Temperature Limits:** Operating: 0 to 175°F (-18 to 71°C); Storage: -65 to 250°F (-53 to 121°C).  
**Compensated Temperature Range:** 30 to 150°F (-1 to 65°C).  
**Thermal Effect:** < ±1.0% FS/100°F.  
**Power Requirements:** 17 to 42 VDC for current models, 22 to 30 VDC for voltage models.  
**Output Signal:** 4 to 20 mA for current models, 0 to 5 VDC for voltage models.  
**Zero and Span Output:** Zero output: Factory set to within ±0.07 mA; Span output: Factory set to within ±0.07 mA.

**Loop Resistance:** Min. supply voltage (VDC) = 17 + 0.02 x Resistance of receiver plus line; Max. supply voltage (VDC) = 42 + 0.004 x Resistance of receiver plus line.  
**Zero and Span Adjustments:** None.  
**Response Time:** < 5 ms.  
**Current Consumption:** < 30 mA.  
**Electrical Connections:** 2 ft cable.  
**Process Connections:** 1/8"-27 NPT internal (both positive and negative ports).  
**Mounting Orientation:** Pressure port 90° parallel to ground.  
**Thermal Effects:** Max. zero: ±1.0 (±1.8); %FS/100°F (100°C) max.  
**Weight:** 8 oz (227 g).  
**Agency Approvals:** CE.

## OPTIONS

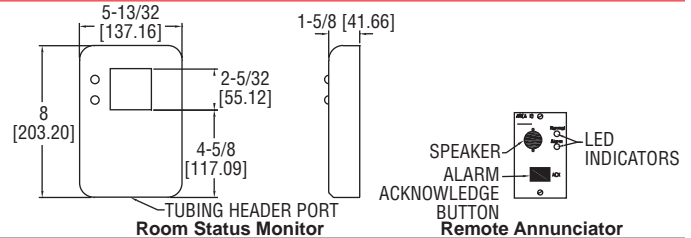
| To order add suffix: | Description                                     |
|----------------------|---|
| -T1                  | Expanded temp range -65 to 250°F (-53 to 121°C) |
| -A1                  | Improved accuracy ±0.073% FS                    |

Process Tubing Options: See page 489 (Gage Tubing Accessories)

## SERIES RSM

# ROOM STATUS MONITOR

For Sensing Low Pressure Using High Accuracy



**SERIES RSM** Room Status Monitor is designed for critical low differential pressure applications that require stringent pressure monitoring and alarming. The Series RSM can be configured to monitor positive or negative pressure in protected environments and hospital isolation rooms per CDC guidelines. The RSM is a complete system with a graphic user interface which enables access to pressure, security, calibration, and alarm setup. The RSM has a NEMA 1 (IP20) rated fire retardant plastic for indoor applications.

## FEATURES/BENEFITS

- Accurately monitor protective environments for negative or positive pressure ensuring safety and reducing risk of catastrophic events
- Audible and visual alarm provides immediate local alerts allowing corrective action to be taken quicker to eliminate the problem from becoming widespread
- Password protected set up menu helps to insure no errors by untrained personnel
- Optional BACnet communication from devices enables integration into building control system for automated control and centralized monitoring and alarming

## APPLICATIONS

- Hospital isolation wards
- Clean rooms
- Pharmaceutical
- Research labs
- Manufacturing
- Animal facilities

| MODEL CHART |                 |         |                 |
|-------------|-----------------|---------|-----------------|
| Model*      | Operating Range | Model** | Operating Range |
| RSM-1-A     | ±0.05 in w.c.   | RSM-1-B | ±0.05 in w.c.   |
| RSM-2-A     | ±0.1 in w.c.    | RSM-2-B | ±0.1 in w.c.    |
| RSM-3-A     | ±0.25 in w.c.   | RSM-3-B | ±0.25 in w.c.   |
| RSM-4-A     | ±0.5 in w.c.    | RSM-4-B | ±0.5 in w.c.    |
| RSM-5-A     | ±1 in w.c.      | RSM-5-B | ±1 in w.c.      |
| RSM-6-A     | ±2.5 in w.c.    | RSM-6-B | ±2.5 in w.c.    |

\*Excitation/Output: 24 VAC/4 to 20 mA or 0 to 5 or 0 to 10 VDC.

\*\*Excitation/Output: 120 VAC/4 to 20 mA or 0 to 5 or 0 to 10 VDC.

**Note:** For optional BACnet communication change end from -A to -C for 24 VAC power or from -B to -D for 120 VAC power models.

## SPECIFICATIONS

**Service:** Air or non-conductive, nonexplosive gases.  
**Accuracy:** ±0.5% FS.  
**Temperature Limits:** 32 to 120°F (0 to 50°C).  
**Humidity Limits:** 5 to 95% relative humidity (non-condensing).  
**Thermal Effects:** ±0.03% FS/°F (±0.05% FS/°C).  
**Pressure Limits:** ±15 in w.c. (±3.7 kPa).  
**Supply Voltage:** Order code A (24 VAC): 18 to 32 VAC, 50 to 60 Hz; Order code B (120 VAC): 85 to 265 VAC, 50 to 60 Hz; Main supply voltage fluctuations up to 10%.  
**Power Requirements:** 5 W.  
**Power Consumption (Voltage output):** 5 W.  
**Output Signal:** Selectable 4 to 20 mA (2-wire), 0 to 5 VDC (3-wire), or 0 to 10 VDC (3-wire).

**Switch Type:** SPST.  
**Loop Resistance (4 to 20 mA output):** 0 to 510 Ω.  
**Electrical Connection:** Removable terminal block.  
**Process Connections:** Barbed fittings for 3/16" ID tubing.  
**Enclosure Rating:** NEMA 1 (IP20) rated for indoor applications.  
**Housing:** Fire retardant plastic.  
**Mounting:** Mount to standard double gang metal electrical box using 4x4" plaster ring adapter.  
**Dimensions:** 8" H x 5.4" W x 1.8" D (20.3 H x 13.7 W x 4.1 D cm).  
**Weight:** 1.5 lb (680 g).  
**Communications:** BACnet MSTP ASC optional.  
**Agency Approvals:** CE, CSA (RSM only).

## ACCESSORY

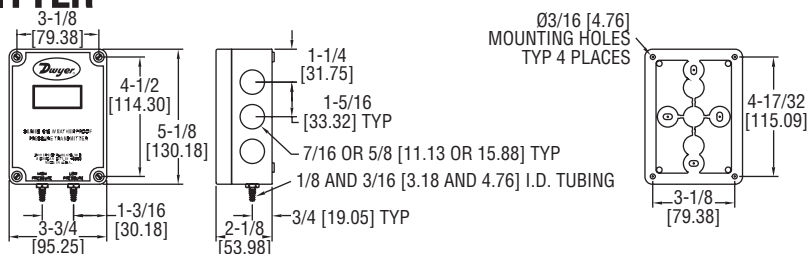
| Model | Excitation/Output  |
|-------|--|
| A-285 | Remote alarm annunciator with visible/audible alarm and acknowledge switch |

Process Tubing Options: See page 489 (Gage Tubing Accessories)



# DIFFERENTIAL PRESSURE TRANSMITTER

## NEMA 4X Enclosure, 0.25% FS Accuracy



Positive, negative and differential pressures can be measured within a full span accuracy of  $\pm 0.25$  with the **SERIES 616W** Differential Pressure Transmitter. Units are enclosed in a polycarbonate case, rated NEMA 4X (IP66) and operate by sensing the pressure of air and compatible gases then sending a standard 4-20 mA output signal. Design enables operation in 2-wire current loops. A wide range of models are available factory calibrated to specific ranges. The span and zero controls are for use when checking calibration. They are not intended for re-ranging to a significantly different span. The LCD display allows local indication of pressure.

### FEATURES/BENEFITS

- NEMA 4X rated enclosure provides protection in harsh environments permitting outdoor monitoring or in areas where dust and particulate matter exists
- Easy to read LCD display provides immediate local alerts allowing corrective action to be taken quicker to eliminate the problem from becoming widespread
- Zero and span controls provides easy calibration checks and shorter installation time to get device running and monitoring

### APPLICATIONS

- Dust collection
- Outdoor HVAC
- Roof-top equipment

| MODEL CHART  |                       |               |
|--------------|-----------------------|---------------|
| Model        | Range                 | Max. Pressure |
| 616W-2-LCD   | 0 to 6 in w.c.        | 10 psig       |
| 616W-3-LCD   | 0 to 10 in w.c.       | 10 psig       |
| 616W-4-LCD   | 0 to 20 in w.c.       | 20 psig       |
| 616W-5-LCD   | 0 to 40 in w.c.       | 20 psig       |
| 616W-6-LCD   | 0 to 100 in w.c.      | 15 psig       |
| 616W-7-LCD   | 0 to 200 in w.c.      | 45 psig       |
| 616W-20B-LCD | 0 to $\pm 10$ in w.c. | 10 psig       |
| 616W-3M-LCD  | 0 to 2.5 kPa          | 68.9 kPa      |

**Note:** Units with "M" in the model number are metric units.

### SPECIFICATIONS

**Service:** Air and non-combustible, compatible gases.  
**Wetted Materials:** Consult factory.  
**Accuracy:**  $\pm 0.25\%$  FS @ 77°F (25°C), display accuracy  $\pm 0.5\%$ .  
**Stability:**  $\pm 1\%$  FS/yr.  
**Temperature Limits:** 14 to 185°F (-10 to 85°C).  
**Pressure Limits:** See chart.  
**Power Requirements:** 10 to 35 VDC (2-wire), 17 to 36 VDC, or isolated 21.6 to 33 VAC (3-wire).  
**Output Signal:** 4 to 20 mA (2-wire), 0 to 5 VDC, or 0 to 10 VDC (3-wire).  
**Zero and Span Adjustments:** Push buttons.

**Loop Resistance:** Current output: 0 to 1250  $\Omega$  max; Voltage output: Load resistance 1 k $\Omega$  (min).  
**Current Consumption:** 40 mA (max).  
**Electrical Connections:** 3-wire removable European style terminal block for 16 to 26 AWG.  
**Process Connections:** Barbed, dual size to fit 1/8" and 3/16" (3.12 and 4.76 mm) ID rubber or vinyl tubing.  
**Enclosure Rating:** NEMA 4X (IP66).  
**Mounting Orientation:** Any orientation.  
**Weight:** Without LCD 8.8 oz. (249 g); with LCD 9.6 oz (272 g).  
**Agency Approvals:** CE.

### OPTION

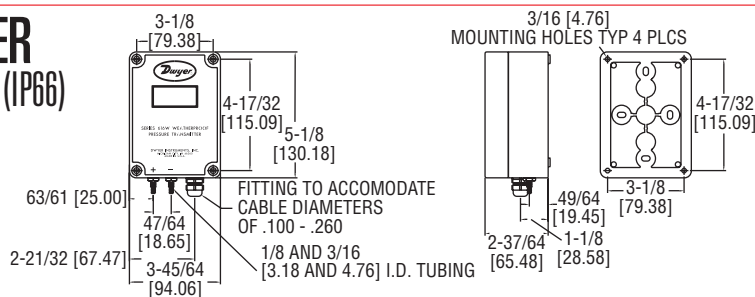
| To order add suffix:     | Description                            |
|--------------------------|--|
| -NIST                    | NIST traceable calibration certificate |
| Example: 616W-3-LCD-NIST |  |

Process Tubing Options: See page 489 (Gage Tubing Accessories)

## SERIES 616WL

# DIFFERENTIAL PRESSURE TRANSMITTER

## LOW RANGES DOWN TO 0.25 IN W.C. (60 PA), NEMA 4X HOUSING (IP66)



The **SERIES 616WL** Differential Pressure Transmitter senses very low pressures of air and non-combustible, compatible gases and sends a standard 4-20 mA output signal. All models, including those featuring the 3 digit LCD digital read-out, are factory calibrated to specific ranges as listed in the chart below.

Positive, negative and differential pressures can be measured within a full span accuracy of  $\pm 0.50\%$ . This weatherproof unit is enclosed in a polycarbonate case, designed to meet (IP66/NEMA 4X). Internal digital push button zero and span allow for quick and simple field calibration.

### FEATURES/BENEFITS

- NEMA 4X rated enclosure provides protection in harsh environments permitting outdoor monitoring or in areas where dust and particulate matter exists
- Easy to read LCD display provides immediate local alerts allowing corrective action to be taken quicker to eliminate the problem from becoming widespread
- Zero and span controls provides easy calibration checks and shorter installation time to get device running and monitoring
- High precision accuracy at low pressure ranges provides exceptional accuracy for insuring tight-control and minimizing costly out of specification conditions

### APPLICATIONS

- Low pressure applications
- Outdoor HVAC
- Dust collection
- Roof-top equipment

| OPTION                    |  |
|---------------------------|--|
| To order add suffix:      | Description                            |
| -NIST                     | NIST traceable calibration certificate |
| Example: 616WL-4-LCD-NIST |  |

### SPECIFICATIONS

**Service:** Air and non-combustible, compatible gases.  
**Wetted Materials:** Consult factory.  
**Accuracy:**  $\pm 0.50\%$  FS, display accuracy  $\pm 0.5\%$ .  
**Stability:**  $\pm 1\%$  FS/yr.  
**Temperature Limits:** 0 to 140°F (-17.8 to 60°C).  
**Compensated Temperature Limits:** 20 to 120°F (-6.67 to 48.9°C).  
**Pressure Limits:** See chart.  
**Thermal Effect:**  $\pm 0.02\%$  FS/°F (0.036% FS/°C).  
**Power Requirements:** 12 to 30 VDC (2-wire).  
**Output Signal:** 4 to 20 mA.

**Zero and Span Adjustments:** Digital, push button adj.  
**Loop Resistance:** DC; 0 to 900  $\Omega$  max.  
**Current Consumption:** DC; 38 mA max.  
**Electrical Connections:** Screw-type terminal block.  
**Process Connections:** Barbed, dual size to fit 1/8" and 3/16" (3.12 and 4.76 mm) ID rubber or vinyl tubing.  
**Enclosure Rating:** NEMA 4X (IP66).  
**Mounting Orientation:** Vertical, consult factory for other position orientations.  
**Weight:** Without LCD 17 oz (482 g); with LCD 18 oz (510 g).  
**Agency Approvals:** CE.

| MODEL CHART  |                         |               |
|--------------|-------------------------|---------------|
| Model        | Range                   | Max. Pressure |
| 616WL-2-LCD  | 0 to 0.25 in w.c.       | 2 psig        |
| 616WL-4-LCD  | 0 to 1 in w.c.          | 4 psig        |
| 616WL-12-LCD | 0 to $\pm 0.25$ in w.c. | 2 psig        |
| 616WL-14-LCD | 0 to $\pm 1$ in w.c.    | 4 psig        |
| 616WL-22-LCD | 0 to 60 Pa              | 2 psig        |
| 616WL-32-LCD | 0 to $\pm 60$ Pa        | 2 psig        |
| 616WL-25-LCD | 0 to 250 Pa             | 4 psig        |
| 616WL-35-LCD | 0 to $\pm 250$ Pa       | 4 psig        |

Process Tubing Options: See page 489 (Gage Tubing Accessories)

# DIFFERENTIAL PRESSURE TRANSMITTER

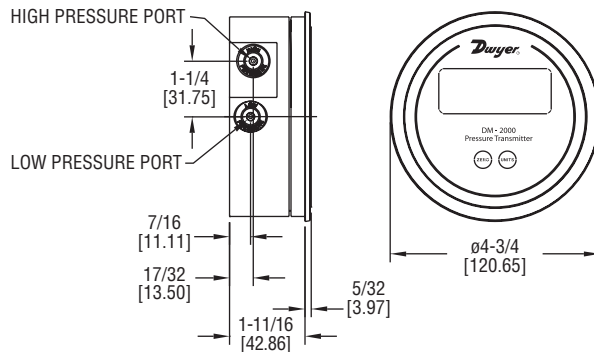
Same Size as Standard Magnehelic® Differential Pressure Gage



DM-2000-LCD



DM-2100-LCD



The Dwyer **SERIES DM-2000** Differential Pressure Transmitter senses the pressure of air and compatible gases and sends a standard 4-20 mA output signal. The DM-2000 housing is specifically designed to mount in the same diameter cutout as a standard Magnehelic® gage. A wide range of models are available factory calibrated to specific ranges.

Pressure connections are inherent to the glass filled plastic molded housing making installation quick and easy. Digital push-button zero and span simplify calibration over typical turn-potentiometers. An optional 3.5 digit LCD shows process and engineering units. A single push button allows field selection of 4 to 6 engineering units depending on range.

## FEATURES/BENEFITS

- Zero and span controls provide easy calibration checks and shorter installation time to get device running and monitoring
- Quick response to pressure changes means no delay in signaling and alerting to critical situations
- Easy to read LCD display provides immediate local alerts allowing corrective action to be taken quicker to eliminate the problem from becoming widespread
- Same size as Magnehelic simplifies field upgrade to digital pressure gage by reducing install steps

## APPLICATIONS

- Differential pressure across filters
- Fan control
- Static pressures in ducts or buildings

| MODEL CHART |                 |             |             |             |       |      |
|-------------|-----------------|-------------|-------------|-------------|-------|------|
| Model       | Range (in w.c.) | Pa          | mm w.c.     | mBar        | kPa   | psi  |
| DM-2001-LCD | 0 to .100       | 24.9        | 2.54        | .249        | -     | -    |
| DM-2002-LCD | 0 to .250       | 62.2        | 6.35        | .622        | -     | -    |
| DM-2003-LCD | 0 to .500       | 124.3       | 12.70       | 1.243       | .124  | -    |
| DM-2004-LCD | 0 to 1.000      | 249         | 25.4        | 2.49        | .249  | -    |
| DM-2005-LCD | 0 to 2.00       | 497         | 50.8        | 4.97        | .497  | -    |
| DM-2006-LCD | 0 to 3.00       | 746         | 76.2        | 7.46        | .746  | .108 |
| DM-2007-LCD | 0 to 5.00       | 1243        | 127.0       | 12.43       | 1.243 | .180 |
| DM-2012-LCD | 0 to ±.250      | 0 to ±62.2  | 0 to ±6.35  | 0 to ±.622  | -     | -    |
| DM-2013-LCD | 0 to ±.500      | 0 to ±124.3 | 0 to ±12.70 | 0 to ±1.243 | -     | -    |
| DM-2019-LCD | 0 to ±.200      | 49.8        | 5.08        | .498        | -     | -    |

**Note:** For white overlay change -20 to -21. **Example:** DM-2102-LCD

| OPTIONS                          |  |
|----------------------------------|--|
| To order add suffix:             | Description                            |
| -NIST                            | NIST traceable calibration certificate |
| <b>Example:</b> DM-2002-LCD-NIST |  |
| -FC                              | Factory calibration certificate        |
| <b>Example:</b> DM-2002-LCD-FC   |  |

## SPECIFICATIONS

**Service:** Air and non-combustible, compatible gases.  
**Wetted Materials:** Consult factory.  
**Accuracy:** ±1% FS at 70°F.  
**Stability:** ±1% FS/yr.  
**Temperature Limits:** 20 to 120°F (-6.67 to 48.9°C).  
**Pressure Limits:** 10 psig (0.69 bar).  
**Thermal Effect:** ±0.055% FS/°F (0.099% FS/°C).  
**Power Requirements:** 10 to 35 VDC (2 wire).  
**Output Signal:** 4 to 20 mA.  
**Zero and Span Adjustments:** Digital push-button zero and span.  
**Loop Resistance:** DC: 0 to 1250 Ω maximum.  
**Current Consumption:** DC: 38 mA max.  
**Electrical Connections:** Screw-type terminal block.  
**Display:** 3.5 digit LCD, 0.7" H.  
**Process Connections:** 1/8" ID tubing.  
**Mounting Orientation:** Vertical.  
**Weight:** 4.8 oz (136 g).

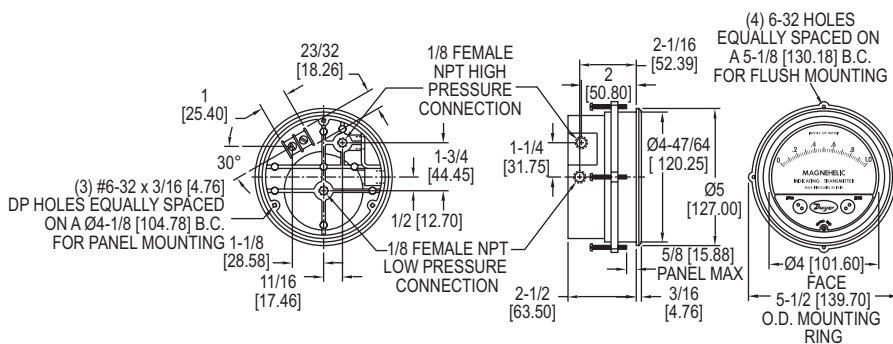
| ACCESSORIES |  |
|-------------|--|
| Model       | Description  |
| A-299       | Surface mounting bracket   |
| A-300       | Flat flush mounting bracket  |
| A-302F-A    | 303 SS static pressure tip with mounting flange; for 3/16" ID rubber or plastic tubing; 4" insertion depth; includes mounting screws |
| A-320-A     | Instrument enclosure   |
| A-489       | 4" straight static pressure tip with flange  |
| SCD-PS      | 100 to 240 VAC/VDC to 24 VDC power supply  |

# MAGNEHELIC® DIFFERENTIAL PRESSURE INDICATING TRANSMITTER

Same Size as Standard Magnehelic® Differential Pressure Gage



**Note:** Shown with optional -SS bezel.  
Backward compatible\* with Magnehelic® gage.



The **SERIES 605** Magnehelic® Indicating Transmitter provides for both visual monitoring and electronic control of very low differential pressure. The Series 605 is ideal for control applications in building HVAC systems where local indication is desired during routine maintenance checks or necessary when trouble shooting the system. The easily read dial gage is complimented by the two-wire, 4-20 mA control signal utilizing the time-proven Dwyer® Magnehelic® gage mechanical design and Series 600 transmitter technology. The two-wire design with terminal strip on the rear simplifies connection in any 4-20 mA control loop powered by a 10-35 VDC supply.

## FEATURES/BENEFITS

- Easy to read gage permits viewing from far away
- Patented design provides quick response to pressure changes means no delay in signaling and alerting to critical situations
- Durable and rugged housing and high-quality components combined provides long-service life and minimized down-time
- Optional stainless steel bezel is the same installation diameter as Magnehelic® gage and simplifies field upgrade to 605 indicating transmitter

## APPLICATIONS

- Monitor pressures in ducts, rooms, or total building pressures
- Filter monitoring
- Local indication of clean room pressures with process signal sent to control room

## SPECIFICATIONS

### GAGE SPECIFICATIONS

**Service:** Air and non-combustible, compatible gases.  
**Wetted Materials:** Consult factory.  
**Accuracy:** See chart.  
**Stability:**  $\pm 1\%$  FS/yr.  
**Pressure Limits:** See chart.  
**Temperature Limits:** 20 to 120°F (-6.67 to 48.9°C).  
**Process Connections:** 1/8" female NPT.  
**Size:** 4" (101.6 mm) dial face, 5" (127 mm) OD x 2-11/16" (68.3 mm); -SS bezel: 4-3/4" (120.7 mm) OD x 2-21/32 (67.5 mm).  
**Weight:** 1 lb 12.6 oz (811 g).  
**Agency Approvals:** CE.

### TRANSMITTER SPECIFICATIONS

**Accuracy:** See chart (includes linearity, hysteresis, repeatability).  
**Temperature Limits:** 20 to 120°F (-6.67 to 48.9°C).  
**Compensated Temperature Range:** 32 to 120°F (0 to 48.9°C).  
**Thermal Effect:**  $\pm 0.025\%$  FS/°F (0.045% FS/°C).  
**Power Requirements:** 10 to 35 VDC (2-wire).  
**Output Signal:** 4 to 20 mA.  
**Zero and Span Adjustments:** Protected potentiometers.  
**Loop Resistance:** DC: 0 to 1250  $\Omega$  max.  
**Current Consumption:** DC: 38 mA max.  
**Electrical Connections:** Screw terminal block.  
**Mounting Orientation:** Diaphragm in vertical position. Consult factory for other position orientations.

## ACCESSORIES

| Model | Description   |
|-------|---|
| A-298 | Flat aluminum bracket for flush mounting  |
| A-370 | Mounting bracket; flush mount Series 605 transmitter in bracket; bracket is then surface mounted; steel with gray hammertone epoxy finish |

## OPTIONS

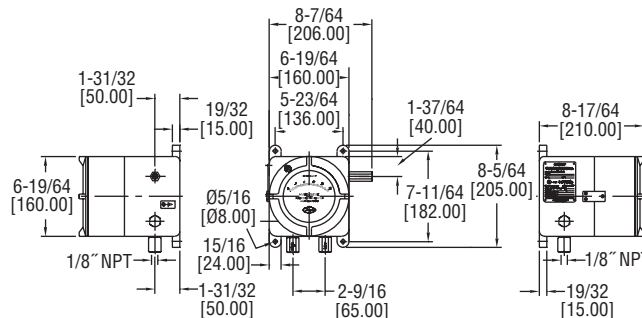
| To order add suffix:       | Description  |
|----------------------------|--|
| -SS*                       | 304 brushed stainless steel bezel. *Backward compatible with standard Magnehelic® gage installation diameter |
| <b>Example:</b> 605-3-SS   |  |
| -NIST                      | NIST traceable calibration certificate   |
| <b>Example:</b> 605-3-NIST |  |

| MODEL CHART |               |                   |                             |                             |
|-------------|---------------|-------------------|-----------------------------|-----------------------------|
| Model       | Range in w.c. | Maximum Pressure  | Electrical Accuracy $\pm\%$ | Mechanical Accuracy $\pm\%$ |
| 605-00N     | 0.05-0-0.2    | 25 psi (1.7 bar)  | 4                           | 4                           |
| 605-11      | 0 to $\pm 25$ | 25 psi (1.7 bar)  | 2                           | 3                           |
| 605-0       | 0 to .50      | 25 psi (1.7 bar)  | 2                           | 3                           |
| 605-1       | 0 to 1.0      | 25 psi (1.7 bar)  | 2                           | 2                           |
| 605-2       | 0 to 2.0      | 2 psi (13.79 kPa) | 0.5                         | 2                           |
| 605-3       | 0 to 3.0      | 2 psi (13.79 kPa) | 0.5                         | 2                           |
| 605-6       | 0 to 6.0      | 2 psi (13.79 kPa) | 0.5                         | 2                           |
| 605-10      | 0 to 10       | 2 psi (13.79 kPa) | 0.5                         | 2                           |
| 605-20      | 0 to 20.0     | 11 psi (75.8 kPa) | 0.5                         | 2                           |
| 605-30      | 0 to 30       | 11 psi (75.8 kPa) | 0.5                         | 2                           |
| 605-50      | 0 to 50       | 11 psi (75.8 kPa) | 0.5                         | 2                           |
| Model       | Range in Pa   | Maximum Pressure  | Electrical Accuracy $\pm\%$ | Mechanical Accuracy $\pm\%$ |
| 605-12      | 60-0-60       | 25 psi (1.7 bar)  | 2                           | 3                           |
| 605-13      | 100-0-100     | 25 psi (1.7 bar)  | 2                           | 2                           |
| 605-60PA    | 0 to 60       | 25 psi (1.7 bar)  | 2                           | 4                           |
| 605-125PA   | 0 to 125      | 25 psi (1.7 bar)  | 2                           | 3                           |
| 605-250PA   | 0 to 250      | 25 psi (1.7 bar)  | 2                           | 2                           |
| 605-500PA   | 0 to 500      | 2 psi (13.79 kPa) | 0.5                         | 2                           |



# ATEX APPROVED 605 DIFFERENTIAL PRESSURE INDICATING TRANSMITTER

## Series 605 in Flame-Proof ATEX Enclosure



The ATEX approved **SERIES AT2605** Indicating Transmitter provides for both visual monitoring and electronic control of very low differential pressure in hazardous locations. The easily read dial gage is complimented by the two-wire, 4 to 20 mA control signal utilizing the time-proven Dwyer® Magnehelic® gage mechanical design and Series 600 transmitter technology. The two-wire design simplifies any 4 to 20 mA control loop powered by a 10 to 35 VDC supply. Flame-proof ATEX enclosures are available in aluminum and can include a glass window for viewing process pressure on gage face.

### FEATURES/BENEFITS

- ATEX housing provides all the capabilities and value of the Magnehelic 605 in a flame & explosion proof enclosure
- Quick response to pressure changes means no delay in assessing critical situations
- Durable and rugged housing and high-quality components combined provides long-service life and minimized down-time
- High impact strength and high temperature rated for applications where hazardous environments exist

### APPLICATIONS

- Monitor pressures in ducts, rooms, or total building pressures
- Filter monitoring
- Local indication of clean room pressures with process signal sent to control room
- Hazardous area pressure measurement and transmitter

### SPECIFICATIONS

#### GAGE SPECIFICATIONS

**Service:** Air and non-combustible, compatible gases.  
**Wetted Materials:** Consult factory.  
**Accuracy:** See page reference ① below.  
**Pressure Limits:** See page reference ① below.  
**Temperature Limits:** 20 to 120°F (-6.67 to 48.9°C); Case: -76 to 140°F (-60 to 60°C) (**Note:** Product temperature limits differ from case).  
**Size:** 4" (101.6 mm) dial face.

#### TRANSMITTER SPECIFICATIONS

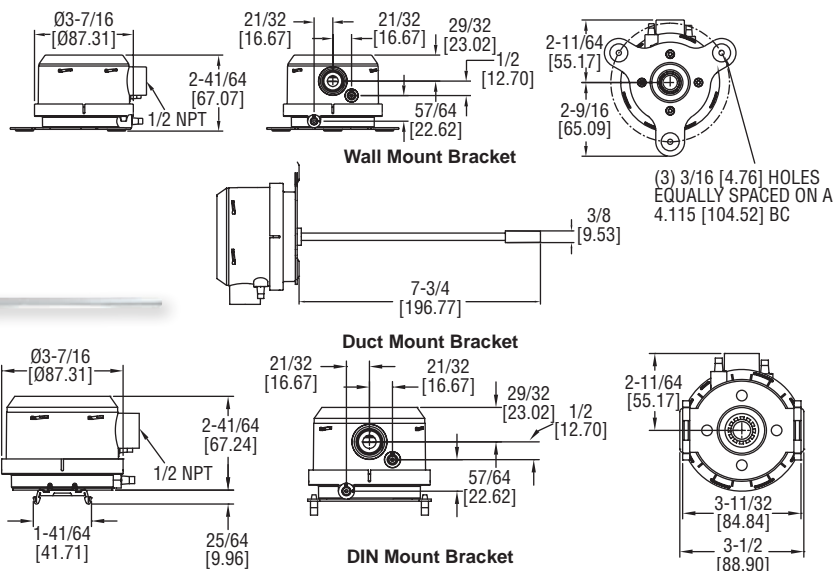
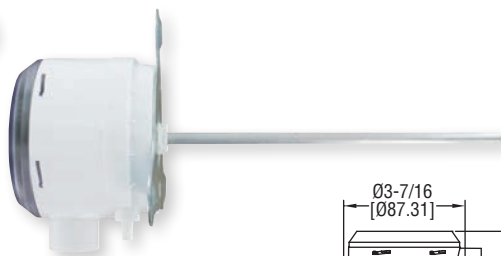
**Accuracy:** See page reference ① below. Includes linearity, hysteresis, repeatability.  
**Compensated Temperature Range:** 32 to 120°F (0 to 48.9°C).  
**Thermal Effect:** ±0.025% FS/°F (0.045% FS/°C).  
**Stability:** ±1% FS/year.  
**Power Requirements:** 10 to 35 VDC (2-wire).  
**Output Signal:** 4 to 20 mA.

**Zero and Span Adjustments:** Protected potentiometers on 605 face. Can access those by opening case. Allowed only in safe zone.  
**Loop Resistance:** DC: 0 to 1250 Ω max.  
**Current Consumption:** DC: 38 mA max.  
**Electrical Connections:** Screw terminal block.  
**Mounting Orientation:** Diaphragm in vertical position.  
**Enclosure Rating:** IP66. IP65 with option OPV, overpressure relief valve.  
**Housing Material:** Aluminum.  
**Finishing:** Texture epoxy coat RAL7038.  
**Process Connections:** 1/8" NPT female brass (SS optional). In presence of acetylene it is necessary to use SS.  
**Electrical Connections:** Two 1/2" NPT female. Cable gland not included.  
**Weight:** 12.6 lb (5.7 kg).  
**ATEX Approved Products from Comhas with ECN:** BVI 14ATEX0072.  
**Agency Approvals:** CE 1370 Ex d IIC Gb T6; -60°C ≤ Ta ≤ +60°C Ex tb IIIC Db T 85°C.

| MODEL CHART        |        |   |    |    |        |        |          |    |   |
|--------------------|--------|---|----|----|--------|--------|----------|----|---|
| Example            | AT2605 | -00N  | -X | -A | B      | 1      | X        | T2 | AT2605-00N-X-AB1XT2   |
| Series             | AT2605 |   |    |    |        |        |          |    | ATEX approved 605 differential pressure indicating transmitter  |
| Range              |        | 00N<br>11<br>0<br>1<br>2<br>3<br>6<br>10<br>20<br>30<br>50<br>60Pa<br>125Pa<br>250Pa<br>500Pa |    |    |        |        |          |    | .05 to 0 to .20 in w.c.<br>.25 to 0 to .25 in w.c.<br>0 to .50 in w.c.<br>0 to 1.0 in w.c.<br>0 to 2.0 in w.c.<br>0 to 3.0 in w.c.<br>0 to 6.0 in w.c.<br>0 to 10.0 in w.c.<br>0 to 20.0 in w.c.<br>0 to 30 in w.c.<br>0 to 50 in w.c.<br>0 to 60 Pa<br>0 to 125 Pa<br>0 to 250 Pa<br>0 to 500 Pa |
| Construction       |        |   | X  |    |        |        |          |    | Standard construction   |
| Housing            |        |   |    | A  |        |        |          |    | Aluminum  |
| Cover              |        |   |    |    | B<br>O |        |          |    | Blind<br>Glass top cover  |
| Process Connection |        |   |    |    |        | 1<br>2 |          |    | 1/8" NPT female brass ports<br>1/8" NPT female SS ports   |
| Overpressure Plug  |        |   |    |    |        |        | X<br>OPV |    | Standard without overpressure relief valve<br>Overpressure relief valve<br>Material same as ports   |
| Tag                |        |   |    |    |        |        |          | T2 | SS information label  |

# MAGNESENSE® II DIFFERENTIAL PRESSURE TRANSMITTER

Monitors Pressure, Air Velocity & Air Flow, BACnet/Modbus® Communications



The **SERIES MS2** Magnesense® II Differential Pressure Transmitter combines the proven stable Hall Effect sensing technology of our original Series MS with additional features to reduce installation time and simplify ordering. Like the original Series MS, the second generation transmitter can be used as a linear pressure output or a linear velocity output with the square root extraction done in the transmitter. Additional parameters have been included to expand the square root capability to include flow measurements.

## FEATURES/BENEFITS

- Field selectable ranges and output signal reduce inventory and the chances of ordering an incorrect part
- BACnet or Modbus serial communications reduce wiring cost by daisy-chaining the transmitters
- Our integral field-upgradeable display or plug-in remote display tool save upfront material cost and allow for local viewing of measurements

## APPLICATIONS

- Filter monitoring in air handler units
- Building pressure in pharmaceutical-semi-conductor clean rooms
- Duct static pressure in commercial buildings
- Air velocity/flow in VAV systems

## MODEL CHART

| Model           | in w.c.                    | Pa                     | mm w.c.              | kPa                          |
|-----------------|----------------------------|------------------------|----------------------|------------------------------|
| <b>MS2-W101</b> | 0.10, 0.15, 0.25, 0.50     | 25, 40, 50, 125        | 2.5, 4, 6, 10        | 0.025, 0.04, 0.05, 0.125     |
| <b>MS2-W111</b> | ±0.10, ±0.15, ±0.25, ±0.50 | ±25, ±40, ±50, ±125    | ±2.5, ±4, ±6, ±10    | ±0.025, ±0.04, ±0.05, ±0.125 |
| <b>MS2-W102</b> | 1, 2, 3, 5                 | 250, 500, 750, 1250    | 25, 50, 75, 125      | 0.25, 0.5, 0.75, 1.25        |
| <b>MS2-W103</b> | 10, 15, 25, 28             | 2500, 3500, 5000, 6975 | 250, 350, 500, 697.5 | 2.5, 3.5, 5.0, 6.975         |

### Note:

For duct mount static probe change W to D. **Example:** MS2-D101  
For DIN rail mounting change W to N. **Example:** MS2-N101

## OPTIONS

| To order add suffix:          | Description                            |
|-------------------------------|--|
| <b>-LCD</b>                   | Units with display                     |
| <b>Example:</b> MS2-W101-LCD  |  |
| <b>-BC</b>                    | BACnet Communications                  |
| <b>Example:</b> MS2-W101-BC   |  |
| <b>-MC</b>                    | Modbus® Communications                 |
| <b>Example:</b> MS2-W101-MC   |  |
| <b>-NIST</b>                  | NIST traceable calibration certificate |
| <b>Example:</b> MS2-W101-NIST |  |
| <b>-FC</b>                    | Factory calibration certificate        |
| <b>Example:</b> MS2-W101-FC   |  |

## SPECIFICATIONS

**Supported Baud Rates:** 9600, 19200, 38400, 57600, 76800, 115200.  
**Data Size:** 8.  
**Parity:** None.  
**Stop Bits:** 1.  
**Service:** Air and non-combustible, compatible gases.  
**Wetted Materials:** Consult factory.  
**Typical Accuracy:** ±1% FS for 0.15 in w.c. (40 Pa), 0.25 in w.c. (50 Pa), 0.5 in w.c. (125 Pa), 2 in w.c. (500 Pa), 3 in w.c. (750 Pa), 5 in w.c. (1250 Pa), 10 in w.c. (2 kPa), 15 in w.c. (3 kPa), 25 in w.c. (5 kPa), 28 in w.c. (6.975 kPa); ±2% FS for 0.1 in w.c. (25 Pa), 1 in w.c. (250 Pa), and all bi-directional ranges.  
**Stability:** ±1% / year FSO.  
**Temperature Limits:** 0 to 150°F (-18 to 66°C).  
**Pressure Limits:** 1 psi max., operation; 10 psi burst.  
**Power Requirements:** 10 to 35 VDC (2-wire), 17 to 36 VDC or isolated 21.6 to 33 VAC (3-wire).  
**Output Signals:** 4 to 20 mA (2-wire), 0 to 5 VDC, 0 to 10 VDC (3-wire).  
**Response Time:** Adjustable: 0.5 to 15 sec. time constant. Provides a 95% response time of 1.5 to 45 seconds.  
**Zero & Span Adjustments:** Digital push buttons.  
**Loop Resistance:** Current output: 0 to 1250 Ω max; Voltage output: Min. load resistance 1 kΩ.  
**Current Consumption:** 40 mA max.  
**Display (Optional):** 5 digit LCD.  
**Electrical Connections:** 3-wire removable European style terminal block for 16 to 22 AWG.  
**Electrical Entry:** 1/2" NPS thread.  
**Process Connection:** 3/16" ID tubing (5 mm ID); Max. OD 9 mm.  
**Enclosure Rating:** IP66.  
**Mounting Orientation:** Diaphragm in vertical position.  
**Weight:** 8.0 oz (230 g).  
**Agency Approvals:** BTL, CE.

## ACCESSORIES

| Model            | Description   |
|------------------|---|
| <b>A-151</b>     | Cable gland for 5 to 10 mm diameter cable   |
| <b>A-MS2-LCD</b> | Field upgradeable display   |
| <b>A-435-A</b>   | Remote display tool   |
| <b>A-480</b>     | Plastic static pressure tip   |
| <b>A-481</b>     | Installer kit; includes 2 plastic static pressure tips and 7 ft (2.1 m) of PVC tubing     |
| <b>A-489</b>     | 4" 303 SS straight static pressure tip with flange  |
| <b>A-302F-A</b>  | 4" 303 SS static pressure tip with mounting flange; for 3/16" ID rubber or plastic tubing |
| <b>SCD-PS</b>    | 100 to 240 VAC/VDC to 24 VDC power supply   |

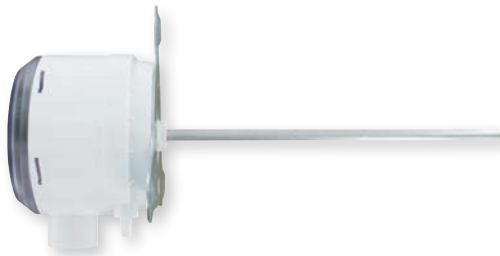
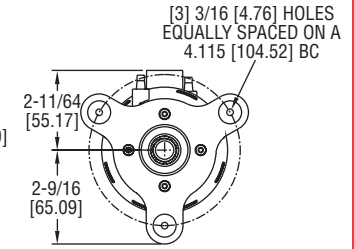
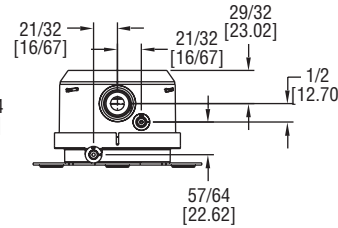
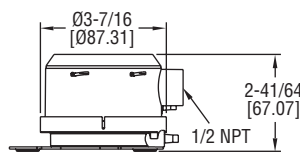
Modbus® is a registered trademark of Schneider Automation, Inc.  
**Process Tubing Options:** See page 489 (Gage Tubing Accessories)

# MAGNESENSE® DIFFERENTIAL PRESSURE TRANSMITTER

## Monitors Pressure & Air Velocity



Standard MS with optional LCD



MS with optional LCD and static probe

The **Series MS** Magnesense® Differential Pressure Transmitter is an extremely versatile transmitter for monitoring pressure and air velocity. This compact package is loaded with features such as:

### FEATURES/BENEFITS

- Field selectable English or Metric ranges
- Field upgradeable LCD display
- Adjustable damping of output signal (with optional display)
- Ability to select a square root output for use with pitot tubes and other similar flow sensors

Along with these features, the patented magnetic sensing technology provides exceptional long term performance and enables the Magnesense® Differential Pressure Transmitter to be the single solution for your pressure and flow applications.

| MODEL CHART |         |   |
|-------------|---------|---|
| Model       | Output  | Selectable Ranges                               |
| MS-121*     | 4-20 mA | 0.1 in, 0.25 in, 0.5 in w.c. (25, 50, 100 Pa)   |
| MS-321*     | 0-10 V  | 0.1 in, 0.25 in, 0.5 in w.c. (25, 50, 100 Pa)   |
| MS-721*     | 0-5 V   | 0.1 in, 0.25 in, 0.5 in w.c. (25, 50, 100 Pa)   |
| MS-111*     | 4-20 mA | 1 in, 2 in, 5 in w.c. (250, 500, 1250 Pa)       |
| MS-311*     | 0-10 V  | 1 in, 2 in, 5 in w.c. (250, 500, 1250 Pa)       |
| MS-711*     | 0-5 V   | 1 in, 2 in, 5 in w.c. (250, 500, 1250 Pa)       |
| MS-131      | 4-20 mA | 10 in w.c. (2 kPa)                              |
| MS-141      | 4-20 mA | 15 in w.c. (3 kPa)                              |
| MS-151      | 4-20 mA | 25 in w.c. (5 kPa)                              |
| MS-331      | 0-10 V  | 10 in w.c. (2 kPa)                              |
| MS-341      | 0-10 V  | 15 in w.c. (3 kPa)                              |
| MS-351      | 0-10 V  | 25 in w.c. (5 kPa)                              |
| MS-021      | 4-20 mA | ±0.1 in, 0.25 in, 0.5 in w.c. (±25, 50, 100 Pa) |
| MS-221      | 0-10 V  | ±0.1 in, 0.25 in, 0.5 in w.c. (±25, 50, 100 Pa) |
| MS-621      | 0-5 V   | ±0.1 in, 0.25 in, 0.5 in w.c. (±25, 50, 100 Pa) |

\*Note: For duct mount static pressure probe, change last digit from 1 to 2. Example: MS-122

| OPTIONS              |  |
|----------------------|--|
| To order add suffix: | Description                            |
| -LCD                 | Units with display                     |
| Example: MS-121-LCD  |  |
| -NIST                | NIST traceable calibration certificate |
| Example: MS-021-NIST |  |
| -FC                  | Factory calibration certificate        |
| Example: MS-021-FC   |  |

### SPECIFICATIONS

**Service:** Air and non-combustible, compatible gases.  
**Wetted Materials:** Consult factory.  
**Accuracy:** ±1% for 0.25" (50 Pa), 0.5" (100 Pa), 2" (500 Pa), 5" (1250 Pa), 10" (2 kPa), 15" (3 kPa), 25" (5 kPa); ±2% for 0.1" (25 Pa), 1" (250 Pa) and all bi-directional ranges.  
**Stability:** ±1% FS/year.  
**Temperature Limits:** 0 to 150°F (-18 to 66°C).  
**Pressure Limits:** 1 psi maximum, operation; 10 psi, burst.  
**Power Requirements:** 10 to 35 VDC (2-wire); 17 to 36 VDC or isolated 21.6 to 33 VAC (3-wire).  
**Output Signals:** 4 to 20 mA (2-wire); 0 to 5 V, 0 to 10 V (3-wire).  
**Response Time:** Adjustable 0.5 to 15 sec. time constant. Provides a 95% response time of 1.5 to 45 seconds.  
**Zero & Span Adjustments:** Digital push button.  
**Loop Resistance:** Current output: 0-1250 Ω max; Voltage output: min. load resistance 1 kΩ.  
**Current Consumption:** 40 mA max.  
**Display (optional):** 4 digit LCD.  
**Electrical Connections:** 4-20 mA, 2-Wire: European style terminal block for 16 to 26 AWG; 0-10 V, 3-Wire: European style terminal block for 16 to 22 AWG.  
**Electrical Entry:** 1/2" NPS thread; Accessory (A-151): Cable gland for 5 to 10 mm diameter cable.  
**Process Connections:** 3/16" (5 mm) ID tubing. Maximum OD 9 mm.  
**Enclosure Rating:** NEMA 4X (IP66).  
**Mounting Orientation:** Diaphragm in vertical position.  
**Weight:** 8.0 oz (230 g).  
**Agency Approvals:** CE.

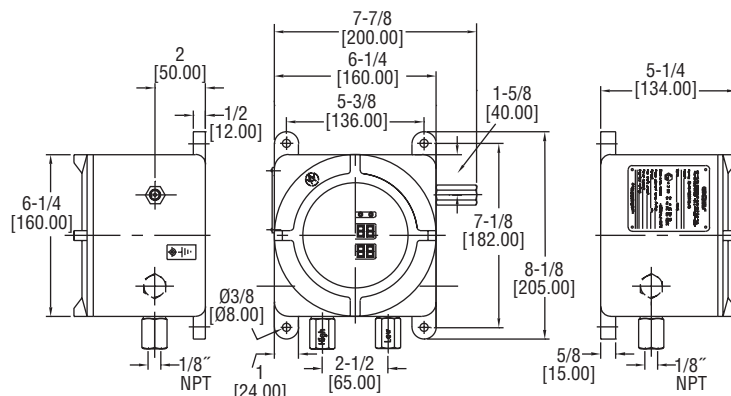
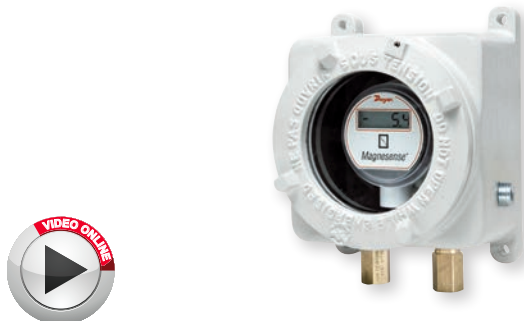
### ACCESSORIES

| Model    | Description  |
|----------|--|
| A-435    | Field upgradeable LCD  |
| A-480    | Plastic static pressure tip  |
| A-481    | Installer kit. Includes 2 plastic static pressure tips and 7 ft (2.1 m) of PVC tubing  |
| A-489    | 4" straight static pressure tip with flange  |
| A-302F-A | 303 SS Static Pressure Tip with mounting flange. For 3/16" ID rubber or plastic tubing. 4" insertion depth. Includes mounting screws |
| SCD-PS   | 100 to 240 VAC/VDC to 24 VDC Power supply  |



# ATEX APPROVED MAGNESENSE® DIFFERENTIAL PRESSURE TRANSMITTER

## Series MS in Flame-Proof ATEX Enclosure



The ATEX Approved **SERIES AT2MS** Magnesense® Differential Pressure Transmitter is an extremely versatile transmitter for monitoring pressure and air velocity in hazardous areas. This transmitter is loaded with features such as: field selectable English or metric ranges, field upgradeable LCD display, adjustable dampening of output signal and the ability to select a square root output for use with pitot tubes and other similar flow sensors. Along with these features, the magnetic sensing technology provides exceptional long term performance and enables the Magnesense® transmitter to be the solution for a myriad of pressure and flow applications. Flame-proof ATEX enclosures are available in aluminum and can include a glass window for viewing process on the LCD.

### FEATURES/BENEFITS

- ATEX housing provides all the capabilities and value of the MS2 in a flame & explosion proof enclosure
- Durable and rugged housing and high-quality components combined provides long-service life and minimized down-time
- High impact strength and high temperature rated for applications where hazardous environments exist
- BACnet or Modbus serial communications reduce wiring cost by daisy-chaining the transmitters

### APPLICATIONS

- Monitor pressures in ducts, rooms, or total building pressures
- Filter monitoring
- Local indication of clean room pressures with process signal sent to control room
- Hazardous area pressure measurement and transmitter

### SPECIFICATIONS

**Service:** Air and non-combustible, compatible gases.

**Wetted Materials:** Consult factory.

**Accuracy:** MS-X21: 0.5 in w.c. & 0.25 in w.c.: ±1%; 0.1 in w.c.: ±2%; 100 Pa & 50 Pa: ±1%; 25 Pa: ±2%. MS-X11: 5 in w.c. & 2 in w.c.: ±1%; 1 in w.c.: ±2%; 1250 Pa & 500 Pa: ±1%; 250 Pa: ±2% (@ standard conditions).

**Stability:** ±1% FS/year.

**Temperature Limits:** 0 to 150°F (-18 to 66°C); Case: -76 to 140°F (-60 to 60°C) (Note: Product temperature limits differ from case).

**Pressure Limits:** 1 psi max., operation; 10 psi, burst.

**Power Requirements:** 10 to 35 VDC (2-wire); 17 to 36 VDC or isolated 21.6 to 33 VAC (3-wire).

**Output Signals:** 4 to 20 mA (2-wire); 0 to 5 V, 0 to 10 V (3-wire).

**Response Time:** Field adjustable 0.5 to 15 s time constant. Provides a 95% response time of 1.5 to 45 seconds.

**Zero & Span Adjustments:** Digital push button. In safe zone only.

**Loop Resistance:** Current output: 0 to 1250 Ω max.; Voltage output: min. load resistance 1 k Ω.

**Current Consumption:** 40 mA max. Display: 4 digit LCD.

**Electrical Wiring:** 4 to 20 mA, 2-wire: European style terminal block for 16 to 26 AWG. 0 to 10 V, 3-wire: European style terminal block 16 to 22 AWG.

**Mounting Orientation:** Diaphragm in vertical position.

**Enclosure Rating:** 4X IP66, IP65 with option OPV overpressure relief valve.

**Housing Material:** Aluminum.

**Finishing:** Texture epoxy coat RAL7038.

**Process Connections:** 1/8" NPT female brass (SS optional). In presence of acetylene it is necessary to use SS.

**Electrical Connections:** Two 1/2" NPT female. Cable gland not included.

**Weight:** 11 lb (5 kg).

**ATEX Approved Products from Comhas with ECN:** BVI 14ATEX0072.

**Agency Approvals:** CE 1370 Ex d IIC Gb T6; -60°C ≤ Ta ≤ +60°C Ex tb IIIC Db T 85°C.

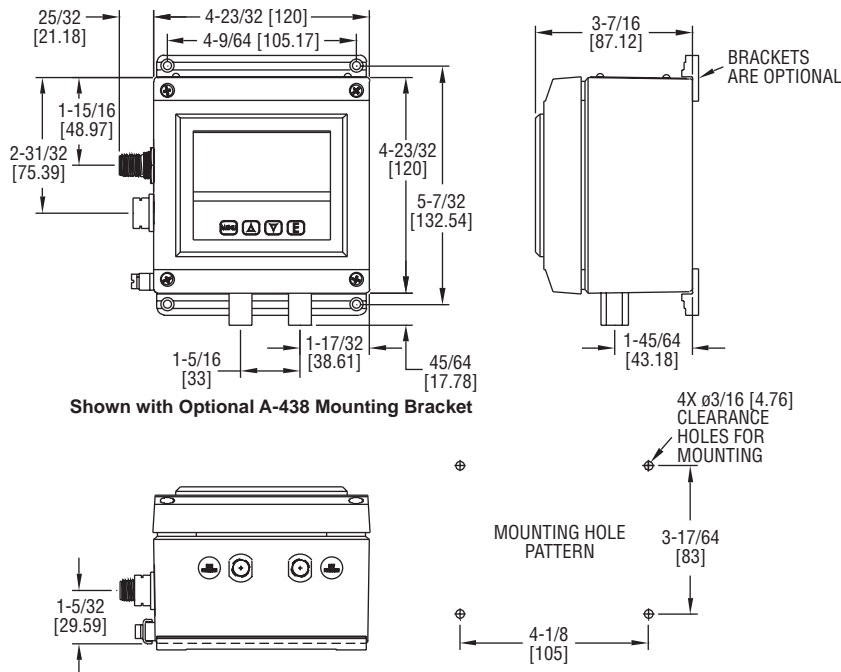
### MODEL CHART

| Example            | AT2MS | -0                                   | -1                    | 1 | -LCD | -A | O      | 1      | X        | T2 | AT2MS-0-11-LCD-AO1XT2  |
|--------------------|-------|--------------------------------------|-----------------------|---|------|----|--------|--------|----------|----|--|
| Series             | AT2MS |                                      |                       |   |      |    |        |        |          |    | ATEX approved Magnesense® differential pressure transmitter  |
| Output             |       | 0<br>1<br>2<br>3<br>6<br>7<br>8<br>9 |                       |   |      |    |        |        |          |    | Bidirectional, 4 to 20 mA<br>Positive range, 4 to 20 mA<br>Bidirectional, 0 to 10 VDC<br>Positive range, 0 to 10 VDC<br>Bidirectional, 0 to 5 VDC<br>Positive range, 0 to 5 VDC<br>Bidirectional, 0 to 5 VDC, 12 volt in<br>Positive range, 0 to 5 VDC, 12 volt in |
| Range              |       |                                      | 1<br>2<br>3<br>4<br>5 |   |      |    |        |        |          |    | 1, 2, 5 in w.c. (200, 500, 1000 Pa)<br>.1, .25, .5 in w.c. (25, 50, 100 Pa)<br>10 in w.c. (2 kPa)<br>15 in w.c. (3 kPa)<br>25 in w.c. (5 kPa)  |
| Mounting           |       |                                      |                       | 1 |      |    |        |        |          |    | Wall   |
| Display            |       |                                      |                       |   | LCD  |    |        |        |          |    | With LCD   |
| Housing            |       |                                      |                       |   |      | A  |        |        |          |    | Aluminum   |
| Cover              |       |                                      |                       |   |      |    | B<br>O |        |          |    | Blind<br>Glass top cover   |
| Process Connection |       |                                      |                       |   |      |    |        | 1<br>2 |          |    | 1/8" NPT female brass ports<br>1/8" NPT female SS ports  |
| Overpressure Plug  |       |                                      |                       |   |      |    |        |        | X<br>OPV |    | Standard without overpressure relief valve<br>Overpressure relief valve<br>Material same as ports  |
| Tag                |       |                                      |                       |   |      |    |        |        |          | T2 | SS information label   |

\*Add on applies to range -2 only.

# INTRINSICALLY SAFE DIFFERENTIAL PRESSURE TRANSMITTER

For Hazardous Zone Pressure and Flow Applications



Shown with Optional A-438 Mounting Bracket

The **SERIES ISDP** Differential Pressure Transmitter provides a 4-20 mA process output, a robust NEMA 4X enclosure, plus a large LCD display that can be programmed to read in pressure, velocity or flow. The ISDP offers simplified programming via a Menu key that enables the user to select: security level; English or Metric engineering units; pressure, velocity or flow operation, K-factor for use with various Pitot tubes and flow sensors, circular or rectangular duct size for volumetric flow operation plus many more. The Series ISDP Differential Pressure Transmitter is powered on its two wire loop with 10-35 VDC via its integral M-12 four pin male connector. The ISDP provides a 0.5% full scale accuracy on ranges from 0.25 in w.c. to 100 in w.c. as well as bi-directional models up to 10 in w.c. These features make the Series ISDP Differential Pressure Transmitter the ideal instrument for monitoring pressures or air flows in hazardous zones having a Class I Div. I Groups A, B, C, D; Class II Div. I Groups E, F, G; Class III Div. I ratings.

## FEATURES/BENEFITS

- NEMA 4X rated enclosure provides protection in harsh environments permitting outdoor monitoring or in areas where dust and particulate matter exists
- Easy to read LCD display provides immediate local alerts allowing corrective action to be taken quicker to eliminate the problem from becoming widespread
- Intrinsically safe for use in the specified hazardous locations meets specifications where pressure transmission and safety cannot be compromised
- Password protected set up menu helps to insure no errors by untrained personnel when accessing the powerful measurement capabilities of this device

## APPLICATIONS

- Hazardous zone pressure control applications
- Hazardous flow and control applications

| MODEL CHART |                 |          |                 |
|-------------|-----------------|----------|-----------------|
| Model       | Range (in w.c.) | Model    | Range (in w.c.) |
| ISDP-002    | 0 to 0.25       | ISDP-012 | 0 to ±0.25      |
| ISDP-004    | 0 to 1          | ISDP-014 | 0 to ±1.0       |
| ISDP-006    | 0 to 5          | ISDP-015 | 0 to ±2.5       |
| ISDP-007    | 0 to 10         | ISDP-016 | 0 to ±5.0       |
| ISDP-008    | 0 to 25         | ISDP-017 | 0 to ±10        |
| ISDP-009    | 0 to 50         |          |                 |
| ISDP-010    | 0 to 100        |          |                 |

| OPTIONS                |  |
|------------------------|--|
| To order add suffix:   | Description                            |
| -NIST                  | NIST traceable calibration certificate |
| Example: ISDP-004-NIST |  |
| -FC                    | Factory calibration certificate        |
| Example: ISDP-004-FC   |  |

## SPECIFICATIONS

**Service:** Air and non-corrosive gases.  
**Wetted Materials:** Ranges 5 in w.c. and greater: glass, PVC, silicon, alumina ceramic, epoxy, RTV, gold, aluminum, stainless steel and nickel; Ranges 1 in w.c. and lower: stainless steel, silicone, gold and ceramic.  
**Housing Materials:** Aluminum, glass.  
**Accuracy:** ±0.5% at 77°F (25°C) including hysteresis and repeatability (after 1 hour warm-up).  
**Stability:** < ±1% per year.  
**Pressure Limits:** Ranges ≤ 2.5 in w.c. = 2 psi; 5 in w.c.: 5 psi; 10 in w.c.: 5 psi; 25 in w.c.: 5 psi; 50 in w.c.: 5 psi; 100 in w.c.: 9 psi.  
**Temperature Limits:** 32 to 140°F (0 to 60°C).  
**Compensated Temperature Limits:** 32 to 140°F (0 to 60°C).  
**Thermal Effects:** 0.020%/°F (0.036/°C) from 77°F (25°C).  
**Power Requirements:** 10-35 VDC.  
**Output Signal:** 4 to 20 mA DC.  
**Zero & Span Adjustments:** Accessible via menus.  
**Response Time:** 250 ms (damping set to 1).  
**Display:** 4 digit LCD 0.6" H.  
**Electrical Connections:** M-12 4 PIN Connector.  
**Process Connections:** 1/8" female NPT.  
**Enclosure Rating:** Designed to meet NEMA 4X (IP66).  
**Mounting Orientation:** Mount unit in vertical plane.  
**Weight:** 2 lb 10 oz (1.19 kg).  
**Agency Approvals:** CE: CENELEC EN 61326/55024: 2003; IEC 61000-4-2/3/4/6: 2001/2006/2004/2005; CENELEC EN 55011: 2006; 2004/108/EC EMC Directive. FM Intrinsically Safe CL I Div I GR: A, B, C, D; CL II Div I GR: E, F, G; CL III Div I.

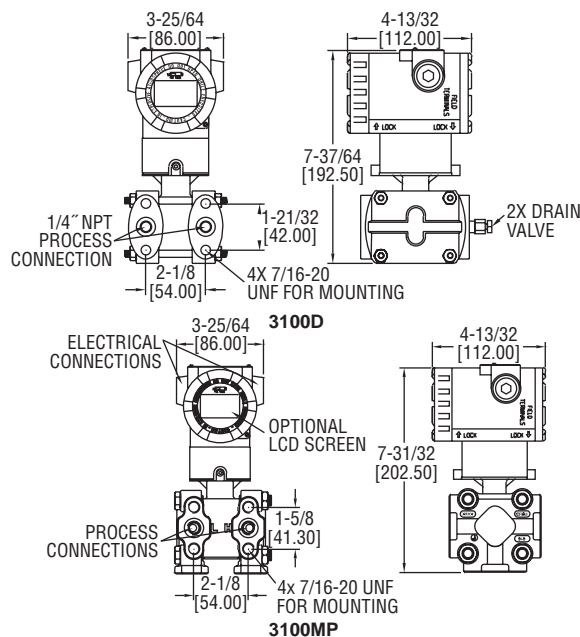
| ACCESSORIES |   |
|-------------|---|
| Model       | Description   |
| A-231       | 16' (5 m) shielded cable with 4 pin female M-12 connection  |
| A-486       | 4.9' (1 m) shielded cable with 4 pin female M-12 connection |
| A-487       | 9.8' (3 m) shielded cable with 4 pin female M-12 connection |
| A-488       | 33' (10 m) shielded cable with 4 pin female M-12 connection |
| A-295       | Female 4 pin M-12 to cable gland connector                  |
| MTL5041     | Intrinsically safe galvanic isolator                        |
| MTL7706     | Intrinsically safe zener barrier                            |
| A-438       | Surface mounting brackets                                   |

**Dwyer**

SERIES 3100 | MERCOID BY DWYER

**EXPLOSION-PROOF DIFFERENTIAL PRESSURE TRANSMITTER**

HART®, Push Button Configuration, Rangeability (100:1)

**3100D****3100MP**

Mercoird® **SERIES 3100** Smart Pressure Transmitter is a microprocessor-based high performance transmitter, which has flexible pressure calibration, push button configuration, and programmable using HART® Communication. The Series 3100 is capable of being configured for differential pressure or level applications with the zero and span buttons. A field calibrator is not required for configuration. The transmitter software compensates for thermal effects, improving performance. EEPROM stores configuration settings and stores sensor correction coefficients in the event of shutdowns or power loss.

The Series 3100 is FM or ATEX approved for use in hazardous (classified) locations. The 100:1 rangeability allows the smart transmitter to be configured to fit any application.

**FEATURES/BENEFITS**

- Configurable using zero/span buttons means no calibrator required reducing time to install and running
- Range-ability and selectable engineering units, allows transmitter to fit many applications reducing the number of different transmitters to meet specifications
- High accuracy ( $\pm 0.075\%$ ) provides exceptional measurement for ensuring tight-control and minimizing costly out of specification conditions
- Automatic sensor temperature compensation improves performance of device for accurate measurement under different operating environments
- Fail-mode process function stores configuration settings in the event of shutdown or power-loss provides for faster restart to getting application back on-line
- A HART® Communication programmable device provides a reliable, long-term solution for plant operators who seek the benefits of intelligent devices with digital communication

**APPLICATIONS**

- Flow measurement
- Filter or pump differential pressure
- Level monitoring
- Critical process monitoring

**MODEL CHART**

| Model              | Calibrated Span (Min. to Max.) |                    | Lower Range Limit |            | Upper Range Limit |           | LCD Display |
|--------------------|--------------------------------|--------------------|-------------------|------------|-------------------|-----------|-------------|
| 3100D-2-FM-1-1     | 0.6 to 30 in w.c.              | 0.15 to 7.5 kPa    | -30 in w.c.       | -7.5 kPa   | 30 in w.c.        | 7.5 kPa   | No          |
| 3100D-3-FM-1-1     | 1.5 to 150 in w.c.             | 0.373 to 37.3 kPa  | -150 in w.c.      | -37.3 kPa  | 150 in w.c.       | 37.3 kPa  | No          |
| 3100D-4-FM-1-1     | 7.5 to 750 in w.c.             | 1.865 to 186.5 kPa | -750 in w.c.      | -186.5 kPa | 750 in w.c.       | 186.5 kPa | No          |
| 3100D-5-FM-1-1     | 1 to 100 psi                   | 6.9 to 690 kPa     | -100 psi          | -690 kPa   | 100 psi           | 690 kPa   | No          |
| 3100D-6-FM-1-1     | 3 to 300 psi                   | 20.68 to 2068 kPa  | -300 psi          | -2068 kPa  | 300 psi           | 2068 kPa  | No          |
| 3100D-2-FM-1-1-LCD | 0.6 to 30 in w.c.              | 0.15 to 7.5 kPa    | -30 in w.c.       | -7.5 kPa   | 30 in w.c.        | 7.5 kPa   | Yes         |
| 3100D-3-FM-1-1-LCD | 1.5 to 150 in w.c.             | 0.373 to 37.3 kPa  | -150 in w.c.      | -37.3 kPa  | 150 in w.c.       | 37.3 kPa  | Yes         |
| 3100D-4-FM-1-1-LCD | 7.5 to 750 in w.c.             | 1.865 to 186.5 kPa | -750 in w.c.      | -186.5 kPa | 750 in w.c.       | 186.5 kPa | Yes         |
| 3100D-5-FM-1-1-LCD | 1 to 100 psi                   | 6.9 to 690 kPa     | -100 psi          | -690 kPa   | 100 psi           | 690 kPa   | Yes         |
| 3100D-6-FM-1-1-LCD | 3 to 300 psi                   | 20.68 to 2068 kPa  | -300 psi          | -2068 kPa  | 300 psi           | 2068 kPa  | Yes         |

**Note:** Consult factory for custom calibration.

**MODEL CHART**

| Model               | Calibrated Span (Min. to Max.) |                    | Lower Range Limit |            | Upper Range Limit |           | LCD Display |
|---------------------|--------------------------------|--------------------|-------------------|------------|-------------------|-----------|-------------|
| 3100MP-2-FM-1-1     | 0.6 to 30 in w.c.              | 0.15 to 7.5 kPa    | -30 in w.c.       | -7.5 kPa   | 30 in w.c.        | 7.5 kPa   | No          |
| 3100MP-3-FM-1-1     | 1.5 to 150 in w.c.             | 0.373 to 37.3 kPa  | -150 in w.c.      | -37.3 kPa  | 150 in w.c.       | 37.3 kPa  | No          |
| 3100MP-4-FM-1-1     | 7.5 to 750 in w.c.             | 1.865 to 186.5 kPa | -750 in w.c.      | -186.5 kPa | 750 in w.c.       | 186.5 kPa | No          |
| 3100MP-5-FM-1-1     | 1 to 100 psi                   | 6.9 to 690 kPa     | -100 psi          | -690 kPa   | 100 psi           | 690 kPa   | No          |
| 3100MP-6-FM-1-1     | 3 to 300 psi                   | 20.68 to 2068 kPa  | -300 psi          | -2068 kPa  | 300 psi           | 2068 kPa  | No          |
| 3100MP-2-FM-1-1-LCD | 0.6 to 30 in w.c.              | 0.15 to 7.5 kPa    | -30 in w.c.       | -7.5 kPa   | 30 in w.c.        | 7.5 kPa   | Yes         |
| 3100MP-3-FM-1-1-LCD | 1.5 to 150 in w.c.             | 0.373 to 37.3 kPa  | -150 in w.c.      | -37.3 kPa  | 150 in w.c.       | 37.3 kPa  | Yes         |
| 3100MP-4-FM-1-1-LCD | 7.5 to 750 in w.c.             | 1.865 to 186.5 kPa | -750 in w.c.      | -186.5 kPa | 750 in w.c.       | 186.5 kPa | Yes         |
| 3100MP-5-FM-1-1-LCD | 1 to 100 psi                   | 6.9 to 690 kPa     | -100 psi          | -690 kPa   | 100 psi           | 690 kPa   | Yes         |
| 3100MP-6-FM-1-1-LCD | 3 to 300 psi                   | 20.68 to 2068 kPa  | -300 psi          | -2068 kPa  | 300 psi           | 2068 kPa  | Yes         |

**Note:** Consult factory for custom calibration.

**SPECIFICATIONS**

**Service:** Compatible gases, steam, liquids or vapors.  
**Wetted Materials:** 316L SS.  
**Accuracy:**  $\pm 0.075\%$  FS (@ 20°C).  
**Rangeability:** 100:1 turn down.  
**Stability:**  $\pm 0.125\%$  FSO/yr.  
**Temperature Limits:** Process: -40 to 248°F (-40 to 120°C); Ambient: Without LCD: -40 to 185°F (-40 to 85°C); With LCD: -22 to 176°F (-30 to 80°C).  
**Pressure Limits:** Max pressure: Range: -14.5 to 2000 psi; Burst pressure: 10000 psi.  
**Thermal Effect:**  $\pm 0.125\%$  span/32°C.  
**Power Requirements:** 11.9 to 45 VDC.  
**Output Signal:** 4 to 20 mA / HART® Communication.  
**Response Time:** 0.12 seconds.  
**Damping Time:** 0.25 to 60 seconds.  
**Loop Resistance:** Operation: 0 to 1500  $\Omega$ ; HART® Communication: 250 to 500  $\Omega$ .  
**Electrical Connection:** Two 1/2" female NPT conduit, screw terminal.  
**Process Connection:** 1/4" female NPT.  
**Display:** Optional 5 digit LCD.  
**Enclosure Rating:** NEMA 4X (IP66) and explosion-proof for Class I, Div I, Groups A, B, C and D.  
**Weight:** 8.6 lb (3.9 kg).  
**Agency Approvals:** CE, FM, ATEX option available (consult factory).

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# EXPLOSION-PROOF DIFFERENTIAL PRESSURE TRANSMITTER

HART®, Push Button Configuration, Rangeability (100:1)

| MODEL CHART                |                 |                                 |                  |        |    |  |          |                                  |                      |                  |   |     |     |                          | 3100D-2-FM-3-1-LECS2A105S2-05-10-LCD   |
|----------------------------|-----------------|---------------------------------|------------------|--------|----|--|----------|----------------------------------|----------------------|------------------|---|-----|-----|--------------------------|--|
| Example                    | 3100D           | -2                              | -FM              | -3     | -1 | -LEC   | S2       | A1                               | 05                   | S                | 2 | -05 | -10 | -LCD                     |  |
| Series                     | 3100D<br>3100MP |                                 |                  |        |    |  |          |                                  |                      |                  |   |     |     |                          | Explosion-Proof Differential Pressure Transmitter<br>Multiplanar Explosion-Proof Differential Pressure Transmitter   |
| Range                      |                 | 1<br>2<br>3<br>4<br>5<br>6<br>7 |                  |        |    |  |          |                                  |                      |                  |   |     |     |                          | 0 to 6 in w.c.<br>0 to 30 in w.c.<br>0 to 150 in w.c.<br>0 to 750 in w.c.<br>0 to 100 psi<br>0 to 300 psi<br>0 to 1000 psi   |
| Approval                   |                 |                                 | FM<br>ATEX<br>WP |        |    |  |          |                                  |                      |                  |   |     |     |                          | FM approved<br>ATEX approved<br>Weatherproof only (only available with 316 SS housing)   |
| Process Connection         |                 |                                 |                  | 1<br>3 |    |  |          |                                  |                      |                  |   |     |     |                          | 1/4" female NPT<br>Diaphragm seal  |
| Electrical Connection      |                 |                                 |                  |        | 1  |  |          |                                  |                      |                  |   |     |     |                          | 1/2" female NPT  |
| Diaphragm Seal Type        |                 |                                 |                  |        |    | LEC<br>LED<br>LEH<br>LEL<br>LFC<br>LFD<br>LFH<br>LFL |          |                                  |                      |                  |   |     |     |                          | 2 extended diaphragm seals capillary type<br>1 extended diaphragm seal direct mount high side<br>1 extended diaphragm seal capillary type high side<br>1 extended diaphragm seal capillary type low side<br>2 flush diaphragm seals capillary type<br>1 flush diaphragm seal direct mount high side<br>1 flush diaphragm seal capillary type high side<br>1 flush diaphragm seal capillary type low side |
| Mounting Flange            |                 |                                 |                  |        |    |  | S2<br>S3 |                                  |                      |                  |   |     |     |                          | 2" (50 mm) 316L SS<br>3" (80 mm) 316L SS   |
| Mounting Flange Rating     |                 |                                 |                  |        |    |  |          | A1<br>A2<br>D1<br>D2<br>J1<br>J2 |                      |                  |   |     |     |                          | ANSI class 150#<br>ANSI class 300#<br>DIN PN 10/16<br>DIN PN 25/40<br>JIS 10 K<br>JIS 20 K   |
| Extension Length           |                 |                                 |                  |        |    |  |          |                                  | 00<br>05<br>10<br>15 |                  |   |     |     |                          | No extension [standard for flush mount]<br>2" extension<br>4" extension<br>6" extension  |
| Diaphragm Material         |                 |                                 |                  |        |    |  |          |                                  |                      | S<br>P<br>H<br>T |   |     |     |                          | 316L SS diaphragm<br>PTFE and 316L SS diaphragm<br>Hastelloy C-276 diaphragm<br>Tantalum diaphragm   |
| Fill Fluid                 |                 |                                 |                  |        |    |  |          |                                  |                      |                  | 2 |     |     |                          | Silicon oil (-40 to 400°F)   |
| Capillary Length High Side |                 |                                 |                  |        |    |  |          |                                  |                      |                  |   | XX  |     |                          | 0 to 20 feet   |
| Capillary Length Low Side  |                 |                                 |                  |        |    |  |          |                                  |                      |                  |   |     | XX  |                          | 0 to 20 feet   |
| Options                    |                 |                                 |                  |        |    |  |          |                                  |                      |                  |   |     |     | LCD<br>SSH<br>NIST<br>CC | 5 digit LCD<br>316 SS housing (Only available with WP approval)<br>NIST calibration<br>Custom calibration  |

## CUSTOM CALIBRATION VALUES

|                    |   |
|--------------------|---|
| Primary Units      | in w.c., ft in w.c., mm in w.c., in Hg, psig, g/cm <sup>2</sup> , kg/cm <sup>2</sup> , MPa, Pa, kPa, bar, mbar, Torr, Atm, mm Hg  |
| Upper Range Limit  | 20 mA value   |
| Lower Range Limit  | 4 mA value  |
| Output             | Linear or square root   |
| Damping Time       | 0 to 60 seconds   |
| Display Mode       | Unit, %, mA, rotate   |
| Display Units      | Primary unit or Engineering unit  |
| Engineering Units* | <b>Volumetric Flow Units</b><br>US gal/s, US gpm, US gal/hr, US gpd, imp gal/s, imp gpm, imp gal/hr, imp gpd, l/s, l/min, l/hour, ft/s, m/s, metric gal/day, metric l/day, ft <sup>3</sup> /s, ft <sup>3</sup> /min, ft <sup>3</sup> /h, ft <sup>3</sup> /day, m <sup>3</sup> /s, m <sup>3</sup> /min, m <sup>3</sup> /hr, m <sup>3</sup> /day, normal l/hr, normal m <sup>3</sup> /hr, standard ft <sup>3</sup> /min, barrels/s, barrels/min, barrels/hr, barrels/day<br><b>Mass Flow Units</b><br>g/s, g/min, g/hr, kg/s, kg/min, kg/hr, kg/day, metric ton/min, metric ton/hour, metric ton/day, lb/s, lb/min, lb/hr, lb/day, short ton/min, short ton/hr, short ton/day, long ton/hr, long ton/day<br><b>Volume Units</b><br>gallons, liters, imp gallons, m <sup>3</sup> , barrels, bushels, yd <sup>3</sup> , ft <sup>3</sup> , in <sup>3</sup> , bbl liq, normal cubic meter, normal liter, standard cubic feet, hectoliters<br>Engr. upper value<br>Engr. lower value<br>Engr. Function*<br>Linear or square root |

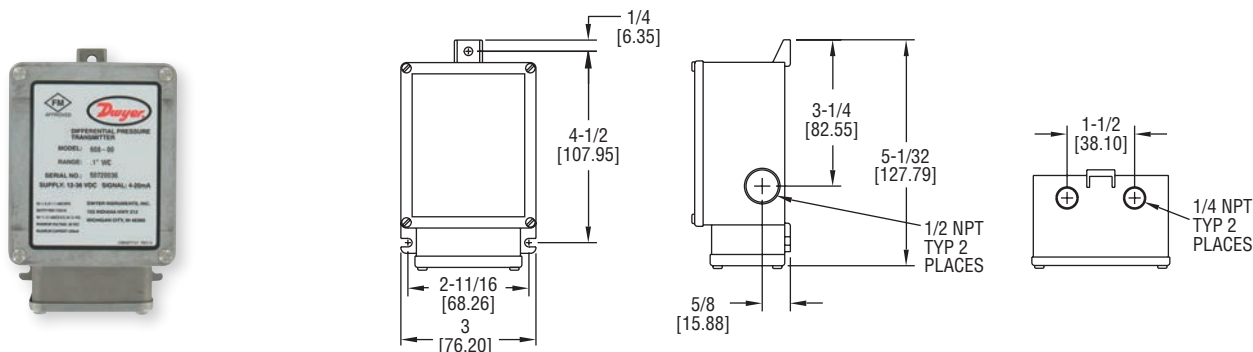
\*Engineering Units, Engr. Upper Range Limit, Engr. Lower Range Limit and Engr. Function values are only required if engineering unit is selected.

## ACCESSORIES

| Model      | Description                                      |
|------------|--|
| A-630      | Stainless steel angle type bracket with SS bolts |
| A-631      | Stainless steel flat type bracket with SS bolts  |
| BBV-1F     | Flanged 3-valve block manifold                   |
| BBV-22F    | Flanged 5-valve block manifold                   |
| DevCom2000 | HART® Communication Protocol Software            |

# INTRINSICALLY SAFE DIFFERENTIAL PRESSURE TRANSMITTER

Ranges Down to 0.1 in w.c., FM Approved, NEMA 4X



The Dwyer **SERIES 608** Differential Pressure Transmitters convert positive, negative (vacuum), or differential pressures of clean, dry air or other non-conductive, non-corrosive gases into a standard two wire, 4-20 mA output signal. The use of an ultra-thin silicon diaphragm enables precision measurement of differential pressures as low as 0.1 in w.c. while withstanding high static working pressures up to 100 psig (6.89 bar). The Series 608 transmitters are FM approved intrinsically safe for use in the specified hazardous locations when used with an approved intrinsic safety barrier. The rugged NEMA 4X, stainless steel housing makes this transmitter ideal for use in industrial and process plant environments.

## FEATURES/BENEFITS

- High accuracy at low pressure ranges provides exceptional measurement for ensuring tight-control and minimizing costly out of specification conditions
- Intrinsically safe for use in the specified hazardous locations meets specifications where pressure transmission and safety cannot be compromised
- NEMA 4X rated enclosure provides protection in harsh environments permitting outdoor monitoring or in areas where dust and particulate matter exists

## APPLICATIONS

- Lab fume hood control
- Clean room applications
- Flow measurements and control
- Filter monitoring
- Furnace draft measurement
- Process control

| MODEL CHART |                 |
|-------------|-----------------|
| Model       | Range (in w.c.) |
| 608-02      | 0 to 0.5        |
| 608-03      | 0 to 1.0        |
| 608-04      | 0 to 2.0        |
| 608-05      | 0 to 5.0        |
| 608-06      | 0 to 10.0       |
| 608-07      | 0 to 25.0       |
| 608-01B     | 0 to $\pm 0.25$ |
| 608-13B*    | 0 to $\pm 1.0$  |
| 608-04B     | 0 to $\pm 2.0$  |

\*Models have a  $\pm 0.25\%$  FS accuracy.

## SPECIFICATIONS

**Service:** Clean/dry air and compatible, combustible gases. (see Agency Approvals for FM ratings).

**Wetted Materials:** Consult factory.

**Accuracy:**  $\pm 0.5\%$  or  $\pm 0.25\%$  full scale.

**Stability:**  $\pm 0.5\%$  FS/year.

**Pressure Limits:** 100 psig (6.89 bar); 15 psid (1.03 bar).

**Temperature Limits:** -20 to 185°F (-28 to 85°C).

**Compensated Temperature Range:** 0 to 160°F (-18 to 71°C).

**Thermal Effect:** 0.5% Accuracy:  $\pm 0.02\%$  FS/°F; 0.25% Accuracy:  $\pm 0.01\%$  FS/°F.

**Power Requirements:** 12 to 36 VDC (2-wire).

**Output Signal:** 4 to 20 mA DC.

**Zero and Span Adjustments:** Potentiometers for zero and span.

**Response Time:** 250 ms.

**Loop Resistance:** DC: 0 to 1045  $\Omega$  max.

**Current Consumption:** 4 to 20 mA.

**Electrical Connections:** Screw terminal: Two 1/2" female NPT conduit.

**Process Connections:** Two 1/4" female NPT.

**Enclosure Rating:** NEMA 4X (IP66).

**Weight:** 2 lb (0.9 kg).

**Agency Approvals:** FM approved intrinsically safe for use in Class I, Div. 1, Groups A, B, C, D; Class II, Div. 1, Groups E, F, G; Class III, Div. 1 when wired with approved intrinsically safe barrier. Entity parameters:  $V_{max}$  = 36 VDC;  $I_{max}$  = 250 mA;  $C$  = 12 nF;  $L$  = 0 mH.

## OPTION

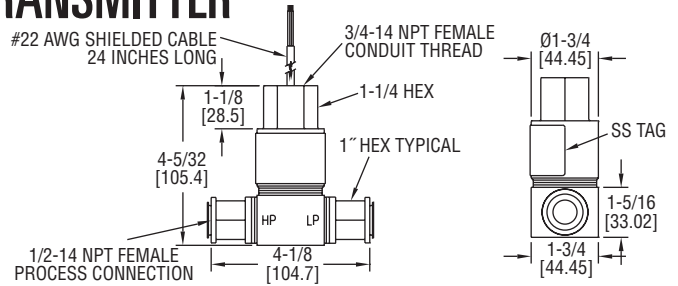
| Use order code: | Description                            |
|-----------------|--|
| NISTCAL-PT1     | NIST traceable calibration certificate |

## ACCESSORIES

| Model   | Description                          |
|---------|--------------------------------------|
| MTL5041 | Intrinsically safe galvanic isolator |
| MTL7706 | Intrinsically safe zener barrier     |

# FIXED RANGE DIFFERENTIAL PRESSURE TRANSMITTER

Explosion-Proof, 0.5% Accuracy



**SERIES 636D** Differential Pressure Transmitter can be used for measuring pressures of liquids, gases & vapors. All available ranges have an excellent 0.5% FS accuracy with a 4-20 mA Output standard or optional 1-5 VDC output. The NEMA 4 housing is an all 316 welded construction that is designed to withstand the harshest environmental conditions. With all 316L wetted materials, this transmitter is compatible with most media. These units are CSA approved explosion-proof for use in the specified hazardous locations and meet NACE standards for off-shore applications.

## FEATURES/BENEFITS

- NEMA 4X rated enclosure provides protection in harsh environments permitting outdoor monitoring or in areas where dust and particulate matter exists
- Explosion-proof device for use in hazardous areas
- Versatile, high-accuracy device for liquid or gas supports designs requiring more precise measurements in support of application

## APPLICATIONS

- Pump differential pressure
- Critical process monitoring
- Off shore applications

## MODEL CHART

| Model<br>4-20 mA Out | Range         | Model<br>1-5 VDC Out | Range         |
|----------------------|---------------|----------------------|---------------|
| 636D-0               | 0 to 6 psid   | 636D-0-LP            | 0 to 6 psid   |
| 636D-1               | 0 to 15 psid  | 636D-1-LP            | 0 to 15 psid  |
| 636D-2               | 0 to 30 psid  | 636D-2-LP            | 0 to 30 psid  |
| 636D-3               | 0 to 60 psid  | 636D-3-LP            | 0 to 60 psid  |
| 636D-4               | 0 to 100 psid | 636D-4-LP            | 0 to 100 psid |
| 636D-5               | 0 to 150 psid | 636D-5-LP            | 0 to 150 psid |
| 636D-6               | 0 to 200 psid | 636D-6-LP            | 0 to 200 psid |
| 636D-7               | 0 to 300 psid | 636D-7-LP            | 0 to 300 psid |
| 636D-8               | 0 to 500 psid | 636D-8-LP            | 0 to 500 psid |

## SPECIFICATIONS

**Service:** Compatible gases, liquids, or vapors.

**Wetted Materials:** Types 316L SS.

**Accuracy:** BFS:  $\pm 0.5\%$  FS (includes linearity, hysteresis, and repeatability).

**Stability:**  $\pm 1.0$  FS/yr.

**Pressure Limits:** 3 x full-scale differential pressure; Burst: 2500 psig.

**Temperature Limits:** Ambient operating:

-40 to 140°F (-40 to 60°C); Process

interface: -40 to 212°F (-40 to 100°C);

Storage: -40 to 212°F (-40 to 100°C).

**Compensated Temperature Range:**

-20 to 160°F (-29 to 71°C).

**Thermal Effect:**  $\pm 2\%$  FS/50°F

(reference to 77°F).

**Power Requirements:** 12 to 30 VDC for 4 to 20 mA outputs; 8 to 14 VDC for 1 to 5 VDC outputs, both with reverse polarity protection.

**Output Signal:** 4 to 20 mA DC or 1 to 5 VDC.

**Zero and Span Adjustment:** Fixed.

**Response Time:** 20 ms.

**Loop Resistance:** 900  $\Omega$  max @ 30 VDC for current outputs. For voltage outputs, minimum lead resistance 50k ohms.

**Current Consumption:** 4 to 20 mA for current output models; 3 mA for voltage output models.

**Electrical Connections:** 2 ft, 22 AWG cable; 3/4" female NPT conduit.

**Process Connections:** Two 1/2" female NPT.

**Enclosure Rating:** NEMA 4 (IP56).

**Mounting Orientation:**  $\pm 0.05$  psi/90° rotation from horizontal.

**Weight:** 1.8 lb (0.82 kg).

**Agency Approvals:** CSA approved explosion-proof for Class I, Division 1, Groups B, C, and D; Class II, Groups E, F, and G; Class III.

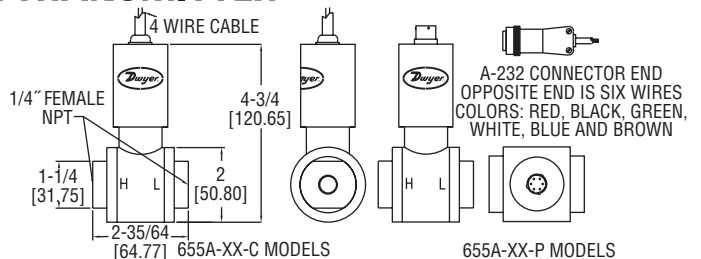
## OPTION

| Use order code: | Description                            |
|-----------------|--|
| NISTCAL-PT1     | NIST traceable calibration certificate |

## SERIES 655A

# 316 WET/WET DIFFERENTIAL PRESSURE TRANSMITTER

Ranges Down to 3 in w.c., 6-Point NIST Certificate Included



**SERIES 655A** Differential Pressure Transmitters are designed for high static/low DP applications designed especially for the End Users and OEM's where extreme overpressure and high performance of 0.25% accuracy and stability are required at ranges down to 3 in w.c. Each unit includes a 6-point NIST certificate of calibration which demonstrates the unit's high level of performance.

## FEATURES/BENEFITS

- Extreme overpressure and stability at low ranges provides durable device for OEM and end-user applications
- High-accuracy device for low differential pressure designs requiring more precise measurements in support of application
- NIST certificate available to demonstrate high-level of performance

## APPLICATIONS

- Pump differential pressure
- Critical process monitoring
- High accuracy/low differential pressure OEM applications

## MODEL CHART

| Model     | Range           | Model     | Range           |
|-----------|-----------------|-----------|-----------------|
| 655A-00-C | 0 to 3 in w.c.  | 655A-00-P | 0 to 3 in w.c.  |
| 655A-01-C | 0 to 5 in w.c.  | 655A-01-P | 0 to 5 in w.c.  |
| 655A-02-C | 0 to 8 in w.c.  | 655A-02-P | 0 to 8 in w.c.  |
| 655A-03-C | 0 to 10 in w.c. | 655A-03-P | 0 to 10 in w.c. |
| 655A-04-C | 0 to 15 in w.c. | 655A-04-P | 0 to 15 in w.c. |
| 655A-05-C | 0 to 20 in w.c. | 655A-05-P | 0 to 20 in w.c. |
| 655A-06-C | 0 to 1 psid     | 655A-06-P | 0 to 1 psid     |
| 655A-07-C | 0 to 2 psid     | 655A-07-P | 0 to 2 psid     |

**Note:** Change 'C' to 'P' for optional 6 pin male connection.

## SPECIFICATIONS

**Service:** Compatible gases or liquids.

**Wetted Materials:** 316L SS.

**Accuracy:**  $\pm 0.25\%$  BFS, RSS (combined effect of non-linearity, hysteresis, and repeatability).

**Stability:**  $\leq \pm 0.25\%$  FSO/yr.

**Temperature Limits:** -20 to 200°F

(-29 to 93°C).

**Compensated Temperature Limits:**

0 to 170°F (-17.8 to 76.7°C).

**Pressure Limits:** 1000 psi (68.95 bar)

continuous; 3000 psi (206.8 bar) burst.

**Thermal Effects:**  $\leq \pm 1.5\%$  FS oven

comp. temperature range.

**Power Requirements:** 8 to 38 VDC.

**Output Signal:** 4 to 20 mA.

**Static Pressure Effects:** On zero:

$\leq \pm 0.25\%$  FSO per 1000 psi; on span:

$\leq \pm 0.5\%$  of reading per 1000 psi.

**Response Time:**  $< 10$  ms.

**Loop Resistance:** 1500  $\Omega$ .

**Electrical Connections:** Cable exit with 24" cable; optional 6-pin connector.

**Process Connections:** 1/4" NPT female.

**Enclosure Rating:** Designed to meet NEMA 4X (IP66).

**Mounting Orientation:** Mount in vertical position; zero shifts up to  $\pm 1$  in w.c. depending on orientation.

**Weight:** 18 oz (510 g).

**Agency Approvals:** CE.

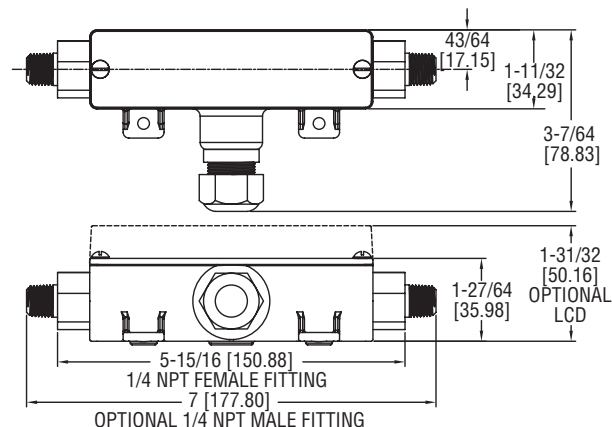
## ACCESSORY

| Model | Description   |
|-------|---|
| A-232 | Connection with cable (3'); for 6 pin connection models |



## WET/WET DIFFERENTIAL PRESSURE TRANSMITTER

0.5% Accuracy, NEMA 4X (IP66) Enclosure



The **SERIES 629C** Wet/Wet Differential Pressure Transmitter monitors differential pressure of air and compatible gases and liquids with 0.5% accuracy. The design employs dual pressure sensors converting pressure changes into a standard 4 to 20 mA output signal or field selectable voltage. Small internal volume and minimal moving parts result in exceptional response and reliability. The terminal block, as well as a zero adjustment button, are easily accessed under the top cover. The Series 629C Differential Pressure Transmitter is designed to meet NEMA 4X (IP66) construction.

## SPECIFICATIONS

**Service:** Compatible gases and liquids.  
**Wetted Materials:** Without valve: 316, 316L SS. Additional wetted parts with valve option: Buna-N, silicone grease, PTFE, brass 360, copper, and reinforced copolymer.  
**Accuracy:**  $\pm 0.5\%$  FS (includes linearity, hysteresis & repeatability).  
**Stability:**  $\pm 1\%$  FS/year.  
**Temperature Limits:** 0 to 200°F (-18 to 93°C).  
**Compensated Temperature Limits:** 0 to 175°F (-18 to 79°C).  
**Pressure Limits:** See Table 1.  
**Thermal Effects:** Avg 0.04%/°F (0.072%/°C) (includes zero and span).  
**Power Requirements:** 2-wire: 10 to 35 VDC; 3-wire: 13 to 35 VDC or isolated 16 to 33 VAC (reverse polarity protected).  
**Output Signal:** 2-wire: 4 to 20 mA; 3-wire: Field selectable 0 to 5, 1 to 5, 0 to 10, or 2 to 10 VDC.

**Zero and Units:** Push buttons inside conduit enclosure.  
**Response Time:** 400 msec.  
**Loop Resistance:** Current output: 0 to 1250  $\Omega$  (max);  $R_{max} = 50(V_{ps}-10)$ ; Voltage output: Minimum load resistance = 5 k $\Omega$ .  
**Current Consumption:** 28 mA (max).  
**Electrical Connections:** Removable terminal block; 1/2" female NPT conduit.  
**Process Connections:** 1/4" female or male NPT.  
**Display:** Optional 4-1/2 digit LCD field attachable display.  
**Enclosure Rating:** Designed to meet NEMA 4X (IP66) for non-LCD models.  
**Mounting Orientation:** Not position sensitive.  
**Weight:** 10.1 oz (286 g).  
**Agency Approvals:** CE.

## MODEL CHART

| Example               | 629C | -01  | -CH | -P1                  | -E1                        | -S1      | -3V                           | 629C-01-CH-P1-E1-S1-3V  |
|-----------------------|------|--|-----|----------------------|----------------------------|----------|-------------------------------|---|
| Series                | 629C |  |     |                      |                            |          |                               | Wet/wet differential pressure transmitter   |
| Range                 |      | 01<br>02<br>03<br>04<br>05<br>06<br>07<br>08<br>09<br>11<br>12<br>13<br>14<br>15<br>16<br>17<br>18<br>19 |     |                      |                            |          |                               | 0 to 5 psid<br>0 to 10 psid<br>0 to 25 psid<br>0 to 50 psid<br>0 to 100 psid<br>0 to 150 psid<br>0 to 200 psid<br>0 to 300 psid<br>0 to 500 psid<br>0 to 0.5 bar differential<br>0 to 1 bar differential<br>0 to 2 bar differential<br>0 to 4 bar differential<br>0 to 6 bar differential<br>0 to 10 bar differential<br>0 to 15 bar differential<br>0 to 20 bar differential<br>0 to 30 bar differential |
| Housing               |      |  | CH  |                      |                            |          |                               | Conduit housing, NEMA 4X (IP66)   |
| Process Connection    |      |  |     | P1<br>P2<br>P3<br>P4 |                            |          |                               | 1/4" male NPT<br>1/4" female NPT<br>1/4" male BSPT<br>1/4" female BSPT  |
| Electrical Connection |      |  |     |                      | E1<br>E2<br>E3<br>E5<br>E9 |          |                               | Cable gland with 3' of prewired cable<br>Cable gland with 6' of prewired cable<br>Cable gland with 9' of prewired cable<br>1/2" female NPT conduit<br>M-12 4 pin connector  |
| Signal Output         |      |  |     |                      |                            | S1<br>S3 |                               | 4-20 mA<br>Field selectable 0-5, 1-5, 0-10, 2-10 VDC  |
| Options               |      |  |     |                      |                            |          | 3V<br>AT<br>FC<br>LCD<br>NIST | 3-way valve<br>Aluminum tag<br>Factory calibration certificate<br>LCD indication<br>NIST traceable certificate  |

## RANGE

| Range Number | Range                     | Working Pressure* | Over Pressure |
|--------------|---------------------------|-------------------|---------------|
| 01           | 0 to 5 psid               | 10 psi            | 50 psi        |
| 02           | 0 to 10 psid              | 20 psi            | 50 psi        |
| 03           | 0 to 25 psid              | 50 psi            | 120 psi       |
| 04           | 0 to 50 psid              | 100 psi           | 250 psi       |
| 05           | 0 to 100 psid             | 200 psi           | 500 psi       |
| 06           | 0 to 150 psid             | 300 psi           | 750 psi       |
| 07           | 0 to 200 psid             | 400 psi           | 1000 psi      |
| 08           | 0 to 300 psid             | 600 psi           | 1200 psi      |
| 09           | 0 to 500 psid             | 1000 psi          | 2000 psi      |
| 11           | 0 to 0.5 bar differential | 1 bar             | 3 bar         |
| 12           | 0 to 1 bar differential   | 2 bar             | 8 bar         |
| 13           | 0 to 2 bar differential   | 4 bar             | 8 bar         |
| 14           | 0 to 4 bar differential   | 8 bar             | 18 bar        |
| 15           | 0 to 6 bar differential   | 12 bar            | 18 bar        |
| 16           | 0 to 10 bar differential  | 20 bar            | 50 bar        |
| 17           | 0 to 15 bar differential  | 30 bar            | 60 bar        |
| 18           | 0 to 20 bar differential  | 40 bar            | 80 bar        |
| 19           | 0 to 30 bar differential  | 60 bar            | 120 bar       |

\*Pressures exceeding the working pressure limit may cause a calibration shift of up to  $\pm 3\%$  of full scale.

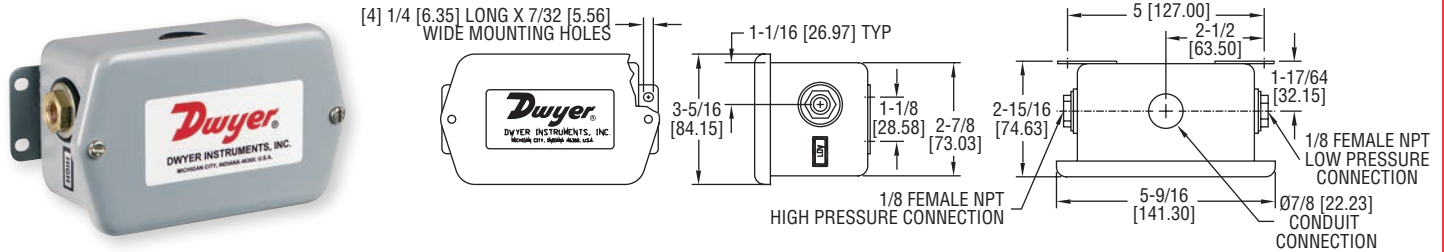
**Note:** Over pressure of all models with 3-way valve is 100 psi.

## ACCESSORIES

| Model     | Description                    |
|-----------|--------------------------------|
| A-629C-3V | Field-upgradeable LCD          |
| A-62X-LCD | 3-way brass manifold valve     |
| A-155     | Cable gland with 1/2" NPT male |
| A-228     | 12" SS flex hose               |
| BBV-1B    | Mini SS 3-valve black manifold |

# WET/WET DIFFERENTIAL PRESSURE TRANSMITTER

Ranges from 0 to 25 in w.c.,  $\pm 1.0\%$  Accuracy, NEMA 4 (IP56) Enclosure, 2-Wire



Monitor differential pressure in air/liquid flow systems, HVAC automation, pneumatic systems and process control with the **SERIES 647** Wet/Wet Differential Pressure Transmitter. Units are temperature compensated and provide a 4 to 20 mA output signal which can be interfaced with chart recorders, data loggers and computerized monitoring and control systems.

## FEATURES/BENEFITS

- Versatile for liquid or gas supports designs requiring more precise measurements in support of application
- Temperature compensated improves performance of device for accurate measurement under different operating environments.
- Output signal provides capability to interface with automation systems to centralize monitoring

## APPLICATIONS

- Flow
- Process control
- HVAC automation
- Pneumatic systems

| MODEL CHART |                 |       |                 |
|-------------|-----------------|-------|-----------------|
| Model       | Range           | Model | Range           |
| 647-0       | 0 to 1 in w.c.  | 647-3 | 0 to 5 in w.c.  |
| 647-1       | 0 to 3 in w.c.  | 647-4 | 0 to 10 in w.c. |
| 647-2       | 0 to 25 in w.c. |       |                 |

## SPECIFICATIONS

**Service:** Compatible gases or liquids on both pressure and reference sides.  
**Wetted Materials:** Brass, vinyl, glass-filled polyester, silicon, and fluorosilicone.  
**Accuracy:**  $\pm 1.0\%$  FS.  
**Stability:**  $\pm 1.5\%$  FS output/year.  
**Temperature Limits:** 32 to 122°F (0 to 50°C).  
**Pressure Limits:** Ranges 1 in w.c. to 5 psi: 20 psi, 15 psi range: 45 psi, 30 psi range: 60 psi.  
**Thermal Effects:** Zero:  $\pm 0.05\%$  FS/°F, Span:  $\pm 0.05\%$  rdg/°F.

**Power Requirements:** 18 to 30 VDC.  
**Output Signal:** 4 to 20 mA, 2-wire.  
**Zero and Span Adjustments:** Adjustable,  $\pm 10\%$ .  
**Loop Resistance:** 400Ω @ 18 VDC, 600Ω @ 24 VDC, 1000Ω @ 30 VDC.  
**Electrical Connection:** Screw terminals, reverse polarity protected.  
**Process Connections:** Two 1/8" female NPT.  
**Housing:** Gasketed steel epoxy painted, NEMA 4 (IP56).  
**Weight:** 14 oz (397 g).

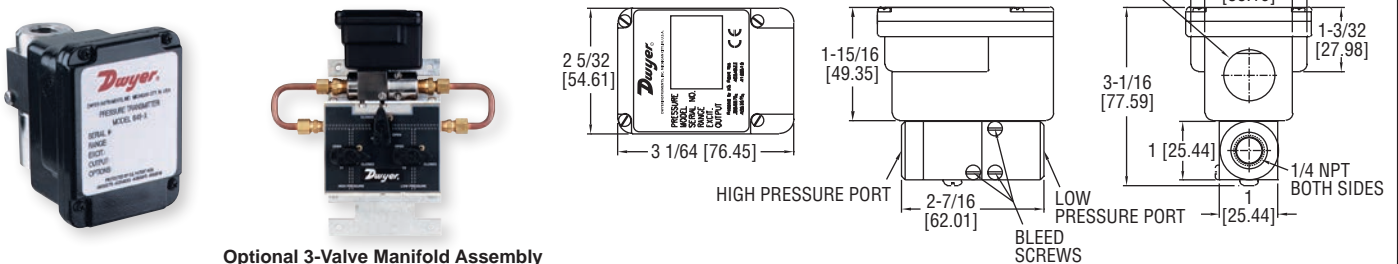
## OPTION

| Use order code: | Description                            |
|-----------------|--|
| NISTCAL-PT1     | NIST traceable calibration certificate |

## SERIES 645

# WET/WET DIFFERENTIAL PRESSURE TRANSMITTER

$\pm 0.25\%$  Accuracy, Quick Response, 2-Wire Design



Optional 3-Valve Manifold Assembly

**SERIES 645** Wet/Wet Differential Pressure Transmitters are designed for use with compatible gases and liquids which can be applied to both the pressure and reference ports. Quick response capacitance sensor delivers a 4 to 20 mA output signal proportional to differential pressure with  $\pm 0.25\%$  accuracy. The Series 645 transmitters are ideal for process control, filter condition monitoring, refrigeration equipment, pump speed control, HVAC equipment, and liquid level measurement. For ease of installation and maintenance, order optional 3-valve manifold assembly. Bleed ports allow for total elimination of air in the line and pressure cavities.

## FEATURES/BENEFITS

- Versatile, high-accuracy device for liquid or gas supports designs requiring more precise measurements in support of application
- Optional 3-way valve manifold supports simplifying installation or removal of transmitter without interrupting process

## APPLICATIONS

- Process control
- Refrigeration equipment
- HVAC equipment
- Filter monitoring
- Pump speed control
- Liquid level measurement

| MODEL CHART |              |       |               |
|-------------|--------------|-------|---------------|
| Model       | Range        | Model | Range         |
| 645-0       | 0 to 1 psid  | 645-4 | 0 to 25 psid  |
| 645-1       | 0 to 2 psid  | 645-5 | 0 to 50 psid  |
| 645-2       | 0 to 5 psid  | 645-6 | 0 to 100 psid |
| 645-3       | 0 to 10 psid |       |               |

**Note:** For optional 3-valve manifold assembly, add -3V to end of model number.

## SPECIFICATIONS

**Service:** Compatible gases or liquids on both pressure and reference sides.  
**Wetted Materials:** 17-4 PH stainless steel, 300 Series stainless steel, fluoroelastomer and silicone O-rings and bleed screw seals.  
**Accuracy:**  $\pm 0.25\%$  FS (RSS).  
**Temperature Limits:** Operating: 0 to 175°F (-22 to 80°C); Storage: -65 to 260°F (-54 to 126°C).  
**Pressure Limits:** (High side) 1 to 5 psi: 20 x FS, 10 to 25 psi: 10 x FS, 50 psi: 5 x FS, 100 psi: 2.5 x FS; (low side) 2.5 x FS.  
**Thermal Effects:** (includes zero and span)  $\pm 0.02\%$  FS/°F, 30 to 150°F (-1 to 65°C).  
**Power Requirements:** 11 to 30 VDC.  
**Output Signal:** 4 to 20 mA, 2-wire.

**Zero and Span Adjustments:** Adjustable,  $\pm 1$  mA, non-interactive.  
**Response Time:** 30 to 50 ms.  
**Loop Resistance:** 0 to 1000Ω.  
**Electrical Connection:** Barrier strip terminal block with conduit enclosure and .875" (22 mm) diameter conduit opening.  
**Process Connection:** 1/4"-18 female NPT.  
**Housing:** Stainless steel/aluminum, NEMA 4X (IP56).  
**Weight:** 14.4 oz (0.4 kg).  
**Agency Approvals:** CE.

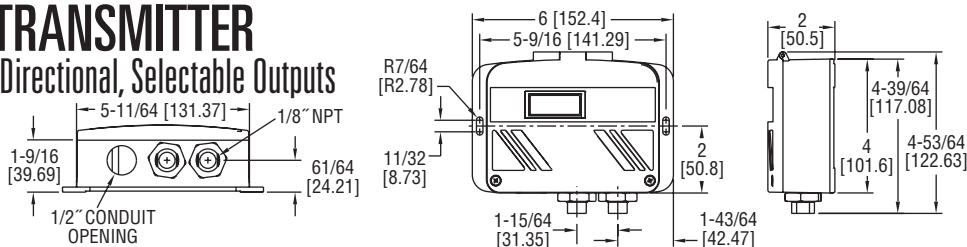
**3-Valve Manifold Assembly**  
**Manifold:** Brass.  
**Valve Type:** 90° on/off.  
**Process Connection:** 1/4"-18 female NPT.

## OPTION

| Use order code: | Description                            |
|-----------------|--|
| NISTCAL-PT1     | NIST traceable calibration certificate |

# DIFFERENTIAL PRESSURE TRANSMITTER

## Selectable Ranges of Uni-Directional or Bi-Directional, Selectable Outputs



The **SERIES WWDP** Wet-to-Wet Differential Pressure Transmitter offers everything in one package by having 30 field selectable variations in just 3 models. The WWDP provides field selectable unidirectional and bidirectional pressure ranges, configurable 0-5, 1-5, 0-10 VDC, and 4 to 20 mA output. It also provides an auto-zero capability. The field selectable port swap feature eliminates costly re-plumbing if the unit is improperly installed or if the transmitter is simply replaced. An optional LCD display is available for on-sight indication of line and differential pressure. The all cast aluminum housing is rated NEMA 4 (IP66). These features make the WWDP transmitter an ideal instrument for measuring the flow of various liquids and gases, pressure drop across filters, measurement of liquid level or pressurized vessels, and for use in energy management and process control systems.

### FEATURES/BENEFITS

- Versatile device for liquid or gas supports designs requiring more precise measurements in support of application
- Field selectable port swap eliminates costly re-plumbing if unit is re-installed or replaced
- Uni-directional and bi-directional pressure selection with configurable output provides a single device that can meet broad application needs without having to specify multiple devices
- Optional LCD display provides local status to identify operational conditions
- NEMA 4 rated enclosure provides protection in harsh environments permitting outdoor monitoring or in areas where dust and particulate matter exists

### APPLICATIONS

- Chiller monitoring
- Filter monitoring
- Liquid level
- Pressure vessels
- Process control
- Energy management

| OPTION          |  |
|-----------------|--|
| Use order code: | Description                            |
| NISTCAL-PT1     | NIST traceable calibration certificate |

### SPECIFICATIONS

**Service:** Gases or liquids compatible with 17-4 PH stainless steel.

**Accuracy:** All pressure ranges have  $\pm 1\%$  full-scale accuracy except the lowest selectable range of each unit is  $\pm 2\%$  full-scale.

**Stability:**  $\pm 0.5\%$  per year.

**Temperature Limits:** Compensated temperature range: 32 to 130°F (0 to 54°C); Operating temperature range: -4 to 185°F (-20 to 85°C).

**Pressure Limits:** Max working pressure: WWDP-1: 50 psi; WWDP-2: 100 psi; WWDP-3: 250 psi; Proof pressure: 2.2X of full-scale; Burst pressure: 40X of full-scale.

**Thermal Effect:** 2% FS/100°F (50°C) includes zero and span.

**Power Requirements:** 12 to 30 VDC/18 to 28 VAC (reverse excitation protected). Note: 4-20 mA output cannot be powered with AC voltage.

**Output Signal:** Selectable 0 to 5, 0 to 10 and 1 to 5 VDC; 4 to 20 mA.

**Zero & Span:** Digital "re" zero button (should be used when changing ranges). Span can be adjusted by changing between field selectable ranges.

**Response Time:** 1 to 5 sec (selectable).

**Loop Resistance:** 1000  $\Omega$ .

**Current Consumption:** VDC power: 0 to 5, 1 to 5 VDC output 4 mA (typ); 0 to 10 VDC output 5 mA (typ); 4 to 20 mA output 20 mA max. Current consumption will equal the transmitter output in current mode. VAC power: 0 to 5, 1 to 5, 0 to 10 VDC output 40 mA (typ).

**Electrical Connections:** 1/2" conduit.

**Process Connections:** 1/8" female NPT internal.

**Enclosure Rating:** Designed to meet NEMA 4 (IP66).

**Mounting Orientation:** Vertical; mount the pressure ports down (keeps debris from building up inside the pressure port).

**Weight:** 1.5 lb (680.4 g).

**Agency Approvals:** CE.

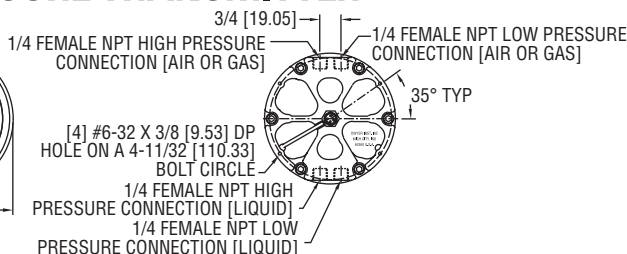
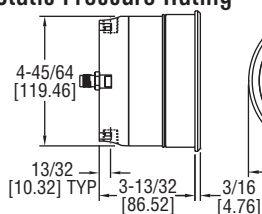
### MODEL CHART

| Model      | Description (psid)          | Max. Working Pressure (psi) |
|------------|-----------------------------|-----------------------------|
| WWDP-1     | Selectable 5, 10, 25, 50    | 50                          |
| WWDP-2     | Selectable 10, 20, 50, 100  | 100                         |
| WWDP-3     | Selectable 25, 50, 125, 250 | 250                         |
| WWDP-1-LCD | Selectable 5, 10, 25, 50    | 50                          |
| WWDP-2-LCD | Selectable 10, 20, 50, 100  | 100                         |
| WWDP-3-LCD | Selectable 25, 50, 125, 250 | 250                         |

## SERIES 631B

# CAPSULHELIC® WET/WET DIFFERENTIAL PRESSURE TRANSMITTER

## Ranges Down to 0.5 in w.c. with 500 psi Static Pressure Rating



The Dwyer **SERIES 631B** Capsuhelic® Differential Pressure Transmitter monitors differential pressure of air and compatible gases and liquids with accuracy. The design employs converting pressure changes into a standard 4-20 mA output signal for two wire circuits. Digital push-button, zero and span adjustments are easily accessed on the front cover. The Series 631 Differential Pressure Transmitter is designed to meet NEMA 4X (IP66) construction. Robust housing offers 500 psi static pressure rating on ranges down to 0.5 in w.c.

### FEATURES/BENEFITS

- Gage capsule permits high-pressure usage with small differentials
- Versatile device for liquid or gas supports designs requiring more precise measurements in support of application
- Zero and range adjustments outside of gage means no disassembly in normal service
- NEMA 4X rated enclosure provides protection in harsh environments permitting outdoor monitoring or in areas where dust and particulate matter exists

### APPLICATIONS

- Refrigeration equipment
- Energy and water management
- Liquid level in water storage tanks

| ACCESSORY |  |
|-----------|--|
| Model     | Description  |
| A-164     | 16.4' (5 m) cable with M-12 4-pin female connector |

### SPECIFICATIONS

**Service:** Compatible gases & liquids.

**Wetted Materials:** Brass, silicone, 300 SS.

**Accuracy:** Transmitter output:  $\pm 2\%$  FS (includes linearity, hysteresis and repeatability). Gage:  $\pm 3\%$  of full-scale at 70°F (21.1°C).

**Stability:**  $\pm 1\%$  FS/yr.

**Temperature Limits:** 20 to 120°F (-6.67 to 48.9°C).

**Pressure Limits:** -20" Hg to 500 psig (-0.677 bar to 34.4 bar).

**Thermal Effect:** 0.025%/°F (0.045%/°C) includes zero & span.

**Power Requirements:** 10 to 35 VDC.

**Output Signal:** 4 to 20 mA.

**Response Time:** 50 msec.

**Loop Resistance:** 0 to 1250  $\Omega$  max.

**Electrical Connections:** M-12 circular 4 pin connector.

**Process Connections:** 1/4" female NPT high and low pressure taps, duplicated - one pair top for air and gas, and one pair bottom for liquids.

**Enclosure Rating:** Designed to meet NEMA 4X (IP66).

**Mounting Orientation:** Diaphragm in vertical position. Consult factory for other position orientations.

**Weight:** 8 lb 4 oz (3.74 kg).

**Agency Approvals:** CE.

### MODEL CHART

| Model  | Range            |
|--------|------------------|
| 631B-0 | 0 to 0.5 in w.c. |
| 631B-1 | 0 to 1 in w.c.   |
| 631B-2 | 0 to 2 in w.c.   |
| 631B-3 | 0 to 5 in w.c.   |
| 631B-5 | 0 to 25 in w.c.  |

### OPTION

| To order add suffix: | Description                            |
|----------------------|--|
| -NIST                | NIST traceable calibration certificate |
| Example: 631B-2-NIST |  |



# UTILITY GAGE

1.5", 2" and 2.5" Dials with Back Connection; 2" Dials with Dual PSI/Bar x100 kPa Scales



UGI



UGJ



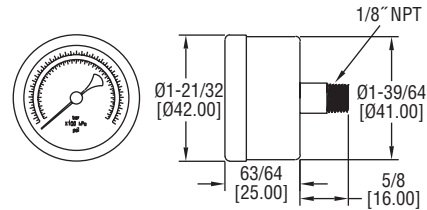
UGJ Back



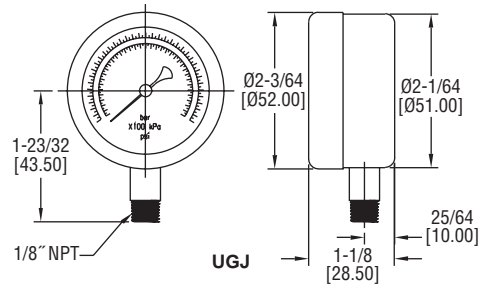
UGK



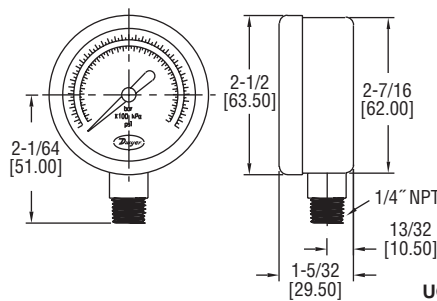
UGK Back



UGI



UGJ



UGK

The **SERIES UGI & UGJ** Utility Gages possess dual psi and bar (x100 kPa) scales with  $\pm 2.5\%$  accuracy. The **SERIES UGK** Gages have dual psi and bar (x100 kPa) scales with  $\pm 1.5\%$  accuracy. They are designed with black steel housings. Wetted parts include a brass socket and phosphor bronze tube. A wide offering of ranges are available from full vacuum to 300 psi. The center back mounting and compact size makes this gage the perfect choice for pneumatic air regulators.

## FEATURES/BENEFITS

- Dual scale provides reading in easily recognizable units
- Good accuracy gage for value-sensitive applications
- Compact size provides for mounting with dimensional limitations
- Higher accuracy gage for value-sensitive applications requiring more precise measurement
- Back or bottom mounting and compact size provides for mounting with dimensional limitations

## APPLICATIONS

- Air regulators
- Pneumatic systems

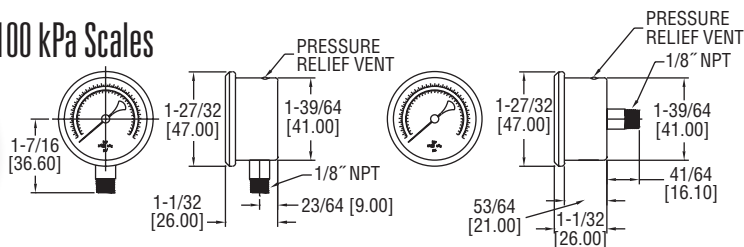
| MODEL CHART |              |
|-------------|--------------|
| Model       | Range        |
| UGI-B10141N | 30" Hg to 0  |
| UGI-B10341N | 0 to 30 psi  |
| UGI-B10441N | 0 to 60 psi  |
| UGI-B10541N | 0 to 100 psi |
| UGI-B10641N | 0 to 160 psi |
| UGI-B10741N | 0 to 200 psi |
| UGI-B11041N | 0 to 300 psi |

| MODEL CHART   |              |
|---|--------------|
| Model   | Range        |
| UGJ-C10121N   | 30" Hg to 0  |
| UGJ-C10321N   | 0 to 30 psi  |
| UGJ-C10421N   | 0 to 60 psi  |
| UGJ-C10521N   | 0 to 100 psi |
| UGJ-C10621N   | 0 to 160 psi |
| UGJ-C10721N   | 0 to 200 psi |
| UGJ-C11021N   | 0 to 300 psi |
| <b>Note:</b> For back connect gages, change 21N to 41N. |              |

| MODEL CHART                                       |              |
|---|--------------|
| Model   | Range        |
| UGK-D10122N                                       | 30" Hg to 0  |
| UGK-D10322N                                       | 0 to 30 psi  |
| UGK-D10422N                                       | 0 to 60 psi  |
| UGK-D10522N                                       | 0 to 100 psi |
| UGK-D10622N                                       | 0 to 160 psi |
| UGK-D10722N                                       | 0 to 200 psi |
| UGK-D11022N                                       | 0 to 300 psi |
| <b>Note:</b> For back connect, change 22N to 42N. |              |

## SPECIFICATIONS

**Service:** Compatible gases and liquids.  
**Wetted Materials:** Brass connector, phosphor bronze tube.  
**Housing:** Black painted steel.  
**Lens:** Polycarbonate.  
**Accuracy:** UGI & UGJ:  $\pm 2.5\%$  FS; UGK: 1.5% FS.  
**Pressure Limit:** FS range.  
**Temperature Limits:** -4 to 140°F (-20 to 60°C).  
**Size:** UGI: 1.5" (40 mm); UGJ: 2" (50 mm); UGK: 2.5" (63 mm).  
**Process Connection:** UGI: 1/8" male NPT center back; UGJ: 1/8" NPT; UGK: 1/4" male NPT.  
**Weight:** UGI: 2.1 oz (59 g); UGJ: 3.8 oz (108 g); UGK: 5.1 oz (145 g) bottom, 5.5 oz (155 g) black.

**Dwyer****SERIES SG1 & SG3****1.5" INDUSTRIAL PRESSURE GAGE****2.5% FS Accuracy, 316 SS or Brass Wetted Parts, Dual PSI/Bar x100 kPa Scales****SG1 Bottom****SG1 Back****SG3 Bottom****SG3 Back**

The **SERIES SG1** Gages are perfect for applications where resistance to corrosion is necessary. The stainless steel case and ring offer excellent protection from harsh processes. The SG1 gages are an economical choice where ambient corrosion and vibration are a concern. Gages are suitable for all fluids that are compatible with brass and bronze, and are available with bottom or back connections.

The **SERIES SG3** Gages have dual psi and bar (x100 kPa) scales with  $\pm 2.5\%$  full-scale accuracy. The Series SG3 gages are designed with 304 SS housings and 316 SS wetted parts for excellent chemical compatibility. These gages cover a wide variety of ranges from full vacuum to 300 psi. Units can withstand ambient temperatures up to 140°F (60°C). Bottom or back 1/8" NPT connection options available.

**FEATURES/BENEFITS**

- Stainless steel housing to resist ambient corrosion for longer service life in harsh environments
- Good accuracy gage for value-sensitive applications requiring more precise measurement and where vibration is a concern
- Back or bottom mounting and compact size provides for mounting with dimensional limitations

**APPLICATIONS**

- Vacuums in pneumatic conveying lines
- Positive pressure in compressed air headers
- Corrosive ambient environments

**SPECIFICATIONS**

**Service:** Compatible gases and liquids.  
**Wetted Materials:** SG1: Brass connector, bronze tube; SG3: 316 L SS tube, 316 SS connector.  
**Housing:** 304 SS.  
**Lens:** Polycarbonate.  
**Accuracy:**  $\pm 2.5\%$  FS.

**Pressure Limit:** FS range.  
**Temperature Limits:** -4 to 140°F (-20 to 60°C).  
**Size:** 1.5" (40 mm).  
**Process Connections:** 1/8" male NPT.  
**Weight:** SG1: 2.2 oz (63 g) bottom, 2.3 oz (65 g) back; SG3: 2.4 oz (70 g) bottom, 2.5 oz (72 g) back.

**MODEL CHART**

| Model       | Range        | Model       | Range        |
|-------------|--------------|-------------|--------------|
| SG1-B10121N | 0 to 30" Hg  | SG3-B10121N | 30" Hg to 0  |
| SG1-B10321N | 0 to 30 psi  | SG3-B10321N | 0 to 30 psi  |
| SG1-B10421N | 0 to 60 psi  | SG3-B10421N | 0 to 60 psi  |
| SG1-B10521N | 0 to 100 psi | SG3-B10521N | 0 to 100 psi |
| SG1-B10621N | 0 to 160 psi | SG3-B10621N | 0 to 160 psi |
| SG1-B10721N | 0 to 200 psi | SG3-B10721N | 0 to 200 psi |
| SG1-B11021N | 0 to 300 psi | SG3-B11021N | 0 to 300 psi |

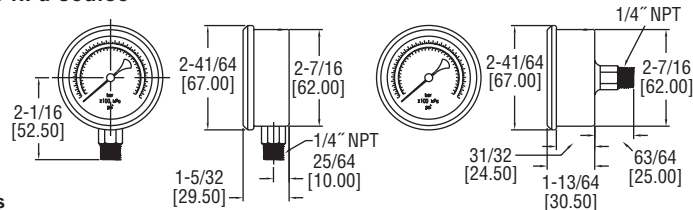
**Note:** For SG1 back connect, change 21N to 41N.  
 For SG3 back connect, change 21N to 41N.

**OPTION**

| Use order code: | Description                            |
|-----------------|--|
| NISTCAL-PG1     | NIST traceable calibration certificate |

**ACCESSORY**

| Model  | Description                                   |
|--------|---|
| A-445B | U-bracket mounting kit for 1.5" and 2.5" gage |

**SERIES SGY & SGZ****2.5" INDUSTRIAL PRESSURE GAGE****1.5% FS Accuracy, 316 SS or Brass Wetted Parts, Dual PSI/Bar x100 kPa Scales****SGZ Bottom****SGZ Back with Accessory Pointers****SGY Bottom****SGY Back with Accessory Pointers**

The **SERIES SGY & SGZ** Gages have dual psi and bar (x100 kPa) scales with  $\pm 1.5\%$  full-scale accuracy. The Series SGZ and SGY gages are designed with 304 SS housings and the SGZ is designed with 316 SS wetted parts for excellent chemical compatibility or SGY brass wetted parts for compatible gases. These gages cover a wide variety of ranges in either bottom or back connection configurations. Series SGZ gages employ an easy-open breather plug on top, which allows liquid filled units to breathe, relieving any built up internal pressures. Plug easily pops open and does not need to be entirely removed or cut like a typical gages' rubber plug grommet.

**FEATURES/BENEFITS**

- Stainless steel housing and wetted parts to resist ambient corrosion for longer service life in harsh environments
- Higher accuracy gage for value-sensitive applications requiring more precise measurement and where vibration is a concern
- Optional sliding pointer clearly mark to make visible critical ranges and high and low points
- Liquid fillable gage with easy open breather plug provides smoother damped movement of pointer
- Back or bottom mounting and compact size provides for mounting with dimensional limitations

**ACCESSORIES**

| Model  | Description                          |
|--------|--------------------------------------|
| A-445D | U-bracket mounting kit for 2.5" gage |
| A-499R | Red sliding color pointer            |
| A-499Y | Yellow sliding color pointer         |
| A-499G | Green sliding color pointer          |

**OPTION**

| Use order code: | Description                            |
|-----------------|--|
| NISTCAL-PG1     | NIST traceable calibration certificate |

**SPECIFICATIONS**

**Service:** Compatible gases and liquids.  
**Wetted Materials:** SGZ: 316 L SS Tube, 316 SS connector; SGY: Brass connection, bronze tube.  
**Housing:** 304 SS.  
**Lens:** Polycarbonate.  
**Accuracy:**  $\pm 1.5\%$  FS.  
**Pressure Limit:** FS range.

**Temperature Limits:** -4 to 140°F (-20 to 60°C).  
**Size:** 2.5" (63 mm).  
**Process Connections:** 1/4" male NPT.  
**Weight:** 4.9 oz (141 g) bottom, 5.8 oz (164 g) back. Add 3.7 oz (104 g) for glycerin fill.

**APPLICATIONS**

- Vacuums in pneumatic conveying lines
- Positive pressure in compressed air headers
- Corrosive ambient environments

**MODEL CHART**

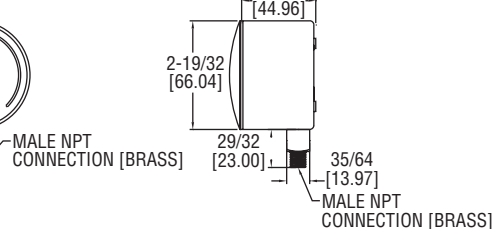
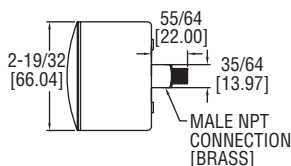
| Model       | Range         | Model       | Range         |
|-------------|---------------|-------------|---------------|
| SGZ-D10122N | 30" Hg to 0   | SGY-D10122N | 30" Hg to 0   |
| SGZ-D10322N | 0 to 30 psi   | SGY-D10322N | 0 to 30 psi   |
| SGZ-D10422N | 0 to 60 psi   | SGY-D10422N | 0 to 60 psi   |
| SGZ-D10522N | 0 to 100 psi  | SGY-D10522N | 0 to 100 psi  |
| SGZ-D10622N | 0 to 160 psi  | SGY-D10622N | 0 to 160 psi  |
| SGZ-D10722N | 0 to 200 psi  | SGY-D10722N | 0 to 200 psi  |
| SGZ-D11022N | 0 to 300 psi  | SGY-D11022N | 0 to 300 psi  |
| SGZ-D11122N | 0 to 500 psi  | SGY-D11122N | 0 to 500 psi  |
| SGZ-D11222N | 0 to 1000 psi | SGY-D11222N | 0 to 1000 psi |

**Note:** To order with glycerin fill add -GF to the end of the model. For back connect, change 22N to 42N.



**Dwyer****SERIES LPG5****2.5" LOW PRESSURE GAGE**

3-2-3% Full Scale Accuracy in a 2.5" Gage



The **SERIES LPG5** Low Pressure Gages offer top of the line performance for pressure applications from 10 in w.c. to 10 psi. The LPG5 gages possess dual scales with 3-2-3% full-scale accuracy on a 2.5" dial. Units are made with a chrome plated steel housing and brass wetted parts. Units can withstand temperatures of -4 to 140°F (-20 to 60°C). This series is meant for the measurement of low pressures of gases and liquids and is ideal for air flow indication, liquid level and draft measurement. Series LPG5 gages are available with either a bottom or back connection option.

**FEATURES/BENEFITS**

- Chrome plated steel housing and brass wetted parts resist ambient for longer service life in harsh environments
- Low pressure gage provides a selection to meet specific applications
- Specified with high ambient and process temperature ratings mean more robust uses and longer service-life
- Good accuracy gage for value-sensitive applications requiring more precise measurement and where vibration is a concern

**APPLICATIONS**

- Air flow indication
- Liquid level
- Draft measurement

**OPTION**

| Use order code: | Description                            |
|-----------------|--|
| NISTCAL-PG1     | NIST traceable calibration certificate |

**SPECIFICATIONS**

**Service:** Compatible gases and liquids.  
**Wetted Materials:** Brass connection, bronze tube.  
**Housing:** Chrome plated steel.  
**Lens:** Polycarbonate.  
**Accuracy:** ± 3-2-3% FS.  
**Pressure Limits:** Full scale range.  
**Temperature Limits:** -4 to 140°F (-20 to 60°C).  
**Size:** 2.5" (63 mm).  
**Process Connections:** 1/4" male NPT.  
**Weight:** 8 oz (227 g).

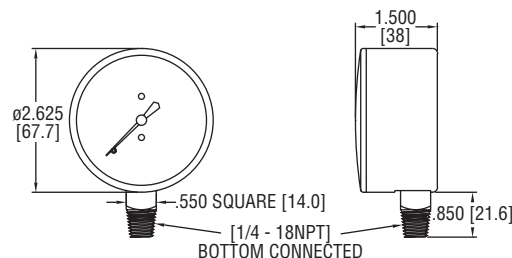
**MODEL CHART**

| Model       | Range in w.c. (kPa) | Model       | Range psi (kPa)   |
|-------------|---------------------|-------------|-------------------|
| LPG5-D8022N | 0 to 10 (0 to 2.5)  | LPG5-D9922N | 0 to 5 (0 to 35)  |
| LPG5-D8122N | 0 to 15 (0 to 3.75) | LPG5-D0022N | 0 to 10 (0 to 70) |
| LPG5-D8222N | 0 to 35 (0 to 8.75) |             |                   |
| LPG5-D8422N | 0 to 60 (0 to 15)   |             |                   |
| LPG5-D8622N | 0 to 100 (0 to 25)  |             |                   |
| LPG5-D8822N | 0 to 200 (0 to 50)  |             |                   |

**Note:** Change 22N to 42N for back connection option.

**SERIES LPG4****2.5" LOW PRESSURE GAGE**

1.5% Full-Scale Accuracy in a 2.5" Gage



Our **SERIES LPG4** gages offer top of the line performance and accuracy for pressure and vacuum applications up to and including 160 in w.c. The LPG4 is constructed from a single beryllium-copper diaphragm affixed to a precision-machined brass plate. This innovative design, together with a high-precision, milled-teeth brass movement and nickel-silver pinion and bearing surface, provide the user with a top of the line low pressure instrument.

**FEATURES/BENEFITS**

- Low pressure gage provides a selection to meet specific applications
- Specified with high ambient and process temperature ratings mean more robust uses and longer service-life
- High accuracy gage for applications requiring more precise measurement is a concern

**APPLICATIONS**

- Air flow indication
- Liquid level
- Draft measurement

**SPECIFICATIONS**

**Service:** Compatible gases & liquids.  
**Wetted Materials:** Brass and beryllium copper.  
**Housing:** Drawn steel, black finish.  
**Lens:** Polycarbonate (removable).  
**Accuracy:** ±1.5% FS.  
**Pressure Limit:** 100% of range scale.  
**Temperature Limits:** Process: -40 to 160°F (-40 to 70°C); Ambient: -40 to 140°F (-40 to 60°C).  
**Size:** 2.5" (63 mm).  
**Process Connections:** 1/4" male NPT.  
**Enclosure Rating:** NEMA 3 (IP54).  
**Weight:** 7.3 oz (0.21 kg).

**OPTION**

| Use order code: | Description                            |
|-----------------|--|
| NISTCAL-PG1     | NIST traceable calibration certificate |

**MODEL CHART**

| Model       | Range                            | Model       | Range  |
|-------------|----------------------------------|-------------|--|
| LPG4-D7122N | -10 to 0 in w.c. (-2.5 to 0 kPa) | LPG4-D8322N | 0 to 40 in w.c. (0 to 10 kPa)                  |
| LPG4-D7222N | -15 to 0 in w.c. (-4 to 0 kPa)   | LPG4-D8422N | 0 to 60 in w.c. (0 to 15 kPa)                  |
| LPG4-D7322N | -25 to 0 in w.c. (-6 to 0 kPa)   | LPG4-D8522N | 0 to 80 in w.c. (0 to 20 kPa)                  |
| LPG4-D7422N | -40 to 0 in w.c. (-10 to 0 kPa)  | LPG4-D8622N | 0 to 100 in w.c. (0 to 25 kPa)                 |
| LPG4-D7522N | -60 to 0 in w.c. (-15 to 0 kPa)  | LPG4-D8722N | 0 to 160 in w.c. (0 to 40 kPa)                 |
| LPG4-D7622N | -80 to 0 in w.c. (-20 to 0 kPa)  | LPG4-D8922N | -4 to 0 to 6 in w.c. (-1 to 0 to 1.5 kPa)      |
| LPG4-D7722N | -100 to 0 in w.c. (-25 to 0 kPa) | LPG4-D9022N | -6 to 0 to 10 in w.c. (-1.5 to 0 to 2.5 kPa)   |
| LPG4-D7822N | -160 to 0 in w.c. (-40 to 0 kPa) | LPG4-D9122N | -8 to 0 to 16 in w.c. (-2 to 0 to 4 kPa)       |
| LPG4-D7922N | -235 to 0 in w.c. (-60 to 0 kPa) | LPG4-D9222N | -16 to 0 to 24 in w.c. (-4 to 0 to 6 kPa)      |
| LPG4-D8022N | 0 to 10 in w.c. (0 to 2.5 kPa)   | LPG4-D9322N | -24 to 0 to 40 in w.c. (-6 to 0 to 10 kPa)     |
| LPG4-D8122N | 0 to 15 in w.c. (0 to 3.75 kPa)  | LPG4-D9422N | -30 to 0 to 50 in w.c. (-7.5 to 0 to 12.5 kPa) |
| LPG4-D8222N | 0 to 25 in w.c. (0 to 6 kPa)     | LPG4-D9522N | -40 to 0 to 60 in w.c. (-10 to 0 to 15.0 kPa)  |



## 2.5" STAINLESS STEEL LOW PRESSURE GAGES

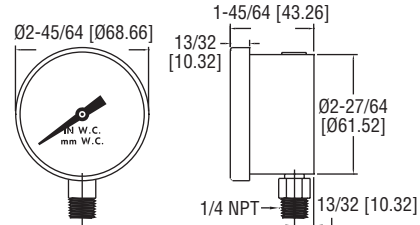
Brass or 316 SS Wetted Parts



SGX



SGF



The **SERIES SGX & SGF** Gages have dual English/metric scales with  $\pm 1.6\%$  full scale accuracy. The Series SGX/SGF gages are designed with 304 SS housings and brass or 316 SS wetted parts. Units can withstand ambient temperatures up to 149°F (65°C) and process temperatures up to 212°F (100°C). Ranges of vacuum, compound and pressures to 235 in w.c. are available. Included on the dial is a convenient zero adjustment screw which allows the user to easily re-zero the needle.

## FEATURES/BENEFITS

- Stainless steel housing and wetted parts resist ambient corrosion for longer service life in harsh environments
- High accuracy gage for applications requiring more precise measurement
- Models that support vacuum to higher pressure ranges provide a selection to meet specific applications
- Specified with high ambient and process temperature ratings mean more robust uses and longer service-life
- Field adjustable zeroing screw simplifies installation and calibration

## APPLICATIONS

- Pneumatic
- Draft measurement
- Filter monitoring
- Liquid level

| OPTION          |  |
|-----------------|--|
| Use order code: | Description                            |
| NISTCAL-PG1     | NIST traceable calibration certificate |

## SPECIFICATIONS

**Service:** Compatible gases & liquids.  
**Wetted Materials:** SGX: Brass; SGF: 316/316L SS.  
**Housing:** 304 SS.  
**Lens:** Glass.  
**Accuracy:**  $\pm 1.6\%$  FS on positive pressure ranges 15 in w.c. and greater;  $\pm 2.5\%$  FS on all other ranges.

**Pressure Limit:** Full-scale value.  
**Temperature Limits:** Ambient: -13 to 149°F (-25 to 65°C); Process: 212°F max. (100°C max.).  
**Size:** 2.5" (63 mm).  
**Process Connections:** 1/4" male NPT.  
**Enclosure Rating:** NEMA 3 (IP54).  
**Weight:** 4.6 oz (0.13 kg).

## MODEL CHART - 316 SS Gages

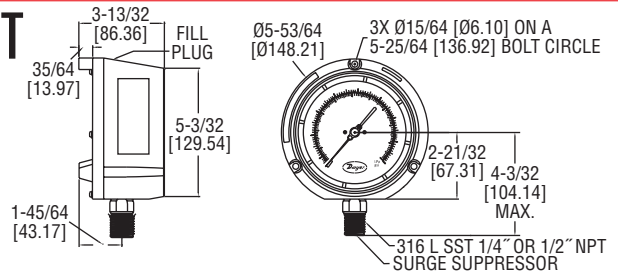
| Model      | Range in w.c. (mm)     |
|------------|------------------------|
| SGF-D7122N | -10 to 0 (-250 to 0)   |
| SGF-D7322N | -25 to 0 (-600 to 0)   |
| SGF-D7522N | -60 to 0 (-1600 to 0)  |
| SGF-D7722N | -100 to 0 (-2500 to 0) |
| SGF-D8022N | 0 to 10 (0 to 250)     |
| SGF-D8122N | 0 to 15 (0 to 400)     |
| SGF-D8222N | 0 to 25 (0 to 600)     |
| SGF-D8322N | 0 to 40 (0 to 1000)    |
| SGF-D8422N | 0 to 60 (0 to 1600)    |
| SGF-D8622N | 0 to 100 (0 to 2500)   |
| SGF-D8722N | 0 to 160 (0 to 4000)   |

## MODEL CHART - Brass Gages

| Model      | Range in w.c. (mm)                   |
|------------|--------------------------------------|
| SGX-D7122N | -10 to 0 (-250 to 0)                 |
| SGX-D7322N | -25 to 0 (-600 to 0)                 |
| SGX-D7522N | -60 to 0 (-1600 to 0)                |
| SGX-D7722N | -100 to 0 (-2500 to 0)               |
| SGX-D8022N | 0 to 10 (0 to 250)                   |
| SGX-D8122N | 0 to 15 (0 to 400)                   |
| SGX-D8222N | 0 to 25 (0 to 600)                   |
| SGX-D8322N | 0 to 40 (0 to 1000)                  |
| SGX-D8422N | 0 to 60 (0 to 1600)                  |
| SGX-D8722N | 0 to 160 (0 to 4000)                 |
| SGX-D8922N | -4 to 0 to 6 (-100 to 0 to 150)      |
| SGX-D9122N | -8 to 0 to 16 (-200 to 0 to 400)     |
| SGX-D9722N | -80 to 0 to 160 (-2000 to 0 to 4000) |

## SERIES 765

## PROCESS GAGE WITH DAMPENED MOVEMENT

 $\pm 0.5\%$  Accuracy, Safety Blow-Out Back

The **SERIES 765** Process Gage with Dampened Movement minimizes effects of vibration without liquid filling. With this dampened movement the 765 gages are ideal for use in any application where high pulsation or vibration exists. The 765 gages offer dual scale range (psi/kPa) with  $\pm 0.5\%$  full-scale accuracy. They are designed with a Phenolic safety-case and have a solid front with a blow-out back. Excellent chemical compatibility is insured with the 316L SS socket and Bourdon tube. A wide offering of ranges are available from full vacuum to 20,000 psi. The 765 process gage comes standard with bottom 1/4" or 1/2" male NPT connections.

## FEATURES/BENEFITS

- Liquid-free dampened movement minimizes effect of vibration and cost to maintain
- Stainless steel socket and Bourdon tube permit use in chemical applications
- High accuracy gage for applications requiring more precise measurement
- Models that support vacuum to high pressure ranges provide a selection to meet specific applications
- Specified with high ambient and process temperature ratings mean more robust uses and longer service-life

## APPLICATIONS

- Process applications
- Chemical
- Refinery
- Fertilizer
- Petrochemical
- Power
- Pharmaceutical
- Pulp and paper
- Cement

| OPTION          |  |
|-----------------|--|
| Use order code: | Description                            |
| NISTCAL-PG1     | NIST traceable calibration certificate |

## SPECIFICATIONS

**Service:** Compatible gases & liquids.  
**Wetted Materials:** 316L SS socket and Bourdon tube.  
**Housing:** Phenolic plastic with safety blow-out back.  
**Lens:** Polycarbonate.  
**Accuracy:**  $\pm 0.5\%$  ANSI/ASME Grade 2A.  
**Pressure Limit:** 125% FS < 1500 psi, 115% FS for 2000 to 5000 psi, 110% FS > 10,000 psi.

**Temperature Limits:** -40 to 200°F (-40 to 93°C).  
**Size:** 4-1/2" (114.3 mm) dial face.  
**Process Connections:** 1/4" or 1/2" NPT male.  
**Enclosure Rating:** IP65 (NEMA 4).  
**Weight:** 37 oz (1040 g).  
**Agency Approval:** Meets the technical requirements of EU Directive 2011/65/EU (RoHS II).

## MODEL CHART

| Example            | 765 | -01  | 2N          | -FMR | 765-012N-FMR   |
|--------------------|-----|--|-------------|------|--|
| Series             | 765 |  |             |      | 4.5" process gage  |
| Range              |     | 01<br>02<br>03<br>04<br>05<br>06<br>07<br>08<br>09<br>10<br>11 |             |      | 30" Hg-0 VAC (-100 to 0 kPa)<br>0 to 30 psi (0 to 206 kPa)<br>0 to 60 psi (0 to 410 kPa)<br>0 to 100 psi (0 to 680 kPa)<br>0 to 160 psi (0 to 1100 kPa)<br>0 to 200 psi (0 to 1370 kPa)<br>0 to 300 psi (0 to 2060 kPa)<br>0 to 400 psi (0 to 2770 kPa)<br>0 to 500 psi (0 to 3400 kPa)<br>0 to 600 psi (0 to 4100 kPa)<br>0 to 1000 psi (0 to 6800 kPa) |
| Process Connection |     |  | 2N<br>4N    |      | 1/4" male NPT<br>1/2" male NPT   |
| Additional Options |     |  | FMR<br>SG45 |      | Flush mounted ring<br>Safety glass lens  |

For additional ranges contact factory.

**Dwyer**

SERIES 7000 &amp; 7000B

**SPIRAHELIC® DIRECT DRIVE PRESSURE GAGE**

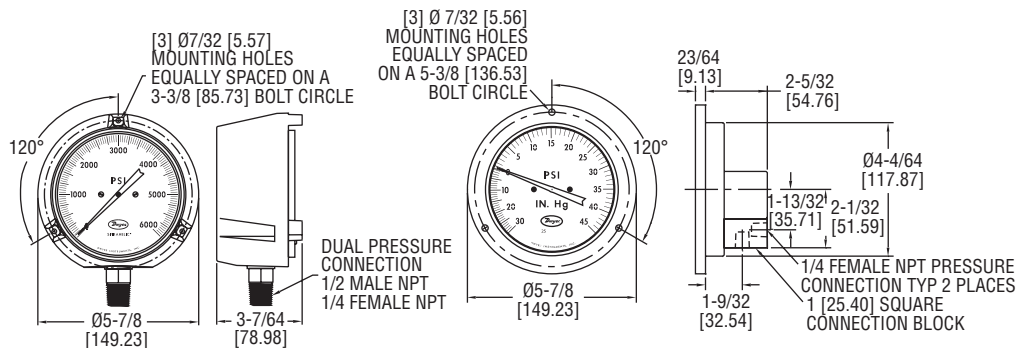
Panel Mount, 4-1/2" &amp; 8-1/2" Dials, ASME Grades 2A &amp; 3A

**GRADE 2A ACCURACY**

7112 (4-1/2" Dial)



7000B



The **SERIES 7000 & 7000B** Spirahelic® Pressure Gages employ a unique triple helix Bourdon tube for precision measurement of compatible gases and liquids. The direct drive design reduces friction and mass, resulting in exceptionally good responsiveness, repeatability and accuracy. Because there are no gears, springs, linkages or other complicated mechanisms, wear is practically eliminated. The Series 7000 has solid brass or 316 stainless steel connection block features convenient dual 1/4" female NPT ports-one each on back and bottom. Block also includes integral filter plug to keep dirt out. Safety is assured with solid front case design and rear blowout hole. Gages fit ASME standard panel cutouts, 4.94" (125 mm) -7100; 6.5" (165.1 mm) -7300. The Series 7000B Spirahelic® Direct Drive Pressure Gages comes with turret mount housings and standard with a dual-size 1/2" male NPT and 1/4" female NPT process connection.

**FEATURES/BENEFITS**

- Direct drive design with single moving part maximizes lifespan and accuracy without the need to recalibrate
- Elastic Bourdon tube resists overpressure and returns to original setting
- Blowout hole prevents early failure from high overpressure conditions
- Single element sensing means total lower cost of ownership because of long service life and lower cost to maintain

**APPLICATIONS**

- Systems with high cycle rates
- Process with problematic pressure surges and spikes
- Environmental with continuous vibration shock

**MODEL CHART - 4-1/2" DIAL, GRADE 2A ACCURACY (1/2% OF FS)**

| Model     | Range (psig) |
|-----------|--------------|
| 7112-G030 | 30           |
| 7112-G060 | 60           |
| 7112-G100 | 100          |
| 7112-G200 | 200          |

**MODEL CHART - GRADE A ACCURACY (2%-1%-2%)**

| Model      | Range (psig) |
|------------|--------------|
| 7100B-G100 | 100          |
| 7100B-G200 | 200          |
| 7100B-G300 | 300          |

**MODEL CHART - GRADE 2A ACCURACY (1/2% OF FS)**

| Model       | Range (psig) |
|-------------|--------------|
| 7112B-G030  | 30           |
| 7112B-G060  | 60           |
| 7112B-G100  | 100          |
| 7112B-G160  | 160          |
| 7112B-G200  | 200          |
| 7112B-GC010 | 1000         |

**ACCESSORY**

| Model | Description  |
|-------|--|
| A-341 | Brass adapter, 1/4" male NPT to G 1/2A (per ISO 228/1) parallel thread 2-1/2" length |

**SPECIFICATIONS**

**Service:** Compatible gases & liquids.

**Wetted Materials:** Grade A accuracy: Inconel® X-750 alloy Bourdon tube, nickel plated brass connection block; Grade 2A accuracy: Inconel® X-750 alloy Bourdon tube, type 316L SS connection block.

**Housing:** Black polycarbonate case and clear acrylic cover.

**Accuracy:** Grade A (2%-1%-2%); Grade 2A (0.5% FS).

**Pressure Limit:** 150% of full-scale. Gage will maintain its specifications for overpressures up to 150% max. range. Normal operation should be between 25% and 75% of full-scale.

**Temperature Limits:** -65 to 180°F (-53.9 to 82.2°C).

**Sizes:** 4-1/2" dial face (114.3 mm), 8-1/2" dial face (215.9 mm), design conforms to ASME B40.1.

**Process Connections:** 7000: Two 1/4" female NPT field-selectable back or bottom connection; 7000B: Dual size 1/2" male NPT X 1/4" female NPT, bottom connections.

**Weight:** 7000: 4-1/2" dial face: 16.3 oz (462.1 g); 8-1/2" dial face: 27.3 oz (773.9 g); 7000B: 18.2 oz (516 g).

**Standard Accessory:** One 1/4" male NPT stainless steel plug.

**Note:** Additional ranges and accuracy requirements are available. Please consult the factory for details.

**PRECISION DESIGN ENSURES MAINTENANCE-FREE PERFORMANCE**

**Solid front case** combined with rear blowout plug provides highest level of operator safety.

**Direct drive movement** - no cams, gears or linkages. Provides longer operating life than standard "C" Bourdon gages.

**Precision balanced pointer** with reduced friction produces higher responsiveness than standard gage.

**High impact plastic case and lens** allows gages to last through the most demanding applications.

**Design of small diameter tubing** wound in spiral/helical coil acts like a liquid filled gage without the fill.

**Center post bearing carrier** supports pointer shaft and coil.

**Rear blowout hole** covered with label. This safety enhancement directs an overpressure surge or spike away from operators.

**Case and shock protection** ribs help prevent damage to Bourdon tube in the event of severe shock.

**Filter plug** protects Bourdon tube from particulate damage and reduces pressure surges.

Inconel® is a registered trademark of Huntington Alloys Corporation

# WEATHERPROOF OR BRASS DIGITAL PRESSURE GAGE

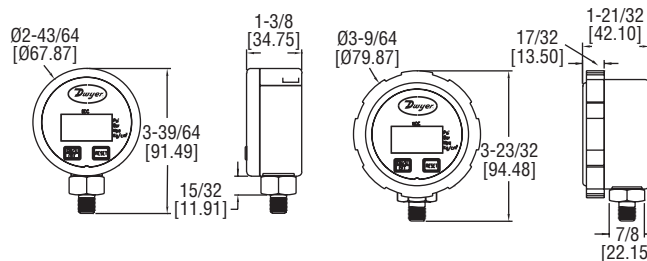
±0.5% FS Accuracy, Weatherproof, Economic Plastic Housing, Brass Wetted Parts



BDG



WDG



BDG

WDG

The **SERIES BDG-01** Brass Digital Pressure Gage measures gas pressure with ±0.5% FS accuracy at an affordable price. With brass wetted material, the series BDG is designed for your specific applications of compatible gases. Its design allows for easy installation. User-selectable units of measure let one gage be used for various pressure scales.

The **SERIES WDG** Weatherproof Digital Pressure Gage measures gas and liquid pressure with high accuracy at an affordable price. It's rugged weatherproof design stands up to outdoor and industrial environments. The 4-digit backlit display with four selectable units makes readings easily visible to prevent reading errors. The WDG comes with 304L stainless steel wetted material for a wide range of compatible liquids and gases.

## FEATURES/BENEFITS

- Brass wetted materials for use with compatible gases
- Backlit display provides easy viewing of gage measurement
- Selectable units provide readings in easily recognizable units for user
- Well-suited gage for application designs specifying simple operation and accuracy
- Rugged weatherproof enclosure enables a range of use outdoor or indoor where water is present

## APPLICATIONS

- Pneumatic
- Draft measurement
- Filter monitoring
- Industrial
- Outdoor
- HVAC roof-top
- Flow

| OPTION          |  |
|-----------------|--|
| Use order code: | Description                            |
| NISTCAL-PG1     | NIST traceable calibration certificate |

## SPECIFICATIONS

**Service:** BDG: Compatible gases; WDG: Compatible gases and liquids.  
**Wetted Materials:** BDG: Brass and silicone sensor; WDG: 304L SS.  
**Housing Materials:** BDG: ABS plastic; WDG: Fiberglass reinforced PP plastic.  
**Accuracy:** BDG: ±0.5% FS; WDG: ±0.5% FS for ranges up to 1000 psig (68.94 bar); ±1% FS for 5000 psig (344.74 bar) range.  
**Long Term Stability:** ±0.05% FS per year.  
**Pressure Limits:** 2X pressure range; Burst pressure: 3X pressure range.  
**Enclosure Rating:** BDG: IP10; WDG: IP65.  
**Temperature Limits:** 14 to 140°F (-10 to 60°C).  
**Thermal Effect:** ±0.04% FS per °C.  
**Size:** 2.5" O.D.  
**Process Connection:** 1/4" male NPT.  
**Display:** 4-digit LCD (1-1/4 x 5/8").  
**Power Requirements:** 3 V CR123A lithium metal battery, installed functional, user replaceable.  
**Battery Life:** 2 to 3 years typ.  
**Weight:** BDG: 0.29 lb (0.13 kg); WDG: 0.34 lb (0.15 kg).

| MODEL CHART |                 |        |       |                    |
|-------------|-----------------|--------|-------|--------------------|
| Model       | Pressure Ranges |        |       |                    |
|             | Range (psig)    | bar    | mPa   | kg/cm <sup>2</sup> |
| BDG-01      | 0 to 150        | 10.342 | 1.034 | 10.545             |
| WDG-01      | 0 to 50         | 3.45   | 0.34  | 3.52               |
| WDG-02      | 0 to 100        | 6.89   | 0.69  | 7.03               |
| WDG-03      | 0 to 300        | 20.68  | 2.07  | 21.09              |
| WDG-04      | 0 to 500        | 34.47  | 3.45  | 35.15              |
| WDG-05      | 0 to 1000       | 68.94  | 6.89  | 70.30              |
| WDG-06      | 0 to 5000       | 344.74 | 34.47 | 351.5              |

# 0.5% & 1% DIGITAL PRESSURE GAGE

Economic Gage With Selectable Engineering Units, Rubber Boot



DPGA



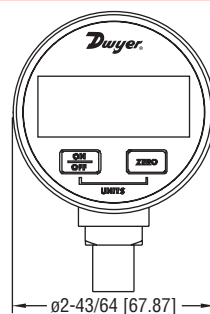
DPGW



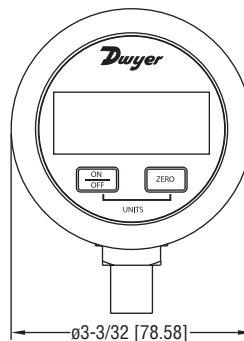
DPGAB



DPGWB



DPGA &amp; DPGW



DPGAB &amp; DPGWB

The **SERIES DPGA** is the only economic digital pressure gage with selectable engineering units on the market. With its 1% accuracy and digital push-button zero, the DPGA is the perfect choice for digitally monitoring the pressures of air and compatible gases.

The **SERIES DPGW** is the only economic digital pressure gage for liquids with the ability to select engineering units on the market. With its 1% accuracy and digital push-button zero, the DPGW is the perfect choice for digitally monitoring the pressures of air and compatible liquids and gases.

The **SERIES DPGWB/DPGAB** pressure gages offer 0.5% full scale accuracy in a rugged, easy-to-use unit at prices comparable to mechanical gages. The DPGWB stainless steel wetted material makes it suitable for a wide variety of liquids or gases. The gages feature user-selectable units of measure allowing one gage to be used for a variety of pressure scales. The DPGWB/DPGAB come with a protective rubber boot to protect against short drops and rough handling.

## FEATURES/BENEFITS

- Push-button zero reduce installation and service time
- High accuracy provides exceptional measurement for minimizing costly out of specification conditions
- Selectable unit button provides reading in easily recognizable units
- Well-suited gage for compatible gas (DPGA) or liquid (DPGW) applications specifying simple operation and accuracy

## APPLICATIONS

- Process applications
- Process start-up
- OEM applications

## SPECIFICATIONS

**Service:** DPGA & DPGAB: Air and compatible gases; DPGW & DPGWB: Liquids and compatible gases.

**Wetted Materials:** DPGA & DPGAB: 316L SS, silicone sensor; DPGW & DPGWB: 316L SS.

**Housing Materials:** ABS plastic.

**Accuracy:** DPGA & DPGW:  $\pm 1.0\%$  FS (includes linearity, hysteresis, repeatability); DPGAB & DPGWB:  $\pm 0.5\%$  FS (includes linearity, hysteresis, repeatability).

**Pressure Limits:** 2X pressure range. Vacuum range max. pressure is 30 psig.

**Temperature Limits:** 30 to 120°F (-1 to 49°C).

**Thermal Effect:** 0.05% FS/°F.

**Size:** 2.62" OD x 1.52" deep.

**Process Connections:** 1/4" male NPT.

**Display:** 4-digit LCD (.425" H x .234" W digits).

**Power Requirements:** 9 V alkaline battery, included, user replaceable.

**Auto Shut-off:** 20 minute auto shut-off.

**Weight:** 5.6 oz (160 g).

## ACCESSORY

| Model | Description            |
|-------|------------------------|
| A-293 | Protective rubber boot |

## OPTION

| To order add suffix:  | Description                            |
|-----------------------|--|
| -NIST                 | NIST traceable calibration certificate |
| Example: DPGA-04-NIST |  |

## MODEL CHART

| Model   | Model   | Range             | Pressure Ranges |                    |        |        |         |        |                    |         |       |         |       | Resolution |
|---------|---------|-------------------|-----------------|--------------------|--------|--------|---------|--------|--------------------|---------|-------|---------|-------|------------|
|         |         |                   | psig            | kg/cm <sup>2</sup> | bar    | in Hg  | ft w.c. | kPa    | oz/in <sup>2</sup> | in w.c. | mbar  | cm w.c. | mm Hg | psi        |
| DPGA-00 | DPGW-00 | 30" Hg to 0 (psi) | -14.70          | -1.033             | -1.013 | -29.93 | -33.94  | -101.4 | -235.2             | -407.3  | -1013 | -1034   | -761  | 0.01       |
| DPGA-04 | DPGW-04 | 0 to 5 psi        | 5.000           | .3515              | .3447  | 10.18  | 11.53   | 34.47  | 80.0               | 138.4   | 344.7 | 351.5   | 258.6 | 0.002      |
| DPGA-05 | DPGW-05 | 0 to 15 psi       | 15.00           | 1.055              | 1.034  | 30.54  | 34.60   | 103.4  | 240.0              | 415.2   | 1034  | 1055    | 776   | 0.01       |
| DPGA-06 | DPGW-06 | 0 to 30 psi       | 30.00           | 2.109              | 2.068  | 61.1   | 69.2    | 206.8  | 480.0              | 830     | 2068  | 2109    | 1551  | 0.01       |
| DPGA-07 | DPGW-07 | 0 to 50 psi       | 50.00           | 3.515              | 3.447  | 101.8  | 115.3   | 344.7  | 800                | 1384    | 3447  | 3515    | 2586  | 0.02       |
| DPGA-08 | DPGW-08 | 0 to 100 psi      | 100.0           | 7.03               | 6.89   | 203.6  | 230.7   | 689    | 1600               | 2768    | -     | -       | -     | 0.1        |
| DPGA-09 | DPGW-09 | 0 to 200 psi      | 200.0           | 14.06              | 13.79  | 407.2  | 461.3   | 1379   | 3200               | -       | -     | -       | -     | 0.1        |
| DPGA-10 | DPGW-10 | 0 to 300 psi      | 300.0           | 21.09              | 20.68  | 611    | 692     | 2068   | 4800               | -       | -     | -       | -     | 0.1        |
| DPGA-11 | DPGW-11 | 0 to 500 psi      | 500.0           | 35.15              | 34.47  | 1018   | 1153    | 3447   | -                  | -       | -     | -       | -     | 0.2        |

Compound range available: DPGW-12: 30" Hg-0-100 psi.

## MODEL CHART

| Model    | Model    | Range             | Pressure Ranges |                    |        |        |         |        |                    |         |       |         |       | Resolution |
|----------|----------|-------------------|-----------------|--------------------|--------|--------|---------|--------|--------------------|---------|-------|---------|-------|------------|
|          |          |                   | psig            | kg/cm <sup>2</sup> | bar    | in Hg  | ft w.c. | kPa    | oz/in <sup>2</sup> | in w.c. | mbar  | cm w.c. | mm Hg | psi        |
| DPGAB-00 | DPGWB-00 | 30" Hg to 0 (psi) | -14.70          | -1.033             | -1.013 | -29.93 | -33.94  | -101.4 | -235.2             | -407.3  | -1013 | -1034   | -761  | 0.01       |
| DPGAB-04 | DPGWB-04 | 0 to 5 psi        | 5.000           | .3515              | .3447  | 10.18  | 11.53   | 34.47  | 80.0               | 138.4   | 344.7 | 351.5   | 258.6 | 0.002      |
| DPGAB-05 | DPGWB-05 | 0 to 15 psi       | 15.00           | 1.055              | 1.034  | 30.54  | 34.60   | 103.4  | 240.0              | 415.2   | 1034  | 1055    | 776   | 0.01       |
| DPGAB-06 | DPGWB-06 | 0 to 30 psi       | 30.00           | 2.109              | 2.068  | 61.1   | 69.2    | 206.8  | 480.0              | 830     | 2068  | 2109    | 1551  | 0.01       |
| DPGAB-07 | DPGWB-07 | 0 to 50 psi       | 50.00           | 3.515              | 3.447  | 101.8  | 115.3   | 344.7  | 800                | 1384    | 3447  | 3515    | 2586  | 0.02       |
| DPGAB-08 | DPGWB-08 | 0 to 100 psi      | 100.0           | 7.03               | 6.89   | 203.6  | 230.7   | 689    | 1600               | 2768    | -     | -       | -     | 0.1        |
| DPGAB-09 | DPGWB-09 | 0 to 200 psi      | 200.0           | 14.06              | 13.79  | 407.2  | 461.3   | 1379   | 3200               | -       | -     | -       | -     | 0.1        |
| DPGAB-10 | DPGWB-10 | 0 to 300 psi      | 300.0           | 21.09              | 20.68  | 611    | 692     | 2068   | 4800               | -       | -     | -       | -     | 0.1        |
| DPGAB-11 | DPGWB-11 | 0 to 500 psi      | 500.0           | 35.15              | 34.47  | 1018   | 1153    | 3447   | -                  | -       | -     | -       | -     | 0.2        |

Compound range available: DPGWB-12: 30" Hg-0-100 psi



# DIGITAL PRESSURE GAGE

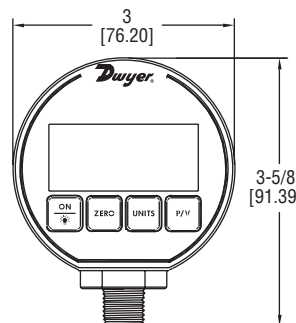
±0.25% or ±0.5% FS Accuracy, NEMA 4X (IP66) Aluminum Housing



DPG-000



DPG-100



Replace your outdated analog gages with the new **SERIES DPG** Digital Pressure Gage. The Series DPG has a high  $\pm 0.25\%$  or  $\pm 0.5\%$  full-scale accuracy. The 4 digit digital display will reduce the potential for errors in readings by eliminating parallax error commonly produced with analog gages. Series DPG is battery powered and has an auto-shut off to conserve battery life. Battery life, on average, will last 2000 hours. A 4 button key pad allows easy access to features without the need to work through complex menus or difficult key combinations. These features include backlight, peak and valley, tare or auto zero and conversion of the pressure units.

## FEATURES/BENEFITS

- High accuracy provides exceptional measurement minimizing costly out of specification conditions
- Backlit 4-digit display provides clear parallax-free reading reducing potential for errors
- Battery-powered gage with auto-shutoff eliminates wiring and prolongs battery life reducing service calls
- Push-button zero reduce installation and service time

## APPLICATIONS

- Process applications
- Replacement for legacy analog gages
- OEM applications

## ACCESSORIES

| Model | Description            |
|-------|------------------------|
| A-183 | Protective rubber boot |
| A-184 | Carrying case          |



DPG-100 with Protective Rubber Boot



Protective Carrying Case

## SPECIFICATIONS

**Service:** Compatible liquids and combustible gases (for FM listing see Agency Approvals below).  
**Wetted Materials:** Type 316L SS.  
**Housing Materials:** Polycarbonate front & back cover, anodized aluminum extruded housing with recessed grooves, polycarbonate overlay, Buna-N O-rings, 316L SS sensor construction.  
**Accuracy:** DPG-000:  $\pm 0.5\%$  FS; DPG-100:  $0.25\%$  FS;  $\pm 1$  least significant digit @ 70°F (21°C) (includes linearity, hysteresis, repeatability).  
**Pressure Limit:** 2x pressure range for models  $\leq 1000$  psi; 5000 psi for 3000 psi range; 7500 psi for 5000 psi range.  
**Enclosure Rating:** Designed to meet NEMA 4/4X (IP66).  
**Temperature Limits:** 0 to 130°F (-18 to 55°C).

**Thermal Effect:** Between 70 to 130°F is 0.016%/F; Between 32 to 70°F is 0.026%/F; Between 10 to 32°F is 0.09%/F.  
**Size:** 3.00" OD x 1.90" deep (max).  
**Process Connection:** 1/4" male NPT.  
**Weight:** 8.84 oz (275 g).  
**Display:** 4 digit (.425" H x .234" W digits).  
**Power Requirements:** (2) AAA alkaline batteries, included, user replaceable.  
**Battery Life:** 2000 hours typical; Low battery indicator.  
**Auto Shut-Off:** Gage: 60 minute auto shut off. Auto shut-off may be disengaged; Backlight: 2 minute auto shut-off.  
**Agency Approvals:** DPG-000: CE; DPG-100: CE, FM approved to be intrinsically safe for Class I, Division I, Groups A, B, C and D, for ranges 0-15 to 0-3000 psi.

## OPTION

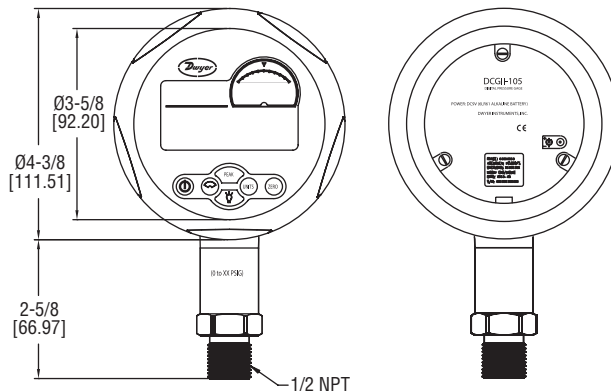
| To order add suffix:  | Description                            |
|-----------------------|--|
| -NIST                 | NIST traceable calibration certificate |
| Example: DPG-002-NIST |  |

| MODEL CHART          |                       |              |                    |          |          |          |          |                    |          |         |         |          |
|----------------------|-----------------------|--------------|--------------------|----------|----------|----------|----------|--------------------|----------|---------|---------|----------|
| Model<br>$\pm 0.5\%$ | Model<br>$\pm 0.25\%$ | Range<br>psi | Pressure Ranges    |          |          |          |          |                    |          |         |         |          |
|                      |                       |              | kg/cm <sup>2</sup> | bar      | in Hg    | ft w.c.  | kPa      | oz/in <sup>2</sup> | in w.c.  | mbar    | cm w.c. | mm Hg    |
| DPG-000*             | -                     | -14.70 to 0  | -1.033             | -1.013   | -29.93   | -33.94   | -101.4   | -235.2             | -407.3   | -1013   | -1034   | -760.7   |
| DPG-002*             | DPG-102               | 15.00        | 1.055              | 1.034    | 30.54    | 34.61    | 103.4    | 240                | 415.2    | 1034    | 1055    | 775.7    |
| DPG-003*             | DPG-103               | 30.00        | 2.109              | 2.069    | 61.08    | 69.21    | 206.9    | 480                | 830.4    | 2069    | 2109    | 1551     |
| DPG-004*             | DPG-104               | 50.00        | 3.515              | 3.448    | 101.8    | 115.4    | 344.8    | 800                | 1384     | 3448    | 3515    | 2586     |
| DPG-005*             | DPG-105               | 100.0        | 7.03               | 6.895    | 203.6    | 230.7    | 689.5    | 1600               | 2768     | 6895    | 7031    | 5172     |
| DPG-006*             | DPG-106               | 200.0        | 14.06              | 13.79    | 407.2    | 461.4    | 1379     | 3200               | 5536     | -       | -       | -        |
| DPG-007*             | DPG-107               | 300.0        | 21.09              | 20.69    | 610.8    | 692.1    | 2069     | 4800               | 8304     | -       | -       | -        |
| DPG-008*             | DPG-108               | 500.0        | 35.15              | 34.48    | 1018     | 1154     | 3448     | 8000               | -        | -       | -       | -        |
| DPG-009*             | DPG-109               | 1000         | 70.3               | 68.98    | 2036     | 2307     | 6895     | -                  | -        | -       | -       | -        |
| DPG-010*             | DPG-110               | 3000         | 210.9              | 206.9    | 6108     | 6921     | -        | -                  | -        | -       | -       | -        |
| DPG-011*             | DPG-111*              | 5000         | 351.5              | 344.8    | -        | -        | -        | -                  | -        | -       | -       | -        |
| DPG-020*             | -                     | -14.70       | -1.033             | -1.013   | -29.93   | -33.94   | -101.4   | -235.2             | -407.3   | -1013   | -1034   | -760.7   |
|                      |                       | to 15.00     | to 1.055           | to 1.034 | to 30.54 | to 34.61 | to 103.4 | to 240             | to 415.2 | to 1034 | to 1055 | to 775.7 |
| DPG-021*             | -                     | -14.70       | -1.033             | -1.013   | -29.93   | -33.94   | -101.4   | -235.2             | -407.3   | -1013   | -1034   | -760.7   |
|                      |                       | to 30.00     | to 2.109           | to 2.069 | to 61.08 | to 69.21 | to 206.9 | to 480             | to 830.4 | to 2069 | to 2109 | to 1551  |
| DPG-022*             | -                     | -14.70       | -1.033             | -1.013   | -29.93   | -33.94   | -101.4   | -235.2             | -407.3   | -1013   | -1034   | -760.7   |
|                      |                       | to 45.00     | to 3.164           | to 3.103 | to 91.63 | to 103.8 | to 310.3 | to 720             | to 1245  | to 3102 | to 3164 | to 2327  |
| DPG-023*             | -                     | -14.70       | -1.033             | -1.013   | -29.93   | -33.94   | -101.4   | -235.2             | -407.3   | -1013   | -1034   | -760.7   |
|                      |                       | to 60.00     | to 4.218           | to 4.137 | to 122.2 | to 138.4 | to 413.7 | to 960             | to 1661  | to 4137 | to 4218 | to 3103  |
| DPG-024*             | -                     | -14.70       | -1.033             | -1.013   | -29.93   | -33.94   | -101.4   | -235.2             | -407.3   | -1013   | -1034   | -760.7   |
|                      |                       | to 100.0     | to 7.03            | to 6.895 | to 203.6 | to 230.7 | to 689.5 | to 1600            | to 2768  | to 6895 | to 7031 | to 5172  |

\*Model is not FM approved.

## DIGITAL CALIBRATION PRESSURE GAGE

±0.05% FS Accuracy, 316 SS Wetted Parts



The **SERIES DCGII** Digital Calibration Pressure Gage offers a complete pressure gage with calibration capabilities. With a precise 0.05% full scale accuracy and large 5 digit resolution, this gage can be used in critical industrial applications where precision is most important. This versatile gage only requires one 9V battery or power adapter and can operate up to 5,000 working hours. The Series DCGII 0.05% Digital Pressure Gage can display percent of range, pressure swings or alarm set points. This pressure gage comes complete with eleven selectable pressure units, backlight and zeroing capability.

## FEATURES/BENEFITS

- Highest accuracy provides exceptional measurement for calibration minimizing costly out of specification conditions
- Stainless steel housing resists ambient corrosion for longer service life in harsh environments
- Lightweight and slim, yet large easy to read battery-powered gage make them easy to carry and read
- Specified with high ambient temperature rating means more robust uses and longer service-life
- Indicator can display pressure swings, minimum and maximum peak detection with alarm set points provides a multipurpose tool where critical calibration is needed

## APPLICATIONS

- Field gage calibration
- Permanent installation
- Burst disc testing
- Torque data logging
- Pressure regulator testing and hydrostatic leak testing

## MODEL CHART

| Model     | Range (psig) | kPa     | mPa     | kgf/cm <sup>2</sup> | in H <sub>2</sub> O | in Hg   | mm Hg   | psi     | mbar   | bar     |
|-----------|--------------|---------|---------|---------------------|---------------------|---------|---------|---------|--------|---------|
| DCGII-100 | -14.7 to 0   | -101.35 | -0.1013 | -1.0335             | -406.90             | -29.929 | -760.21 | -14.700 | 1013.5 | -1.0135 |
| DCGII-101 | 0 to 15      | 103.42  | 0.1034  | 1.0546              | 415.20              | 30.540  | 775.72  | 15.000  | 1034.2 | 1.0342  |
| DCGII-102 | 0 to 30      | 206.84  | 0.2067  | 2.1092              | 830.40              | 61.080  | 1551.4  | 30.000  | 2068.4 | 2.0684  |
| DCGII-103 | 0 to 60      | 413.69  | 0.4134  | 4.2184              | 1660.8              | 122.16  | 3102.9  | 60.000  | 4136.9 | 4.1369  |
| DCGII-104 | 0 to 100     | 689.48  | 0.6890  | 7.0307              | 2768.0              | 203.60  | 5171.5  | 100.00  | 6894.8 | 6.8948  |
| DCGII-105 | 0 to 200     | 1379.0  | 1.3780  | 14.061              | 5536.0              | 407.20  | 1034.3  | 200.00  | 1379.0 | 13.790  |
| DCGII-106 | 0 to 300     | 2068.4  | 2.0670  | 21.092              | 8304.0              | 610.80  | 1551.4  | 300.00  | 2068.4 | 20.684  |
| DCGII-107 | 0 to 500     | 3447.4  | 3.4450  | 35.153              | 1384.0              | 1018.0  | 2585.7  | 500.00  | 3447.4 | 34.474  |
| DCGII-108 | 0 to 1000    | 6894.8  | 6.8900  | 70.307              | 2768.0              | 2036.0  | 5171.5  | 1000.00 | 6894.8 | 68.948  |
| DCGII-109 | 0 to 2000    | 1379.0  | 13.780  | 140.61              | 5536.0              | 4072.0  |         | 2000.00 |        | 137.90  |

## ACCESSORIES

| Model   | Description                |
|---------|----------------------------|
| A-644   | 9 V DC power adapter       |
| BBV-0N  | 2-valve block manifold     |
| PCHP-10 | Pneumatic calibration pump |

## SPECIFICATIONS

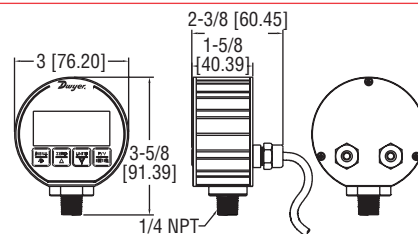
**Service:** Compatible, non-combustible liquids and gases.  
**Wetted Materials:** 316 SS.  
**Other Materials:** Housing: Aluminum alloy; Display: Acrylic MR200; Buttons: Silicon gel; Back plate: 304 SS; Back seal: Oil-proof latex.  
**Accuracy:** 0.05% FS; ±1 least significant digit.  
**Temperature Accuracy:** ±1°C.  
**Pressure Limits:** 120% FS.  
**Temperature Limits:** 14 to 122°F (-10 to 50°C).  
**Compensated Limits:** 32 to 122°F (0 to 50°C).  
**Process Connection:** 1/2" male NPT.  
**Display:** 5-digit LCD with blue backlight.  
**Power Requirements:** 9 V alkaline battery, included, user replaceable, or power adapter accessory.  
**Battery Life:** Up to 10,000 hours (600 working hours @ default 3 times/s).  
**Auto Shut-Off:** Backlight: On/off, 10 s, 20 s, 30 s.  
**Weight:** 1.28 lb (0.58 kg).  
**Agency Approvals:** CE.

## OPTION

| Use order code: | Description                                     |
|-----------------|---|
| NISTCAL-PG2     | NIST traceable pressure calibration certificate |

# DIGITAL PRESSURE GAGE

## 3-in-1: Gage, Transmitter & Switch



The **SERIES DPG-200** Digital Pressure Gage has a precise  $\pm 0.25\%$  full-scale accuracy. The 4 digit digital display will reduce the potential for errors in readings by eliminating parallax error commonly produced with analog gages. The DPG-200 is packaged in a durable extruded aluminum case designed to meet NEMA 4X (IP66). The unit is powered by 12 to 24 VDC/VAC and contains two alarm set points along with a 4-20 mA process output. A four-button keypad allows easy access to features. These features include backlight, peak and valley, auto zero and conversion of the pressure units. Pressure ranges also in mbar, kg/cm<sup>2</sup>, oz/in<sup>2</sup>, in Hg, mm Hg, ft w.c. and ft sw for various models.

### FEATURES/BENEFITS

- High accuracy provides exceptional measurement minimizing costly out of specification conditions
- Backlit 4-digit display provides clear parallax-free reading reducing potential for errors
- Durable aluminum case to meet NEMA 4X (IP66) requirements supports use in harsh or outdoor environments
- Push-button zero reduce installation and service time

### APPLICATIONS

- Process control
- Compressor control

| MODEL CHART |              |                 |         |        |         |         |
|-------------|--------------|-----------------|---------|--------|---------|---------|
| Model       | Range (psig) | Pressure Ranges |         |        |         |         |
|             |              | bar             | ft w.c. | kPa    | in w.c. | cm w.c. |
| DPG-200     | -14.70-0     | -1.013          | -33.94  | -101.4 | -407.3  | -1034   |
| DPG-202     | 15.00        | 1.034           | 34.61   | 103.4  | 415.2   | 1055    |
| DPG-203     | 30.00        | 2.069           | 69.21   | 206.9  | 830.4   | 2109    |
| DPG-204     | 50.00        | 3.448           | 115.4   | 344.8  | 1384    | 3515    |
| DPG-205     | 100.0        | 6.895           | 230.7   | 689.5  | 2768    | 7031    |
| DPG-206     | 200.0        | 13.79           | 461.4   | 1379   | 5536    | -       |
| DPG-207     | 300.0        | 20.69           | 692.1   | 2069   | 8304    | -       |
| DPG-208     | 500.0        | 34.48           | 1154    | 3448   | -       | -       |
| DPG-209     | 1000         | 68.98           | 2307    | 6895   | -       | -       |
| DPG-210     | 3000         | 206.9           | 6921    | -      | -       | -       |
| DPG-211     | 5000         | 344.8           | -       | -      | -       | -       |

Compound range available: DPG-220 range: 30" Hg-0-15 psi.

### SPECIFICATIONS

#### DIGITAL GAGE SPECIFICATIONS

**Service:** Liquids and non-combustible compatible gases.  
**Wetted Materials:** Type 316L SS.  
**Enclosure:** Black polycarbonate front & back cover, anodized aluminum extruded enclosure with recessed grooves, polycarbonate overlay, Buna-N O-rings, 316L SS sensor construction.  
**Accuracy:** 0.25% FS  $\pm 1$  least significant digit (includes linearity, hysteresis, repeatability).  
**Pressure Limit:** 2x pressure range for models  $\leq 1000$  psi; 5000 psi for 3000 psi range; 7500 psi for 5000 psi range.  
**Temperature Limits:** 0 to 158°F (0 to 70°C).  
**Process Connection:** 1/4" male NPT.  
**Display:** 4 digit (.425" H x .234" W digits).  
**Size:** 3.00" OD x 1.90" deep (not including cables).  
**Weight:** 8.84 oz (275 g).

#### SWITCH SPECIFICATIONS

**Switch Type:** 2 SPDT form C contacts.  
**Electrical Rating:** 0.5 A @ 125 VAC resistive, 1 A @ 24 VDC.  
**Relay Differential:** 1 least significant digit.  
**Electrical Connections:** 3 ft (.91 m) cable.  
**Mounting Orientation:** Mount in any position.  
**Set Point Adjustment:** Via menu.

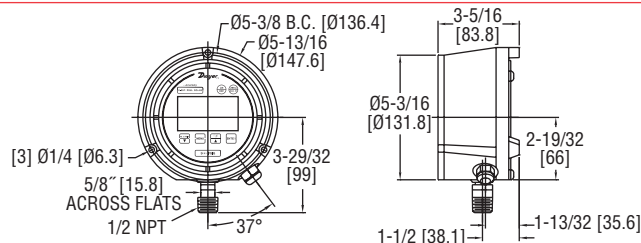
#### TRANSMITTER SPECIFICATIONS

**Temperature Limits:** 0 to 158°F (0 to 70°C).  
**Thermal Effect:** Between 70 to 158°F = 0.016%/°F. Between 0 to 70°F = 0.026%/°F.  
**Power Requirements:** 12 to 24 VAC  $\pm 20\%$  50 to 400 Hz, 12 to 24 VDC  $\pm 20\%$ .  
**Output Signal:** 4 to 20 mA.  
**Loop Resistance:** 600  $\Omega$  max.  
**Power Consumption:** 0.8 W max.  
**Electrical Connections:** 3 ft (.91 m) cable.  
**Enclosure Rating:** Designed to meet NEMA 4X (IP66).

## SERIES DSGT

# DIGITAL INDICATING TRANSMITTER

## $\pm 0.25\%$ Full-Scale Accuracy



The **SERIES DSGT** Digital Indicating Transmitter is a versatile multi-function process gage that features an excellent 0.25% full-scale accuracy. This all-in-one digital gage package is designed to reduce installation costs, instrument cost, and save space where an application requires a gage, transmitter, and switches. The Series DSGT gage comes standard with a loop-powered 4 to 20 mA transmitter. The Series DSGT gage is enclosed in a durable fiberglass reinforced thermoplastic case that is designed to meet NEMA 4 IP56 requirements. The gage features a menu-driven display for easy customization. User selectable features include 12 engineering units of measure, password protected calibration and disable functions, as well as an adjustable bar graph and update/dampening rates.

### FEATURES/BENEFITS

- All-in-one digital gage package is designed to reduce installation costs, instrument cost, and save space where an application requires a gage, transmitter, and switches
- Durable fiberglass reinforced thermoplastic case to meet NEMA 4 (IP56) requirements supports use in harsh environments
- Password protected calibration and disable functions helps to insure no errors by untrained personnel

### APPLICATIONS

- Process
- Compressor
- Outdoor
- OEM

### MODEL CHART

| Model        | Range (psig)   | Model        | Range (psig) | Model        | Range (psig) | Model        | Range (psig) |
|--------------|----------------|--------------|--------------|--------------|--------------|--------------|--------------|
| DSGT-101-C0S | 30" Hg-0 to 15 | DSGT-106-C0S | 0 to 100     | DSGT-109-C0S | 0 to 300     | DSGT-116-C0S | 0 to 5000    |
| DSGT-102-C0S | 30" Hg-0 to 30 | DSGT-107-C0S | 0 to 160     | DSGT-110-C0S | 0 to 600     | DSGT-117-C0S | 0 to 8000    |
| DSGT-104-C0S | 0 to 30        | DSGT-108-C0S | 0 to 200     | DSGT-112-C0S | 0 to 1000    | DSGT-118-C0S | 0 to 10000   |
| DSGT-105-C0S | 0 to 60        |              |              |              |              |              |              |

### SPECIFICATIONS

#### GAGE SPECIFICATIONS

**Service:** Compatible, non-combustible liquids & gases.  
**Wetted Materials:** 17 to 4 stainless steel sensor, 316 SS socket.  
**Housing Materials:** Fiberglass reinforced thermoplastic case.  
**Accuracy:** 0.25% FS (includes linearity, hysteresis, repeatability).  
**Pressure Limit:** 2 x FS range.  
**Process Connection:** 1/2" male NPT.  
**Display:** 5 digit (0.88" high).

#### TRANSMITTER SPECIFICATIONS

**Power Requirements:** 12 to 36 VDC (loop powered).

**Memory Back Up Supply:** (2) C alkaline batteries, installed functional, user replaceable.

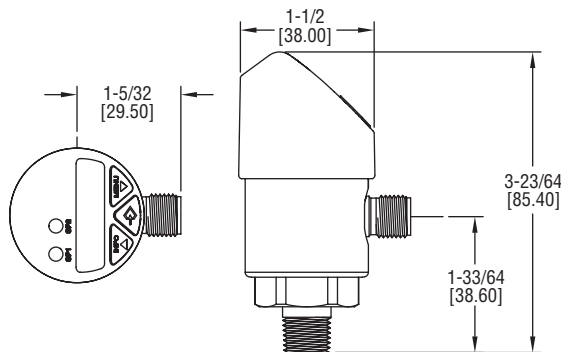
**Output Signal:** 4 to 20 mA.  
**Response Time:** 100 ms.  
**Temperature Limits:** 14 to 140°F (-10 to 60°C).  
**Thermal Effects:** 0.04% FS/°F.  
**Electrical Connections:** 3 ft flying leads.  
**Loop Resistance:** DC; 0 to 1090  $\Omega$  max.  
**Set Point Adjustments:** Adjustable through menu selections.  
**Weight:** 1.45 lb (.66 kg).  
**Agency Approvals:** CE.

### OPTION

| Use order code: | Description                            |
|-----------------|--|
| NISTCAL-PT1     | NIST traceable calibration certificate |

## DIGITAL PRESSURE TRANSMITTER WITH SWITCHES

Two Solid State Switches, LED Display



The **SERIES DPT** Digital Pressure Transmitter with Switches combines a large, 14-segment LED display with two programmable solid state switches into one compact unit. A unique, 3-way rotating design allows the DPT to meet specific installation requirements without any retrofitting. The display and electrical connection can be rotated independently to maximize visibility while still orienting the electrical connection in the best position for the cable connector. Large, ergonomically designed push buttons allow for quick/easy programming and thin-film piezoresistive sensor technology guarantees long-term reliability and stability.

## FEATURES/BENEFITS

- Compact size, lightweight, and high accuracy supports multiple installation methods to support application need and footprint
- Rotating display and electrical connection to maximize visibility while orienting the electrical connection in the best position for the cable connector

## APPLICATIONS

- Calibration
- Hydraulics and pneumatics
- Machine tools
- Compressors and pumps
- Machine building

## SPECIFICATIONS

**Service:** Compatible gases, liquids or vapors.

**Wetted Materials:** Pressure connection: 316 L SS; Pressure sensor: 316 L SS (13-8 PH for ranges above 150 psi).

**Housing:** 316 L lower body, heat and chemical resistant fiberglass reinforced plastic (PBT) plastic head, TPE-E keyboard, PC display window.

**Accuracy:** 1.0% FS (includes non-linearity, hysteresis, zero point).

**Pressure Limit:** See table.

**Temperature Limits:** 32 to 176°F (0 to 80°C).

**Process Connections:** 1/4" male NPT.

**Display:** Red LED 4-digit (0.35" H digits).

**Weight:** 7 oz (0.2 kg).

## SWITCH SPECIFICATIONS

**Switch Type:** PNP.

**Electrical Rating:** 250 mA.

**Electrical Connections:** M 12x1, 5-pin.

**Mounting Orientation:** Mount in any position.

## TRANSMITTER SPECIFICATIONS

**Temperature Limits:** 32 to 176°F (0 to 80°C).

**Thermal Effect:** 0.2% FS / 10k.

**Power Requirements:** 15 to 35 VDC.

**Output Signal:** DPT-A: 4 to 20 mA; DPT-V: 0 to 10 VDC.

**Loop Resistance:** DPT-A: ≤ 0.5k; DPT-V: > 10k.

**Power Consumption:** ≤ 100 mA.

**Electrical Connections:** M 12x1, 5-pin.

**Enclosure Rating:** IP67.

**Agency Approvals:** CE.

## MODEL CHART

| 0 to 10 VDC<br>Model | 4 to 20 mA<br>Model | Range (psig) | Maximum<br>Pressure (psig) | Burst<br>Pressure (psig) | Pressure Ranges |       |       |                    |
|----------------------|---------------------|--------------|----------------------------|--------------------------|-----------------|-------|-------|--------------------|
|                      |                     |              |                            |                          | bar             | MPa   | kPa   | kg/cm <sup>2</sup> |
| DPT-V00              | DPT-A00             | -14.5 to 0   | 30                         | 75                       | 1.034           | .1034 | 103.4 | 1.055              |
| DPT-V01              | DPT-A01             | 0 to 15      | 30                         | 75                       | 1.034           | .1034 | 103.4 | 1.055              |
| DPT-V02              | DPT-A02             | 0 to 25      | 60                         | 150                      | 1.724           | .1724 | 172.4 | 1.758              |
| DPT-V03              | DPT-A03             | 0 to 30      | 60                         | 150                      | 2.068           | .2068 | 206.8 | 2.109              |
| DPT-V04              | DPT-A04             | 0 to 50      | 100                        | 250                      | 3.447           | .3447 | 344.7 | 3.515              |
| DPT-V05              | DPT-A05             | 0 to 100     | 200                        | 500                      | 6.895           | .6895 | 689.5 | 7.031              |
| DPT-V06              | DPT-A06             | 0 to 160     | 290                        | 500                      | 11.03           | 1.103 | 1103  | 11.25              |
| DPT-V07              | DPT-A07             | 0 to 200     | 400                        | 1500                     | 13.79           | 1.378 | 1378  | 14.06              |
| DPT-V08              | DPT-A08             | 0 to 300     | 600                        | 1500                     | 20.68           | 2.068 | 2068  | 21.09              |
| DPT-V09              | DPT-A09             | 0 to 500     | 1000                       | 2500                     | 34.47           | 3.447 | 3447  | 35.15              |
| DPT-V10              | DPT-A10             | 0 to 1000    | 1740                       | 7975                     | 68.95           | 6.895 | 6895  | 70.31              |

## OPTION

| Use order code: | Description                            |
|-----------------|--|
| NISTCAL-PT1     | NIST traceable calibration certificate |

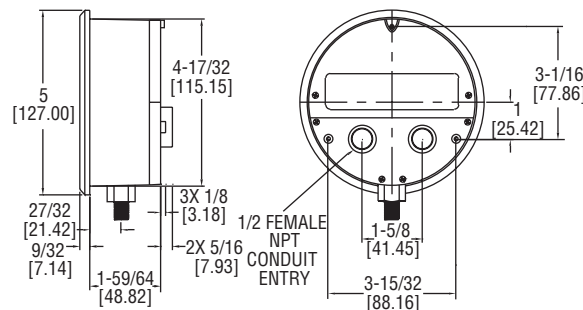
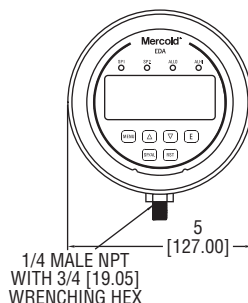
## ACCESSORY

| Model | Description  |
|-------|--|
| A-195 | 6' (2 m) shielded cable with 5 pin female M-12 connections |



# ELECTRONIC PRESSURE CONTROLLER

## 2 Switches, Indicating Gauge, and Transmitter in One Package



**SERIES EDA** Electronic Pressure Control is an extremely versatile compact package that can replace a separate gauge, two switches, and a transmitter in a system saving money, installation time, and panel space. The EDA incorporates two SPDT relays that have the on and off points fully adjustable over the range for control or alarm use. Front face has LED indicators for switch status and a large backlight two-line display showing process value and indication units. Programming is easy with simple menu structure, two-line display, and external programming buttons. Weatherproof housing is ideal for a wide variety of applications with panel mount, flush mount, or pipe mount ability. Features include zero set, adjustable dampening, menu lock out, peak and valley indication, removable terminal blocks, adjustable time delay, and scalable transmitter output.

### FEATURES/BENEFITS

- Versatile compact package that can replace a separate gauge, two switches, and a transmitter in a system saving money, installation time, and panel space
- Fully programmable to meet simple or complex application needs
- Test mode function simulates input over the range without pressuring to easily test switches and transmitter output function
- Failsafe relay output choices in case of sensor failure, over pressure, high temperature limit, low temperature limit, or keypad short
- Selectable alternation of set points between the relays for even wear on duplex pump applications
- Weatherproof housing is ideal for a wide variety of applications with panel mount, flush mount, or pipe mount ability

### APPLICATIONS

- Process control
- Compressor control
- SCFM duct flow
- Filter status
- Duct or building static pressure
- Damper and fan control

### SPECIFICATIONS

**Service:** Compatible liquids and gases.

**Wetted Materials:** 316L SS.

**Housing:** Glass filled plastic.

**Accuracy:**  $\pm 1\%$  of FS including linearity, hysteresis, and repeatability (indicator and transmitter).

**Stability:**  $< \pm 2\%$  of FS per year.

**Pressure Limits:** 1.5 x range.

**Temperature Limits:** Ambient: 20 to 140°F (-6.6 to 60°C); Process: 0 to 176°F (-18 to 80°C).

**Compensated Temperature Limits:** 32 to 122°F (0 to 50°C).

**Thermal Effect:**  $\pm 0.05\%$  of FS/°F.

**Display:** 4-digit backlit LCD (digits: 0.60"H x 0.33" W).

**Power Requirements:** 12 to 30 VDC/AC.

**Power Consumption:** 2.5 watts.

**Electrical Connections:** Removable terminal blocks with two 1/2" female NPT conduit connections.

**Enclosure Rating:** Meets NEMA 4X (IP66).

**Warm Up Time:** <10 seconds.

**Mounting Orientation:** Any position.

**Weight:** 1.18 lb (535 g).

**Agency Approvals:** CE, UL.

### SWITCH SPECIFICATIONS

**Switch Type:** 2 SPDT relays.

**Electrical Rating:** 5 A @ 120/240VAC, 1 A @ 30 VDC.

**Repeatability:**  $\pm 1\%$  of FS (switching only).

**Set Points:** Adjustable 0-100% of FS.

**Switch Indication:** External LED for each relay on the front panel.

**Switch Reset:** Manual or automatic.

### TRANSMITTER SPECIFICATIONS

**Output Signal:** 4 to 20 mA, 1 to 6 VDC, 1 to 5 VDC, 0 to 5 VDC, or 0 to 10 VDC (direct or reverse output selection).

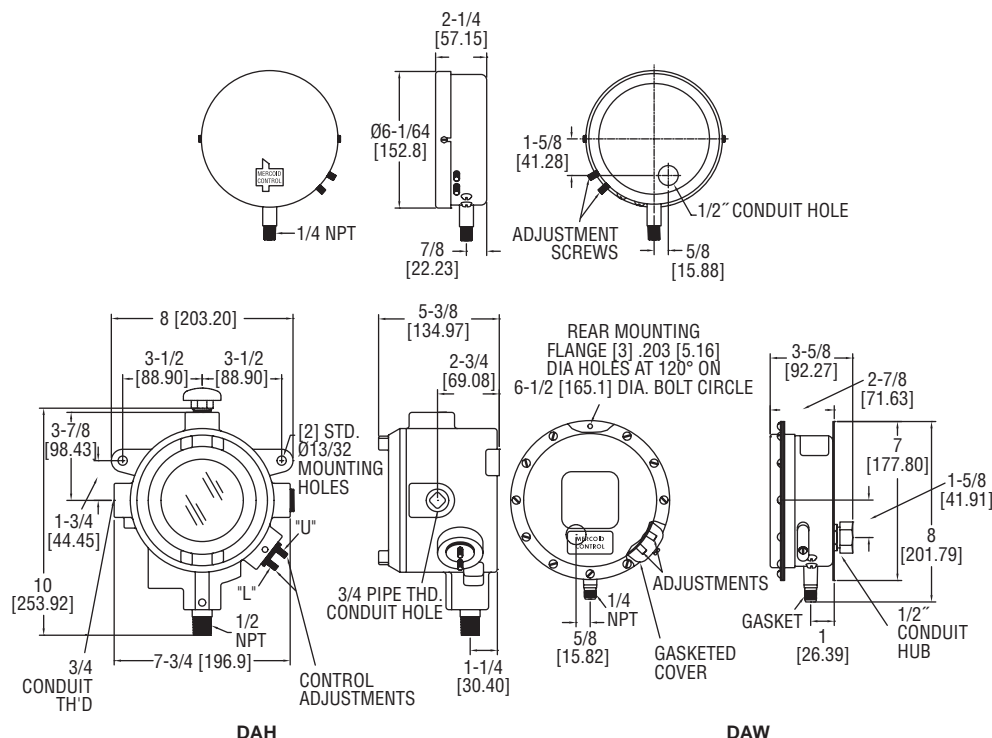
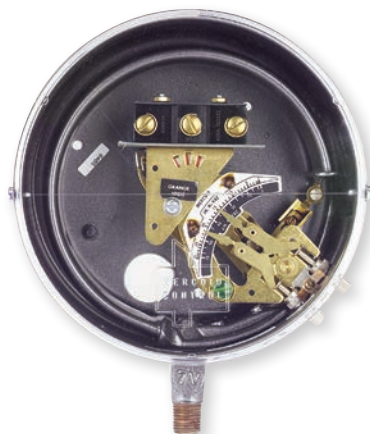
**Minimum Excitation:** 14 VDC.

**Zero and Span Adjustments:** Menu scalable within the range.

| MODEL CHART                  |     |   |     |    |  |                                  |  |
|------------------------------|-----|---|-----|----|--|----------------------------------|--|
| Example                      | EDA | W | -N1 | E1 | -02  | T0                               | -AT  |
| <b>Series</b>                | EDA |   |     |    |  |                                  | EDAW-N1E1-02T0-AT  |
| <b>Housing</b>               |     | W |     |    |  |                                  | Electronic pressure controller   |
| <b>Process Connection</b>    |     |   | N1  |    |  |                                  | Weatherproof   |
| <b>Electrical Connection</b> |     |   |     | E1 |  |                                  | 1/4" NPT male bottom   |
| <b>Range</b>                 |     |   |     |    | 02<br>03<br>04<br>05<br>06<br>07<br>08<br>09<br>10 |                                  | Two 1/2" female NPT conduit connections<br>0 to 20 psi (1.379 bar)<br>0 to 60 psi (4.14 bar)<br>0 to 100 psi (6.89 bar)<br>0 to 150 psi (10.34 bar)<br>0 to 300 psi (20.68 bar)<br>0 to 600 psi (41.4 bar)<br>0 to 1000 psi (68.9 bar)<br>0 to 1500 psi (103.4 bar)<br>0 to 3000 psi (206.8 bar) |
| <b>Transmitter Output</b>    |     |   |     |    |  | T0<br>T1<br>T2<br>T3<br>T4<br>T5 | None<br>4 to 20 mA<br>1 to 5 VDC<br>0 to 5 VDC<br>1 to 6 VDC<br>0 to 10 VDC  |
| <b>Options</b>               |     |   |     |    |  | AT<br>NIST<br>23444              | Aluminum adhesive tag<br>NIST certificate<br>Oxygen cleaning   |

# BOURDON TUBE PRESSURE SWITCHES

Pressure Ranges to 8000 psi (551.6 bar)



Customers tell us that the **SERIES DA/DS** are the best pressure switches made. The Mercoid D Series is one of the world's broadest lines of pressure switches. The D Series has extremely high sensitivity and great repeatability. The DA Models are equipped with two external adjustments, one for setting high pressure operating point, the other for setting low pressure operating point. Deadband, the difference between high and low setpoints, is adjustable over the full-scale. The DS Models are equipped with a single external adjustment for setting operating point only. For mercury-free switches, choose between the snap action switch or hermetically sealed snap action switch. Hermetically sealed mercury switch also available.

## FEATURES/BENEFITS

- Visible calibrated dial provides an easy and fast check without having to open device causing dangerous conditions to operators
- On/off indication (except hermetically sealed snap switch models) gives operator clear indication of state of switched equipment that could be located in another location
- Adjustable or fixed deadband supports control applications by reducing equipment wear-out by unnecessary recycling
- External switch set-point adjustment reduces set-up time
- Pressure ranges of full vacuum to 8000 psig gives application designers the ability to specify standard equipment, simplifying install and training, and reducing servicing costs
- UL listed, CSA approved, many models FM approved to support rigorous process applications and regulations
- General purpose, weatherproof or explosion-proof enclosures for a variety of indoor or outdoor environments meeting the needs of multiple applications and uses

## APPLICATIONS

- Compressors
- Mechanical HVAC or process equipment
- Pump control

## SPECIFICATIONS

**Wetted Materials:** Brass, 403 SS, or 316 SS.

**Temperature Limit:** 180°F (82°C).

**Pressure Limit:** Maximum pressure of the operating range.

**Enclosure Rating:** General purpose, weatherproof or explosion-proof.

**Repeatability:** ±1% of full operating range, ±1.5% on DS-7300 models.

**Switch Type:** SPST mercury switch, SPDT mercury switch, SPDT snap switch, or SPDT hermetically sealed snap switch. Other circuit types available.

**Electrical Rating:** See model charts.

**Electrical Connections:** Screw terminal.

**Conduit Connection:** General purpose: 1/2" hole for conduit hub; Weatherproof: 1/2" conduit hub; Explosion-proof: 3/4" female NPT.

**Process Connection:** General purpose and weatherproof: 1/4" male NPT, 1/2" male NPT on ranges 15S and 16S; Explosion-proof: 1/2" male NPT and 1/4" female NPT.

**Mounting Orientation:** Vertical.

**Set Point Adjustment:** Thumbscrew.

**Weight:** General purpose: 4 lb (1.8 kg); Weatherproof: 6 lb (2.7 kg); Explosion-proof: 8 lb (3.5 kg).

**Deadband:** See model chart.

**Agency Approvals:** CE, CSA, FM, UL (mercury switch units are not CE approved) (Consult factory for FM approved models).

# BOURDON TUBE PRESSURE SWITCHES

Pressure Ranges to 8000 psi (551.6 bar)

| MODEL CHART - D SERIES PRESSURE SWITCH WITH SNAP ACTION SWITCH AND GENERAL PURPOSE ENCLOSURE |                                   |   |                 |   |                 |   |                 |
|--|-----------------------------------|---|-----------------|---|-----------------|---|-----------------|
| Bourdon Tube Material  | Adjustable Operating Range (psig) | Adjustable Deadband<br>SPDT: 10 A @ 120/240 VAC |                 | Fixed Deadband<br>SPDT: 15 A @ 120/240 AC |                 | Hermetically Sealed, Fixed Deadband<br>SPDT: 5 A @ 120/240 VAC, 5 A res. @ 30 VDC |                 |
|  |                                   | Minimum Deadband (psig)                         | Model           | Fixed                                     | Model           | Fixed   | Model           |
| Brass  | 0 to 30" Hg VAC                   | 13.5" Hg  | DA-7031-153-2   | 3" Hg                                     | DS-7231-153-2   | 5" Hg   | DS-7331-153-2   |
| Brass  | 10" Hg VAC to 12                  | 6   | DA-7031-153-3   | 1.5                                       | DS-7231-153-3   | 3   | DS-7331-153-3   |
| Brass  | 25" Hg VAC to 50                  | 12  | DA-7031-153-27  | 2.5                                       | DS-7231-153-27  | 3.75  | DS-7331-153-27  |
| Brass  | 1/8 to 15                         | 6   | DA-7031-153-1   | 1.5                                       | DS-7231-153-1   | 3   | DS-7331-153-1   |
| Brass  | 1/8 to 20                         | 6   | DA-7031-153-3A  | 1.5                                       | DS-7231-153-3A  | 3   | DS-7331-153-3A  |
| Brass  | 1 to 35                           | 7.5   | DA-7031-153-4   | 1.5                                       | DS-7231-153-4   | 3   | DS-7331-153-4   |
| Brass  | 2 to 60                           | 9   | DA-7031-153-5   | 2   | DS-7231-153-5   | 3   | DS-7331-153-5   |
| Brass  | 5 to 100                          | 13.5  | DA-7031-153-6   | 2.5                                       | DS-7231-153-6   | 3.75  | DS-7331-153-6   |
| Brass  | 5 to 150                          | 24  | DA-7031-153-7   | 3   | DS-7231-153-7   | 5.25  | DS-7331-153-7   |
| Brass  | 10 to 200                         | 24  | DA-7031-153-8   | 4   | DS-7231-153-8   | 6.75  | DS-7331-153-8   |
| Brass  | 10 to 300                         | 37.5  | DA-7031-153-9   | 5   | DS-7231-153-9   | 9   | DS-7331-153-9   |
| 403 stainless steel  | 30" Hg VAC to 60                  | 18  | DA-7021-153-25S | 3.5                                       | DS-7221-153-25S | 5.25  | DS-7321-153-25S |
| 403 stainless steel  | 30" Hg VAC to 75                  | 22.5  | DA-7021-153-26S | 3.5                                       | DS-7221-153-26S | 5.25  | DS-7321-153-26S |
| 403 stainless steel  | 2 to 60                           | 13.5  | DA-7021-153-5S  | 3   | DS-7221-153-5S  | 4.5   | DS-7321-153-5S  |
| 403 stainless steel  | 5 to 100                          | 19.5  | DA-7021-153-6S  | 3.5                                       | DS-7221-153-6S  | 5.25  | DS-7321-153-6S  |
| 403 stainless steel  | 10 to 200                         | 22.5  | DA-7021-153-8S  | 4   | DS-7221-153-8S  | 7.125   | DS-7321-153-8S  |
| 403 stainless steel  | 10 to 300                         | 28.5  | DA-7021-153-9S  | 6   | DS-7221-153-9S  | 10.5  | DS-7321-153-9S  |
| 403 stainless steel  | 40 to 350                         | 30  | DA-7021-153-9AS | 6   | DS-7221-153-9AS | 10.5  | DS-7321-153-9AS |
| 403 stainless steel  | 25 to 600                         | 67.5  | DA-7021-153-10S | 10  | DS-7221-153-10S | 18  | DS-7321-153-10S |
| 403 stainless steel  | 50 to 1000                        | 142.5   | DA-7021-153-11S | 20  | DS-7221-153-11S | 33  | DS-7321-153-11S |
| 403 stainless steel  | 100 to 1500                       | 195   | DA-7021-153-12S | 30  | DS-7221-153-12S | 52.5  | DS-7321-153-12S |
| 403 stainless steel  | 300 to 2500                       | 390   | DA-7021-153-13S | 60  | DS-7221-153-13S | 90  | DS-7321-153-13S |
| 403 stainless steel  | 500 to 5000                       | 1350  | DA-7021-153-15S | 200                                       | DS-7221-153-15S | 300   | DS-7321-153-15S |
| 403 stainless steel  | 800 to 8000                       | 2250  | DA-7021-153-16S | 500                                       | DS-7221-153-16S |   |                 |
| 316 stainless steel  | 30" Hg VAC to 75                  | 15  | DA-7041-153-26E | 3.5                                       | DS-7241-153-26E | 5.25  | DS-7341-153-26E |
| 316 stainless steel  | 5 to 75                           | 12  | DA-7041-153-23E | 4   | DS-7241-153-23E | 6   | DS-7341-153-23E |
| 316 stainless steel  | 10 to 100                         | 15  | DA-7041-153-6E  | 3.5                                       | DS-7241-153-6E  | 5.25  | DS-7341-153-6E  |
| 316 stainless steel  | 10 to 150                         | 16.5  | DA-7041-153-24E | 4   | DS-7241-153-24E | 6.75  | DS-7341-153-24E |
| 316 stainless steel  | 10 to 300                         | 42  | DA-7041-153-9E  | 8   | DS-7241-153-9E  | 12  | DS-7341-153-9E  |
| 316 stainless steel  | 30 to 400                         | 78  | DA-7041-153-21E | 10  | DS-7241-153-21E | 18  | DS-7341-153-21E |
| 316 stainless steel  | 75 to 800                         | 180   | DA-7041-153-22E | 25  | DS-7241-153-22E | 37.5  | DS-7341-153-22E |
| 316 stainless steel  | 100 to 1000                       | 285   | DA-7041-153-11E | 35  | DS-7241-153-11E | 52.5  | DS-7341-153-11E |
| 316 stainless steel  | 200 to 2500                       | 600   | DA-7041-153-13E | 75  | DS-7241-153-13E | 112.5   | DS-7341-153-13E |

MODEL CHART - D SERIES PRESSURE SWITCH WITH MERCURY SWITCH AND GENERAL PURPOSE ENCLOSURE

| Bourdon Tube Material | Adjustable Operating Range (psig) | Adjustable Deadband     |  |   |  |
|-----------------------|-----------------------------------|-------------------------|--|---|--|
|                       |                                   | Minimum Deadband (psig) | SPDT<br>4 A @ 120 V,<br>2 A @ 240 V<br>AC/DC | SPST<br>Open on Increase<br>10 A @ 120 V,<br>5 A @ 240 V<br>AC/DC | SPST<br>Close on Increase<br>10 A @ 120 V,<br>5 A @ 240 V<br>AC/DC |
| Brass                 | 30" to 0 Hg VAC                   | 2" Hg                   | DA-31-153-2                                  | DA-31-2-2   | DA-31-3-2  |
| Brass                 | 10" Hg VAC to 12                  | 1                       | DA-31-153-3                                  | DA-31-2-3   | DA-31-3-3  |
| Brass                 | 25" Hg VAC to 50                  | 3.5                     | DA-31-153-27                                 | DA-31-2-27  | DA-31-3-27   |
| Brass                 | 1/8 to 15                         | 1                       | DA-31-153-1                                  | DA-31-2-1   | DA-31-3-1  |
| Brass                 | 1/8 to 20                         | 1                       | DA-31-153-3A                                 | DA-31-2-3A  | DA-31-3-3A   |
| Brass                 | 1 to 35                           | 1.75                    | DA-31-153-4                                  | DA-31-2-4   | DA-31-3-4  |
| Brass                 | 2 to 60                           | 3                       | DA-31-153-5                                  | DA-31-2-5   | DA-31-3-5  |
| Brass                 | 5 to 100                          | 3.75                    | DA-31-153-6                                  | DA-31-2-6   | DA-31-3-6  |
| Brass                 | 5 to 150                          | 6                       | DA-31-153-7                                  | DA-31-2-7   | DA-31-3-7  |
| Brass                 | 10 to 200                         | 8                       | DA-31-153-8                                  | DA-31-2-8   | DA-31-3-8  |
| Brass                 | 10 to 300                         | 12                      | DA-31-153-9                                  | DA-31-2-9   | DA-31-3-9  |
| 403 stainless steel   | 30" Hg VAC to 60                  | 6                       | DA-21-153-25S                                | DA-21-2-25S   | DA-21-3-25S  |
| 403 stainless steel   | 30" Hg VAC to 75                  | 8                       | DA-21-153-26S                                | DA-21-2-26S   | DA-21-3-26S  |
| 403 stainless steel   | 2 to 60                           | 4                       | DA-21-153-5S                                 | DA-21-2-5S  | DA-21-3-5S   |
| 403 stainless steel   | 5 to 100                          | 6                       | DA-21-153-6S                                 | DA-21-2-6S  | DA-21-3-6S   |
| 403 stainless steel   | 10 to 200                         | 8                       | DA-21-153-8S                                 | DA-21-2-8S  | DA-21-3-8S   |
| 403 stainless steel   | 10 to 300                         | 14                      | DA-21-153-9S                                 | DA-21-2-9S  | DA-21-3-9S   |
| 403 stainless steel   | 40 to 350                         | 14                      | DA-21-153-9AS                                | DA-21-2-9AS   | DA-21-3-9AS  |
| 403 stainless steel   | 25 to 600                         | 25                      | DA-21-153-10S                                | DA-21-2-10S   | DA-21-3-10S  |
| 403 stainless steel   | 50 to 1000                        | 60                      | DA-21-153-11S                                | DA-21-2-11S   | DA-21-3-11S  |
| 403 stainless steel   | 100 to 1500                       | 90                      | DA-21-153-12S                                | DA-21-2-12S   | DA-21-3-12S  |
| 403 stainless steel   | 300 to 2500                       | 150                     | DA-21-153-13S                                | DA-21-2-13S   | DA-21-3-13S  |
| 403 stainless steel   | 500 to 5000                       | 450                     | DA-21-153-15S                                | DA-21-2-15S   | DA-21-3-15S  |
| 403 stainless steel   | 800 to 8000                       | 750                     | DA-21-153-16S                                | DA-21-2-16S   | DA-21-3-16S  |
| 316 stainless steel   | 30" Hg VAC to 75                  | 7                       | DA-41-153-26E                                | DA-41-2-26E   | DA-41-3-26E  |
| 316 stainless steel   | 5 to 75                           | 3                       | DA-41-153-23E                                | DA-41-2-23E   | DA-41-3-23E  |
| 316 stainless steel   | 10 to 100                         | 7                       | DA-41-153-6E                                 | DA-41-2-6E  | DA-41-3-6E   |
| 316 stainless steel   | 10 to 150                         | 6                       | DA-41-153-24E                                | DA-41-2-24E   | DA-41-3-24E  |
| 316 stainless steel   | 10 to 300                         | 18                      | DA-41-153-9E                                 | DA-41-2-9E  | DA-41-3-9E   |
| 316 stainless steel   | 30 to 400                         | 30                      | DA-41-153-21E                                | DA-41-2-21E   | DA-41-3-21E  |
| 316 stainless steel   | 75 to 800                         | 75                      | DA-41-153-22E                                | DA-41-2-22E   | DA-41-3-22E  |
| 316 stainless steel   | 100 to 1000                       | 100                     | DA-41-153-11E                                | DA-41-2-11E   | DA-41-3-11E  |
| 316 stainless steel   | 200 to 2500                       | 210                     | DA-41-153-13E                                | DA-41-2-13E   | DA-41-3-13E  |

## OPTIONS

### Weatherproof Enclosure - Series DAW

**Note:** To order, add "W" to model number after DA or DS, change 1 to 3.

**Example:** DAW-33-153-7

### Explosion-Proof Enclosure - Series DAH

Suitable for Class I, Groups C and D; NEMA 7; Class II, Groups E, F, G; Class III NEMA 9 and 9A, Division 1.

**Note:** To order, add "H" to model number after DA or DS. **Example:** DAH-31-153-7

### FM Approved

For general purpose and explosion-proof models see agency approvals.

**Note:** To order, add "F" to model number after DA, DS, DAH or DSH.

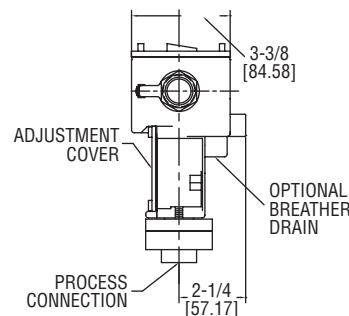
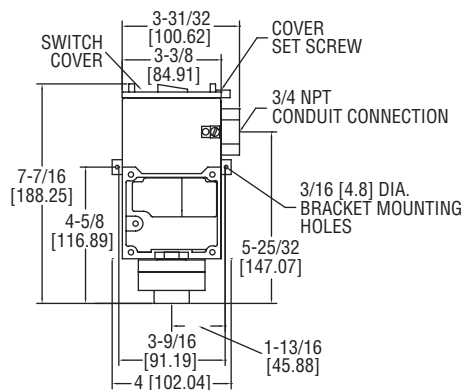
**Examples:** DAF-31-153-7 or DAHF-31-153-7

### Other Options (Consult Factory)

DPDT switches or other switch types, fixed deadband mercury switch units for low deadband applications, manual reset operation, two-stage operation, acetal bushed movement for applications with high amounts of vibration and/or pulsation, fungus proofing, siphon, diaphragm seals, mounting flange and remote connection.

# DIAPHRAGM OPERATED PRESSURE SWITCHES

Visible Setpoint, Adjustable Deadband, Hermetically Sealed Snap Switch, Weatherproof and Explosion-Proof



The **SERIES SA1100** Diaphragm Operated Pressure Switches are weatherproof and explosion-proof in one economical enclosure. Extremely rugged construction assures excellent reliability in chemical, petroleum and industrial plants. New design also provides burst pressure protection to 3000 psi (206 bar). The rolling diaphragm design maintains a constant effective area to minimize friction. This results in a minimum deadband as low as 5% of full-scale. Since many applications require higher deadbands, the SA1100 includes a separate adjustment of this when necessary. A pump being used to control liquid level in a tank would be a typical situation where this feature would be important. Both setpoint and deadband adjustments are protected, yet clearly visible behind a clear polycarbonate window and are fully isolated from the electrical components for additional safety. A 7/16" open-end wrench is the only tool required to change settings. Terminal blocks are provided for switch wiring connections and both internal and external ground screws are included. Standard housing is weatherproof to NEMA standards 1 through 4X and 13; explosion-proof to NEMA 7, Class I, Groups B, C & D; NEMA 9, Class II, Groups E, F & G. Optional construction adds drain to meet NEMA 3R IP54.

## FEATURES/BENEFITS

- Explosion-proof and weatherproof housing provides device protection for outdoor use or harsh environment operation
- Burst pressure protection prevents device failure where high-pressure surges may damage device costing down-time and repair/replacement
- Adjustable deadband reduces equipment cycling and potential failure
- Visible set-point and deadband adjustments provide an easy and fast check without having to open device causing dangerous conditions to operators

## APPLICATIONS

- Chemical, petroleum, food and drug processing industries
- Used indoor, outdoor or in explosion-proof area
- Pump control

## SPECIFICATIONS

**Wetted Materials:** See pressure chamber and diaphragm material in model chart.

**\*Temperature Limits:** -30 to 180°F (-35 to 82°C) standard; ATEX compliant at Ambient Temperature: -4 to 167°F (-20 to 75°C); Process Temperature: -4 to 167°F (-20 to 75°C).

**Pressure Limit:** 1200 psig (82.6 bar).

**\*Enclosure Rating:** Weatherproof and Explosion-proof. Listed with UL and CSA for Class I, Groups B, C and D; Class II Groups E, F, and G. ATEX Compliant 0344 Ex II 2 G EEx d IIC T6 Process Temperature 75°C. Weatherproof UL Rated Type 4. Meets NEMA 4X (IP66).

\*Options that do not have ATEX

**Switch Type:** SPDT or DPDT snap switch.

**Electrical Rating:** See model chart.

**Electrical Connections:** Screw terminal.

**Conduit Connection:** 3/4" female NPT.

**Process Connection:** 1/2" female NPT.

**Mounting Orientation:** Within 20° of vertical.

**Set Point Adjustment:** Internal 7/16" hex nuts.

**Weight:** 3.5 lb (1.6 kg).

**Deadband:** See deadband chart.

**\*Agency Approvals:** ATEX, CE, CSA, UL.

## SWITCH DEADBAND CHART

| Range Number | Adjustable Operating Range |          | Approximate Minimum Deadband |      | Approximate Maximum Deadband |      |
|--------------|----------------------------|----------|------------------------------|------|------------------------------|------|
|              |                            |          |                              |      |                              |      |
|              | psig                       | bar      | psig                         | bar  | psig                         | bar  |
| 11           | 10-150                     | 0.7-10   | 4.0                          | 0.28 | 7.5                          | 0.52 |
| 12           | 20-250                     | 1.4-17.2 | 5.0                          | 0.35 | 12.5                         | 0.86 |
| 13           | 30-500                     | 2.0-34   | 12                           | 0.83 | 45                           | 3.1  |

## MODEL CHART

| Example                            | SA11 | 13             | E             | -A     | 4      | -K     | 2           | SA1113E-A4-K2   |
|------------------------------------|------|----------------|---------------|--------|--------|--------|-------------|---|
| Construction                       | SA11 |                |               |        |        |        |             | Series designator, weatherproof NEMA 4X, explosion-proof NEMA 7, 9  |
| Adjustable Pressure Ranges         |      | 11<br>12<br>13 |               |        |        |        |             | Adjustable range 10 to 150 psig (0.7-10 bar)<br>Adjustable range 20 to 250 psig (1.4-17.2 bar)<br>Adjustable range 30 to 500 psig (2.0-34.0 bar)  |
| Circuit (Switch) Options           |      |                | E<br>HS<br>HG |        |        |        |             | Snap action switch rated 15 A @ 125/250/480 VAC, 1/8 HP @ 125 VAC, 1/4 HP @ 250 VAC, 1/2 A @ 125 VDC resistive, 1/4 A @ 250 VDC resistive<br>Hermetically sealed snap action switch rated 5 A @ 125/250 VAC, 5 A resistive @ 30 VDC*<br>Hermetically sealed snap action switch with gold contacts rated 1A @ 125 VAC, 1 A resistive @ 30 VDC* |
| Pressure Chamber Material (Wetted) |      |                |               | A<br>S |        |        |             | Aluminum<br>316 SS  |
| Diaphragm Material (Wetted)        |      |                |               |        | 4<br>5 |        |             | Buna-N diaphragm and O-ring<br>Fluorocarbon diaphragm and O-ring  |
| Circuit (Switch) Type              |      |                |               |        |        | K<br>L |             | SPDT<br>DPDT (not available with HS or HG switch options)   |
| Process Connection                 |      |                |               |        |        |        | 2           | 1/2 inch female NPT   |
| *Options                           |      |                |               |        |        |        | AT<br>DRAIN | ATEX certified construction<br>Housing with drain - allows condensate to be drained from inside enclosure (meets NEMA 3R instead of 4X)   |

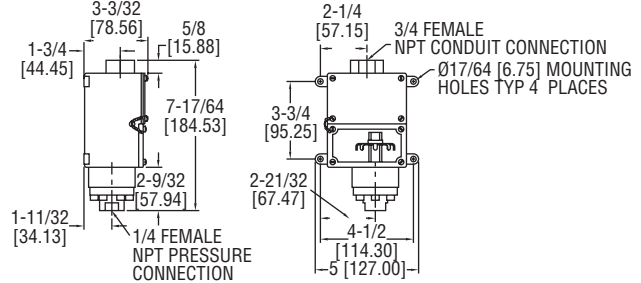
\*Options that do not have ATEX

Examples: SA1111E-A4-K2; SA1111E-S5-K2



# WEATHERPROOF DIAPHRAGM OPERATED PRESSURE SWITCHES

Visible Setpoint, Fixed Deadband, Pressure Ranges to 1400 psi



With extremely rugged construction the **SERIES 1000W** provides excellent reliability in chemical, petroleum and industrial plants. Bellville spring movement permits mounting of control in any position and helps prevent contact chatter. New design also provides high over-pressure protection. Weatherproof housing is standard.

## FEATURES/BENEFITS

- Weatherproof housing is ideal for a wide variety of applications where dust or water is present
- Spring movement design provides for control in any mounting position and prevents contact chatter reducing false or inconsistent switching

## APPLICATIONS

- Chemical, petroleum, food and drug processing industries
- Process and Industrial applications

## SPECIFICATIONS

**Wetted Materials:** See pressure chamber and diaphragm material in model chart.  
**Temperature Limits:** -30 to 170°F (-35 to 77°C).  
**Pressure Limit:** 3000 psig (206.8 bar).  
**Enclosure Rating:** Weatherproof, meets NEMA 4X (IP66).  
**Switch Type:** SPDT snap switch.  
**Electrical Rating:** 15 A @ 125/250 VAC resistive.

**Electrical Connections:** Screw type.  
**Conduit Connection:** 3/4" female NPT.  
**Process Connection:** 1/4" female NPT.  
**Mounting Orientation:** Any position.  
**Set Point Adjustment:** Internal thumbwheel.  
**Weight:** 3 lb (1.4 kg).  
**Deadband:** See model chart.  
**Agency Approvals:** CE, UL.

## MODEL CHART

| Aluminum Pressure Chamber<br>Polyamide Diaph. Model | 316 SS Pressure Chamber<br>FEP Diaph. Model | Adjustable Operating<br>Range psig (bar) | Approx.* Deadband<br>(Fixed) psig (bar) |
|---|---|--|---|
| 1003W-A1-D  | 1003W-B3-D                                  | 5 to 40 (.48 to 2.8)                     | 2 (.14)                                 |
| 1004W-A1-D  | 1004W-B3-D                                  | 10 to 70 (.69 to 4.8)                    | 4 (.28)                                 |
| 1005W-A1-D  | 1005W-B3-D                                  | 25 to 200 (1.7 to 13.8)                  | 8 (.55)                                 |
| 1006W-A1-D  | 1006W-B3-D                                  | 50 to 350 (3.5 to 24.1)                  | 15 (1.0)                                |
| 1007W-A1-D  | 1007W-B3-D                                  | 75 to 550 (5.2 to 37.9)                  | 30 (2.1)                                |
| 1008W-A1-D  | 1008W-B3-D                                  | 100 to 900 (6.9 to 62.1)                 | 50 (3.5)                                |
| 1009W-A1-D  | 1009W-B3-D                                  | 200 to 1400 (13.8 to 96.5)               | 75 (5.2)                                |

\*Deadband 10-15% larger when using 316 SS diaphragm.

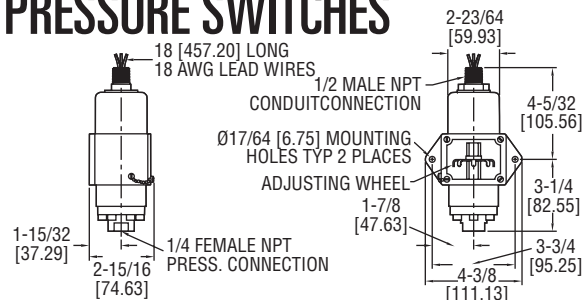
**Note:** To order, change A1 to B2 for 316 SS diaphragm and pressure chamber.

**Example:** 1003W-B2-D. Values shown are for mid-scale.

## SERIES 1000E | MERCOID BY DWYER

# EXPLOSION-PROOF DIAPHRAGM OPERATED PRESSURE SWITCHES

Visible Setpoint, Fixed Deadband, Pressure Ranges to 1400 psi



The **SERIES 1000E** has the same rugged construction as used in Series 1000W plus explosion-proof design are combined in this new unit. UL listed for Class I, Groups A, B, C & D; Class II, Groups E, F & G. Bellville spring movement permits mounting of control in any position and helps prevent contact chatter. High over-pressure protection and vibration resistance are also featured.

## FEATURES/BENEFITS

- Weatherproof housing is ideal for a wide variety of applications where dust or water is present
- Spring movement design provides for control in any mounting position and prevents contact chatter reducing false or inconsistent switching
- UL listed to support rigorous process applications and regulations

## APPLICATIONS

- Chemical, petroleum, food and drug processing industries
- Process and industrial applications

## SPECIFICATIONS

**Wetted Materials:** See pressure chamber and diaphragm material in model chart.  
**Temperature Limits:** -30 to 170°F (-35 to 77°C).  
**Pressure Limit:** 3000 psig (206.8 bar).  
**Enclosure Rating:** Explosion-proof, UL listed for Class I, Groups A, B, C and D; Class II, Groups E, F, and G.  
**Switch Type:** SPDT snap switch. Hermetically sealed optional.  
**Electrical Rating:** 15 A @ 125/250/480 VAC res., 0.5 A @ 125 VDC, 0.25 A @ 250 VDC.

**Wiring Connections:** 18 AWG, 18" (460 mm) color-coded leads: N.O. (yellow), N.C. (black), and common (red).  
**Conduit Connection:** 1/2" male NPT.  
**Process Connection:** 1/4" female NPT.  
**Mounting Orientation:** Any position.  
**Set Point Adjustment:** Internal thumbwheel.  
**Weight:** 3 lb (1.4 kg).  
**Deadband:** See model chart.  
**Agency Approvals:** CE, UL.

## MODEL CHART

| Aluminum Pressure Chamber<br>Polyamide Diaph. Model | 316 SS Pressure Chamber<br>FEP Diaph. Model | Adjustable Operating<br>Range psig (bar) | Approx.* Deadband<br>(Fixed) psig (bar) |
|---|---|--|---|
| 1003E-A1-J  | 1003E-B3-J                                  | 5 to 40 (.48 to 2.8)                     | 2.5 (.17)                               |
| 1004E-A1-J  | 1004E-B3-J                                  | 10 to 70 (.69 to 4.8)                    | 5 (.34)                                 |
| 1005E-A1-J  | 1005E-B3-J                                  | 25 to 200 (1.7 to 13.8)                  | 10 (.69)                                |
| 1006E-A1-J  | 1006E-B3-J                                  | 50 to 350 (3.5 to 24.1)                  | 18 (1.2)                                |
| 1007E-A1-J  | 1007E-B3-J                                  | 75 to 550 (5.2 to 37.9)                  | 36 (2.5)                                |
| 1008E-A1-J  | 1008E-B3-J                                  | 100 to 900 (6.9 to 62.1)                 | 60 (4.1)                                |
| 1009E-A1-J  | 1009E-B3-J                                  | 200 to 1400 (13.8 to 96.5)               | 90 (6.2)                                |

\*Deadband 10-15% larger when using 316 SS diaphragm.

**Note:** To order, change A1 to B2 for 316 SS diaphragm and pressure chamber.

**Example:** 1003E-B2-J. Values shown are for mid-scale.

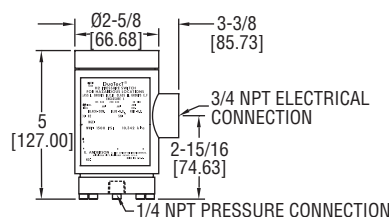
**Dwyer**

SERIES H2 | W. E. ANDERSON BY DWYER



# DUAL-ACTION EXPLOSION-PROOF PRESSURE SWITCHES

Explosion-proof and Weatherproof Enclosure



Explosion-Proof, UL & CSA Listed for Class I, Groups B, C & D and Class II, Groups E, F & G. The **SERIES H2** is designed for sequencing two different actions as pressure of a liquid or gas increases or decreases. The design consists of two concentric pistons operated by a single diaphragm with one pressure chamber. Each piston actuates a separate switch independent of the other. The switches may be adjusted to operate together, at opposite ends of the range or at two intermediate set points. The threaded top is removed to field adjust or service switches without disturbing electrical or pressure connections. The Duotect® switch is explosion-proof and weatherproof. It can be mounted in any position and is not affected by vibration.

## FEATURES/BENEFITS

- Explosion-proof and weather-proof housing provides device protection for outdoor use or harsh environment operation
- UL listed, CSA approved to support rigorous process applications and regulations
- Independent piston action design for either gas or liquid allows switches to active together or independently based on settings
- Mounting in any position and not affected by vibration provides reliable switching for equipment

## APPLICATIONS

- Mechanical HVAC or process equipment
- Chemical, petroleum, food and drug processing industries
- Process and Industrial applications

## SPECIFICATIONS

**Wetted Materials:** 316 SS chamber with FEP diaphragm and Buna-N O-ring standard. Fluoroelastomer or EPDM O-ring optional.

**Temperature Limit:** 275°F (135°C). CSA approved: -20 to 90°C (-4 to 184°F).

**Pressure Limit:** 1500 psig (103 bar).

**Enclosure Rating:** UL listed explosion-proof, Class I, Groups B, C, and D. Class II Groups E, F, and G. Meets NEMA 4X (IP66). CSA optional. Class I, Groups B, C & D. Class II, Groups E, F, & G -20°C ≤ Tamb ≤ 75°C T6 [optional -20°C ≤ Tamb ≤ 40°C T5] Type 4.

**Switch Type:** Two SPDT snap switches.

**Electrical Rating:** 5 A @ 125/250 VAC. 5 A res., 3 A ind. @ 30 VDC. Gold contacts or 10 A switch optional.

**Electrical Connections:** 18 AWG, 18" (460 mm) long.

**Conduit Connection:** 3/4" female NPT.

**Process Connection:** 1/4" female NPT.

**Mounting Orientation:** Any position.

**Set Point Adjustment:** Internal nut.

**Weight:** 2 lb (.9 kg).

**Deadband:** Approximately 10% of range.

**Agency Approvals:** CSA, UL.

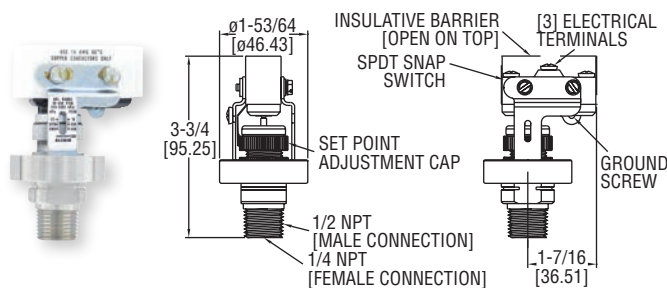
## MODEL CHART

| Model | Low Range psig (bar)       | High Range psig (bar)     |
|-------|----------------------------|---------------------------|
| H2S-1 | 3 to 40 (0.21 to 2.76)     | 5 to 75 (0.35 to 5.17)    |
| H2S-2 | 25 to 250 (1.72 to 17.2)   | 30 to 400 (2.07 to 27.6)  |
| H2S-3 | 100 to 1000 (6.89 to 68.9) | 150 to 1500 (10.3 to 103) |

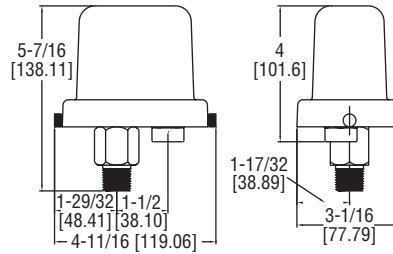
SERIES A1F | MERCOID BY DWYER

# LOW COST OEM PRESSURE SWITCH

Field Installable Weatherproof Enclosure



A1F



A1F with weatherproof enclosure

Low cost and precision made, the **SERIES A1F** Pressure Switch is ideal for OEM industrial applications. Wetted materials of 316 SS and fluorocarbon ensure great chemical compatibility with a wide range of process media. The open case style is perfect for panel mounting applications like pump skids. Weatherproof enclosure is available in polycarbonate offering a low cost weatherproof switch. Superior 15 A contact allows direct control of motors or pumps without the use of external relays, a true cost savings. Features include a convenient indicating scale for quick and easy field adjustment.

## FEATURES/BENEFITS

- 15 A contact allows direct control reducing costs and reliability by having to introduce additional contacts and relays
- Case style allows use for panel mounting application with optional weather-proof enclosure for use in outdoor environments
- Field adjustable reduces installation time bring application on-line faster
- Wetted material provides support for wider range of process media

## APPLICATIONS

- OEM
- Compressors
- Motor control
- Process equipment
- Pump control

## SPECIFICATIONS

**Service:** Compatible liquids and gases.

**Wetted Materials:** Pressure chamber: 316 SS; Diaphragm: Fluorocarbon.

**Temperature Limit:** -40 to 175°F (-40 to 80°C).

**Pressure Limits:** 500 psig (34 bar).

**Enclosure Rating:** No rating for open construction. Installed properly within an optional weatherproof enclosure meets NEMA 4X (IP66) standards.

**Switch Type:** SPDT snap switch.

**Electrical Rating:** 15 A @ 120/240/480 VAC; 1/8 HP @ 125 VAC; 1/4 HP @ 250 VAC.

**Electrical Connection:** Screw terminals.

**Process Connection:** 1/4" female NPT and 1/2" male NPT.

**Mounting Orientation:** Within 20° of vertical.

**Set Point Adjustment:** Knurled screw cap with indicating scale.

**Deadband:** Fixed. See deadband chart.

**Weight:** 10.5 oz (297 g).

**Agency Approvals:** cUL, UL.

## MODEL CHART

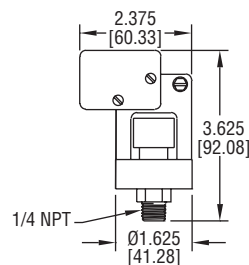
| Model        | Range psig (bar)        | Deadband at Min. Range psig (bar) | Deadband at Max. Range psig (bar) |
|--------------|-------------------------|-----------------------------------|-----------------------------------|
| A1F-O-SS-1-1 | 2 to 15 (0.14 to 1.03)  | 2 (0.14)                          | 3 (0.21)                          |
| A1F-O-SS-1-2 | 4 to 75 (0.28 to 5.17)  | 4 (0.27)                          | 15 (1.0)                          |
| A1F-O-SS-1-3 | 8 to 225 (0.55 to 15.5) | 8 (0.55)                          | 25 (1.7)                          |
| A1F-O-SS-1-4 | 16 to 450 (1.1 to 31.0) | 15 (1.0)                          | 50 (3.5)                          |

**Note:** Optional enclosure factory installed. To order, change O to PC.

**Example:** A1F-PC-SS-1-1

## ECONOMICAL PRESSURE SWITCH

Vacuum and Compound Ranges Available, Adjustable Set Point



**SERIES A1PS/A1VS** Economical Pressure Switches are designed with a 15 Amp SPDT switch for direct control of pumps and motors. Available in pressure, vacuum, or compound ranges, the switches offer a field adjustable set point. Easily adjust the switch by aligning the top of the self locking adjusting nut with the desired setting indicated on the adjacent range scale. Connection is 1/4" male NPT for quick installation and can be mounted in any position.

## FEATURES/BENEFITS

- 15 A contact allows direct control reducing costs and reliability by having to introduce additional contacts and relays
- Field adjustable reduces installation time bring application on-line faster

## APPLICATIONS

- OEM
- Process equipment
- Compressors
- Motor control
- Pump control

## MODEL CHART

| Model   | Set Point Range (kPa)        | Repeatability (kPa) | Deadband (approx.) (kPa)   | Model   | Set Point Range (kPa)          | Repeatability (kPa)          | Deadband (approx.) (kPa)    |
|---------|------------------------------|---------------------|----------------------------|---------|--------------------------------|------------------------------|-----------------------------|
| A1PS-14 | 1.5 to 3.5 psi (10 to 24)    | ±0.15 psi (1)       | 0.5 to 1.7 psi (3 to 11)   | A1VS-14 | 6-28" Hg (-20 to -94)          | ±1.2" Hg (-4)                | 3-14" Hg (-10 to -47)       |
| A1PS-24 | 3 to 40 psi (21 to 276)      | ±1.0 psi (7)        | 2 to 5 psi (14 to 34)      | A1VS-24 | 28" Hg to 3.5 psig (-94 to 24) | ±1.2" Hg (-4), ±0.15 psi (1) | 6" Hg - 1.5 psi (-20 to 10) |
| A1PS-34 | 30 to 150 psi (207 to 1034)  | ±5.0 psi (34)       | 5 to 30 psi (34 to 207)    |         |                                |                              |                             |
| A1PS-44 | 100 to 500 psi (689 to 3445) | ±20.0 psi (138)     | 30 to 120 psi (207 to 827) |         |                                |                              |                             |

## SPECIFICATIONS

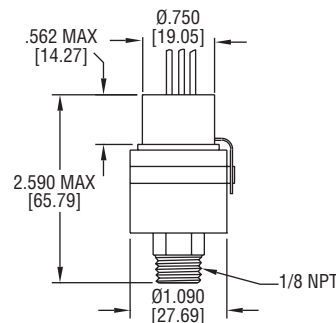
**Service:** Compatible liquids or gases.  
**Wetted Materials:** Diaphragm: Buna-N;  
 Body with fitting: Zinc alloy, chromate finish.  
**Temperature Limits:** -31 to 185°F (-35 to 85°C).  
**Pressure Limits:** 600 psig.  
**Vacuum Limits:** 29.9" Hg (vacuum and compound models only).  
**Switch Type:** SPDT snap action.

**Electrical Ratings:** 15 A (resistive) @ 250 VAC, 1/2 HP @ 250 VAC.  
**Electrical Connections:** Three screw terminals.  
**Process Connection:** 1/4" male NPT.  
**Set Point:** Field adjustable via knurled screw cap.  
**Cycling:** Not to exceed 1 Hz.  
**Sensor Element:** Diaphragm.  
**Weight:** 7.4 oz (209 g).  
**Agency Approvals:** UL.

## SERIES APS/AVS

## ADJUSTABLE PRESSURE SWITCH

Vacuum and Pressure Ranges, 5 A Switch, Compact Size



Miniature **SERIES APS/AVS** Adjustable Switches offer reliable switching for pressure/vacuum alarm, shutdown or control. The units are readily adjustable throughout their range using the locking adjusting ring and indicating pointer. The body is constructed of stainless steel for durability in harsh environments. Switches include 12" (30 cm) wire leads sealed with epoxy for additional protection.

## FEATURES/BENEFITS

- Field adjustable with simple indicating pointer reduces installation time bring application on-line faster
- Stainless steel construction provides a durable solution in harsh environments

## APPLICATIONS

- OEM
- Process equipment
- Compressors
- Motor control
- Pump control

## MODEL CHART

| Model   | Set Point Range psi (bar) |                           | Repeatability psi (bar) | Deadband psi (bar)      | Model   | Set Point Range Hg (cm Hg) VAC |                            | Repeatability Hg (cm Hg) |
|---------|---------------------------|---------------------------|-------------------------|-------------------------|---------|--------------------------------|----------------------------|--------------------------|
|         | Decreasing                | Increasing                |                         |                         |         | Decreasing                     | Increasing                 |                          |
| APS-150 | 0.8 to 28.5 (.06 to 2.0)  | 1.6 to 30.0 (.11 to 2.1)  | ±0.6(.04)               | 0.8 to 1.3 (.06 to .09) | AVS-150 | 1.6 to 27.1 (4.1 to 68.6)      | 2.7 to 28.2 (6.9 to 71.6)  | ±1.2 (3.1)               |
| APS-250 | 2.0 to 48.0 (.14 to 3.3)  | 3.0 to 50.0 (.21 to 3.5)  | ±1.0(.07)               | 1 to 1.7 (.07 to .12)   | AVS-250 | 4.0 to 24.8 (10.2 to 63.0)     | 5.1 to 28.2 (13.0 to 71.6) | ±2.0 (5.1)               |
| APS-350 | 3.0 to 96.5 (.21 to 6.7)  | 4.5 to 100 (.31 to 6.9)   | ±2.0(.14)               | 1.6 to 4 (.11 to .28)   | AVS-350 | 6.0 to 21.5 (15.2 to 54.6)     | 8.4 to 28.2 (21.3 to 71.6) | ±4.0 (10.2)              |
| APS-450 | 7.5 to 242 (.52 to 16.7)  | 9.7 to 250 (.67 to 17.2)  | ±5.0(.35)               | 2.5 to 9 (.17 to .62)   |         |                                |                            |                          |
| APS-550 | 15.0 to 485 (1.0 to 33.4) | 20.0 to 500 (1.4 to 34.5) | ±10.0(.69)              | 5 to 22 (.35 to 1.5)    |         |                                |                            |                          |

## SPECIFICATIONS

**Service:** Compatible liquids or gases.  
**Wetted Materials:** Capsule: 17-7 PH SS; Fitting: 303 SS.  
**Temperature Limits:** -65 to 225°F (-54 to 107°C), a set point change of up to 2% when used below -10°F (-23°C) or above 125°F (52°C).  
**Pressure/Vacuum Limits:** 150% of range.  
**Switch Type:** SPDT snap action.

**Electrical Ratings:** 5 A @ 250 VAC, 3 A @ 28 VDC.  
**Electrical Connections:** 3-wire, 20 AWG insulated with PVC, 12" (30 cm) length.  
**Process Connection:** 1/8" male NPT.  
**Set Point:** Field adjustable.  
**Cycling:** Not to exceed 20 CPM.  
**Sensor Element:** Capsule.  
**Weight:** 3 oz (85 g).  
**Agency Approvals:** UR.

**Dwyer**

SERIES A6 | MERCROID BY DWYER



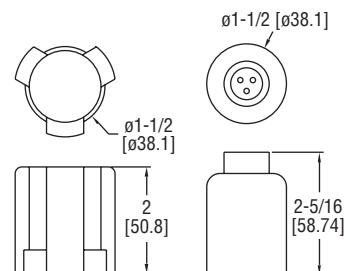
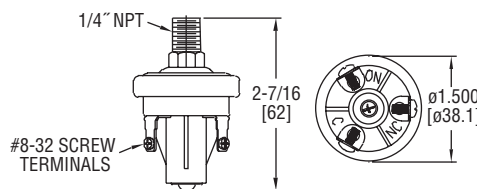
# DURABLE PRESSURE SWITCH

Designed for Extended Duty, Simple and Reliable



A-439

A-440



A-439

A-440

**SERIES A6** Durable Pressure Switches have been specifically designed to stand up to extended duty applications. These switches are constructed with a polyimide film diaphragm and are compatible with a variety of fluids. For ease of installation, the switches come with a 1/4" male NPT process connection and can be mounted in any orientation. The Series A6 pressure switches are compact and have great set-point integrity, and feature simple, easy set-point field adjustment.

## FEATURES/BENEFITS

- High switch cycle means long life for extended duty applications
- Mounting in any position and feature simple makes a reliable switching for equipment and OEM applications

## APPLICATIONS

- OEM
- Process equipment
- Process applications

## MODEL CHART

| Model     | Set Point Range psi (bar) |                                |
|-----------|---------------------------|--------------------------------|
|           | NC                        | NO                             |
| A6-153221 | 0.5 to 1 (0.03 to 0.07)   | 1.1 to 3.1 (0.08 to 0.21)      |
| A6-253221 | 1.1 to 3 (0.08 to 0.21)   | 2.27 to 6.05 (0.16 to 0.42)    |
| A6-353221 | 3.1 to 7 (0.21 to 0.48)   | 4.22 to 10.75 (0.29 to 0.74)   |
| A6-453221 | 8 to 13 (0.55 to 0.90)    | 12.3 to 17.5 (0.85 to 1.21)    |
| A6-553221 | 14 to 24 (0.97 to 1.66)   | 18.6 to 31.8 (1.28 to 2.19)    |
| A6-653221 | 25 to 50 (1.73 to 3.45)   | 33.1 to 61 (2.28 to 4.21)      |
| A6-753221 | 51 to 90 (3.52 to 6.21)   | 65.6 to 112.3 (4.53 to 7.75)   |
| A6-853221 | 91 to 150 (6.28 to 10.35) | 114.7 to 198.3 (7.94 to 13.68) |

## SPECIFICATIONS

**Service:** Air, motor oils, transmission oils, jet fuels, and similar hydrocarbon media.  
**Wetted Materials:** Base: 304 SS; Diaphragm: Polyamide film.  
**Temperature Limits:** -40 to 248°F (-40 to 120°C).  
**Pressure Limits:** Operating pressure: 150 psi (10.3 bar) for 0.5-24 psi set point ranges, 250 psi (17.2 bar) for 25 to 150 psi set-point ranges; Proof pressure: 500 psi (34.5 bar); Burst pressure: 750 psi (51.7 bar) for 0.5-24 psi set point ranges, 1250 psi (86.2 bar) for 25-150 psi set point ranges.  
**Enclosure Rating:** General purpose or with cover: IP65 - weatherproof.

**Repeatability:** ±10% of set point.  
**Set Point Tolerance:** ±15% of range.  
**Switch Type:** 1 SPST NO, 1 SPST NC. NO and NC switch independent from each other.  
**Electrical Ratings:** Resistive: 15 A @ 6 VDC, 8 A @ 12 VDC, 4 A @ 24 VDC; Inductive: 1 A @ 120 VAC, 0.5 A @ 240 VAC.  
**Electrical Connections:** #8-32 screw terminals.  
**Process Connection:** 1/4" NPT male.  
**Mounting Orientation:** Switch can be installed in any position.  
**Set-point Adjustment:** Screw.  
**Weight:** 0.13 lb (0.06 kg).  
**Agency Approvals:** CE.

## ACCESSORIES

| Model | Description                           |
|-------|---------------------------------------|
| A-439 | Weatherproof IP65 cover               |
| A-440 | Weatherproof IP65 with fly-wire holes |

SERIES AP | MERCROID BY DWYER

# DIAPHRAGM OPERATED PRESSURE SWITCHES

Visible Setpoint Adjustment, Compact



Reliable and convenient, **SERIES AP** pressure switch is a compact switch. Reliable and convenient, series AP pressure switch is a compact for instrument air or other low pressure applications. Visible set point and external adjustment add convenience. Used on air, non-corrosive gas or liquid service compatible with wetted parts. Units are available in weather-proof and explosion-proof housing.

## FEATURES/BENEFITS

- Explosion-proof and weatherproof housing provides device protection for outdoor use or harsh environment operation
- External switch set point adjustment reduces set-up time

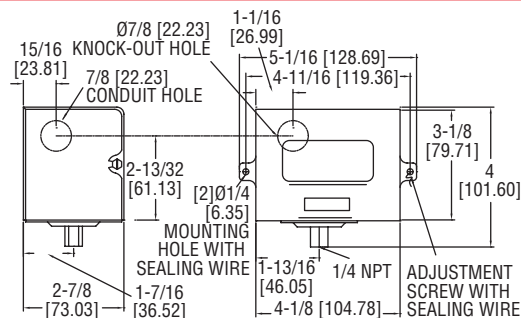
## APPLICATIONS

- Low pressure applications
- Instrument air

## MODEL CHART

| Model          | Switch* Type SPDT | Ranges                                    | Switch Deadband      |                       | Max. Press. psig(bar) |
|----------------|-------------------|---|----------------------|-----------------------|-----------------------|
|                |                   |   | Low                  | High                  |                       |
| AP-153-33      | Mercury           | 10 in VAC to 50 in w.c. (2.5 to 12.4 kPa) | 5 in w.c. (1.2 kPa)  | 6 in w.c. (1.49 kPa)  | 15 (1.03)             |
| AP-153-37      | Mercury           | 1 to 30 psig (.07 to 2.1 bar)             | 0.4 psig (0.03 bar)  | 0.75 psig (0.05 bar)  | 60 (4.14)             |
| AP-153-39      | Mercury           | 10 to 125 psig (.69 to 8.6 bar)           | 2 psig (0.14 bar)    | 6 psig (0.04 bar)     | 160 (11.0)            |
| AP-7021-153-33 | Snap              | 10 in VAC to 50 in w.c. (2.5 to 12.4 kPa) | 8 in w.c. (2.0 kPa)  | 10 in w.c. (2.49 kPa) | 15 (1.03)             |
| AP-7021-153-37 | Snap              | 1 to 30 psig (.07 to 2.1 bar)             | 0.75 psig (0.05 bar) | 1.5 psig (0.10 bar)   | 60 (4.14)             |
| AP-7021-153-39 | Snap              | 10 to 125 psig (.69 to 8.6 bar)           | 3 psig (0.21 bar)    | 7 psig (0.48 bar)     | 160 (11.0)            |

\*Mercury switch units are not CE approved.



## SPECIFICATIONS

**Wetted Materials:** Nylon reinforced Buna-N and steel. PTFE and 316 SS optional.  
**Temperature Limits:** -30 to 150°F (-30 to 66°C).  
**Pressure Limit:** See model chart.  
**Enclosure Rating:** General purpose. Weatherproof and explosion-proof optional.  
**Switch Type:** SPDT mercury switch or SPDT snap switch. Other switch types available.  
**Electrical Rating:** Mercury switch: 4 A @ 120 VAC/DC, 2 A @ 240 VAC/DC; Snap switch: 15 A @ 120 VAC, 8 A @ 240 VAC, 0.5 A @ 120 VDC, 0.25 A @ 240 VDC.

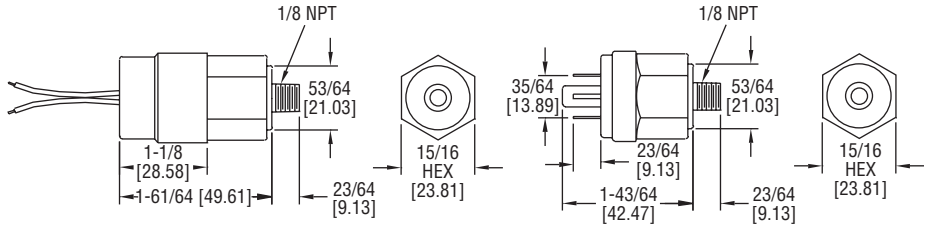
**Electrical Connections:** Screw terminal. **Conduit Connection:** 7/8" (22.23 mm) hole for 1/2" (12.7 mm) conduit hub.  
**Process Connection:** 1/4" female NPT.  
**Mounting Orientation:** Vertical for mercury switch models, any position for snap switch models.  
**Set Point Adjustment:** External screw.  
**Weight:** General purpose: 2 lb (0.9 kg).  
**Deadband:** See model chart.  
**Agency Approvals:** CE, FM, UL. For FM consult factory. (Mercury switch units are not CE approved.)





# SUBMINIATURE PRESSURE SWITCH

Field Adjustable



Designed for OEM applications, the **SERIES A2** is economical and is equipped with high proof pressure capabilities for demanding applications. The A2 is available with either spade terminals or flying leads (submersible). Switches with spade terminals can be easily adjusted in the field.

## FEATURES/BENEFITS

- High-proof pressure means capable to meet application demands
- Easy to adjust switches means shorter install and service times

## APPLICATIONS

- OEM

## SPECIFICATIONS

**Service:** Compatible liquids and gases.  
**Wetted Materials:** Polyamide film and brass.  
**Temperature Limits:** -40 to 250°F (-40 to 121°C).  
**Pressure Limits:** 500 psi (34 bar).  
**Enclosure Rating:** IP66 (flying lead models only).  
**Repeatability:** ±5% of highest set point.  
**Switch Type:** SPST, 100 VA, 42 V.  
**Electrical Connection:** 1/4" (6.3 mm) spade terminals or flying leads.  
**Process Connection:** 1/8" male NPT.  
**Weight:** 0.14 lb (0.06 kg).  
**Deadband:** 1 to 2 psi (0.07 to 0.14 bar).  
**Agency Approvals:** CE.

## MODEL CHART

| Model     | Range psi (bar) | Electrical Connection | NO/NC | Model     | Range psi (bar)   | Electrical Connection | NO/NC |
|-----------|-----------------|-----------------------|-------|-----------|-------------------|-----------------------|-------|
| A2-2801   | 5-25 (.48-1.72) | Spade terminals       | NO    | A2-3811   | 20-60 (1.4-4.1)   | Spade terminals       | NC    |
| A2-28032* | 5-25 (.48-1.72) | Flying leads          | NO    | A2-38132* | 20-60 (1.4-4.1)   | Flying leads          | NC    |
| A2-2811   | 5-25 (.48-1.72) | Spade terminals       | NC    | A2-4801   | 50-150 (3.5-10.3) | Spade terminals       | NO    |
| A2-28132* | 5-25 (.48-1.72) | Flying leads          | NC    | A2-48032* | 50-150 (3.5-10.3) | Flying leads          | NO    |
| A2-3801   | 20-60 (1.4-4.1) | Spade terminals       | NO    | A2-4811   | 50-150 (3.5-10.3) | Spade terminals       | NC    |
| A2-38032* | 20-60 (1.4-4.1) | Flying leads          | NO    | A2-48132* | 50-150 (3.5-10.3) | Flying leads          | NC    |

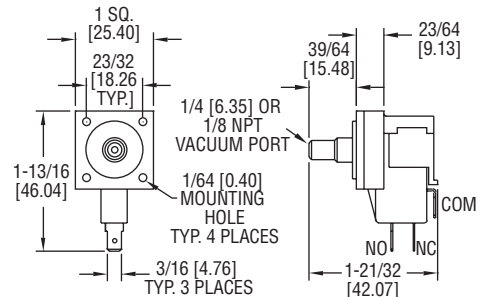
\*Flying lead models are not field adjustable. Set point must be given at time of order. **Note:** To order, add suffix -PRESET and indicate the set point desired (must be in the set point range) in psi units and whether the trip point is on an increase "I" or decrease "D". **Example:** A2-28032-PRESET 5 psi I.

## SERIES MVS



# MINIATURE VACUUM SWITCH

SPDT N/O or N/C Switch, Adjustable Set Point, Ideal for OEM's



Compact, lightweight, and adjustable, the **SERIES MVS** Miniature Vacuum Switch is specially designed for OEM applications. This low cost switch has a minimum life expectancy of 10 million cycles and has an extremely fast response time. Typical applications for the MVS are HVAC, home appliance, dairy systems, medical, office equipment, and pump control.

## FEATURES/BENEFITS

- High switch cycle means long life for extended duty applications

## APPLICATIONS

- OEM
- HVAC applications
- Medical equipment
- Dairy equipment
- Pump control

## MODEL CHART

| Model  | Set Point in H <sub>2</sub> O (mbar) |           |
|--------|--------------------------------------|-----------|
|        | Minimum                              | Maximum   |
| MVS-1  | 3 (8)                                | 8 (20)    |
| MVS-2  | 9 (21)                               | 80 (199)  |
| MVS-3  | 81 (200)                             | 330 (822) |
| MVS-4* | 3 (8)                                | 8 (20)    |
| MVS-5* | 9 (21)                               | 80 (199)  |
| MVS-6* | 81 (200)                             | 330 (822) |

\*Models have 1/8" male NPT process connections

## SPECIFICATIONS

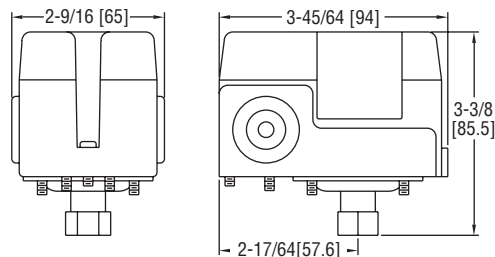
**Service:** Air or compatible fluids.  
**Wetted Materials:** Enclosure: Polycarbonate; Diaphragm: Polyurethane.  
**Temperature Limits:** 40 to 150°F (4 to 66°C).  
**Pressure Limits:** Up to maximum range.  
**Repeatability:** ±20%.  
**Switch Type:** SPDT normally open or normally closed.  
**Electrical Rating:** Range 3 to 8 in w.c.: 3 A, 125/250 VAC; Range 9 to 80 in w.c.: 10 A, 125/250 VAC; Range 81 to 330 in w.c.: 15 A, 125/250 VAC.  
**Contacts:** Silver with brass terminals.  
**Electrical Connections:** Terminals 0.187" x 0.20" spade for use with quick disconnects.  
**Process Connections:** Models MVS 1 to MVS 3: Smooth port 0.25" diameter; Models MVS 4 to MVS 6: 1/8" male NPT.  
**Mounting:** Use #2 screws through eyelets.  
**Weight:** Less than 0.671 oz (19 g).  
**Agency Approvals:** cULus.

**Dwyer**

SERIES CXA | MERCOID BY DWYER

# WATER PUMP PRESSURE SWITCH

Simple, Reliable, Adjustable Set Point and Deadband



The **SERIES CXA** Water Pump Pressure Switches have been proven reliable for controlling automatic water systems. These switches are very popular for use on water well pumps and pumping systems. The set point and dead-band are both easily adjustable via screws inside the cover. For ease of installation, the switches come with a 1/4" female NPT process connection and can be mounted in any orientation. The series CXA's simple design makes it a great switch for an installer at any skill level.

**FEATURES/BENEFITS**

- The set point and deadband are both easily adjustable reducing time to install and operation
- Mounting in any position and feature simple makes a reliable switch that can be installed by any skill level

**APPLICATIONS**

- Electric water pumps
- Water system applications
- Well pumps
- Pumping systems

**SPECIFICATIONS**

**Service:** Compatible liquids and gases.  
**Wetted Materials:** Silicone, steel, and SS.

**Temperature Limits:** 140°F (60°C).

**Pressure Limits:** See model chart.

**Enclosure Rating:** General purpose.

**Repeatability:** ±5 psig (±0.3 bar).

**Switch Type:** DPST snap action (see model chart).

**Electrical Ratings:** 20 A @ 120 VAC, 12 A @ 240 VAC, 9.6 A @ 240 VAC (3 phase), 8.6 A @ 32 VDC, 3.1 A @ 120 VDC, 1.6 A @ 240 VDC.

**Electrical Connections:** Screw terminal.

**Conduit Connection:** 7/8" hole for 1/2" conduit hub (2 places).

**Process Connection:** 1/4" female NPT. **Mounting Orientation:** Switch can be installed in any position.

**Set Point Adjustment:** Internal screws.

**Weight:** 0.75 lb (0.34 kg).

**Deadband:** See model chart.

**Agency Approvals:** CE.

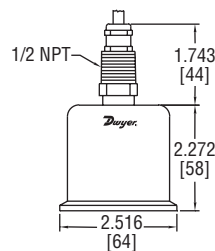
**MODEL CHART**

| Model  | Switch Type | Range psig (bar)        | Approx. Adjustable Deadband psig (bar) | Max. Pressure psig (bar) |
|--------|-------------|-------------------------|--|--------------------------|
| CXA-S1 | NC          | 15 to 80 (1.0 to 5.5)   | 15 to 30 (1.0 to 2.1)                  | 129 (8.9)                |
| CXA-S2 | NC          | 30 to 100 (2.1 to 6.9)  | 20 to 35 (1.4 to 2.4)                  | 179 (12.3)               |
| CXA-S3 | NC          | 35 to 150 (2.4 to 10.3) | 30 to 40 (2.1 to 2.8)                  | 204 (14.1)               |
| CXA-R1 | NO          | 15 to 80 (1.0 to 5.5)   | 15 to 30 (1.0 to 2.1)                  | 129 (8.9)                |
| CXA-R2 | NO          | 30 to 100 (2.1 to 6.9)  | 20 to 35 (1.4 to 2.4)                  | 179 (12.3)               |
| CXA-R3 | NO          | 35 to 150 (2.4 to 10.3) | 30 to 40 (2.1 to 2.8)                  | 204 (14.1)               |

**SERIES 681**

# SANITARY PRESSURE TRANSMITTER

No Liquid Fill Diaphragm, Sanitary Clamp Fitting



The **SERIES 681** Sanitary Pressure Transmitter is designed to meet 3A standards for applications in food, dairy, beverage and pharmaceutical processing, liquid level control, and sanitary pipelines. The unit is fully sealed to withstand high pressure wash-down in Clean-in-Place (CIP) and Sterilize-in-Place (SIP) installations. The Series 681 is designed with a unique, no liquid fill diaphragm and a sanitary clamp pressure fitting for easy installation with negligible clamping effect. A conduit fitting, shielded cable with vent tube and sealed screws for zero and span adjustment combine to make the Series 681 completely watertight.

**FEATURES/BENEFITS**

- Fully sealed to withstand Clean-in-Place and Sterilize-in-Place installations supports regulatory conditions for sanitary processes
- Sanitary clamp fitting makes for easy installation

**APPLICATIONS**

- Sanitary process applications
- Food and beverage processing
- Water processing
- Dairy processing
- Pharmaceutical processing

**SPECIFICATIONS**

**Service:** Compatible liquids and gases.  
**Wetted Parts:** 316L SS.

**Accuracy:** ±.20% FS (includes non-linearity, hysteresis and non-repeatability).

**Temperature Limits:** -40 to 260°F (-40 to 125°C) 10 to 90% RH, non-condensing.

**Pressure Limits:** See table.

**Compensated Temperature Range:** 20 to 180°F (-7 to 80°C).

**Thermal Effect:** Zero and span shift: ±2.0% FS/100°F.

**Power Requirements:** 9 to 30 VDC.

**Output Signal:** 4 to 20 mA, 2-wire.

**Zero and Span Adjustment:** ±0.5 mA, non-interactive.

**Response Time:** ≤ 10 ms.

**Loop Resistance:** 800 Ω.

**Electrical Connections:** 1/2" conduit fitting and strain relief with 15 ft (4.5 m) cable.

**Process Connection:** 2" or 1-1/2" sanitary clamp fitting male NPT.

**Clamping Effect:** Zero and span shift: ±0.15% FS for ranges up to 30 psi; ±0.25% FS for ranges >30 psi.

**Weight:** 8 oz (227 g).

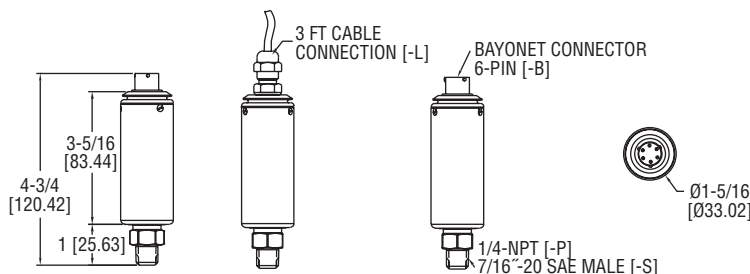
**Agency Approvals:** CE.

**MODEL CHART**

| Model  | Range       | Overpressure | Sanitary Clamp Connection |
|--------|-------------|--------------|---------------------------|
| 681-02 | 0 to 1 psi  | 50 psi       | 2"                        |
| 681-12 | 0 to 2 psi  | 100 psi      | 2"                        |
| 681-42 | 0 to 15 psi | 150 psi      | 2"                        |
| 681-52 | 0 to 30 psi | 150 psi      | 2"                        |
| 681-62 | 0 to 60 psi | 180 psi      | 2"                        |

# HIGH ACCURACY PRESSURE TRANSMITTER

$\pm 0.05\%$  FS,  $< \pm 0.25\%$  FS Total Error Band



The **SERIES 644** High Accuracy Pressure Transmitter is a robust transmitter designed for high accuracy pressure applications. Boasting an accuracy of  $\pm 0.05\%$  FS RSS ( $< \pm 0.25\%$  TEB), the 644 is intended for precise measurements in the critical applications.

## FEATURES/BENEFITS

- High accuracy provides exceptional measurement for insuring tight-control and minimizing costly out of specification conditions
- NIST calibrated to provide traceability for regulated processes where production and documentation is monitored
- Low thermal error over a wide range of temperatures helps to insure accurate pressure measurement and process operation

## APPLICATIONS

- Calibration equipment
- Hydraulic/pneumatic controls
- Test benches
- Transportation
- Pulp and paper mills
- Power generation

## SPECIFICATIONS

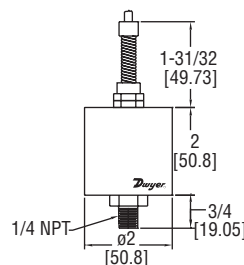
**Service:** Compatible gases and liquids.  
**Wetted Materials:** 17- 4 PH SS.  
**Accuracy:**  $\pm 0.05\%$  FS RSS.  
**Total Error Band (Includes all thermal effects):**  $< \pm 0.25\%$  FS over entire temperature compensated range.  
**Stability:**  $< 0.15\%$  FS/year.  
**Temperature Limits:** -40 to 185°F (-40 to 85°C).  
**Pressure Limits:** Proof pressure and burst pressure: See pressure limits table below.  
**Compensated Temperature Range:** -4 to 140°F (-20 to 60°C).  
**Power Requirements:** 9 to 30 VDC for current output; 15 to 30 VDC for voltage output.  
**Minimum Supply Voltage:** Min. supply voltage (VDC) for current output =  $9 + 0.02 \times \text{loop resistance } \Omega$  (loop resistance  $\Omega$  = line resistance + receiver resistance).  
**Output Signal:** 0 to 10 VDC (4-wire); 4 to 20 mA (2-wire).  
**Response Time:**  $< 10$  ms (voltage output),  $< 80$  ms (current output).  
**Max Current Consumption:** 4 to 20 mA: 22 mA; 0 to 10 VDC: 20 mA.  
**Electrical Connections:** 3 ft cable or 6-pin male bayonet connector.  
**Process Connection:** 1/4" male NPT or 7/16"-20 male SAE with O-ring.  
**Enclosure Rating:** NEMA 4X (IP65).  
**Mounting Orientation:** Vertical.  
**Weight:** 9 oz (254 g).  
**Agency Approvals:** CE.

| MODEL CHART           |     |    |    |     |    |                                 |
|-----------------------|-----|----|----|-----|----|---------------------------------|
| Example               | 644 | -L | -V | -00 | -P | 644-L-V-00-P                    |
| Series                | 644 |    |    |     |    | Industrial pressure transmitter |
| Electrical Connection |     | L  |    |     |    | 3 ft cable                      |
|                       |     | B  |    |     |    | Male 6-pin bayonet              |
| Signal Output         |     |    | V  |     |    | 0 to 10 volt                    |
|                       |     |    | C  |     |    | 4 to 20 mA                      |
| Range                 |     |    |    | 00  |    | 0 to -14.7 psig                 |
|                       |     |    |    | 01  |    | 0 to 15 psig                    |
|                       |     |    |    | 02  |    | 0 to 25 psig                    |
|                       |     |    |    | 03  |    | 0 to 50 psig                    |
|                       |     |    |    | 04  |    | 0 to 100 psig                   |
|                       |     |    |    | 05  |    | 0 to 150 psig                   |
|                       |     |    |    | 06  |    | 0 to 200 psig                   |
|                       |     |    |    | 07  |    | 0 to 300 psig                   |
|                       |     |    |    | 08  |    | 0 to 500 psig                   |
|                       |     |    |    | 09  |    | 0 to 750 psig                   |
|                       |     |    |    | 10  |    | 0 to 1000 psig                  |
|                       |     |    |    | 11  |    | 0 to 15 psia                    |
| Process Connection    |     |    |    |     | P  | 1/4" male NPT                   |
|                       |     |    |    |     | S  | 7/16"-20 SAE male               |

| ACCESSORY |                                     |
|-----------|-------------------------------------|
| Model     | Description                         |
| A-495     | 6-pin female bayonet mate connector |

# INDUSTRIAL PRESSURE TRANSMITTER

±0.13% FS Accuracy, External Adjustments, 4 to 20 mA Output



The **SERIES 682** Industrial Pressure Transmitter is designed to withstand environmental effects such as shock, vibration, temperature, and EMI/RFI. The electronics and capacitive sensor are packaged in a welded stainless steel housing and meets NEMA 4 (IP65) protection ratings.

## FEATURES/BENEFITS

- Weather-proof welded housing provides device protection for outdoor use or harsh environment operation
- Not affected by environmental effects such as temperature, shock, vibration, and EMI/RFI provides reliable switching for equipment
- External span and zero adjustments reduce installation and service time

## APPLICATIONS

- Off-road equipment
- Compressor control
- Industrial refrigeration
- Hydraulic systems
- Industrial engines

| MODEL CHART |              |              |        |              |              |
|-------------|--------------|--------------|--------|--------------|--------------|
| Model*      | Range        | Overpressure | Model* | Range        | Overpressure |
| 682-1       | 0 to 50 psi  | 150 psi      | 682-3  | 0 to 250 psi | 500 psi      |
| 682-2       | 0 to 100 psi | 300 psi      | 682-4  | 0 to 500 psi | 1000 psi     |

\*Units calibrated in bar also available. Consult factory.

## SPECIFICATIONS

|  |   |
|--|---|
| <b>Service:</b> Compatible liquids and gases.  | <b>Power Requirements:</b> 9 to 30 VDC.                           |
| <b>Wetted Parts:</b> 17-4 PH SS.   | <b>Output Signal:</b> 4 to 20 mA, 2-wire.                         |
| <b>Accuracy:</b> ±0.13% FS (includes non-linearity, hysteresis and non-repeatability). | <b>Zero and Span Adjustment:</b> ±0.5 mA, non-interactive.        |
| <b>Temperature Limits:</b> -40 to 260°F (-40 to 125°C) 10 to 90% RH, non-condensing.   | <b>Response Time:</b> 5 ms.                                       |
| <b>Pressure Limit:</b> See table.  | <b>Loop Resistance:</b> 800 Ω.                                    |
| <b>Compensated Temperature Range:</b> -4 to 176°F (-20 to 80°C).                       | <b>Electrical Connections:</b> 2 ft (51 cm) multiconductor cable. |
| <b>Thermal Effect: Zero shift:</b> 1.0% FS/100°F span shift: ±1.5% FS/100°F.           | <b>Process Connection:</b> 1/4" male NPT.                         |
|  | <b>Weight:</b> 8 oz (227 g).                                      |
|  | <b>Shock:</b> 200 g operating.                                    |
|  | <b>Vibration:</b> 20 g 50-2000 Hz.                                |
|  | <b>Agency Approvals:</b> CE.                                      |

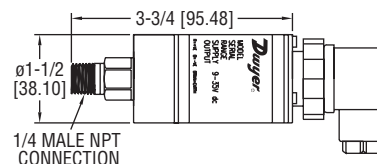
## OPTION

| Use order code: | Description                            |
|-----------------|--|
| NISTCAL-PT1     | NIST traceable calibration certificate |

## SERIES 672

# LOW PRESSURE TRANSDUCER

Single Pressure Connection, Ranges down to 10 in w.c.



The **SERIES 672** Low Pressure Transducer is a perfect solution to any The Series 672 Low Pressure Transducer is a perfect solution to any application where a very accurate low pressure transducer is necessary. Using variable capacitance technology, the Series 672 is designed to measure pressures as low as 10 in w.c. up to 400 in w.c., very low ranges for a single connection pressure transducer. The 672 also features a 0.25% FS accuracy. Use the Series 672 in liquid level, flood warning, waste water, clean room, and open channel flow applications.

## FEATURES/BENEFITS

- Low range high accuracy provides precise control for process applications

## APPLICATIONS

- Liquid level
- Flood warning
- Waste water
- Clean room
- Open flow applications

| MODEL CHART |                  |                 |
|-------------|------------------|-----------------|
| Model       | Operating Range  | Output          |
| 672-1-A     | 0 to 10 in w.c.  | 4-20 mA, 2-wire |
| 672-2-A     | 0 to 15 in w.c.  | 4-20 mA, 2-wire |
| 672-3-A     | 0 to 25 in w.c.  | 4-20 mA, 2-wire |
| 672-4-A     | 0 to 50 in w.c.  | 4-20 mA, 2-wire |
| 672-5-A     | 0 to 100 in w.c. | 4-20 mA, 2-wire |
| 672-6-A     | 0 to 150 in w.c. | 4-20 mA, 2-wire |
| 672-7-A     | 0 to 200 in w.c. | 4-20 mA, 2-wire |
| 672-8-A     | 0 to 300 in w.c. | 4-20 mA, 2-wire |
| 672-9-A     | 0 to 400 in w.c. | 4-20 mA, 2-wire |

Note: For voltage output models change -A to -V.

## SPECIFICATIONS

|  |   |
|--|---|
| <b>Service:</b> Compatible liquids and gases.  | <b>Thermal Effects:</b> Zero: 1.0%FS/100°F (2.0%FS/100°C); Span: 1.0%FS/100°F (2.0%FS/100°C). |
| <b>Wetted Materials:</b> 318 duplex SS, ceramic, fluoroelastomer (FKM).  | <b>Power Requirements:</b> 4 to 20 mA: 9 to 35 VDC; 0 to 5 VDC: 7.5 to 35 VDC.                |
| <b>Housing Material:</b> 318 stainless steel.  | <b>Output Signal:</b> 4 to 20 mA (2-wire) or 0 to 5 VDC (3-wire).                             |
| <b>Accuracy:</b> ±0.25% FS (RSS). Includes non-linearity, hysteresis, and non-repeatability.   | <b>Zero &amp; Span Adjustment:</b> ±10% FS each (by potentiometer).                           |
| <b>Stability:</b> 0.25% FS/1 year.   | <b>Response Time:</b> 5 ms.   |
| <b>Temperature Limits:</b> -40 to 212°F (-40 to 100°C).  | <b>Max Loop Resistance:</b> 1.325 kΩ.   |
| <b>Compensated Temperature Limits:</b> -5 to 140°F (-20 to 60°C).  | <b>Electrical Connections:</b> Large DIN 43650 connector with mating plug.                    |
| <b>Pressure Limits:</b> 29 psi (2 bar) for up to 85 in w.c. (0.2 bar) ranges; 58 psi (4 bar) for 85 to 140 in w.c. (0.2 to 0.35 bar); 73 psi (5 bar) for 141 to 400 in w.c. (0.35 to 1 bar). | <b>Process Connection:</b> 1/4"-18 NPT male.  |
|  | <b>Enclosure Rating:</b> NEMA 4X (IP66).  |
|  | <b>Weight:</b> 11.6 oz (330 g).   |
|  | <b>Agency Approvals:</b> CE.  |

## OPTION

| Use order code: | Description                            |
|-----------------|--|
| NISTCAL-PT1     | NIST traceable calibration certificate |



# PRESSURE TRANSMITTER

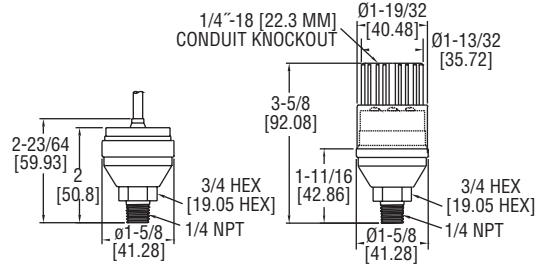
±0.25% FS Accuracy, 4-20 mA Signal, Ranges to 1000 psi



Cable Anchor



Conduit Version



Cable Anchor

Conduit Version

The low cost **SERIES 673** Pressure Transmitter is a fixed range transmitter designed for harsh environments and suitable for high shock and vibration applications. Constructed of stainless steel, the Series 673 provides a 4 to 20 mA output signal with 0.25% accuracy. Use the Series 673 in industrial OEM equipment, hydraulic systems, HVAC equipment, industrial engines and compressor control.

## FEATURES/BENEFITS

- High-shock and vibration resistant insures stability in controlling pressure for process applications

## APPLICATIONS

- OEM
- Industrial engines
- Hydraulic systems
- Compressors
- HVAC equipment

| MODEL CHART |              |         |              |
|-------------|--------------|---------|--------------|
| Model       | Range psi    | Model   | Range psi    |
| 673-1       | 0 to 1       | 673-1C  | 0 to 1       |
| 673-2       | 0 to 2       | 673-2C  | 0 to 2       |
| 673-3       | 0 to 5       | 673-3C  | 0 to 5       |
| 673-4       | 0 to 10      | 673-4C  | 0 to 10      |
| 673-5       | 0 to 25      | 673-5C  | 0 to 25      |
| 673-6       | 0 to 50      | 673-6C  | 0 to 50      |
| 673-7       | 0 to 100     | 673-7C  | 0 to 100     |
| 673-8       | 0 to 200     | 673-8C  | 0 to 200     |
| 673-9       | 0 to 500     | 673-9C  | 0 to 500     |
| 673-10      | 0 to 1000    | 673-10C | 0 to 1000    |
| 673-14      | -14.7 to 100 | 673-14C | -14.7 to 100 |

\*The model numbers followed by a "C" represent the conduit version, which is hand tightened to ensure proper electrical seal.

## SPECIFICATIONS

|  |   |
|--|---|
| <b>Service:</b> Liquid, gas, or vapor.<br><b>Wetted Materials:</b> 17-4 PH SS.<br><b>Accuracy:</b> ±0.25% FS (RSS), (includes non-linearity, hysteresis and non-repeatability).<br><b>Temperature Limits:</b> -40 to 185°F (-40 to 85°C).<br><b>Compensated Temperature Limits:</b> -40 to 176°F (-40 to 80°C).<br><b>Pressure Limits:</b> 2 x max range.<br><b>Thermal Errors:</b> Zero: ±3.6% FS/100°F(100°C); Span: ±2.7% FS/100°F(100°C).<br><b>Power Requirements:</b> 9 to 30 VDC. | <b>Output:</b> 4 to 20 mA, 2-wire.<br><b>Zero &amp; Span Adjustment:</b> Fixed.<br><b>Response Time:</b> 5 ms.<br><b>Loop Resistance:</b> 0 to 800 Ω.<br><b>Stability:</b> 0.5% FS/year.<br><b>Shock:</b> 200 g.<br><b>Vibration:</b> 20 g.<br><b>Electrical Connections:</b> 2 ft (61 cm) multiconductor cable.<br><b>Conduit Connection:</b> 1/4"-18 (22.3 mm) knockout.<br><b>Enclosure:</b> Stainless steel and Valox.<br><b>Weight:</b> 2.3 oz (65 g).<br><b>Agency Approvals:</b> CE. |
|--|---|

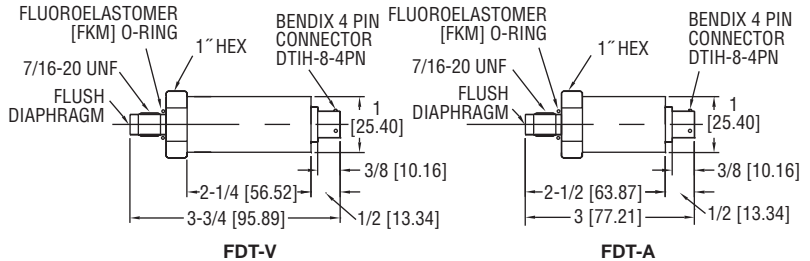
## OPTION

| Use order code: | Description                            |
|-----------------|--|
| NISTCAL-PT1     | NIST traceable calibration certificate |

## SERIES FDT

# FLUSH DIAPHRAGM TRANSMITTER

Non-Liquid Filled, ±0.5% FS Accuracy, SS Wetted Parts



FDT-V

FDT-A

The **SERIES FDT** Flush Diaphragm Transmitter is designed for highly cyclical conditions. Flush sensor feature prevents any potential inaccuracies due to build-up or blockage which is a typical problem found in most non-flush transmitter sensors.

## FEATURES/BENEFITS

- Performs well in high cyclical environments with the presence of water-hammering or spiking for long service life

## APPLICATIONS

- OEM
- Hydraulic systems
- Process systems

| MODEL CHART |     |    |  |   |
|-------------|-----|----|--|---|
| Example     | FDT | -A | -01  | -NPT  |
| Series      | FDT |    |  | Flush diaphragm transmitter   |
| Output      |     | A  | V  | 4 to 20 mA<br>0 to 5 VDC  |
| Range       |     |    | 01<br>02<br>03<br>04<br>06<br>11<br>12<br>15 | 100 psi<br>150 psi<br>200 psi<br>300 psi<br>500 psi<br>1000 psi<br>2000 psi<br>5000 psi |
| Options     |     |    |  | -NPT 1/4" male NPT<br>-C08 0.25% FS accuracy  |

Note: Contact factory for additional range availability.

## SPECIFICATIONS

|  |   |
|--|---|
| <b>Service:</b> Compatible liquids and gases, adhesives, slurries, materials that can harden, or where a pressure cavity is not desired.<br><b>Wetted Materials:</b> 316 & 15-5 SST.<br><b>Accuracy:</b> ±0.5% FS (includes non-linearity, hysteresis, and repeatability).<br><b>Stability:</b> ±0.25% FS per year.<br><b>Temperature Limits:</b> -40 to 200°F (-40 to 93°C).<br><b>Compensated Temperature Limits:</b> 0 to 170°F (-18 to 77°C).<br><b>Pressure Limit:</b> 150% FS; Burst: 200% FS.<br><b>Thermal Effect:</b> ±1.5% FSO over compensated range. | <b>Power Requirements:</b> 8 to 38 VDC.<br><b>Output Signal:</b> FDT-A: 4 to 20 mADC; FDT-V: 0 to 5 VDC.<br><b>Response Time:</b> <1 ms.<br><b>Loop Resistance:</b> FDT-A: 0 to 1.5 Ω; FDT-V: 100 Ω.<br><b>Electrical Connections:</b> 4-pin.<br><b>Process Connection:</b> 7/16-20 UNF male flush diaphragm. Optional 1/4" male NPT.<br><b>Enclosure Rating:</b> NEMA 4X (IP66).<br><b>Mounting Orientation:</b> Mount in any position.<br><b>Weight:</b> 2 oz (57 g).<br><b>Agency Approvals:</b> CE. |
|--|---|

## ACCESSORY

| Model | Description                     |
|-------|---------------------------------|
| A-168 | Mating connector for 4 pin M-12 |

## OPTION

| Use order code: | Description                            |
|-----------------|--|
| NISTCAL-PT1     | NIST traceable calibration certificate |

# INDUSTRIAL PRESSURE TRANSMITTER

Complete Offering of Ranges, Connections and Outputs



626/628 Pressure Transmitters  
with General Purpose Housing (-GH)



626/628 Pressure Transmitters  
with Conduit Housing (-CH) and LCD display (-LED)



\*Please see our website for dimensional drawings.

The **SERIES 626** Pressure Transmitters possess a highly precise 0.25% full scale accuracy piezo-resistive sensor contained in a compact, rugged, NEMA 4X (IP66) stainless steel general purpose housing or cast aluminum conduit housing. The **SERIES 628** Pressure Transmitters are ideal for OEMs with 1% full scale accuracy sensors. The corrosion resistant 316L stainless steel wetted parts allow the Series 626 and 628 transmitters to measure the pressure in a multitude of processes from hydraulic oils to chemicals. The Series 626 and 628 are available in absolute and pressure ranges with a variety of optional outputs, process connections and electrical terminations to allow you to select the right transmitter for your application.

## FEATURES/BENEFITS

- NEMA 4X rated enclosure provides protection in harsh environments permitting outdoor monitoring or in areas where dust and particulate matter exists
- Robust 316 SS oil filled sensor provides shock and vibration resistance insuring stability in controlling pressure for process applications
- A wide range of models and connections that can meet pressure measurement specifications from low to very high

## APPLICATIONS

- Compressors
- Pumping systems
- Irrigation equipment
- Hydraulic
- Industrial process monitoring

## SPECIFICATIONS

**Service:** Compatible gases and liquids.

**Wetted Materials:** Type 316L SS.

**Accuracy:** 626: 0.25% FS; 626: 0.20% RSS; 628: 1.0% FS; 628: 0.5% RSS; 626 Absolute Ranges: 0.5% FS; 626 absolute ranges: 0.30% RSS. (Includes linearity, hysteresis, and repeatability.)

**Temperature Limit:** 0 to 200°F (-18 to 93°C).

**Compensated Temperature Range:** 0 to 175°F (-18 to 79°C).

**Thermal Effect:** ±0.02% FS/°F (includes zero and span).

**Pressure Limits:** See table.

**Power Requirements:** 10 to 30 VDC (for 4 to 20 mA, 0 to 5, 1 to 5, 1 to 6 VDC outputs); 13 to 30 VDC (for 0 to 10, 2 to 10 VDC outputs); 5 VDC ±0.5 VDC (for 0.5 to 4.5 VDC ratio-metric output).

**Output Signal:** 4 to 20 mA, 0 to 5 VDC, 1 to 5 VDC, 0 to 10 VDC, or 0.5 to 4.5 VDC.

**Response Time:** 300 ms.

**Loop Resistance:** 0 to 1000 Ohms max.  $R_{max} = 50 (V_{ps} - 10) \text{ Ohms}$  (4 to 20 mA output), 5K Ohms (0 to 5, 1 to 5, 1 to 6, 0 to 10, 2 to 10, 0.5 to 4.5 VDC output).

**Stability:** 1.0% FS/year (Typ.).

**Current Consumption:** 38 mA maximum (for 4 to 20 mA output); 10 mA maximum (for 0 to 5, 1 to 5, 1 to 6, 0 to 10, 2 to 10, 0.5 to 4.5 VDC output); 140 mA maximum (for all 626/628/629-CH with optional LED).

**Electrical Connections:** Conduit Housing (-CH): terminal block, 1/2" female NPT conduit; General Purpose Housing (-GH): cable DIN EN 175801-803-C.

**Process Connection:** 1/4" male or female NPT and BSPT.

**Enclosure Rating:** NEMA 4X (IP66).

**Mounting Orientation:** Mount in any position.

**Weight:** 10 oz (283 g).

**Agency Approvals:** CE.

# INDUSTRIAL PRESSURE TRANSMITTER

Complete Offering of Ranges, Connections and Outputs

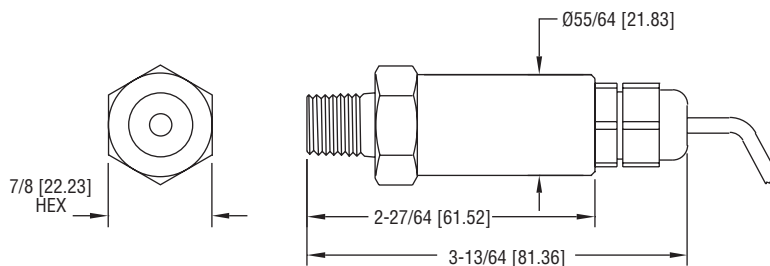
| MODEL CHART  |            |  |          |                            |  |                            |                   |   |
|--|------------|--|----------|----------------------------|--|----------------------------|-------------------|---|
| Example  | 626        | -00  | -CH      | -P1                        | -E1                                    | -S1                        | -AT               | 626-00-CH-P1-E1-S1-AT   |
| Accuracy   | 626<br>628 |  |          |                            |  |                            |                   | 0.25% full scale accuracy<br>1.0% full scale accuracy   |
| Range  |            | 00<br>01<br>02<br>03<br>04<br>05<br>06<br>07<br>08<br>09<br>10<br>11<br>12<br>13<br>14<br>22<br>15<br>16<br>18<br>19<br>26<br>67<br>71<br>75<br>81 |          |                            |  |                            |                   | 0 to 15 psia<br>0 to 30 psia<br>0 to 50 psia<br>0 to 100 psia<br>0 to 200 psia<br>0 to 300 psia<br>0 to 5 psi<br>0 to 15 psi<br>0 to 30 psi<br>0 to 50 psi<br>0 to 100 psi<br>0 to 150 psi<br>0 to 200 psi<br>0 to 300 psi<br>0 to 500 psi<br>0 to 600 psi<br>0 to 1000 psi<br>0 to 1500 psi<br>0 to 3000 psi<br>0 to 5000 psi<br>0 to 8000 psi<br>0 to 0.5 bar<br>0 to 2.5 bar<br>0 to 10 bar<br>0 to 40 bar |
| Housing  |            |  | CH<br>GH |                            |  |                            |                   | Conduit housing<br>General purpose housing  |
| Process Connection   |            |  |          | P1<br>P2<br>P3<br>P5<br>P9 |  |                            |                   | 1/4" male NPT<br>1/4" female NPT<br>1/4" male BSPT<br>1/4" female SAE with refrigerant valve depressor ①<br>1/2" male NPT ①   |
| Electrical Connection  |            |  |          |                            | E1<br>E3<br>E4<br>E5<br>E6<br>E8<br>E9 |                            |                   | Cable gland with 3' of prewired cable<br>Cable gland with 9' of prewired cable<br>DIN EN 175801-803-C ①<br>1/2" female NPT conduit ②<br>M-12 4 pin connector-UL ⑤<br>Packard connector<br>M-12 4 pin connector non-UL   |
| Signal Output  |            |  |          |                            |  | S1<br>S2<br>S4<br>S5<br>S7 |                   | 4 to 20 mA<br>1 to 5 VDC<br>0 to 5 VDC<br>0 to 10 VDC<br>0.5 to 4.5 VDC ①④  |
| Options  |            |  |          |                            |  |                            | AT<br>NIST<br>LED | Aluminum tag<br>NIST traceable certificate<br>Bright red LED display ②③   |
| ①Available with -GH housing only, NEMA 4 (IP65)    ②Available with -CH housing only<br>③LED option is not NEMA 4X (IP66)    ④Power requirement: 5 VDC ±10%    ⑤Available with -GH housing only |            |  |          |                            |  |                            |                   |   |

| PRESSURE LIMITS |                |                         |                      |              |                       |                         |                      |
|-----------------|----------------|-------------------------|----------------------|--------------|-----------------------|-------------------------|----------------------|
| Range Number    | Pressure Range | Maximum Pressure (psig) | Over Pressure (psig) | Range Number | Pressure Range (psig) | Maximum Pressure (psig) | Over Pressure (psig) |
| 00              | 0 to 15 psia   | 30                      | 45                   | 12           | 0 to 200              | 400                     | 1000                 |
| 30              | 15 to 0 psia   | 30                      | 45                   | 13           | 0 to 300              | 600                     | 1500                 |
| 06              | 0 to 5 psig    | 10                      | 50                   | 14           | 0 to 500              | 1000                    | 2500                 |
| 07              | 0 to 15 psig   | 30                      | 150                  | 15           | 0 to 1000             | 2000                    | 5000                 |
| 08              | 0 to 30 psig   | 60                      | 300                  | 16           | 0 to 1500             | 3000                    | 5000                 |
| 09              | 0 to 50 psig   | 100                     | 300                  | 18           | 0 to 3000             | 6000                    | 7500                 |
| 10              | 0 to 100 psig  | 200                     | 500                  | 19           | 0 to 5000             | 7500                    | 10000                |
| 11              | 0 to 150 psig  | 300                     | 750                  | 26           | 0 to 8000             | 10000                   | 12000                |

| ACCESSORIES |  |
|-------------|--|
| Model       | Description  |
| A-164       | 16.4' (5 m) cable with M-12 4-pin female connector |
| A-960       | 3' packard cable                                   |
| A-961       | 9' packard cable                                   |
| A-962       | 20' packard cable                                  |

## OEM PRESSURE TRANSMITTER

±1.0% FS Accuracy, NEMA 4X (IP66)



The **SERIES 628CR** Pressure Transmitter, contains a low cost ceramic sensor enclosed in a compact, rugged, NEMA 4X (IP65) stainless steel body. Ideal for the budget conscious OEMs that require high levels of performance, reliability and stability at an unbeatable price. The 628CR enclosure is small and lightweight for optimum compatibility with OEM systems. The design allows for a variety of pressure ranges from 30 to 500 psi and optional electrical connections allowing you to select the right transmitter for your application.

## FEATURES/BENEFITS

- NEMA 4X rated enclosure provides protection in harsh environments permitting outdoor monitoring or in applications where dust and particulate matter exists
- A wide range of models that can meet exacting pressure measurement application specifications
- High reliability and response provides excellent control in demanding OEM applications

## APPLICATIONS

- Pump monitoring
- Compressors
- Irrigation equipment
- HVAC
- Pneumatic systems

## SPECIFICATIONS

**Service:** Compatible gases and liquids.

**Wetted Materials:** Ceramic, fluoroelastomer, 316L SS.

**Accuracy:** ±1.0% FS (includes linearity, hysteresis and repeatability).

**Stability:** ±0.25% FS/year.

**Temperature Limits:** 0 to 185°F (-18 to 85°C).

**Compensated Temperature Range:** 0 to 175°F (-18 to 79°C).

**Pressure Limit:** Max pressure: 2x range; Burst pressure: 3x range.

**Thermal Effect:** ±0.04% FS/°F.

**Power Requirements:** 9 to 30 VDC.

**Output Signal:** 4 to 20 mA.

**Response Time:** 3 ms typ.

**Loop Resistance:** 0 to 1200 Ω max.

**Current Consumption:** 40 mA max.

**Electrical Connections:** Cable or DIN connector.

**Process Connection:** 1/4" male NPT or 1/4" male BSPT.

**Enclosure Rating:** NEMA 4X (IP66).

**Mounting Orientation:** Mount in any position.

**Weight:** 4.0 oz.

**Agency Approvals:** CE.

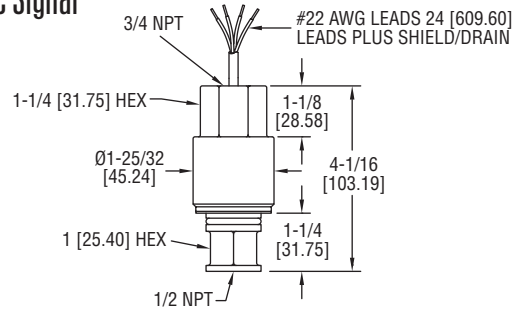
## MODEL CHART

| Example               | 628CR | -08  | -GH | -P1      | -E1            | -S1        | 628CR-08-GH-P1-E1-S1   |
|-----------------------|-------|--|-----|----------|----------------|------------|--|
| Series                | 628CR |  |     |          |                |            | Pressure transmitter   |
| Range                 |       | 08<br>09<br>10<br>12<br>13<br>14<br>71<br>90<br>91<br>75<br>92<br>93<br>81 |     |          |                |            | 0 to 30 psi<br>0 to 50 psi<br>0 to 100 psi<br>0 to 200 psi<br>0 to 300 psi<br>0 to 500 psi<br>0 to 2.5 bar<br>0 to 4 bar<br>0 to 6 bar<br>0 to 10 bar<br>0 to 16 bar<br>0 to 25 bar<br>0 to 40 bar |
| Housing               |       |  | GH  |          |                |            | General purpose housing  |
| Process Connection    |       |  |     | P1<br>P3 |                |            | 1/4" male NPT<br>1/4" male BSPT  |
| Electrical Connection |       |  |     |          | E1<br>E3<br>E4 |            | Cable gland with 3' of prewired cable<br>Cable gland with 9' of prewired cable<br>DIN EN 175801-803-C  |
| Signal Output         |       |  |     |          |                | S1         | 4 to 20 mA   |
| Options               |       |  |     |          |                | AT<br>NIST | Aluminum tag<br>NIST traceable certificate   |



# FIXED RANGE PRESSURE TRANSMITTER

Stainless Steel, Explosion-Proof, Accuracy  $\pm 0.30\%$ , 4 to 20 mA or 1 to 5 VDC Signal



The **SERIES 636** Pressure Transmitter is a low cost, fixed range, stainless steel transmitter with  $\pm 0.30\%$  accuracy. It is designed to continuously measure pressure for years in even the toughest environmental and media conditions. Transmitters are explosion-proof, (FM approved) and meet NACE standards for off-shore applications.

## FEATURES/BENEFITS

- Long service life and lower cost to maintain reduces total cost of ownership
- Explosion-proof housing for use in applications where protection of process and personnel is needed

## APPLICATIONS

- Off-shore
- Process applications

| MODEL CHART    |                |                      |                      |
|----------------|----------------|----------------------|----------------------|
| 4 to 20 mA OUT | 1 to 5 VDC OUT | Operating Range, PSI | Operating Range, Bar |
| 636-0          | 636-0-LP       | 0 to 15              | 0 to 1               |
| 636-1          | 636-1-LP       | 0 to 30              | 0 to 2               |
| 636-2          | 636-2-LP       | 0 to 100             | 0 to 7               |
| 636-3          | 636-3-LP       | 0 to 300             | 0 to 20              |

| OPTION          |  |
|-----------------|--|
| Use order code: | Description                            |
| NISTCAL-PT1     | NIST traceable calibration certificate |

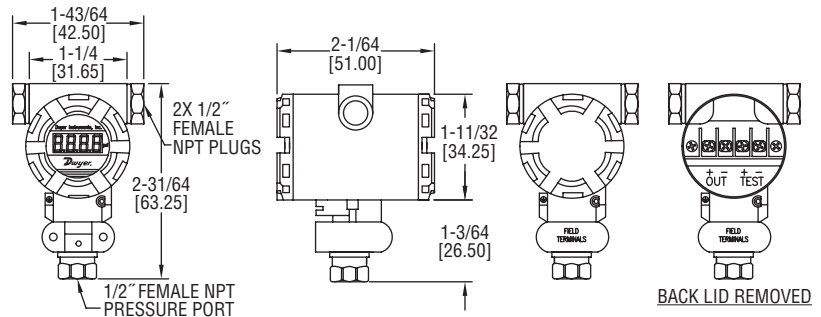
## SPECIFICATIONS

**Service:** Liquid, gas or vapor.  
**Wetted Materials:** 316 L SS.  
**Fill Fluid:** DC 200 silicone (standard).  
**Accuracy:**  $\pm 0.30\%$  of calibrated span.  
**Stability:**  $\pm 0.5\%$  of upper range limit for six months.  
**Temperature Limits:** Electronics (ambient): -40 to 140°F (-40 to 60°C); Process interface: -40 to 212°F (-40 to 100°C).  
**Pressure Limits:** 300% upper range limit.  
**Compensated Temperature Range:** -20 to 180°F (-29 to 82°C).  
**Thermal Effect:** (includes zero and span). Between -20 and 180°F (-29 and 82°C).  $\pm 2.0\%$  per 50°F (28°C).  
**Power Requirements:** 12 to 30 VDC (636), 8 to 14 VDC (636LP), reverse polarity protection.  
**Output Signal:** 4 to 20 mA DC, limited to 30 mA DC (636), 1 to 5 VDC (636LP).  
**Zero & Span Adjustments:** Null: 4.0 mA  $\pm 2\%$  span (636), 1 VDC  $\pm 1\%$  span (636LP); Span: 16.0 mA  $\pm 1\%$  span (636), 4 VDC  $\pm 1\%$  span (636LP).  
**Loop Resistance:** 900  $\Omega$  max @ 30 V.  
**Electrical Connection:** 3/4" female NPT 24" (61 cm), 22 AWG.  
**Process Connection:** 1/2" female NPT.  
**Enclosure Rating:** NEMA 4 (IP56).  
**Weight:** 0.83 lb (374 g).  
**Agency Approvals:** CSA, FM.  
 FM and CSA approved explosion-proof for Class I, Division 1, Groups B, C, & D, Class II Groups E, F, & G Class III.

## SERIES IWP

# INDUSTRIAL WEATHERPROOF PRESSURE TRANSMITTER

Exceptional Reliability for Harsh Environments



The **SERIES IWP** Pressure Transmitter provides an exceptional value solution to pressure measurement in industrial conditions requiring high-performance, stability and long service life. The precise operation under dirty and wet conditions, make the Series IWP an ideal choice for petroleum, chemical and metallurgical industry applications.

## FEATURES/BENEFITS

- Rugged, weather-proof design supports use in harsh environments

## APPLICATIONS

- Harsh environments
- Process
- Chemical
- Petroleum
- Metallurgical

| OPTION          |  |
|-----------------|--|
| Use order code: | Description                            |
| NISTCAL-PT1     | NIST traceable calibration certificate |

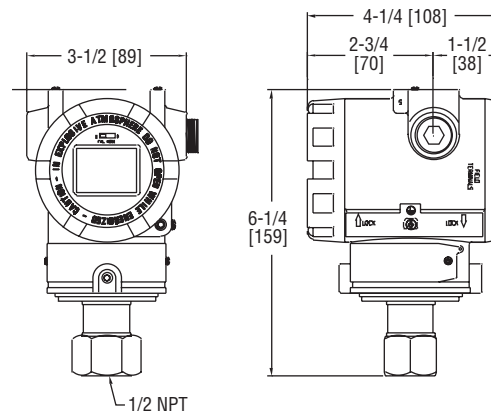
## SPECIFICATIONS

**Service:** Gases and liquids compatible with wetted materials.  
**Wetted Materials:** 304 and 316 stainless steel.  
**Accuracy:** 0.5% FS.  
**Stability:**  $< 0.2\%$  FS per year.  
**Temperature Limits:** -22 to 203°F (-30 to 95°C).  
**Compensated Temperature Limits:** 32 to 158°F (0 to 70°C).  
**Pressure Limits:** 1.5 x pressure range.  
**Temperature Coefficient:** 0.3% FS per 10°C.  
**Power Requirements:** 12 to 36 VDC.  
**Output Signal:** 4 to 20mA.  
**Loop Resistance:** 1200  $\Omega$  max.  
**Electrical Conduit Connection:** 1/2" female NPT.  
**Process Connection:** 1/2" female NPT.  
**Enclosure Rating:** IP65.  
**Agency Approvals:** CE.

| MODEL CHART |                |        |                |
|-------------|----------------|--------|----------------|
| Model       | Pressure Range | Model  | Pressure Range |
| IWP-00      | 0 to 30 psig   | IWP-04 | 0 to 300 psig  |
| IWP-01      | 0 to 50 psig   | IWP-05 | 0 to 500 psig  |
| IWP-02      | 0 to 100 psig  | IWP-06 | 0 to 1000 psig |
| IWP-03      | 0 to 200 psig  | IWP-10 | 0 to 30 psia   |

# EXPLOSION-PROOF PRESSURE TRANSMITTER

HART®, Push Button Configuration, Rangeability (100:1)



The Mercoid® **SERIES 3200G** Smart Pressure Transmitter is a microprocessor-based high performance transmitter, which has flexible pressure calibration, push button configuration, and programmable using HART® Communication. The Series 3200G is capable of being configured with the zero and span buttons, a field calibrator is not required for configuration. The transmitter software compensates for thermal effects, improving performance. EEPROM stores configuration settings and stores sensor correction coefficients in the event of shutdowns or power loss. The Series 3200G is FM approved for use in hazardous (Classified) locations. The 100:1 rangeability allows the smart transmitter to be configured to fit any application.

## FEATURES/BENEFITS

- Completely configurable using zero/span buttons (no calibrator required)
- Rangeability (100:1)
- High accuracy ( $\pm 0.075\%$ )
- Automatic sensor temperature compensation
- Fail-mode process function

## SPECIFICATIONS

**Service:** Compatible gases, steam, liquids or vapors.  
**Wetted Materials:** 316L SS.  
**Accuracy:**  $\pm 0.075\%$  FS (@ 20°C).  
**Rangeability:** 100:1 turn down.  
**Stability:**  $\pm 0.125\%$  FSO/yr.  
**Temperature Limits:** Process: -40 to 248°F (-40 to 120°C); Ambient: Without LCD -40 to 185°F (-40 to 85°C); With LCD -22 to 176°F (-30 to 80°C).  
**Thermal Effect:**  $\pm 0.125\%$  span/32°C.  
**Power Requirements:** 11.9 to 45 VDC.  
**Output Signal:** 4 to 20 mA / HART® Communication.  
**Response Time:** 0.12 seconds.  
**Damping Time:** 0.25 to 60 seconds.  
**Loop Resistance:** Operation: 0 to 1500  $\Omega$ ; HART® Communication: 250 to 500  $\Omega$ .  
**Electrical Connection:** Two 1/2" female NPT conduit, screw terminal.  
**Process Connections:** 1/2" female NPT.  
**Display:** Optional 5 digit LCD.  
**Enclosure Rating:** NEMA 4X (IP66) and explosion proof for Class I, Div I Groups A, B, C and D.  
**Weight:** 5.5 lb (2.5 kg).  
**Agency Approvals:** ATEX, CE, FM.

## MODEL CHART

| Model              | Range<br>psi (kPa)          | Calibrated Span<br>(Min. to Max.) psi (kPa) | Max. Pressure<br>psi (bar) | LCD<br>Display |
|--------------------|-----------------------------|---|----------------------------|----------------|
| 3200G-1-FM-1-1     | -14.5 to 21 (-100 to 150)   | 0.22 to 21 (1.5 to 150)                     | 58 (4)                     | No             |
| 3200G-2-FM-1-1     | -14.5 to 217 (-100 to 1500) | 2 to 217 (15 to 1500)                       | 580 (40)                   | No             |
| 3200G-3-FM-1-1     | 0 to 725 (0 to 5000)        | 7.25 to 725 (50 to 5000)                    | 2000 (138)                 | No             |
| 3200G-4-FM-1-1     | 0 to 3600 (0 to 25000)      | 36 to 3600 (250 to 25000)                   | 10000 (690)                | No             |
| 3200G-5-FM-1-1     | 0 to 8500 (0 to 60000)      | 87 to 8700 (600 to 60000)                   | 11600 (800)                | No             |
| 3200G-1-FM-1-1-LCD | -14.5 to 21 (-100 to 150)   | 0.22 to 21 (1.5 to 150)                     | 58 (4)                     | Yes            |
| 3200G-2-FM-1-1-LCD | -14.5 to 217 (-100 to 1500) | 2 to 217 (15 to 1500)                       | 580 (40)                   | Yes            |
| 3200G-3-FM-1-1-LCD | 0 to 725 (0 to 5000)        | 7.25 to 725 (50 to 5000)                    | 2000 (138)                 | Yes            |
| 3200G-4-FM-1-1-LCD | 0 to 3600 (0 to 25000)      | 36 to 3600 (250 to 25000)                   | 10000 (690)                | Yes            |
| 3200G-5-FM-1-1-LCD | 0 to 8500 (0 to 60000)      | 87 to 8700 (600 to 60000)                   | 11600 (800)                | Yes            |

**Note:** Contact factory for custom calibration.

## ACCESSORIES

| Model      | Description                                      |
|------------|--|
| A-630      | Stainless steel angle type bracket with SS bolts |
| A-631      | Stainless steel flat type bracket with SS bolts  |
| BBV-0N     | 2-valve block manifold                           |
| DevCom2000 | HART® Communication Protocol Software            |

## EXPLOSION-PROOF PRESSURE TRANSMITTER

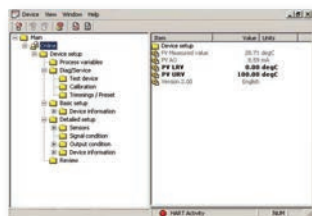
HART®, Push Button Configuration, Rangeability (100:1)

| MODEL CHART            |       |                       |                  |        |    |                          |          |                                  |                      |                  |   |     |                          |   |
|------------------------|-------|-----------------------|------------------|--------|----|--------------------------|----------|----------------------------------|----------------------|------------------|---|-----|--------------------------|---|
| Example                | 3200G | -2                    | -FM              | -3     | -1 | -LES                     | S2       | A1                               | 05                   | S                | 2 | -05 | -LCD                     | 3200G-2-FM-3-1-LESS2A105S2-05-LCD   |
| Series                 | 3200G |                       |                  |        |    |                          |          |                                  |                      |                  |   |     |                          | 3200G Explosion-Proof Pressure Transmitter  |
| Range                  |       | 1<br>2<br>3<br>4<br>5 |                  |        |    |                          |          |                                  |                      |                  |   |     |                          | -14.5 to 21 psig (factory set 0 to 21 psig)<br>-14.5 to 217 psig (factory set 0 to 217 psig)<br>0 to 725 psig<br>0 to 3600 psig<br>0 to 8500 psig                       |
| Approval               |       |                       | FM<br>ATEX<br>WP |        |    |                          |          |                                  |                      |                  |   |     |                          | FM approved<br>ATEX approved<br>Weatherproof only (Only available with 316 SS housing)  |
| Process Connection     |       |                       |                  | 1<br>3 |    |                          |          |                                  |                      |                  |   |     |                          | 1/2" female NPT<br>Diaphragm seal   |
| Electrical Connection  |       |                       |                  |        | 1  |                          |          |                                  |                      |                  |   |     |                          | 1/2" female NPT   |
| Diaphragm Seal Type    |       |                       |                  |        |    | LED<br>LES<br>LFD<br>LFS |          |                                  |                      |                  |   |     |                          | 1 extended diaphragm seal direct mount<br>1 extended diaphragm seal capillary type high<br>1 flush diaphragm seal direct mount<br>1 flush diaphragm seal capillary type |
| Mounting Flange        |       |                       |                  |        |    |                          | S2<br>S3 |                                  |                      |                  |   |     |                          | 2" (50 mm) 316L SS<br>3" (80 mm) 316L SS  |
| Mounting Flange Rating |       |                       |                  |        |    |                          |          | A1<br>A2<br>D1<br>D2<br>J1<br>J2 |                      |                  |   |     |                          | ANSI class 150#<br>ANSI class 300#<br>DIN PN 10/16<br>DIN PN 25/40<br>JIS 10 K<br>JIS 20 K  |
| Extension Length       |       |                       |                  |        |    |                          |          |                                  | 00<br>05<br>10<br>15 |                  |   |     |                          | No extension (standard for flush mount)<br>2" extension<br>4" extension<br>6" extension   |
| Diaphragm Material     |       |                       |                  |        |    |                          |          |                                  |                      | S<br>P<br>H<br>T |   |     |                          | 316L SS diaphragm<br>PTFE and 316L SS diaphragm<br>Hastelloy C-276 diaphragm<br>Tantalum diaphragm  |
| Fill Fluid             |       |                       |                  |        |    |                          |          |                                  |                      |                  | 2 |     |                          | Silicon oil (-40 to 400°F)  |
| Capillary Length       |       |                       |                  |        |    |                          |          |                                  |                      |                  |   | XX  |                          | 0 to 20 feet  |
| Options                |       |                       |                  |        |    |                          |          |                                  |                      |                  |   |     | LCD<br>SSH<br>NIST<br>CC | 5 digit LCD<br>316 SS housing (only available with WP approval)<br>NIST calibration<br>Custom calibration   |

## CUSTOM CALIBRATION VALUES

|                   |   |
|-------------------|---|
| Primary Units     | in w.c., ft w.c., mm w.c., in Hg, psig, g/cm <sup>2</sup> , kg/cm <sup>2</sup> , Pa, kPa, bar, mbar, Torr, Atm, mm Hg |
| Upper Range Limit | 20 mA value   |
| Lower Range Limit | 4 mA value  |
| Damping Time      | 0 to 60 seconds   |
| Display Mode      | Primary unit, %, mA, rotate   |

## MODEL DEVCOM2000

HART® COMMUNICATION PROTOCOL SOFTWARE  
Includes USB HART Modem

DevCom2000 Software



HART Field Device

Windows®-Based PC

USB HART Modem

The **MODEL DEVCOM2000** HART® Communicator Software turns your PC into a full-featured HART® communicator. Now it is possible to configure transmitters and control valves at the desktop or in the field. DevCom2000 uses device descriptions (DDs) to retrieve data that is stored in the memory of smart field devices. This software is a simple, reliable and secure method to add new measurement values to control systems without the need of additional wires. This software eliminates the need to purchase and maintain a separate handheld HART® communicator.

## FEATURES/BENEFITS

- Complete DD library
- Includes USB HART modem
- USB 1.1 and 2.0 compatible
- Self powered modem

| MODEL CHART |                             |
|-------------|-----------------------------|
| Model       | Description                 |
| DevCom2000  | HART® Communicator Software |

## SPECIFICATIONS

**HART® Communicator Software**  
**DD Library:** Included.  
**Generic DD:** Included.  
**Operating System:** Windows NT®, Windows® 2000, Windows XP®, Windows® Vista (32/64), Windows® 7 (32/64).

## USB HART MODEM

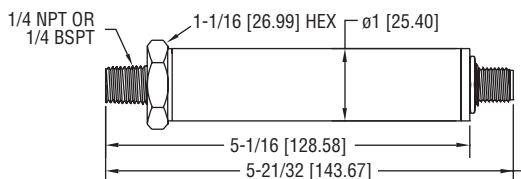
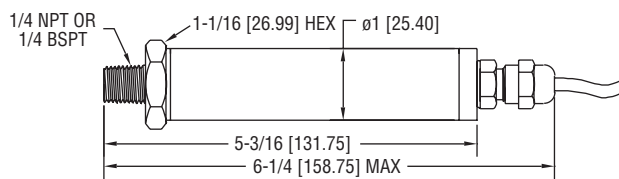
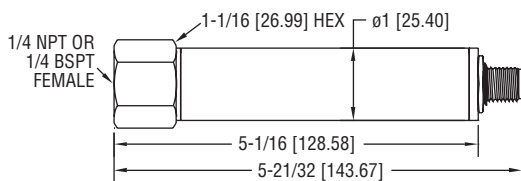
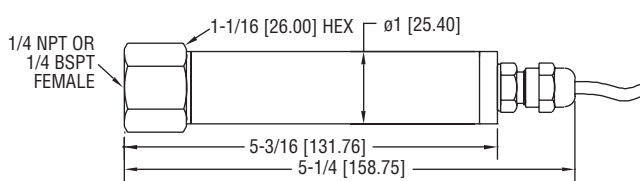
**Material:** High strength ABS plastic.  
**Temperature Limits:** 0 to 50°C (32 to 122°F).  
**Storage Temperature:** -40 to 85°C (-40 to 185°F).  
**Humidity:** 0 to 99% (non-condensing).  
**HART® Cable Length:** 4' (1.2 m).

**HART® Cable Connectors:** Mini-grabber.  
**USB Cable Length:** 18" (0.5 m).  
**USB Cable Connector:** USB Type A.  
**USB:** USB 1.1, USB 2.0.  
**Power:** USB port provides power to unit.  
**Current Draw:** 20 mA.  
**Output:** 600 mVpp.  
**Leakage:** < 10 uA.  
**Isolation Voltage:** 1500 VDC.  
**HART®:** HART® 4, HART® 5, HART® 6, HART® 7, HART® Physical Layer Spec HCF SPEC-54.  
**Weight:** 3 oz (85 g).  
**Agency Approvals:** CE.

HART® is a registered trademark of Hart Communication Foundation  
 Windows®, Windows NT®, and Windows Vista® are registered trademarks of Microsoft Corporation.

# INTRINSICALLY SAFE PRESSURE TRANSMITTER

## For Use In Hazardous Locations


**Male NPT/BSPT Connector with Male M-12 Connector**

**Male NPT/BSPT Connector with Cable Gland**

**Female NPT/BSPT Connector with Male M-12 Connector**

**Female NPT/BSPT Connector with Cable Gland**


The Dwyer **SERIES IS626** Intrinsically Safe Pressure Transmitter can be used to accurately measure compatible gases and liquids compatible with its 316/316L stainless steel wetted parts. Series IS626 full-scale accuracy is 0.25%. Designed for industrial environments with a NEMA 4X (IP66) housing, this transmitter resists most effects of shock and vibration. Models are available with a 3' cable or M-12 4 pin connection.

The IS626 is UL listed for use in Hazardous (Classified) Locations. The protection method is by Intrinsic Safety, "ia". It was investigated by UL under UL Standard 913 Sixth Edition and CSA Standard No. 157-92.

### FEATURES/BENEFITS

- Exceptional accuracy for insuring tight-control and minimizing costly out of specification conditions
- NEMA 4x rated enclosure provides protection in harsh environments permitting outdoor monitoring or in areas where dust and particulate matter exists
- Robust sensor provides shock and vibration resistance insuring stability in controlling pressure for process applications

### APPLICATIONS

- Monitoring pressure in hazardous environments
- Process

### SPECIFICATIONS

**Service:** Compatible gases and liquids.

**Wetted Materials:** Type 316, 316L SS.

**Accuracy:** 0.25% FS; Absolute range: 0.5% FS (includes linearity, hysteresis, and repeatability).

**Temperature Limit:** 0 to 176°F (-18 to 80°C).

**Compensated Temperature Range:** 0 to 176°F (-18 to 80°C).

**Thermal Effect:** ±0.02% FS/°F (includes zero and span).

**Pressure Limits:** See Pressure Range Table.

**Power Requirements:** 10 to 28 VDC.

**Output Signal:** 4 to 20 mA.

**Response Time:** 50 ms.

**Loop Resistance:** 0 - 900 Ω max.

**Current Consumption:** 38 mA (max).

**Electrical Connections:** 3 ft cable or 4-pin M-12 connector.

**Process Connection:** 1/4" male or female NPT and BSPT.

**Enclosure Rating:** NEMA 4X (IP66).

**Mounting Orientation:** Mount in any position.

**Weight:** 8.9 oz (252 g).

**Agency Approvals:** CE, cULus Intrinsically Safe to UL Standard 913.

**For use in Hazardous (Classified) Locations:**

**Class I Div. 1 Groups A,B,C,D**

**Class II Div. 1 Groups E,F,G**

**Class III Div. 1**

**Temperature Code: T4 @ 80°C ambient**

**Install in accordance with control drawing 01-700797-00.**

**WARNING** To prevent ignition of flammable or combustible atmospheres, disconnect power before servicing.

**Use with approved safety barriers using entity evaluation.**

| MODEL CHART  |           |                         |                      |
|--|-----------|-------------------------|----------------------|
| Model  | Range     | Maximum Pressure (psig) | Over Pressure (psig) |
| IS626-00-GH-P1-E1-S1   | 15 psia*  | 30                      | 150                  |
| IS626-07-GH-P1-E1-S1   | 15 psig   | 30                      | 150                  |
| IS626-08-GH-P1-E1-S1   | 30 psig   | 60                      | 300                  |
| IS626-09-GH-P1-E1-S1   | 50 psig   | 100                     | 300                  |
| IS626-10-GH-P1-E1-S1   | 100 psig  | 200                     | 500                  |
| IS626-11-GH-P1-E1-S1   | 150 psig  | 300                     | 750                  |
| IS626-12-GH-P1-E1-S1   | 200 psig  | 400                     | 1000                 |
| IS626-13-GH-P1-E1-S1   | 300 psig  | 600                     | 1500                 |
| IS626-14-GH-P1-E1-S1   | 500 psig  | 1000                    | 2500                 |
| IS626-15-GH-P1-E1-S1   | 1000 psig | 2000                    | 5000                 |
| IS626-16-GH-P1-E1-S1   | 1500 psig | 3000                    | 5000                 |
| *Absolute pressure ranges are not UL approved.                               |           |                         |                      |
| <b>Note:</b> For optional M-12 4 pin electrical connection, change E1 to E6. |           |                         |                      |

| ACCESSORIES |  |
|-------------|--|
| Model       | Description  |
| A-295       | Female four pin M-12 to cable gland connector              |
| A-231       | 16' (5 m) shielded cable with 4 pin female M-12 connection |
| MTL5041     | Intrinsically safe galvanic isolator                       |
| MTL7706     | Intrinsically safe zener barrier                           |

| OPTION                                    |  |
|---|--|
| To order add suffix:                      | Description                            |
| -NIST                                     | NIST traceable calibration certificate |
| <b>Example:</b> IS626-00-GH-P1-E1-S1-NIST |  |



### SELECTION GUIDE

pages 112-115

### TYPICAL APPLICATIONS

pages 116-117



**Thermometers, Dial**  
pages 118-121



**Thermometers, Glass**  
page 122



**Thermometers, Digital Solar**  
page 123



**Thermometers with Transmitter**  
page 124



**Temperature/Process Controllers**  
pages 125-129



**DIN Rail Temperature Controllers**  
page 130



**Panel Meters/Indicators**  
page 131



**Temperature Switches, Limit**  
pages 131-132



**Temperature Switches, Digital**  
pages 133-138



**Temperature Switches, Mechanical**  
page 139



**Temperature Transmitters**  
pages 140-144



**Temperature Sensors**  
pages 145-160



**Thermostats**  
page 160

## FEATURED PRODUCTS

### TEMPERATURE/PROCESS LOOP CONTROLLERS

SERIES 16G, 8G, & 4G | pages 128-129



- 2 primary control outputs, 2 secondary/alarm relay outputs, and RS-485 standard on all models
- Options for remote set-point, input retransmission, or event input functions available with optional hardware







### DIGITAL TEMPERATURE SWITCH

SERIES TST | page 134







- Capacitive touch buttons offer sleek and modern front panel design that is durable and easy to clean
- Modbus® communication for remotely connecting to the device through an RS485 network

# DIAL Thermometers

|                           |   |   |   |  |   |   |
|---------------------------|---|---|---|--|---|---|
|                           |  |  |  |  |  |  |
| <b>SERIES</b>             | <b>BT</b> - page 118  | <b>BTLRN</b> - page 118   | <b>BTL</b> - page 119   | <b>CBT</b> - page 119  | <b>BTP</b> - page 120   | <b>BTM3</b> - page 120  |
| <b>Range</b>              | 0 to 1000°F   | 0 to 200°F  | -40 to 500°F  | -40 to 500°F   | -50 to 500°F  | -40 to 750°F  |
| <b>Dial Size</b>          | 2", 3" or 5"  | 3"  | 3"  | 1-3/4", 2" or 3"   | 2"  | 3" with min/max follower pointer  |
| <b>Stem Length</b>        | 2.5", 4" or 6"  | 12" to 72"  | 2.5", 4" or 6"  | 5" or 8"   | Pipe surface mount  | 2-1/2", 4", 6", 9", or 12"  |
| <b>Process Connection</b> | 1/2" NPT; Back, Lower, or Adjustable mount  | 1/2" NPT; Back mount  | 1/2" NPT; Right side or left side mount   | Vessel clip  | Spring clamp for pipes from 3/4" to 6" diameter                                     | 1/2" NPT; Back mount  |







# PID LOOP CONTROLLERS Temperature and Process Controllers

|                                     |   |  |  |  |
|-------------------------------------|---|--|--|--|
|                                     |  |         |        |       |
| <b>SERIES</b>                       | <b>16C, 8C, 4C</b> - page 125   | <b>32B, 16B, 8B, 4B</b> - pages 126-127  | <b>16G, 8G, 4G</b> - pages 128-129   | <b>SCD</b> - page 130  |
| <b>Number of Temperature Inputs</b> | 1   | 1  | 1  | 1 to 8   |
| <b>Temperature Input Type</b>       | Thermocouple or RTD   | Thermocouple, RTD, current, or voltage   | Thermocouple, RTD, current, or voltage   | Thermocouple, RTD, current, or voltage   |
| <b>DIN Sizes</b>                    | 1/16, 1/8, 1/4  | 1/32, 1/16, 1/8, 1/4   | 1/16, 1/8, 1/4   | DIN rail mount   |
| <b>Number of Outputs</b>            | 1   | 2  | 2  | 2 to 16  |
| <b>Output Type</b>                  | SPDT mechanical relay<br>14 VDC pulse voltage<br>4 to 20 mA current                 | SPDT mechanical relay<br>14 VDC pulse voltage<br>4 to 20 mA current<br>0 to 10 VDC voltage | SPDT mechanical relay<br>14 VDC pulse voltage<br>4 to 20 mA current<br>0 to 10 VDC voltage | SPDT mechanical relay<br>14 VDC pulse voltage<br>4 to 20 mA current<br>0 to 10 VDC voltage |
| <b>Approvals</b>                    | CE, UL  | CE, UL   | CE, UL   | CE, UL   |

These Selection Guides are for quick comparison of similar products. Please refer to the catalog page number referenced for complete product information and specifications.

# DIAL

## Thermometers

|                           |   |   |   |  |   |   |
|---------------------------|---|---|---|--|---|---|
|                           |  |  |  |  |  |  |
| <b>SERIES</b>             | <b>STC</b> - page 121   | <b>ST</b> - page 121  | <b>ITA</b> - page 122   | <b>DBT</b> - page 123  | <b>RRT3</b> - page 123  | <b>BTO</b> - page 124   |
| <b>Range</b>              | -50 to 500°F  | -50 to 500°F  | -40 to 550°F  | -58 to 302°F   | -40 to 300°F  | 0 to 550°F  |
| <b>Dial Size</b>          | 2"  | 2"  | 9" liquid filled linear scale   | 3" solar powered digital readout   | 3-1/2" with set-point and SPDT output   | 3" or 5" with 4 to 20 mA temperature output   |
| <b>Stem Length</b>        | Pipe surface mount  | Surface mount   | 2-1/2" or 5" thermowell   | 2-1/2", 4", 6", 9", 12", 15", 18", or 24"  | 3-1/8" remote stem with 10.5' capillary   | 2-1/2", 4", 6", 9", or 12"  |
| <b>Process Connection</b> | Clip for pipes from 3/4" to 2-3/8" diameter                                       | Magnetic backing for surface mount  | 3/4" NPT; Adjustable lower mount  | 1/2" NPT; Adjustable mount   | 1/2" NPT; Remote mount  | 1/2" NPT; Adjustable mount  |

## LIMIT CONTROL

### Digital Temperature Switches

**SERIES****16L** - page 131**TSF-DF** - page 132**TSF** - page 132**Number of Temperature Units**

1

1

1

**Temperature Input Type**

Thermocouple, RTD, voltage, or current

Type J, K, or S thermocouple

Type J, K, or S thermocouple

**Digital Input**

No

Yes

Yes

**Number of Relay Outputs**

1 or 2

1

1

**Relay Type**

2 SPST, 1 SPDT

SPST

SPDT

**Approvals**

FM, UL

CE, UL

CE, FM, UL

## REFRIGERATION OR LOW TEMPERATURE HEATING

### Digital Temperature Switches

**SERIES****TST** - page 134**TSXT** - page 134**TS3** - page 135**TSX3** - page 135**Number of Temperature Inputs**

1

3

1

2

**Temperature Input Type**

PTC or NTC thermistor

PTC or NTC thermistor

PTC or NTC thermistor

PTC or NTC thermistor

**Digital Input**

No

Yes

Yes

Yes

**Number of Relay Outputs**

1

1, 2, or 3

1

2 or 3

**Relay Type**

SPDT

1 output models: SPDT  
2 & 3 output models: SPST




SPDT

2 output models: SPDT  
3 output models: SPST






# HEATING & COOLING CONTROL

## Digital Temperature Switches

|                                    |   |  |   |
|------------------------------------|---|--|---|
|                                    |  |  |  |
| <b>SERIES</b>                      | <b>40T</b> - page 133   | <b>40M</b> - page 133  | <b>TCS</b> - page 133   |
| <b>Number of Temperature Units</b> | 1   | 1  | 1   |
| <b>Temperature Input Type</b>      | Type J or K thermocouple, 2 or 3 wire PT 100 RTD                                  | Thermocouple, RTD, thermistor, current, or voltage                                 | Type J, K, or S thermocouple  |
| <b>Digital Input</b>               | No  | No   | No  |
| <b>Number of Relay Outputs</b>     | 1   | 1  | 1   |
| <b>Relay Type</b>                  | SPDT  | SPDT   | SPDT  |
| <b>Approvals</b>                   | CE, UL  | CE, UL   | CE, UL  |

# REFRIGERATION OR LOW TEMPERATURE HEATING

## Digital Temperature Switches

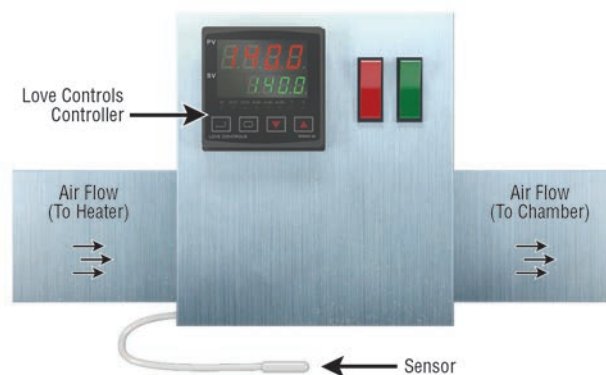
|                                     |   |   |  |   |
|-------------------------------------|---|---|--|---|
|                                     |  |  |  |  |
| <b>SERIES</b>                       | <b>TS2</b> - page 136   | <b>TSS2</b> - page 136  | <b>TSW</b> - page 137  | <b>TSWB</b> - page 137  |
| <b>Number of Temperature Inputs</b> | 1   | 2   | 1 or 2   | 1   |
| <b>Temperature Input Type</b>       | PTC   | PTC or NTC thermistor   | PTC or NTC thermistor  | PTC or NTC thermistor   |
| <b>Digital Input</b>                | No  | No  | No   | Yes   |
| <b>Number of Relay Outputs</b>      | 1   | 2   | 1 or 2   | 3   |
| <b>Relay Type</b>                   | SPDT  | SPDT  | SPDT   | 2 SPST, 1 SPDT  |



### Environmental chamber control simplified with digital zone control.

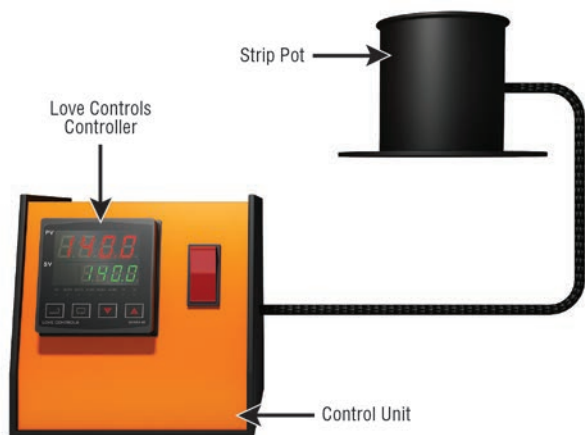
Environmental chambers have traditionally used separate controls to handle the temperature and relative humidity control tasks. The Love Controls 32DZ dual zone control with Love 5000 Series RTD and Dwyer® RH Humidity transmitter controls both parameters in a single small format (1/32 DIN) control to handle both zones, simplifying wiring and reducing panel costs.

The 32DZ can switch small resistive loads directly or, when used with Dwyer® Series 62 solid state relays (not shown), can switch larger loads.



### Dwyer® controllers used within heater controllers.

In bioscience laboratories, the preferred methods of temperature control for experiments are heated water baths. There are experiments where water cannot be used, so the next feasible option is to send temperature controlled air to the experiment site. In order to use temperature controlled air, an air heater is needed. Within this product, a Love Controls temperature controller is used for accurate and responsive temperature control. The Love Controls controller can adapt to a different environment through different operating modes such as SELF-TUNE or manual PID adjustments, or preset PID responses.



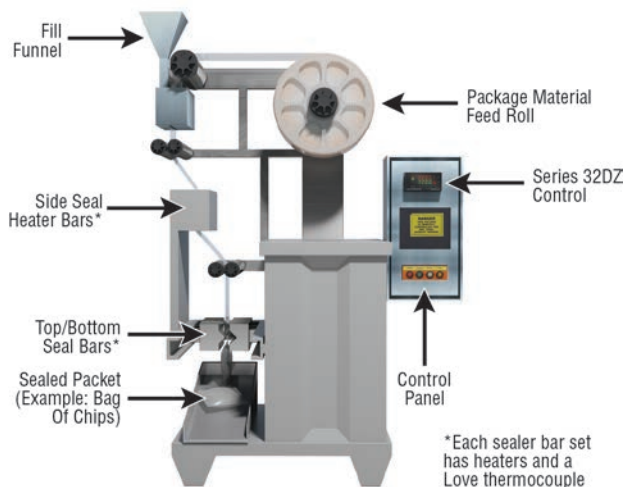
### Love Controls controllers involved in insulation removal.

For most wires, removing the insulation is easy, but for magnetic and enamel wires, removing the insulation is very difficult. One way to easily remove the insulation of the magnetic or enamel wire is to dip them in a solution of molten fused salts. The salts are heated to a temperature high enough to melt the salts into a liquid, but not deteriorate them. This process uses a Love Controls feedback temperature controller. The Love Controls controller allows the operator to input a desired temperature and maintain that temperature accurately. The Love Controls controller will also retain the input temperature after the power is disconnected.



### Series TS Digital Temperature Switches regulate temperature in refrigerated and display cases.

When storing food or other perishables in chillers or display cases, temperature must be carefully regulated to ensure the products remain fresh. If the storage area rises above the critical preservation temperature, products can have their shelf life dramatically shortened or be spoiled altogether. A Dwyer® Series TSX3 Digital Temperature Switch will prevent these scenarios by monitoring temperature and activating refrigeration and defrost cycles to ensure the storage temperature stays within safe limits.



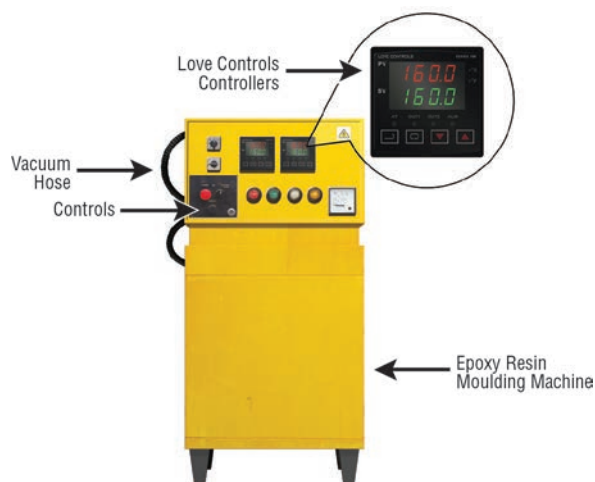
### Form, fill and seal machine control simplified with dual zone control.

Form, fill and seal machines traditionally have used separate controls to handle the temperature control requirement for the side and top/bottom seal bars. The Love Controls® 32DZ with Love® 5000 Series thermocouples allows for a single small format (1/32 DIN) control to handle both zones, simplifying wiring and reducing panel costs. The 32DZ can switch small resistive loads directly or, when used with the Love® 62 Series solid state relays (not shown), can switch larger loads.



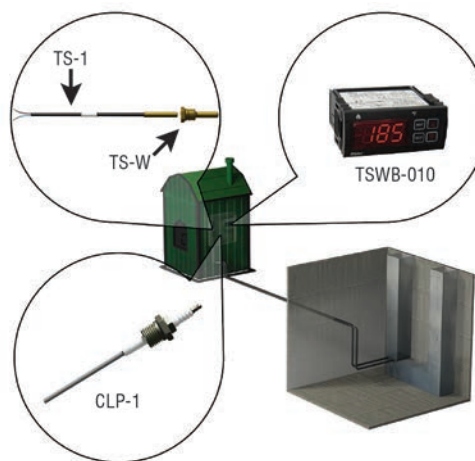
### Love Controls controllers used in the packaging of condiments.

Packaging of condiments require the sealing bars to be heated to a temperature hot enough to seal the packages, but not destroy the packaging material. The heat on the sealing bars needs to be controlled to ensure the heat does not become excessive. Love Controls controllers are used in this process to accurately control the heat on the sealing bars. The sensors from the Love Controls controllers are placed on the sealing bars to ensure accurate temperature readings. Should the heat become excessive, an alarm light on the controller notifies the operator of the impending conditions.



### Resin transfer molding.

Accurate control of temperature and epoxy resin flow is important during resin transfer molding. For the epoxy resin to have an even and thorough flow, the resin must be at a temperature high enough to allow it to flow, yet not burn the resin. With the help of a Love Controls controller, the temperature of the resin is accurately controlled under different conditions through the different PID operating modes. Another Love Controls controller, with a flow transducer, is used in this process to control the flow of the epoxy resin. The Love Controls controller provides information on the temperature and flow rate to the computer through an RS-485 serial communication option.



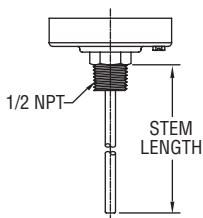
### Controlling water temperature in outdoor wood furnace.

The Series TSWB is the ideal control for monitoring water temperature and water level in outdoor wood furnaces. The Series TSWB controls the damper and/or the fan that provides oxygen to the flame in the fire box. Usually an external light will also be controlled by the Series TSWB to inform the user that the furnace is out of wood or that the water level is low. The TSWB accepts thermistor inputs for temperature and conductivity probe, Dwyer CLP-1, inputs for monitoring water level.

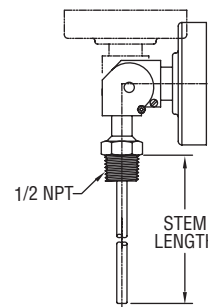
**Dwyer**  
SERIES BT

# BIMETAL THERMOMETER

2", 3" or 5" Dial, Dual Scale,  $\pm 1\%$  FS Accuracy, External Reset



Back Connection



Adjustable Angle Connection

The **SERIES BT** Bimetal Thermometers offer accurate, reliable service even in the toughest environments. These corrosion resistant units are constructed from stainless steel and are hermetically sealed to prevent crystal fogging.

## FEATURES/BENEFITS

- Hermetically sealed
- Adjustable dial position models

## APPLICATIONS

- Chiller or boiler water temperature monitoring
- Treatment plant temperature monitoring

## SPECIFICATIONS

**Wetted Materials:** 304 SS.  
**Housing Material:** Series 300 SS.  
**Lens:** Glass.  
**Accuracy:**  $\pm 1\%$  full-scale.  
**Response Time:**  $\leq 40$  seconds.  
**Temperature Limits:** Head: 200°F (93°C); Stem: Not to exceed 50% over-range or 1000°F (538°C) or 800°F (427°C) continuously.  
**Process Connection:** 1/4" NPT on 2" dial size; 1/2" NPT on 3" or 5" dial size.  
**Stem Diameter:** 1/4" OD.  
**Immersion Depth:** Minimum 2" in liquids, 4" in gas.

## MODEL CHART

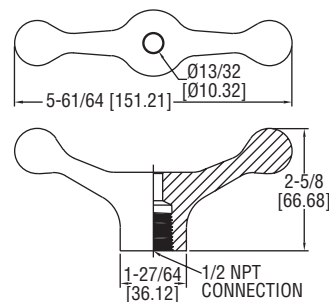
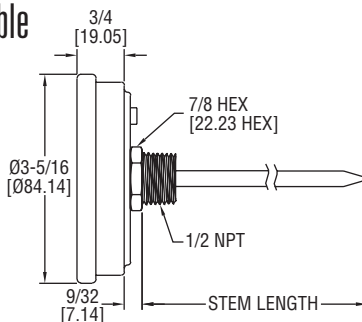
| Model     | Dial Size | Stem Length | Connection | Range °F (°C)            | Degree Div °F (°C) | Model     | Dial Size | Stem Length | Connection | Range °F (°C)         | Degree Div °F (°C) |
|-----------|-----------|-------------|------------|--------------------------|--------------------|-----------|-----------|-------------|------------|-----------------------|--------------------|
| BTB22551* | 2"        | 2-1/2"      | Back       | 0 to 250                 | 2                  | BTB3605D  | 3"        | 6"          | Back       | 0 to 250 (-20 to 120) | 2 (2)              |
| BTB2405D  | 2"        | 4"          | Back       | 0 to 250 (-20 to 120)    | 2 (2)              | BTA54010D | 5"        | 4"          | Adjustable | 0 to 200 (-20 to 100) | 2 (2)              |
| BTB2409D  | 2"        | 4"          | Back       | 200 to 1000 (100 to 550) | 10 (5)             | BTA5405D  | 5"        | 4"          | Adjustable | 0 to 250 (-20 to 120) | 2 (2)              |
| BTB32510D | 3"        | 2-1/2"      | Back       | 0 to 200 (-20 to 100)    | 2 (2)              | BTA5407D  | 5"        | 4"          | Adjustable | 50 to 550 (10 to 290) | 5 (5)              |
| BTB3255D  | 3"        | 2-1/2"      | Back       | 0 to 250 (-20 to 120)    | 2 (2)              | BTA56010D | 5"        | 6"          | Adjustable | 0 to 200 (-20 to 100) | 2 (2)              |
| BTB3257D  | 3"        | 2-1/2"      | Back       | 50 to 550 (10 to 290)    | 5 (5)              | BTA5605D  | 5"        | 6"          | Adjustable | 0 to 250 (-20 to 120) | 2 (2)              |
| BTB34010D | 3"        | 4"          | Back       | 0 to 200 (-20 to 100)    | 2 (2)              | BTA5607D  | 5"        | 6"          | Adjustable | 50 to 550 (10 to 290) | 5 (5)              |
| BTB3405D  | 3"        | 4"          | Back       | 0 to 250 (-20 to 120)    | 2 (2)              | BTC3255D  | 3"        | 2-1/2"      | Lower      | 0 to 250 (-20 to 120) | 2 (2)              |
| BTB3407D  | 3"        | 4"          | Back       | 50 to 550 (10 to 290)    | 5 (5)              |           |           |             |            |                       |                    |

\*Model offered in Fahrenheit scale only.

## SERIES BTLRN

# LONG REACH BIMETAL THERMOMETER

Extra-long Stems Reach Remote Areas, Gripping Handle Available



The **SERIES BTLRN** Long Reach Bimetal Thermometer reaches areas that other thermometers can't. A gripping handle is available as an accessory to comfortably hold the thermometer during temporary installations.

## FEATURES/BENEFITS

- Stem lengths from 12" to 72"

## APPLICATIONS

- Large container monitoring
- Duct temperature measurement

## MODEL CHART

| Model       | Stem Length | Range*     |
|-------------|-------------|------------|
| BTLRN312101 | 12"         | 0 to 200°F |
| BTLRN318101 | 18"         | 0 to 200°F |
| BTLRN324101 | 24"         | 0 to 200°F |
| BTLRN336101 | 36"         | 0 to 200°F |
| BTLRN348101 | 48"         | 0 to 200°F |
| BTLRN360101 | 60"         | 0 to 200°F |
| BTLRN372101 | 72"         | 0 to 200°F |

\*Dual scale units available by changing last digit to D. **Example:** BTLRN31210D

## SPECIFICATIONS

**Wetted Materials:** 304 SS.  
**Housing Materials:** Series 300 SS.  
**Lens:** Glass.  
**Accuracy:**  $\pm 1\%$ .  
**Temperature Limits:** Ambient: -40 to 392°F (-40 to 200°C).  
**Dial Size:** 3".  
**Process Connection:** 1/2" NPT.  
**Resolution:** 2°F (1°C).  
**Weight:** 1.0 lb (0.45 kg).

## ACCESSORY

| Model   | Description     |
|---------|-----------------|
| BTLR-GH | Gripping handle |



# SIDE READING BIMETAL THERMOMETER

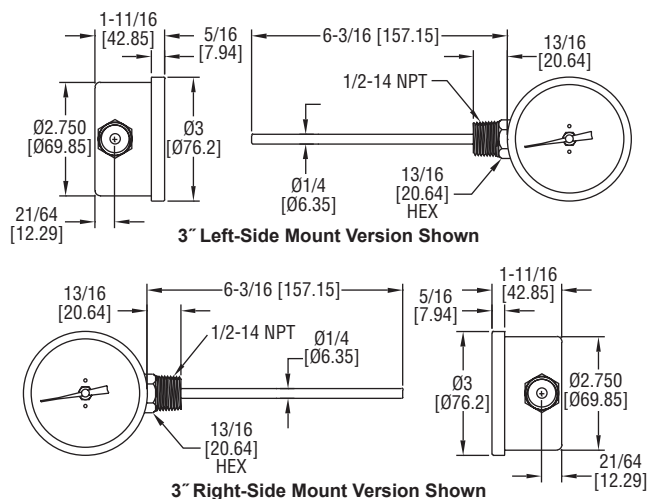
Horizontally Mounts to Tank



BTLS



BTLR



The **SERIES BTL** Side Reading Bimetal Thermometers are a great fit for tight, compact areas. These horizontally mounted thermometers face upright to allow quick and easy measurements.

## FEATURES/BENEFITS

- Dial face positioned for horizontal mounting
- Scratch resistant lens

## APPLICATIONS

- Tank or vessel monitoring

| MODEL CHART |             |            |                           |           |             |            |                           |
|-------------|-------------|------------|---------------------------|-----------|-------------|------------|---------------------------|
| Model       | Stem Length | Connection | Range*                    | Model     | Stem Length | Connection | Range*                    |
| BTLS32541   | 2-1/2"      | Left-side  | -40 to 160°F              | BTLR32541 | 2-1/2"      | Right-side | -40 to 160°F              |
| BTLS32571   | 2-1/2"      | Left-side  | 50 to 500°F               | BTLR32571 | 2-1/2"      | Right-side | 50 to 500°F               |
| BTLS3255D   | 2-1/2"      | Left-side  | 0 to 250°F (-20 to 120°C) | BTLR3255D | 2-1/2"      | Right-side | 0 to 250°F (-20 to 120°C) |
| BTLS34041   | 4"          | Left-side  | -40 to 160°F              | BTLR34041 | 4"          | Right-side | -40 to 160°F              |
| BTLS34071   | 4"          | Left-side  | 50 to 500°F               | BTLR34071 | 4"          | Right-side | 50 to 500°F               |
| BTLS3405D   | 4"          | Left-side  | 0 to 250°F (-20 to 120°C) | BTLR3405D | 4"          | Right-side | 0 to 250°F (-20 to 120°C) |
| BTLS36041   | 6"          | Left-side  | -40 to 160°F              | BTLR36041 | 6"          | Right-side | -40 to 160°F              |
| BTLS36071   | 6"          | Left-side  | 50 to 500°F               | BTLR36071 | 6"          | Right-side | 50 to 500°F               |
| BTLS3605D   | 6"          | Left-side  | 0 to 250°F (-20 to 120°C) | BTLR3605D | 6"          | Right-side | 0 to 250°F (-20 to 120°C) |

\*Dual scale units available by changing last digit to D. **Example:** BTLS3254D

## SPECIFICATIONS

**Wetted Materials:** 304 SS.

**Lens:** Glass.

**Accuracy:** ±1% FS.

**Temperature Limits:** Ambient: -40 to 392°F (-40 to 200°C).

**Dial Size:** 3".

**Process Connection:** 1/2" NPT.

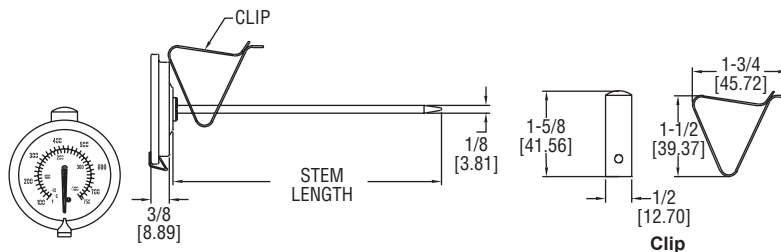
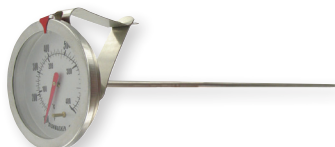
**Resolution:** < 2% of scale.

**Weight:** 9.2 oz (260 g).

## SERIES CBT

# CLIP-ON BIMETAL THERMOMETER

Fits Any Size Pot, Adjustable Set Point Pointer



The **SERIES CBT** Clip-on Thermometers are designed to monitor the temperatures of products while they are cooking in pots, kettles, or other food preparation equipment.

## FEATURES/BENEFITS

- Adjustable clip for easy mounting in pots or kettles
- Reference pointer

## APPLICATIONS

- Food preparation monitoring
- Fryers or other kitchen equipment

## SPECIFICATIONS

**Wetted Materials:** 304 SS.

**Housing Material:** Series 300 SS.

**Lens:** Glass.

**Accuracy:** ±1%.

**Temperature Limits:** Ambient: 15 to 300°F (-10 to 150°C).

**Dial Size:** 1-3/4", 2", and 3".

**Resolution:** 2°.

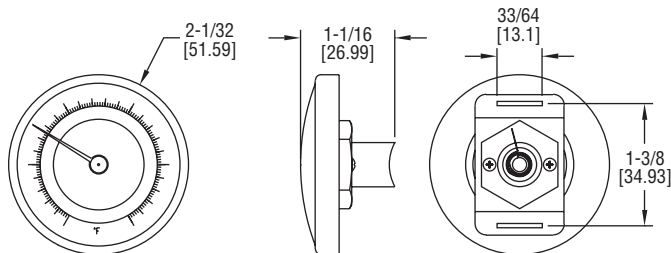
**Weight:** 2.3 oz (65 g).

| MODEL CHART |           |             |              |           |           |             |              |          |           |             |              |
|-------------|-----------|-------------|--------------|-----------|-----------|-------------|--------------|----------|-----------|-------------|--------------|
| Model       | Dial Size | Stem Length | Range*       | Model     | Dial Size | Stem Length | Range*       | Model    | Dial Size | Stem Length | Range*       |
| CBT175041   | 1-3/4"    | 5"          | -40 to 160°F | CBT178071 | 1-3/4"    | 8"          | 50 to 500°F  | CBT28051 | 2"        | 8"          | 0 to 250°F   |
| CBT175051   | 1-3/4"    | 5"          | 0 to 250°F   | CBT178052 | 1-3/4"    | 8"          | -10 to 110°C | CBT28061 | 2"        | 8"          | 50 to 300°F  |
| CBT175061   | 1-3/4"    | 5"          | 50 to 300°F  | CBT25041  | 2"        | 5"          | -40 to 160°F | CBT28071 | 2"        | 8"          | 50 to 500°F  |
| CBT175071   | 1-3/4"    | 5"          | 50 to 500°F  | CBT25051  | 2"        | 5"          | 0 to 250°F   | CBT28052 | 2"        | 8"          | -10 to 110°C |
| CBT175052   | 1-3/4"    | 5"          | -10 to 110°C | CBT25061  | 2"        | 5"          | 50 to 300°F  | CBT38041 | 3"        | 8"          | -40 to 160°F |
| CBT178041   | 1-3/4"    | 8"          | -40 to 160°F | CBT25071  | 2"        | 5"          | 50 to 500°F  | CBT38051 | 3"        | 8"          | 0 to 250°F   |
| CBT178051   | 1-3/4"    | 8"          | 0 to 250°F   | CBT25052  | 2"        | 5"          | -10 to 110°C | CBT38071 | 3"        | 8"          | 50 to 500°F  |
| CBT178061   | 1-3/4"    | 8"          | 50 to 300°F  | CBT28041  | 2"        | 8"          | -40 to 160°F | CBT38052 | 3"        | 8"          | -10 to 110°C |

\*Dual scale units available by changing last digit to D. **Example:** CBT17504D

# PIPE-MOUNT BIMETAL SURFACE THERMOMETER

3 Spring Sizes, Fits Pipe Sizes from 3/4" to 6"



The **SERIES BTP** Pipe-Mount Bimetal Surface Thermometers are designed to accurately measure the surface temperature of a pipe.

## FEATURES/BENEFITS

- Pipe mount design complete with mounting hardware
- Fits 3/4" to 6" pipes

## APPLICATIONS

- HVAC
- Non-intrusive measurement

| MODEL CHART |              |             |        |              |             |
|-------------|--------------|-------------|--------|--------------|-------------|
| Model       | Range        | Spring Size | Model  | Range        | Spring Size |
| BTP251      | -50 to 250°F | 3/4" to 6"  | BTP252 | -40 to 120°C | 3/4" to 6"  |
| BTP241      | 0 to 150°F   | 3/4" to 6"  | BTP262 | 20 to 180°C  | 3/4" to 6"  |
| BTP261      | 70 to 370°F  | 3/4" to 6"  | BTP272 | 20 to 260°C  | 3/4" to 6"  |
| BTP271      | 70 to 500°F  | 3/4" to 6"  | BTP242 | -18 to 66°C  | 3/4" to 6"  |

## SPECIFICATIONS

**Housing Material:** Steel.

**Lens:** Glass.

**Accuracy:** ±2%.

**Temperature Limits:** Ambient: 14 to 302°F (-10 to 150°C).

**Dial Size:** 2".

**Mounting:** Spring.

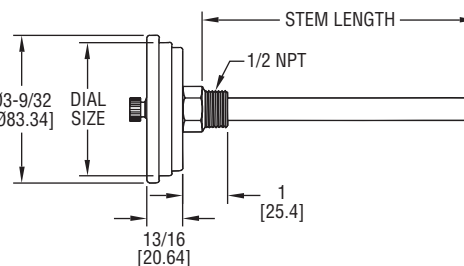
**Resolution:** < 4% of scale.

**Weight:** 3.4 oz (95 g).

## SERIES BTM3

# MAXIMUM/MINIMUM BIMETAL THERMOMETER

Scratch Resistant Glass Lens, Max/Min Temperature Pointer



The **SERIES BTM3** Bimetal Thermometer with Maximum/Minimum Temperature Pointer accurately measures the current temperature along with a maximum read or minimum read temperatures.

## FEATURES/BENEFITS

- Pointer follower indicates max or min temperature the process reached

## APPLICATIONS

- Oven monitoring
- Refrigerators

| MODEL CHART |             |            |                            |           |             |            |                            |
|-------------|-------------|------------|----------------------------|-----------|-------------|------------|----------------------------|
| Model       | Stem Length | Connection | Range °F (°C)              | Model     | Stem Length | Connection | Range °F (°C)              |
| BTM3254D    | 2-1/2"      | Back       | -40 to 160 (-40 to 71.1)   | BTM3606D  | 6"          | Back       | 50 to 300 (10 to 148.9)    |
| BTM32511D   | 2-1/2"      | Back       | 0 to 140 (-17.8 to 60)     | BTM3608D  | 6"          | Back       | 150 to 750 (65.5 to 398.9) |
| BTM32510D   | 2-1/2"      | Back       | 0 to 200 (-17.8 to 93.3)   | BTM3904D  | 9"          | Back       | -40 to 160 (-40 to 71.1)   |
| BTM3256D    | 2-1/2"      | Back       | 50 to 300 (10 to 148.9)    | BTM39011D | 9"          | Back       | 0 to 140 (-17.8 to 60)     |
| BTM3258D    | 2-1/2"      | Back       | 150 to 750 (65.5 to 398.9) | BTM39010D | 9"          | Back       | 0 to 200 (-17.8 to 93.3)   |
| BTM3404D    | 4"          | Back       | -40 to 160 (-40 to 71.1)   | BTM3906D  | 9"          | Back       | 50 to 300 (10 to 148.9)    |
| BTM34011D   | 4"          | Back       | 0 to 140 (-17.8 to 60)     | BTM3908D  | 9"          | Back       | 150 to 750 (65.5 to 398.9) |
| BTM34010D   | 4"          | Back       | 0 to 200 (-17.8 to 93.3)   | BTM3124D  | 12"         | Back       | -40 to 160 (-40 to 71.1)   |
| BTM3406D    | 4"          | Back       | 50 to 300 (10 to 148.9)    | BTM31211D | 12"         | Back       | 0 to 140 (-17.8 to 60)     |
| BTM3408D    | 4"          | Back       | 150 to 750 (65.5 to 398.9) | BTM31210D | 12"         | Back       | 0 to 200 (-17.8 to 93.3)   |
| BTM3604D    | 6"          | Back       | -40 to 160 (-40 to 71.1)   | BTM3126D  | 12"         | Back       | 50 to 300 (10 to 148.9)    |
| BTM36011D   | 6"          | Back       | 0 to 140 (-17.8 to 60)     | BTM3128D  | 12"         | Back       | 150 to 750 (65.5 to 398.9) |
| BTM36010D   | 6"          | Back       | 0 to 200 (-17.8 to 93.3)   |           |             |            |                            |

## SPECIFICATIONS

**Wetted Materials:** 304 SS.

**Housing Material:** 300 SS.

**Lens:** Scratch resistant glass.

**Accuracy:** ±1%.

**Temperature Limits:** Ambient: 15 to 300°F (-10 to 150°C).

**Dial Size:** 3".

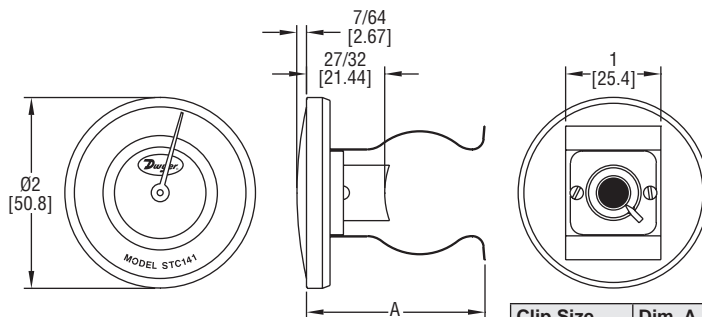
**Process Connection:** 1/2" NPT.

**Resolution:** 2°.

**Weight:** 7.4 oz (210 g).

# PIPE-MOUNT BIMETAL SURFACE THERMOMETER

Fits Pipe Sizes from 3/4" to 2-3/8", Clip-on Mount



| Clip Size      | Dim. A        |
|----------------|---------------|
| 3/4 to 7/8     | 1-5/8 [41.28] |
| 1 to 1-5/8     | 1-7/8 [47.63] |
| 1-5/8 to 2-3/8 | 2-1/2 [63.5]  |

The **SERIES STC** Pipe-Mount Bimetal Surface Thermometers are designed to accurately measure a pipe surface temperature. The STC series is available in three different clip sizes and feature a bimetal spiral spring sensing element that provides quick temperature readings.

## FEATURES/BENEFITS

- Integral pipe mount models for 3/4" to 2-3/8" pipe

## APPLICATIONS

- HVAC
- Non-intrusive temperature measurement

| MODEL CHART |              |              |        |              |                  |
|-------------|--------------|--------------|--------|--------------|------------------|
| Model       | Range        | Pipe Size    | Model  | Range        | Pipe Size        |
| STC151      | -50 to 250°F | 3/4" to 7/8" | STC361 | 70 to 370°F  | 1" to 1-5/8"     |
| STC141      | 0 to 150°F   | 3/4" to 7/8" | STC371 | 70 to 500°F  | 1" to 1-5/8"     |
| STC161      | 70 to 370°F  | 3/4" to 7/8" | STC372 | 20 to 260°C  | 1" to 1-5/8"     |
| STC152      | -40 to 120°C | 3/4" to 7/8" | STC451 | -50 to 250°F | 1-5/8" to 2-3/8" |
| STC162      | 20 to 180°C  | 3/4" to 7/8" | STC441 | 0 to 150°F   | 1-5/8" to 2-3/8" |
| STC172      | 20 to 260°C  | 3/4" to 7/8" | STC461 | 70 to 370°F  | 1-5/8" to 2-3/8" |
| STC351      | -50 to 250°F | 1" to 1-5/8" | STC462 | 20 to 180°C  | 1-5/8" to 2-3/8" |
| STC341      | 0 to 150°F   | 1" to 1-5/8" | STC472 | 20 to 260°C  | 1-5/8" to 2-3/8" |

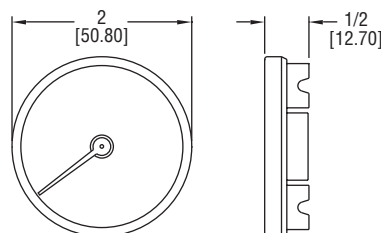
## SPECIFICATIONS

**Housing Material:** Steel.  
**Lens:** Glass.  
**Accuracy:** ±2%.  
**Resolution:** < 4% of scale.  
**Temperature Limits:** Ambient: 14 to 302°F (-10 to 150°C).  
**Dial Size:** 2".  
**Mounting:** Clip.  
**Weight:** 3.4 oz (95 g).

## SERIES ST

# SURFACE MOUNT THERMOMETER

2" Dual Scale Dial, ±2% FS Accuracy



The **SERIES ST** Surface Mount Thermometer easily mounts to and measures the temperature of any ferrous surface.

## FEATURES/BENEFITS

- Magnetic mount works on any ferrous surface

## APPLICATIONS

- HVAC, air ducts
- Refrigerators

| MODEL CHART |                           |
|-------------|---------------------------|
| Model       | Range                     |
| ST250       | 0 to 250°F (-20 to 120°C) |
| ST500       | 0 to 500°F (-20 to 260°C) |
| ST750       | 50 to 750°F (10 to 400°C) |

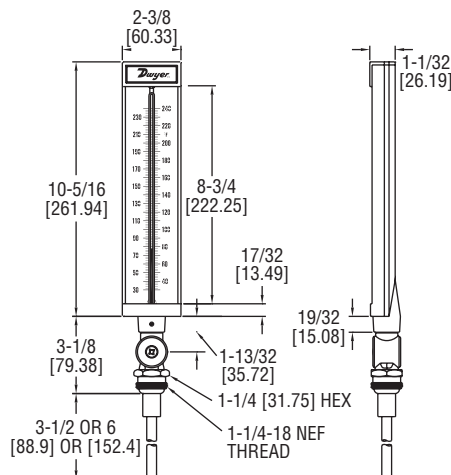
## SPECIFICATIONS

**Housing Material:** Aluminum.  
**Accuracy:** ±2% FS.  
**Sensing Element:** Bimetal coil.  
**Dial Size:** 2" (5.08 cm).  
**Response Time:** Approximately one minute.  
**Mounting:** Two Alnico magnets on back.  
**Height:** 1/2" (1.27 cm).  
**Weight:** 2 oz (56.7 g).

**Dwyer**  
SERIES IT

# INDUSTRIAL THERMOMETER

9" Scale, Adjustable Angle Stem



The **SERIES IT** Industrial Thermometer allows users to easily take accurate temperature measurements in any environment. The case of the IT series is made of die cast aluminum for extra durability in industrial environments.

## FEATURES/BENEFITS

- Organic, non-toxic fill fluid
- Dual scale in °F and °C
- Adjustable stem angle

## APPLICATIONS

- Boiler or chiller temperature monitoring

## MODEL CHART

| 3-1/2" Stem Model | Range                      | 6" Stem Model | Range                      |
|-------------------|----------------------------|---------------|----------------------------|
| ITA9351D          | -40 to 110°F (-40 to 43°C) | ITA9601D      | -40 to 110°F (-40 to 43°C) |
| ITA9352D          | 0 to 120°F (-17 to 49°C)   | ITA9602D      | 0 to 120°F (-17 to 49°C)   |
| ITA9353D          | 0 to 160°F (-17 to 71°C)   | ITA9603D      | 0 to 160°F (-17 to 71°C)   |
| ITA9354D          | 20 to 180°F (-6 to 82°C)   | ITA9604D      | 20 to 180°F (-6 to 82°C)   |
| ITA9355D          | 30 to 240°F (0 to 114°C)   | ITA9605D      | 30 to 240°F (0 to 114°C)   |
| ITA9356D          | 30 to 300°F (-1 to 149°C)  | ITA9606D      | 30 to 300°F (-1 to 149°C)  |
| ITA9357D          | 50 to 400°F (10 to 240°C)  |               |                            |
| ITA9358D          | 50 to 550°F (10 to 288°C)  |               |                            |

## SPECIFICATIONS

**Wetted Material:** Tapered cast aluminum with graphite fill.

**Housing Material:** 9" (228 mm) aluminum.

**Lens:** Glass.

**Accuracy:** 1% accuracy.

**Scales:** Aluminum painted white with black markings.

**Process Connection:** 1-1/4-18 NEF thread.

**Liquid Filling:** Organic blue liquid filled tube.

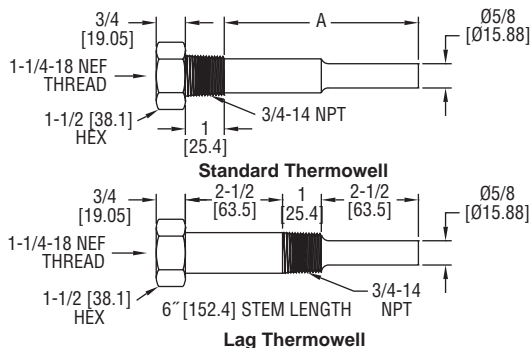
**Mounting:** Adjustable stem: Vertical plane 180° horizontal plane 360°.

**Weight:** 1 lb 7 oz (0.65 kg).

## SERIES IT-W

# INDUSTRIAL THERMOMETER THERMOWELLS

Fits IT Thermometers with 3-1/2" and 6" Stem Lengths



The **SERIES IT-W** Thermowells reduce installation cost and time by eliminating the need to drain the system when servicing industrial thermometers. The thermowells protect industrial thermometers from high pressure, flow and corrosive media.

## FEATURES/BENEFITS

- Designed to fit the Series IT industrial thermometers
- Lag stems available

## APPLICATIONS

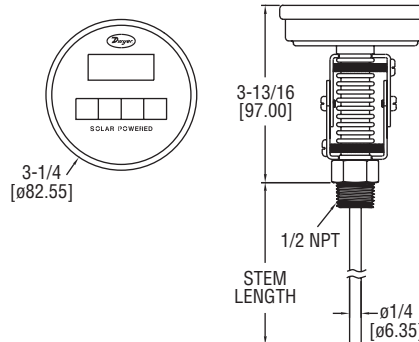
- Boiler or chiller temperature monitoring

| MODEL CHART |          |                  |        |
|-------------|----------|------------------|--------|
| Model       | Material | Insertion Length | Lag    |
| IT-W01      | Brass    | 2-1/2"           | N/A    |
| IT-W11      | 304 SS   | 2-1/2"           | N/A    |
| IT-W21      | 316 SS   | 2-1/2"           | N/A    |
| IT-W04      | Brass    | 5"               | N/A    |
| IT-W14      | 304 SS   | 5"               | N/A    |
| IT-W24      | 316 SS   | 5"               | N/A    |
| IT-W07      | Brass    | 2-1/2"           | 2-1/2" |
| IT-W17      | 304 SS   | 2-1/2"           | 2-1/2" |
| IT-W27      | 316 SS   | 2-1/2"           | 2-1/2" |



# DIGITAL SOLAR-POWERED BIMETAL THERMOMETER

## LCD Display, Adjustable Angle Stem



The **SERIES DBT** Digital Solar-Powered Bimetal Thermometer takes the guesswork out of temperature measurement.

### FEATURES/BENEFITS

- Field selectable °F or °C temperature units
- 0.1° resolution
- Adjustable dial position

### APPLICATIONS

- Boiler or chiller temperature monitoring
- HVAC duct monitoring

### SPECIFICATIONS

**Wetted Materials:** 304 SS.  
**Housing Material:** 300 SS.  
**Lens:** Glass.  
**Accuracy:** 32 to 122°F (0 to 50°C): ±1% FS.  
**Dial Size:** 3".  
**Process Connection:** 1/2" NPT-adjustable angle.  
**Display:** 3-1/2 digit LCD.  
**Response Time:** 15 seconds.  
**Supply Power:** 3-volt solar cell (minimum 35 LUX required).  
**Weight:** 12 oz (350 g).

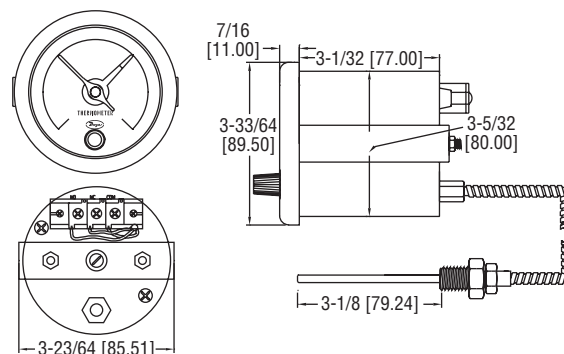
### MODEL CHART

| Model    | Stem Length | Range                       | Model    | Stem Length | Range                       |
|----------|-------------|-----------------------------|----------|-------------|-----------------------------|
| DBTA3251 | 2.5"        | -58 to 302°F (-50 to 150°C) | DBTA3121 | 12"         | -58 to 302°F (-50 to 150°C) |
| DBTA3252 | 2.5"        | -58 to 158°F (-50 to 70°C)  | DBTA3122 | 12"         | -58 to 158°F (-50 to 70°C)  |
| DBTA3401 | 4"          | -58 to 302°F (-50 to 150°C) | DBTA3151 | 15"         | -58 to 302°F (-50 to 150°C) |
| DBTA3402 | 4"          | -58 to 158°F (-50 to 70°C)  | DBTA3152 | 15"         | -58 to 158°F (-50 to 70°C)  |
| DBTA3601 | 6"          | -58 to 302°F (-50 to 150°C) | DBTA3181 | 18"         | -58 to 302°F (-50 to 150°C) |
| DBTA3602 | 6"          | -58 to 158°F (-50 to 70°C)  | DBTA3182 | 18"         | -58 to 158°F (-50 to 70°C)  |
| DBTA3901 | 9"          | -58 to 302°F (-50 to 150°C) | DBTA3241 | 24"         | -58 to 302°F (-50 to 150°C) |
| DBTA3902 | 9"          | -58 to 158°F (-50 to 70°C)  | DBTA3242 | 24"         | -58 to 158°F (-50 to 70°C)  |

### SERIES RRT3

# REMOTE READING THERMOMETER WITH SWITCH

## SPDT Relay, Liquid Actuated Bulb and Capillary



The **SERIES RRT3** Remote Reading Thermometer with Switch combines an easy to read 3-1/4" dual scale dial thermometer and a SPDT relay. Color coordinated pointers display the current process temperature and set point.

### FEATURES/BENEFITS

- Quick connect electrical terminals
- Industrial armored capillary

### APPLICATIONS

- High temp shut down in process applications
- Boiler or chiller control

### MODEL CHART

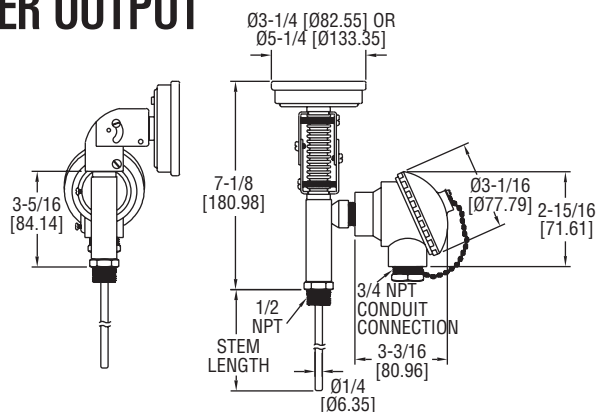
| Model    | Temperature Ranges         |
|----------|----------------------------|
| RRT3120U | -40 to 120°F (-40 to 50°C) |
| RRT3250U | 32 to 248°F (0 to 120°C)   |
| RRT3300U | 0 to 300°F (-18 to 149°C)  |

### SPECIFICATIONS

**Wetted Materials:** Brass.  
**Accuracy:** ±3% FS.  
**Housing Material:** 304 SS.  
**Temperature Limit:** -4 to 158°F (-20 to 70°C).  
**Switch Type:** SPDT.  
**Electrical Ratings:** 3 A @ 250 VAC, .2 A @ 250 VDC.  
**Electrical Connections:** Screw terminal.  
**Process Connection:** 1/2" (12.7 mm) male NPT.  
**Dial Size:** 3-1/2" (90 mm).  
**Capillary Length:** 10.5' (3.2 m).  
**Bulb Length:** 3-1/8" (79.24 mm).  
**Weight:** 2 lb (900 g).

**Dwyer****SERIES BTO****BIMETAL THERMOMETER WITH TRANSMITTER OUTPUT**

Bimetal Stem with 4 to 20 mA Output, 3" or 5" Dial



The **SERIES BTO** Bimetal Thermometer with Transmitter Output eliminates the need for a separate thermometer and transmitter.

**FEATURES/BENEFITS**

- Thermometer and transmitter in one device
- Weatherproof construction

**APPLICATIONS**

- Boilers
- Compressors
- Thermal oxidizers

**SPECIFICATIONS****THERMOMETER SPECIFICATIONS**

**Wetted Materials:** 304 SS.  
**Housing Material:** 304 SS.  
**Lens:** Glass.  
**Accuracy:**  $\pm 1\%$  FS.  
**Temperature Limits:** Ambient: -58 to 185°F (-50 to 85°C).  
**Dial Size:** 3" or 5".  
**Process Connection:** 1/2" NPT.  
**Resolution:** 2°F (5°F for 400°F and 550°F models).  
**Weight:** 1.95 lb.

**TRANSMITTER SPECIFICATIONS**

**Temperature Limits:** Ambient: -58 to 185°F (-50 to 85°C).  
**Power Requirement:** 10 to 33 VDC.  
**Output Signal:** 4 to 20 mA.  
**Loop Resistance:** 1045  $\Omega$ .  
**Power Consumption:** 38 mA.  
**Enclosure Rating:** NEMA 4X (IP66).

**MODEL CHART**

| Model    | Dial Size | Stem Length | Range       | Model    | Dial Size | Stem Length | Range       |
|----------|-----------|-------------|-------------|----------|-----------|-------------|-------------|
| BTO32551 | 3"        | 2.5"        | 0 to 250°F  | BTO52551 | 5"        | 2.5"        | 0 to 250°F  |
| BTO32571 | 3"        | 2.5"        | 50 to 550°F | BTO52571 | 5"        | 2.5"        | 50 to 550°F |
| BTO34051 | 3"        | 4"          | 0 to 250°F  | BTO54051 | 5"        | 4"          | 0 to 250°F  |
| BTO34071 | 3"        | 4"          | 50 to 550°F | BTO54071 | 5"        | 4"          | 50 to 550°F |
| BTO36051 | 3"        | 6"          | 0 to 250°F  | BTO56051 | 5"        | 6"          | 0 to 250°F  |
| BTO36071 | 3"        | 6"          | 50 to 550°F | BTO56071 | 5"        | 6"          | 50 to 550°F |
| BTO39051 | 3"        | 9"          | 0 to 250°F  | BTO59051 | 5"        | 9"          | 0 to 250°F  |
| BTO39071 | 3"        | 9"          | 50 to 550°F | BTO59071 | 5"        | 9"          | 50 to 550°F |
| BTO31251 | 3"        | 12"         | 0 to 250°F  | BTO51251 | 5"        | 12"         | 0 to 250°F  |
| BTO31271 | 3"        | 12"         | 50 to 550°F | BTO51271 | 5"        | 12"         | 50 to 550°F |

**Note:** -40 to 160°F, 0 to 200°F, 50 to 300°F, and 50 to 400°F ranges available, contact factory for more information

**MODEL LOVELINK™III****CONFIGURATION MONITORING & LOGGING SOFTWARE**

Designed for Love Temperature Controls



**MODEL LOVELINK™III** Configuration, Monitoring and Logging Software is an easy to use program allowing connection of up to 40 controls on a single computer port. Data logging can be set up by individual control with varying logging parameters.

**FEATURES/BENEFITS**

- Address and store data for up to 40 controls
- Data logging at individually adjustable rates
- On-screen graphing for up to 10 zones
- Upload and download control configuration profiles
- Save and retrieve control configuration profiles

**COMPUTER REQUIREMENTS**

The LoveLink™III software application will run on Windows® 2000 and Windows® XP Software. One available RS-232 or RS-485 port is needed to communicate with the temperature control(s). A minimum of 4 MB of hard disk space is needed for the LoveLink™III software application files, and additional hard disk space is needed to store temperature log files. Log file size will vary depending on the Duration and Rate selected for the controls and the number of controls on line.

**CONTROL REQUIREMENTS**

The temperature controls supported by LoveLink™III software are the Love 4B, 4C, 2600, 8B, 8C, 8600, 16A, 16B, 16C, 16L, 32A, 32B, 32DZ, SCD and SCZ Series.

**MODEL CHART**

| Model        |
|--------------|
| LOVELINK III |

**ACCESSORIES**

| Model | Description                     |
|-------|---------------------------------|
| MN-1  | Mini-Node™ USB/RS-485 converter |

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 Windows NT® is a registered trademark of Microsoft Corporation

# TEMPERATURE LOOP CONTROLLERS

Universal Temperature Input, Single Control Output, RS-485 Communication



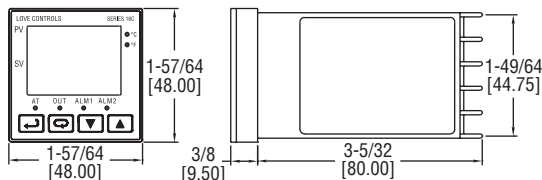
16C



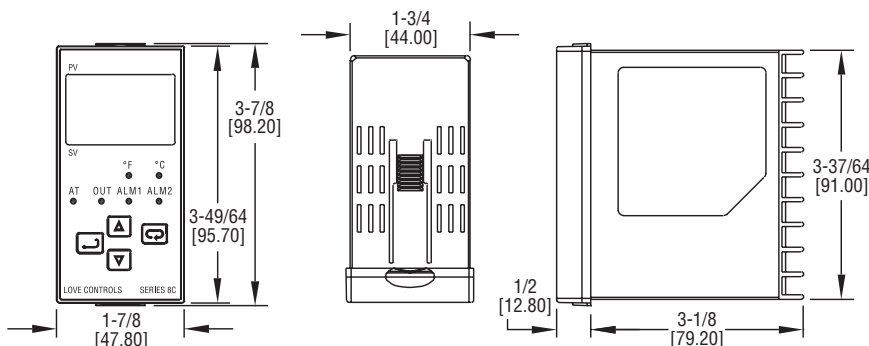
8C



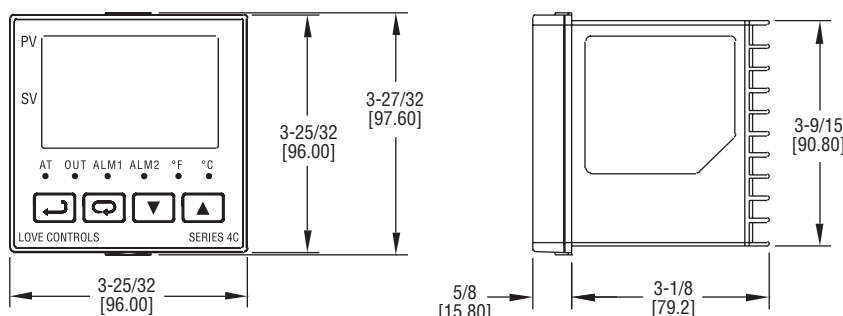
4C



16C



8C



4C

The **SERIES 16C, 8C, & 4C** Temperature Loop Controllers offer advanced control features for the most demanding temperature or process applications. Offered in 3 standard DIN cutout housing sizes, these controllers are designed with dual, 4 digit LED displays for local indication of the process value, setpoint, and output conditions.

## FEATURES/BENEFITS

- Universal input accepts RTD or thermocouple sensors
- On/Off, PID, or manual output control
- RS-485 standard on all models

## APPLICATIONS

- Oven, boiler, or chiller control
- Hot plates/melt pots
- Food service equipment
- Environmental chambers
- Packaging equipment

| MODEL CHART |               |
|-------------|---------------|
| Model       | Output        |
| 16C-2       | Voltage pulse |
| 16C-3       | Relay         |
| 16C-5       | Current       |

| MODEL CHART |               |
|-------------|---------------|
| Model       | Output        |
| 8C-2        | Voltage pulse |
| 8C-3        | Relay         |
| 8C-5        | Current       |

| MODEL CHART |               |
|-------------|---------------|
| Model       | Output        |
| 4C-2        | Voltage pulse |
| 4C-3        | Relay         |
| 4C-5        | Current       |

| ACCESSORIES |                                    |
|-------------|------------------------------------|
| Model       | Description                        |
| MN-1        | Mini-Node™ RS-485 to USB converter |
| SCD-SW      | Configuration software             |
| A-600       | R/C snubber                        |

## SPECIFICATIONS

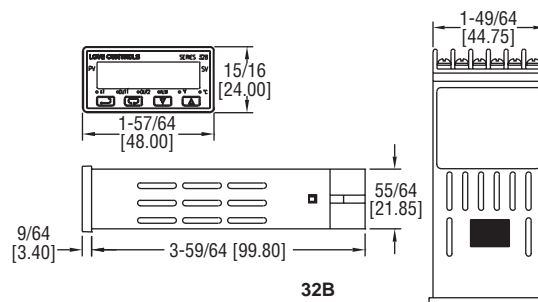
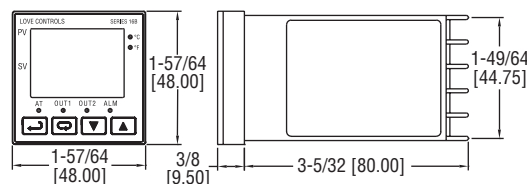
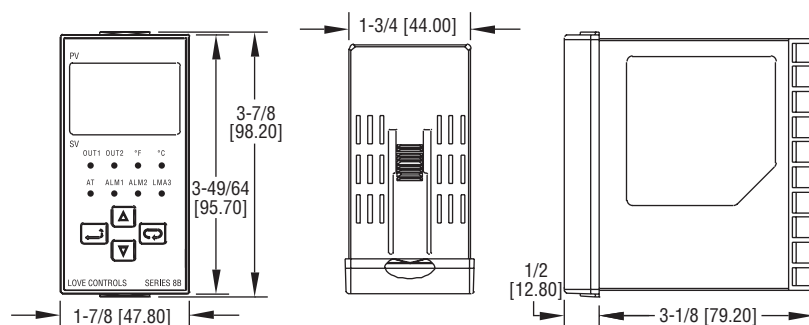
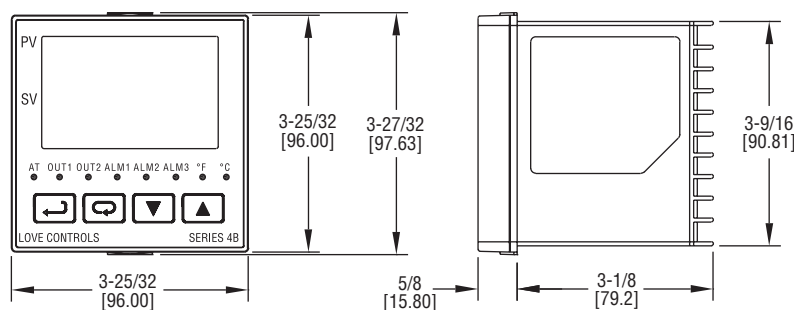
**Inputs:** Thermocouple or RTD.  
**Display:** Two 4 digit, 7 segment LED's. PV: Red, SV: Green.  
**Accuracy:**  $\pm 0.25\%$  of span,  $\pm 1$  least significant digit.  
**Power Requirements:** 100 to 240 VAC, 50/60 Hz.  
**Power Consumption:** 5 VA max.  
**Operating Temperature:** 32 to 122°F (0 to 50°C).  
**Memory Backup:** Nonvolatile memory.  
**Control Output Ratings:** Relay: SPST, 5 A @ 250 VAC resistive for 16C; SPDT, 5 A @ 250 VAC resistive for 8C and 4C; Voltage Pulse: 14 VDC (max. 40 mA); Current: 4 to 20 mA.  
**Communication:** RS-485 Modbus® ASCII communication protocol.  
**Weight:** 4 oz (114g) for 16C, 15 oz (425g) for 8C and 4C.  
**Front Panel Rating:** IP56.  
**Agency Approvals:** CE, cULus.

| INPUT RANGES |                                 |
|--------------|---------------------------------|
| Input Types  | Range                           |
| K Type TC    | -328 to 2372°F (-200 to 1300°C) |
| K Type TC    | -328 to 932°F (-200 to 500°C)   |
| J Type TC    | -148 to 2192°F (-100 to 1200°C) |
| J Type TC    | -4 to 752°F (-20 to 400°C)      |
| T Type TC    | -328 to 752°F (-200 to 400°C)   |
| T Type TC    | 4 to 752°F (-20 to 400°C)       |
| E Type TC    | 32 to 1112°F (0 to 600°C)       |
| N Type TC    | -328 to 2372°F (-200 to 1300°C) |
| R Type TC    | 32 to 3092°F (0 to 1700°C)      |
| S Type TC    | 32 to 3092°F (0 to 1700°C)      |
| B Type TC    | 212 to 3272°F (100 to 1800°C)   |
| L Type TC    | -328 to 932°F (-200 to 500°C)   |
| U Type TC    | -328 to 1472°F (-200 to 800°C)  |
| Pt 100 RTD   | -328 to 1112°F (-200 to 600°C)  |
| Pt 100 RTD   | -4 to 932°F (-20 to 500°C)      |
| Pt 100 RTD   | 32 to 212°F (0 to 100°C)        |

**Dwyer****SERIES 32B, 16B, 8B, & 4B**

# TEMPERATURE/PROCESS LOOP CONTROLLERS

Universal Input, Dual Control Output, RS-485 Communication

**32B****16B****8B****4B****32B****16B****8B****4B**

The **SERIES 32B, 16B, 8B, & 4B** Temperature/Process controllers offer advanced control features for the most demanding temperature or process applications. Offered in 4 standard DIN cutout housing sizes, these controllers are designed with dual, 4 digit LED displays for local indication of the process value, setpoint, and output conditions.

## FEATURES/BENEFITS

- Universal input accepts process transmitters, RTD's or thermocouple signals
- On/off, PID, or manual output control
- RS-485 standard on all models
- Stage control program for up to 64 ramp/soak actions

## APPLICATIONS

- Oven, boiler, or chiller control
- Hot plates/melt pots
- Packaging equipment
- Environmental chambers
- Medical equipment
- Food service equipment

## SPECIFICATIONS

**Inputs:** Thermocouple, RTD, DC voltages or DC current.  
**Display:** Two 4 digit, 7 segment LED's. PV: Red, SV: Green.  
**Accuracy:**  $\pm 0.25\%$  span,  $\pm 1$  least significant digit.  
**Power Requirements:** 100 to 240 VAC, 50/60 Hz; Optional 24 VDC.  
**Power Consumption:** 5 VA max.  
**Operating Temperature:** 32 to 122°F (0 to 50°C).  
**Memory Backup:** Nonvolatile memory.  
**Control Output Ratings:** Relay: SPST, 3 A @ 250 VAC resistive for 32B; SPST, 5 A @ 250 VAC resistive for 16B; SPDT, 5 A @ 250 VAC resistive for 8B and 4B; Voltage pulse: 14 VDC (max. 40 mA); Current: 4 to 20 mA; Linear voltage: 0 to 10 V.  
**Communication:** RS-485 Modbus® ASCII/RTU communication protocol.  
**Weight:** 32B and 16B: 4 oz (114 g); 8B and 4B: 15 oz (425 g).  
**Front Panel Rating:** IP56.  
**Agency Approvals:** CE, cULus.



# TEMPERATURE/PROCESS LOOP CONTROLLERS

Universal Input, Dual Control Output, RS-485 Communication

| MODEL CHART - 32B |                |               |          |
|-------------------|----------------|---------------|----------|
| Model             | Supply Power   | Output 1      | Output 2 |
| 32B-23            | 100 to 240 VAC | Voltage pulse | Relay    |
| 32B-23-LV         | 24 VDC         | Voltage pulse | Relay    |
| 32B-33            | 100 to 240 VAC | Relay         | Relay    |
| 32B-33-LV         | 24 VDC         | Relay         | Relay    |
| 32B-53            | 100 to 240 VAC | Current       | Relay    |
| 32B-53-LV         | 24 VDC         | Current       | Relay    |

| MODEL CHART - 16B |                |                |          |
|-------------------|----------------|----------------|----------|
| Model             | Supply Power   | Output 1       | Output 2 |
| 16B-23            | 100 to 240 VAC | Voltage pulse  | Relay    |
| 16B-23-LV         | 24 VDC         | Voltage pulse  | Relay    |
| 16B-33            | 100 to 240 VAC | Relay          | Relay    |
| 16B-33-LV         | 24 VDC         | Relay          | Relay    |
| 16B-53            | 100 to 240 VAC | Current        | Relay    |
| 16B-53-LV         | 24 VDC         | Current        | Relay    |
| 16B-63            | 100 to 240 VAC | Linear voltage | Relay    |
| 16B-63-LV         | 24 VDC         | Linear voltage | Relay    |

| MODEL CHART - 8B |                |                |          |
|------------------|----------------|----------------|----------|
| Model            | Supply Power   | Output 1       | Output 2 |
| 8B-23            | 100 to 240 VAC | Voltage pulse  | Relay    |
| 8B-23-LV         | 24 VDC         | Voltage pulse  | Relay    |
| 8B-33            | 100 to 240 VAC | Relay          | Relay    |
| 8B-33-LV         | 24 VDC         | Relay          | Relay    |
| 8B-53            | 100 to 240 VAC | Current        | Relay    |
| 8B-53-LV         | 24 VDC         | Current        | Relay    |
| 8B-63            | 100 to 240 VAC | Linear voltage | Relay    |
| 8B-63-LV         | 24 VDC         | Linear voltage | Relay    |

| MODEL CHART - 4B |                |                |          |
|------------------|----------------|----------------|----------|
| Model            | Supply Power   | Output 1       | Output 2 |
| 4B-23            | 100 to 240 VAC | Voltage pulse  | Relay    |
| 4B-23-LV         | 24 VDC         | Voltage pulse  | Relay    |
| 4B-33            | 100 to 240 VAC | Relay          | Relay    |
| 4B-33-LV         | 24 VDC         | Relay          | Relay    |
| 4B-53            | 100 to 240 VAC | Current        | Relay    |
| 4B-53-LV         | 24 VDC         | Current        | Relay    |
| 4B-63            | 100 to 240 VAC | Linear voltage | Relay    |
| 4B-63-LV         | 24 VDC         | Linear voltage | Relay    |
| 4B-33-986/U      | 120 VAC        | Relay          | Relay    |

| INPUT RANGES |                                 |
|--------------|---------------------------------|
| Input Types  | Range                           |
| K Type TC    | -328 to 2372°F (-200 to 1300°C) |
| J Type TC    | -148 to 2192°F (-100 to 1200°C) |
| T Type TC    | -328 to 752°F (-200 to 400°C)   |
| E Type TC    | 32 to 1112°F (0 to 600°C)       |
| W Type TC    | -328 to 2372°F (-200 to 1300°C) |
| R Type TC    | 32 to 3092°F (0 to 1700°C)      |
| S Type TC    | 32 to 3092°F (0 to 1700°C)      |
| B Type TC    | 212 to 3272°F (100 to 1800°C)   |
| L Type TC    | -328 to 1562°F (-200 to 850°C)  |
| U Type TC    | -328 to 932°F (-200 to 500°C)   |
| JPt 100 RTD  | -4 to 752°F (-20 to 400°C)      |
| Pt 100 RTD   | -328 to 1562°F (-200 to 850°C)  |
| 0 to 5 V     | -999 to 9999                    |
| 0 to 10 V    | -999 to 9999                    |
| 0 to 20 mA*  | -999 to 9999                    |
| 4 to 20 mA*  | -999 to 9999                    |
| 0 to 50 mV   | -999 to 9999                    |

\*Requires 250 Ω precision resistor across input terminals

| ACCESSORIES |   |
|-------------|---|
| Model       | Description                                       |
| MN-1        | Mini-Node™ USB/RS-485 converter                   |
| SCD-SW      | Configuration software                            |
| A-277       | 250 Ω precision resistor                          |
| A-600       | R/C snubber                                       |
| A-900       | Weatherproof front mount enclosure                |
| A-901       | Weatherproof internal mount enclosure with window |

## Application Note:

When using a relay output to operate a contactor or solenoid an R/C snubber should be installed across the coil to prevent damage to the controller relays.



4B-33-986/U Benchtop Controller



A-600



MN-1



A-900



A-901



SERIES 16G, 8G, & 4G

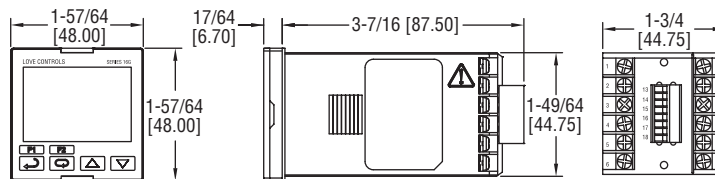


# TEMPERATURE/PROCESS LOOP CONTROLLERS

Universal Input, Dual Output, On/Off PID or FUZZY Logic Output Control



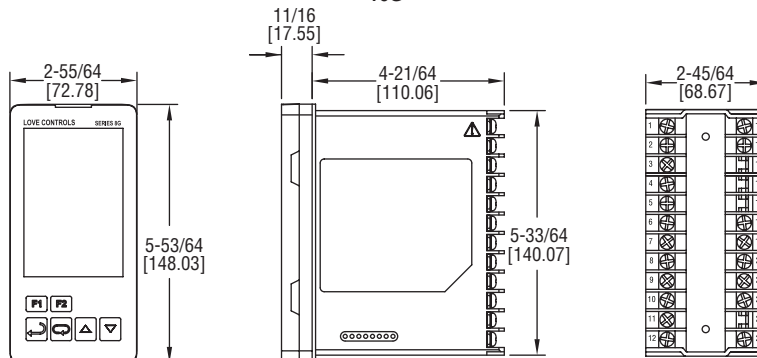
16G



16G



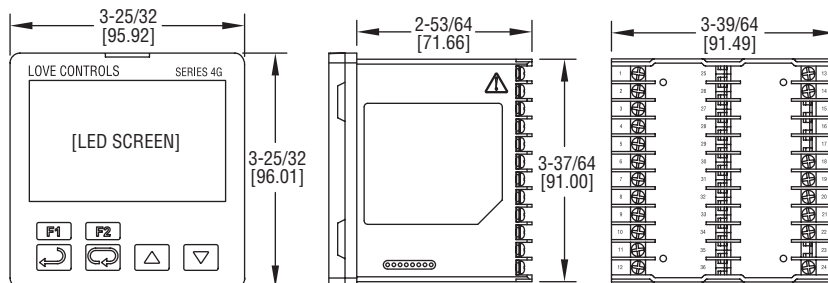
8G



8G



4G



4G

The **SERIES 16G, 8G, & 4G** Temperature/Process Loop Controllers allow for monitoring and control of temperature or process conditions. The controller features two independent control outputs for dual loop control using on/off, auto-tune or self-tune PID, fuzzy logic, or manual control methods. RS-485 interface is included with Modbus® communication protocol, for easy bench-top configuration or integration with a PLC or data control system.

## FEATURES/BENEFITS

- On/off, PID, fuzzy logic, or manual output control
- Constant, sloped, program (ramp/soak), or remote set-point control
- 2 primary control outputs, 2 secondary/alarm relay outputs, and RS-485 standard on all models
- Remote set-point, input retransmission, or event input functions available with optional hardware

## APPLICATIONS

- Oven control
- Packaging equipment
- Parts washers

## SPECIFICATIONS

**Inputs:** Thermocouple, RTD, DC voltages or DC current.

**Display:** Process value: 4 digit, 0.47" H (12mm), orange LCD; Set point value: 4 digit, 0.47" H (12mm), green LCD.

**Accuracy:**  $\pm 1.8^\circ\text{F}$  plus  $\pm 0.3\%$  of span ( $\pm 1^\circ\text{C}$  plus  $\pm 0.3\%$  of span) at  $77^\circ\text{F}$  ( $25^\circ\text{C}$ ) after 20 minutes warm up.

**Power Requirements:** 100 to 240 VAC -20/+8%, 50/60 Hz; Optional 24 VDC,  $\pm 10\%$ .

**Power Consumption:** 5 VA max.

**Operating Temperature:**  $32$  to  $122^\circ\text{F}$  ( $0$  to  $50^\circ\text{C}$ ).

**Storage Temperature:**  $-42$  to  $150^\circ\text{F}$  ( $-20$  to  $65^\circ\text{C}$ ).

**Memory Backup:** Nonvolatile memory.

**Control Output Ratings:** Relay: SPST, 5 A @ 250 VAC resistive; Voltage pulse: 12 V (max. 40 mA); Current: 4 to 20 mA; Linear voltage: 0 to 10 V.

**Alarm Relay Ratings:** 3 A @ 250 VAC resistive.

**Communication:** RS-485 Modbus® ASCII/RTU communication protocol.

**Weight:** 9 oz (255g).

**Front Panel Rating:** IP66.

**Agency Approvals:** CE, cULus.

# TEMPERATURE/PROCESS LOOP CONTROLLERS

Universal Input, Dual Output, On/Off PID or FUZZY Logic Output Control

| MODEL CHART - 16G |                |          |                |           |
|-------------------|----------------|----------|----------------|-----------|
| Model             | Output 1       | Output 2 | Option 1       | Option 2  |
| 16G-23-11         | Voltage pulse  | Relay    | Event          | Event     |
| 16G-23-31         | Voltage pulse  | Relay    | Input retrans. | Event     |
| 16G-23-32         | Voltage pulse  | Relay    | Input retrans. | Remote SP |
| 16G-33-11         | Relay          | Relay    | Event          | Event     |
| 16G-33-31         | Relay          | Relay    | Input retrans. | Event     |
| 16G-33-32         | Relay          | Relay    | Input retrans. | Remote SP |
| 16G-53-11         | Current        | Relay    | Event          | Event     |
| 16G-53-31         | Current        | Relay    | Input retrans. | Event     |
| 16G-53-32         | Current        | Relay    | Input retrans. | Remote SP |
| 16G-63-11         | Linear voltage | Relay    | Event          | Event     |
| 16G-63-31         | Linear voltage | Relay    | Input retrans. | Event     |
| 16G-63-32         | Linear voltage | Relay    | Input retrans. | Remote SP |

| MODEL CHART - 8G |                |          |                |           |
|------------------|----------------|----------|----------------|-----------|
| Model            | Output 1       | Output 2 | Option 1       | Option 2  |
| 8G-23-31         | Voltage pulse  | Relay    | Input retrans. | Event     |
| 8G-23-32         | Voltage pulse  | Relay    | Input retrans. | Remote SP |
| 8G-33-31         | Relay          | Relay    | Input retrans. | Event     |
| 8G-33-32         | Relay          | Relay    | Input retrans. | Remote SP |
| 8G-53-31         | Current        | Relay    | Input retrans. | Event     |
| 8G-53-32         | Current        | Relay    | Input retrans. | Remote SP |
| 8G-63-31         | Linear voltage | Relay    | Input retrans. | Event     |
| 8G-63-32         | Linear voltage | Relay    | Input retrans. | Remote SP |

| MODEL CHART - 4G |                |          |                |           |
|------------------|----------------|----------|----------------|-----------|
| Model            | Output 1       | Output 2 | Option 1       | Option 2  |
| 4G-23-11         | Voltage pulse  | Relay    | Event          | Event     |
| 4G-23-31         | Voltage pulse  | Relay    | Input retrans. | Event     |
| 4G-23-32         | Voltage pulse  | Relay    | Input retrans. | Remote SP |
| 4G-33-11         | Relay          | Relay    | Event          | Event     |
| 4G-33-31         | Relay          | Relay    | Input retrans. | Event     |
| 4G-33-32         | Relay          | Relay    | Input retrans. | Remote SP |
| 4G-53-11         | Current        | Relay    | Event          | Event     |
| 4G-53-31         | Current        | Relay    | Input retrans. | Event     |
| 4G-53-32         | Current        | Relay    | Input retrans. | Remote SP |
| 4G-63-11         | Linear voltage | Relay    | Event          | Event     |
| 4G-63-31         | Linear voltage | Relay    | Input retrans. | Event     |
| 4G-63-32         | Linear voltage | Relay    | Input retrans. | Remote SP |

## Application Note:

When using a relay output to operate a contactor or solenoid an R/C snubber should be installed across the coil to prevent damage to the controller relays.

| INPUT RANGES |                                  |
|--------------|----------------------------------|
| Input Types  | Range                            |
| K Type TC    | -328 to 2372°F (-200 to 1300°C)  |
| J Type TC    | -148 to 2192°F (-100 to 1200°C)  |
| T Type TC    | -328 to 752°F (-200 to 400°C)    |
| E Type TC    | 32 to 1112°F (0 to 600°C)        |
| N Type TC    | -328 to 2372°F (-200 to 1300°C)  |
| R Type TC    | 32 to 3092°F (0 to 1700°C)       |
| S Type TC    | 32 to 3092°F (0 to 1700°C)       |
| B Type TC    | 212 to 3272°F (100 to 1800°C)    |
| L Type TC    | -328 to 1562°F (-200 to 850°C)   |
| U Type TC    | -328 to 932°F (-200 to 500°C)    |
| TXK Type TC  | -328 to 1472 °F (-200 to 800 °C) |
| JPt 100 RTD  | -4 to 752 °F (-20 to 400 °C)     |
| Pt 100 RTD   | -328 to 1562 °F (-200 to 850 °C) |
| Ni 120 RTD   | -112 to 572 °F (-80 to 300 °C)   |
| Cu 50 RTD    | -58 to 302 °F (-50 to 150 °C)    |
| 0 to 5 V     | -999 to 9999                     |
| 0 to 10 V    | -999 to 9999                     |
| 0 to 20 mA*  | -999 to 9999                     |
| 4 to 20 mA*  | -999 to 9999                     |
| 0 to 50 mV   | -999 to 9999                     |

\*Requires 250 Ω precision resistor across input terminals

| ACCESSORIES |   |
|-------------|---|
| Model       | Description                                       |
| MN-1        | Mini-Node™ RS-485 to USB Converter                |
| SCD-SW      | Configuration software                            |
| A-277       | 250 Ω precision resistor                          |
| A-600       | R/C snubber                                       |
| A-900       | Weatherproof front mount enclosure                |
| A-901       | Weatherproof internal mount enclosure with window |



A-600



MN-1



A-900



A-901

# DIN RAIL TEMPERATURE/PROCESS CONTROLLER

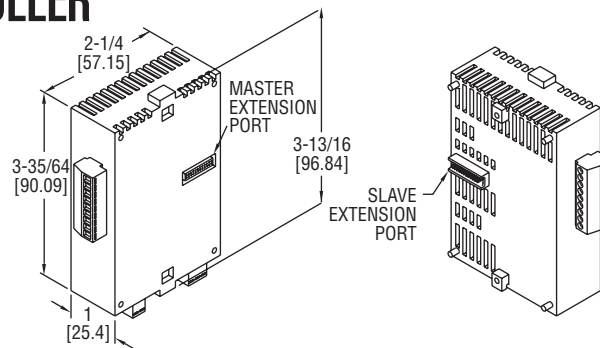
Universal Inputs, Up to 8 PID Loops, Modbus® Communications



Master Controller



Slave Controller



The DIN Rail Mount **SERIES SCD** offers multiple PID loops in a compact size. Each SCD-1000 master controller can be combined with up to seven SCD-2000 slave controllers without any wires. Each controller has one universal input, one relay output and one user selected output.

## FEATURES/BENEFITS

- Expandable from 1 to 8 process control loops
- Universal transmitter or temperature sensor inputs
- RS-485 Modbus® communication
- Dual loop or single loop/alarm output control

## MODEL CHART

| Model    | Controller | Output 1       | Output 2 |
|----------|------------|----------------|----------|
| SCD-1023 | Master     | Voltage pulse  | Relay    |
| SCD-1033 | Master     | Relay          | Relay    |
| SCD-1053 | Master     | Current        | Relay    |
| SCD-1063 | Master     | Linear voltage | Relay    |
| SCD-2023 | Slave      | Voltage pulse  | Relay    |
| SCD-2033 | Slave      | Relay          | Relay    |
| SCD-2053 | Slave      | Current        | Relay    |
| SCD-2063 | Slave      | Linear voltage | Relay    |

\*DC current input requires 250 Ω precision resistor

## SPECIFICATIONS

**Inputs:** Thermocouple, RTD, DC linear voltage, and DC currents.\*  
**Supply Voltage:** 24 VDC.  
**Power Consumption:** 3 W.  
**Operating Temperature:** 32 to 122°F (0 to 50°C).  
**Memory Backup:** Non-volatile.

**Control Output Ratings:** Relay: 3 A @ 250 VAC resistive; Voltage pulse: 12 VDC, max. output current: 40 mA; Current: 4 to 20 mA output; Linear voltage: 0 to 10 VDC.  
**Communication:** RS-485 Modbus® A-5-11/RTU communication protocol.  
**Weight:** 2.7 oz (76.5 g).  
**Agency Approvals:** CE, RoHS, cULus.

## ACCESSORIES

| Model  | Description                               |
|--------|---|
| SCD-PS | 100 to 240 VAC/VDC to 24 VDC power supply |
| SCD-SW | Configuration software                    |
| A-277  | 250 ohm precision resistor                |
| MN-1   | Mini-Node™ USB/RS-485 converter           |
| A-600  | R/C snubber                               |

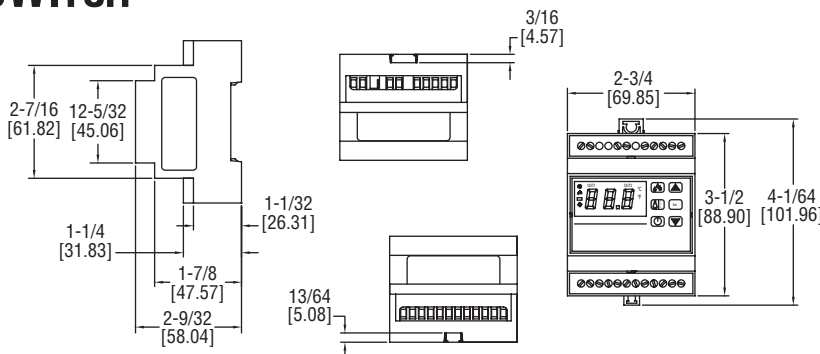
Modbus® is a registered trademark of Schneider Automation, Inc.

## SERIES TSDIN



# DIN RAIL MOUNT TEMPERATURE SWITCH

HACCP Alarm Logging, Intelligent Defrost



The **SERIES TSDIN** DIN Rail Mount Temperature Switch is ideally designed to control compressor, defrost, and fan cycles in refrigeration applications. The digital input can be used to remotely trigger a defrost cycle, monitor cooler door status, or act as an external alarm. Three other probe inputs measure cabinet, defrost, and product temperature. Programming performed on the 6 button keypad or with the Model TS2-K configuration key.

## FEATURES/BENEFITS

- 3 temperature probe inputs
- Real-time clock used for HACCP logging of temperature limit alarms or loss of power
- Intelligent Defrost parameters manage defrost cycle in order to save energy cost

## APPLICATIONS

- Refrigerated cabinets
- Walk in coolers
- Applications requiring defrost cycles

## MODEL CHART

| Model     | Supply Power | # of Outputs  | Display Color |
|-----------|--------------|---------------|---------------|
| TSDIN-013 | 115 VAC      | 1, 2, 3       | Red           |
| TSDIN-015 | 115 VAC      | 1, 2, 3, 4, 5 | Red           |
| TSDIN-023 | 230 VAC      | 1, 2, 3       | Red           |
| TSDIN-025 | 230 VAC      | 1, 2, 3, 4, 5 | Red           |
| TSDIN-033 | 12 VAC/VDC   | 1, 2, 3       | Red           |
| TSDIN-043 | 24 VAC/VDC   | 1, 2, 3       | Red           |
| TSDIN-213 | 115 VAC      | 1, 2, 3       | Blue          |
| TSDIN-215 | 115 VAC      | 1, 2, 3, 4, 5 | Blue          |
| TSDIN-223 | 230 VAC      | 1, 2, 3       | Blue          |
| TSDIN-225 | 230 VAC      | 1, 2, 3, 4, 5 | Blue          |
| TSDIN-233 | 12 VAC/VDC   | 1, 2, 3       | Blue          |
| TSDIN-243 | 24 VAC/VDC   | 1, 2, 3       | Blue          |

## SPECIFICATIONS

**Probe Range:** PTC: -58 to 302°F (-50 to 150°C); NTC: -58 to 230°F (-50 to 110°C).  
**Input:** PTC/NTC.  
**Output:** Output 1: SPST relay rated 16A @ 240 VAC resistive, 10 FLA, 60 LRA, 1HP @ 240 VAC inductive; Output 2: SPDT relay rated 8A @ 240 VAC resistive; Output 3: SPST relay rated 8A @ 240 VAC resistive; Output 4: SPDT relay rated 8A @ 240 VAC resistive; Output 5: SPST relay rated 16A @ 240 VAC resistive, 10 FLA, 60 LRA, 1HP @ 240 VAC inductive.  
**Control Type:** On/off.

**Power Requirement:** 115 VAC, 230 VAC, 12 VAC/VDC, 24 VAC/VDC (±10% depending on model).  
**Power Consumption:** 6 VA.  
**Accuracy:** Better than 1% of full-scale.  
**Display:** 3-digits plus sign.  
**Resolution:** 0.1°.  
**Memory Backup:** Non-volatile memory.  
**Temperature Limits:** Operating: 32 to 131°F (0 to 55°C); Storage: -4 to 176°F (-20 to 80°C).  
**Weight:** 10.8 oz (306 g).  
**Agency Approvals:** CE, cURus.

## ACCESSORIES

See page reference 1 below.

①Digital Temperature Switch Probes and Accessories: See page 138 (Series TS-Probes)