

## 1800 Series Pressure Transmitters

The **1800 Series Pressure Transmitters** are well suited for intrinsically safe applications or conventional transmitter installations. The 1800 Series transmitters utilize an advanced monosilicon pressure sensor and incorporate a patented encapsulation technology to achieve exceptional mechanical and thermal isolation.

All 1800 Series transmitters include external push-buttons for device setup and calibration. If ordered with the appropriate output, they can also be programmed using HART® or Modbus. Additionally, they are available with 2, 3, or 5-valve manifolds. With a standard  $\pm 0.075\%$  accuracy, the SOR 1800 Series conventional transmitters are an exceptional solution for continuous pressure monitoring.

### Features

- Gauge Pressure Ranges
  - 1 psi to 1 psi through -14.5 psi to 14,500 psi
  - 6 kPa to 6 kPa through -100 kPa to 100 MPa
- Differential Pressure Ranges
  - 0.87 psid to 0.87 psid through -72.5 psid to 1,450 psid
  - 6 kPa to 6 kPa through -500 kPa to 10 MPa
- 4-20 mA with optional HART®, 1-5VDC low power or Modbus output
- $\pm 0.075\%$  accuracy (F.S.)
- Aluminum explosion proof housing
- Standard push-buttons for setup
- Optional integral LCD display
- EMC (EMI/RFI) protection
- ATEX / IECEx certified for intrinsically safe and flameproof applications
- CSA certified for explosion proof applications
- 3 year warranty



**1800PT**  
Conventional  
Gauge  
Pressure

**1800PR**  
Piezoresistive  
Gauge Pressure



**1800DM**  
Differential Pressure with  
Direct Mount Diaphragm Seal



**1800DP**  
Differential  
Pressure



**1800RM**  
Differential Pressure  
with Remote Mount  
Diaphragm Seals

|                                                                                        |           |
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# 1800 Series Pressure Transmitters

## Product Specifications 1800PT



### Product Specifications - 1800PT

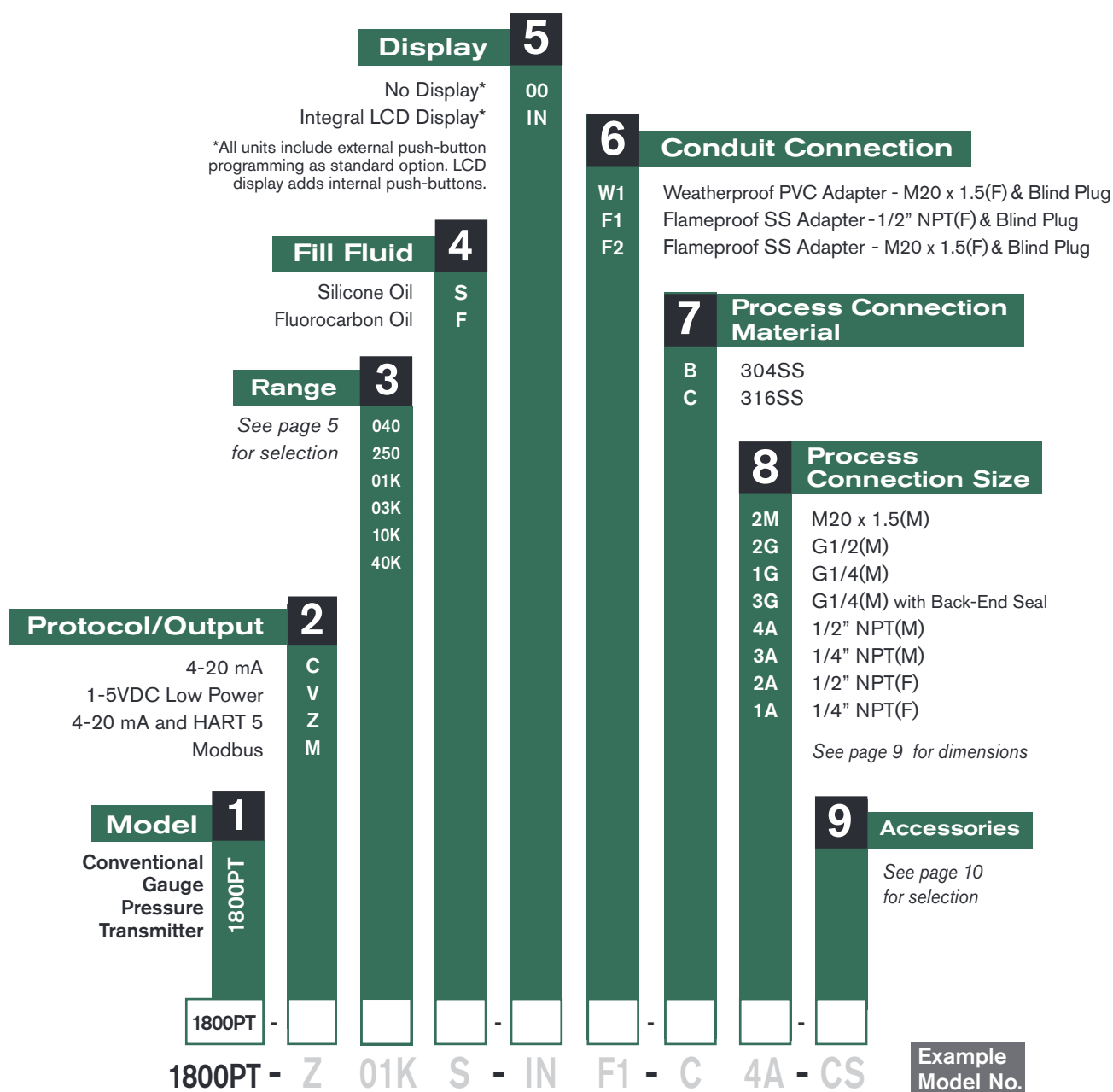
|                                                 |                                                                                                                                                  |                                  |                                                 |
|-------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|-------------------------------------------------|
| Output                                          | 4-20mA<br>1-5VDC Low Power<br>HART 5 (Optional)<br>Modbus                                                                                        | Long Term Stability              | ≤ ±0.2% URL per 5 years                         |
|                                                 |                                                                                                                                                  | Response Time                    | ≤ 200 ms                                        |
|                                                 |                                                                                                                                                  | Damping Time                     | 0-100 s (Configurable)                          |
|                                                 |                                                                                                                                                  | Startup Time                     | ≤ 6 s                                           |
| Accuracy                                        | (Linearity, Hysteresis and Repeatability)<br>± 0.075% (± 0.2% at max turndown)<br>*Square Root Output Accuracy<br>= 1.5 x Linear Output Accuracy | Supply Voltage                   |                                                 |
|                                                 |                                                                                                                                                  | 4-20mA                           | 10.5-55 VDC                                     |
|                                                 |                                                                                                                                                  | 1-5VDC Low Power                 | 9-32 VDC                                        |
|                                                 |                                                                                                                                                  | HART® with 250 Ω load            | 16.5-55 VDC                                     |
|                                                 |                                                                                                                                                  | Modbus                           | 5-32 VDC                                        |
| Temperature Effect                              | ± 2.1% URL<br>@ -4 to 176°F                                                                                                                      | Loop Resistance                  | 0-2119 Ω                                        |
| Temperature Range                               |                                                                                                                                                  | HART® Protocol                   | 250-600 Ω                                       |
| Compensated                                     | -4 to 176°F                                                                                                                                      | Circuit Protection               | Reverse Polarity and<br>EMC (EMI/RFI) protected |
| Ambient (Limited by both Approvals and Display) |                                                                                                                                                  | Power Consumption                | ≤ 500 mW @ 24 VDC, 20.8 mA                      |
| No Approvals or Display                         | -40 to 185°F                                                                                                                                     | Power Supply Effects             | < ±0.005% URL/V                                 |
| With Integral LCD Display<br>(No Approvals)     | -4 to 158°F                                                                                                                                      | Mounting Position Effect         | ≤ 0.06 psi<br>Can be corrected by re-zeroing    |
| Intrinsically Safe                              | -40 to 140°F                                                                                                                                     | Vibration Effect                 | < 0.1% URL                                      |
| Flameproof                                      | -13 to 140°F                                                                                                                                     |                                  | IEC61928-3 tests                                |
| Process                                         | -40 to 248°F                                                                                                                                     | Relative Humidity                | 5-100% R.H. @ 104°F                             |
| Flameproof                                      | Limits Max<br>Temperature to 176°F                                                                                                               | Construction                     | Aluminum Ex-Pf Housing                          |
| Intrinsically Safe                              | Limits Max<br>Temperature to 248°F                                                                                                               | IP Rating                        | IP67                                            |
| Storage                                         |                                                                                                                                                  | Weight (No Adapters or Brackets) | 3.44 lbs                                        |
| No Display                                      | -40 to 230°F                                                                                                                                     | Warranty                         | 3 years                                         |
| With Integral LCD Display                       | -40 to 185°F                                                                                                                                     |                                  |                                                 |

Design and specifications are subject to change without notice. For latest revision, see [SORInc.com](http://SORInc.com).

### How to Order

Below is the SOR quick select model number tree that provides you with all the options to configure and order a product for your application.

- You must select a designator for each component
- Reference tables, charts and additional information are provided throughout the catalog to help you make your selections, see pages noted in the tree.



See page 32 for agency and options.

### Ranges - PT

| Designator | LRL                     | URL                   | Smallest Possible Span | Over Pressure         |
|------------|-------------------------|-----------------------|------------------------|-----------------------|
| 040        | -5.8 psi<br>(-40 kPa)   | 5.8 psi<br>(40 kPa)   | 0.29 psi<br>(2 kPa)    | 145 psi<br>(1 MPa)    |
| 250        | -14.5 psi<br>(-100 kPa) | 36.3 psi<br>(250 kPa) | 1.81 psi<br>(12.5 kPa) | 580 psi<br>(4 MPa)    |
| 01K        | -14.5 psi<br>(-100 kPa) | 145 psi<br>(1 MPa)    | 7.25 psi<br>(50 kPa)   | 870 psi<br>(6 MPa)    |
| 03K        | -14.5 psi<br>(-100 kPa) | 435 psi<br>(3 MPa)    | 21.8 psi<br>(150 kPa)  | 2175 psi<br>(15 MPa)  |
| 10K        | -14.5 psi<br>(-100 kPa) | 1450 psi<br>(10 MPa)  | 72.5 psi<br>(500 kPa)  | 2900 psi<br>(20 MPa)  |
| 40K        | -14.5 psi<br>(-100 kPa) | 5802 psi<br>(40 MPa)  | 725 psi<br>(5 MPa)     | 11603 psi<br>(80 MPa) |

To determine if desired Measuring Range is achievable for a specific range option:

1. Lower End of Measuring Range  $\geq$  LRL
2. Upper End of Measuring Range  $\leq$  URL
3. Measuring Range Span = Upper End – Lower End  $\geq$  Smallest Possible Span

# 1800 Series Pressure Transmitters

## Product Specifications 1800PR



### Product Specifications - 1800PR

|                                                 |                                                                                                                                                |                                  |                                                 |
|-------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|-------------------------------------------------|
| Output                                          | 4-20mA<br>1-5VDC Low Power<br>HART 5 (Optional)<br>Modbus                                                                                      | Long Term Stability              | ≤ ±0.2% URL per 5 years                         |
|                                                 |                                                                                                                                                | Response Time                    | ≤ 200 ms                                        |
|                                                 |                                                                                                                                                | Damping Time                     | 0-100 s (Configurable)                          |
|                                                 |                                                                                                                                                | Startup Time                     | ≤ 6 s                                           |
| Accuracy                                        | (Linearity, Hysteresis and Repeatability)<br>± 0.2% (± 0.5% at max turndown)<br>*Square Root Output Accuracy<br>= 1.5 x Linear Output Accuracy | Supply Voltage                   |                                                 |
|                                                 |                                                                                                                                                | 4-20mA                           | 10.5-55 VDC                                     |
|                                                 |                                                                                                                                                | 1-5VDC Low Power                 | 9-32 VDC                                        |
|                                                 |                                                                                                                                                | HART® with 250 Ω load            | 16.5-55 VDC                                     |
|                                                 |                                                                                                                                                | Modbus                           | 5-32 VDC                                        |
| Temperature Effect                              | ± 0.67% URL<br>@ -4 to 176°F                                                                                                                   | Loop Resistance                  | 0-2119 Ω                                        |
| Temperature Range                               |                                                                                                                                                | HART® Protocol                   | 250-600 Ω                                       |
| Compensated                                     | -4 to 176°F                                                                                                                                    | Circuit Protection               | Reverse Polarity and<br>EMC (EMI/RFI) protected |
| Ambient (Limited by both Approvals and Display) |                                                                                                                                                | Power Consumption                | ≤ 500mW @ 24VDC, 20.8mA                         |
| No Approvals or Display                         | -40 to 185°F                                                                                                                                   | Power Supply Effects             | < ±0.005% URL/V                                 |
| With Integral LCD Display<br>(No Approvals)     | -4 to 158°F                                                                                                                                    | Mounting Position Effect         | ≤ 0.06 psi<br>Can be corrected by re-zeroing    |
| Intrinsically Safe                              | -40 to 140°F                                                                                                                                   | Vibration Effect                 | < 0.1% URL<br>IEC61928-3 tests                  |
| Flameproof                                      | -13 to 140°F                                                                                                                                   | Relative Humidity                | 5-100% R.H. @ 104°F                             |
| Process                                         | -40 to 248°F                                                                                                                                   | Construction                     | Aluminum Ex-Pf Housing                          |
| Flameproof                                      | Limits Max<br>Temperature to 176°F                                                                                                             | IP Rating                        | IP67                                            |
| Intrinsically Safe                              | Limits Max<br>Temperature to 248°F                                                                                                             | Weight (No Adapters or Brackets) | 3.18 lbs                                        |
| Storage                                         |                                                                                                                                                | Warranty                         | 3 years                                         |
| No Display                                      | -40 to 230°F                                                                                                                                   |                                  |                                                 |
| With Integral LCD Display                       | -40 to 185°F                                                                                                                                   |                                  |                                                 |

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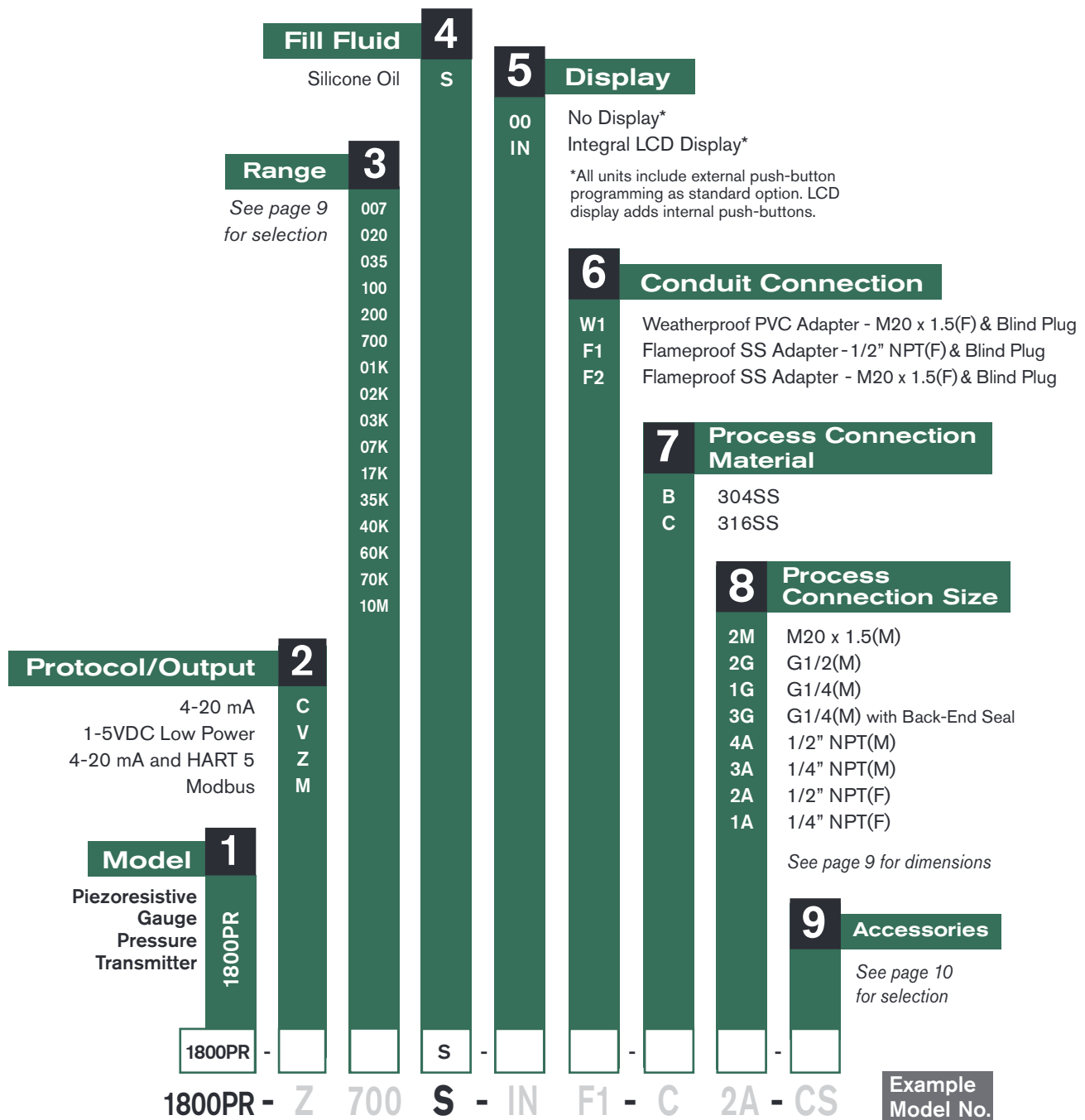
# 1800 Series Pressure Transmitters

## How to Order 1800PR

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See page 32 for agency and options.

# 1800 Series Pressure Transmitters

**Ranges  
1800PR**

## Ranges

| Designator | LRL                     | URL                    | Smallest Possible Span | Over Pressure           |
|------------|-------------------------|------------------------|------------------------|-------------------------|
| 007        | -1 psi<br>(-7 kPa)      | 1 psi<br>(7 kPa)       | 0.73 psi<br>(5 kPa)    | 1.52 psi<br>(10.5 kPa)  |
| 020        | -2.9 psi<br>(-20 kPa)   | 2.9 psi<br>(20 kPa)    | 1.45 psi<br>(10 kPa)   | 4.35 psi<br>(30 kPa)    |
| 035        | -5.08 psi<br>(-35 kPa)  | 5.08 psi<br>(35 kPa)   | 2.9 psi<br>(20 kPa)    | 7.61 psi<br>(52.5 kPa)  |
| 100        | -14.5 psi<br>(-100 kPa) | 14.5 psi<br>(100 kPa)  | 5.08 psi<br>(35 kPa)   | 21.8 psi<br>(150 kPa)   |
| 200        | -14.5 psi<br>(-100 kPa) | 29 psi<br>(200 kPa)    | 14.5 psi<br>(100 kPa)  | 43.5 psi<br>(300 kPa)   |
| 700        | -14.5 psi<br>(-100 kPa) | 101.5 psi<br>(700 kPa) | 29 psi<br>(200 kPa)    | 152 psi<br>(1050 kPa)   |
| 01K        | -14.5 psi<br>(-100 kPa) | 145 psi<br>(1 MPa)     | 72.5 psi<br>(500 kPa)  | 217.5 psi<br>(1.5 MPa)  |
| 02K        | -14.5 psi<br>(-100 kPa) | 246.6 psi<br>(1.7 MPa) | 145 psi<br>(1 MPa)     | 369.8 psi<br>(2.55 MPa) |
| 03K        | -14.5 psi<br>(-100 kPa) | 507.6 psi<br>(3.5 MPa) | 246.6 psi<br>(1.7 MPa) | 761.4 psi<br>(5.25 MPa) |
| 07K        | -14.5 psi<br>(-100 kPa) | 1015 psi<br>(7 MPa)    | 507.6 psi<br>(3.5 MPa) | 1523 psi<br>(10.5 MPa)  |
| 17K        | -14.5 psi<br>(-100 kPa) | 2465 psi<br>(17 MPa)   | 1015 psi<br>(7 MPa)    | 3698 psi<br>(25.5 MPa)  |
| 35K        | -14.5 psi<br>(-100 kPa) | 5076 psi<br>(35 MPa)   | 2465 psi<br>(17 MPa)   | 7614 psi<br>(52.5 MPa)  |
| 40K        | -14.5 psi<br>(-100 kPa) | 5801 psi<br>(40 MPa)   | 2900 psi<br>(20 MPa)   | 8702 psi<br>(60 MPa)    |
| 60K        | -14.5 psi<br>(-100 kPa) | 8702 psi<br>(60 MPa)   | 4351 psi<br>(30 MPa)   | 13053 psi<br>(90 MPa)   |
| 70K        | -14.5 psi<br>(-100 kPa) | 10153 psi<br>(70 MPa)  | 5076 psi<br>(35 MPa)   | 15229 psi<br>(105 MPa)  |
| 10M        | -14.5 psi<br>(-100 kPa) | 14504 psi<br>(100 MPa) | 7252 psi<br>(50 MPa)   | 21756 psi<br>(150 MPa)  |

To determine if desired Measuring Range is achievable for a specific range option:

1. Lower End of Measuring Range  $\geq$  LRL
2. Upper End of Measuring Range  $\leq$  URL
3. Measuring Range Span = Upper End – Lower End  $\geq$  Smallest Possible Span

# 1800 Series Pressure Transmitters

## Process Connections 1800PT/PR

### Process Connections

| Designator                                 | Dimensions = mm | Designator               | Dimensions = mm |
|--------------------------------------------|-----------------|--------------------------|-----------------|
| <b>2M</b><br>M20 x 1.5(M)                  |                 | <b>4A</b><br>1/2" NPT(M) |                 |
| <b>2G</b><br>G1/2(M)                       |                 | <b>3A</b><br>1/4" NPT(M) |                 |
| <b>1G</b><br>G1/4(M)                       |                 | <b>2A</b><br>1/2" NPT(F) |                 |
| <b>3G</b><br>G1/4(M) with<br>Back-End Seal |                 | <b>1A</b><br>1/4" NPT(F) |                 |

### Accessories

| Description                                                                                              | Designator |
|----------------------------------------------------------------------------------------------------------|------------|
| Pipe Mounting Kit (U-Shaped Bracket for 2" Pipe) <i>Dimension drawing below.</i>                         | PK         |
| Customer-Specified Display Settings <sup>1, 6</sup>                                                      | SC         |
| ATEX / IECEx Flameproof Ex db IIC T6 Gb, Ex tb IIIC T80°C Db <sup>1, 2</sup>                             | CL         |
| CSA Explosion Proof Class I, II, III, Div. 1, Grps. A, B, C, D, T6; Grps. E, F, G, T80°C <sup>2, 3</sup> | CS         |
| ATEX / IECEx Intrinsically Safe Ex ia IIC T4 Ga <sup>1</sup>                                             | CK         |
| CE Certificate                                                                                           | CE         |
| Degrease Treatment of Wetted Parts                                                                       | BB         |
| Electropolishing Treatment of Wetted Parts                                                               | CC         |
| Coiled Tube Heat Exchange Connector <i>Dimension drawing below.</i>                                      | ET         |
| Finned Heat Exchange Connector <i>Dimension drawing below.</i>                                           | FE         |
| Calibration Certificate                                                                                  | C1         |
| Welding Adapter M20 x 1.5(M) 304SS <sup>4</sup> <i>Dimension drawing below.</i>                          | WM         |
| Welding Adapter G1/2(F) 304SS <sup>5</sup> <i>Dimension drawing below.</i>                               | WG         |
| Compliance to NACE Certification MR0 175/ISO 15156                                                       | NC         |
| Password protected settings menu lockout                                                                 | LK         |

<sup>1</sup> Requires Display option IN

<sup>2</sup> Requires Conduit Connection option F1 or F2

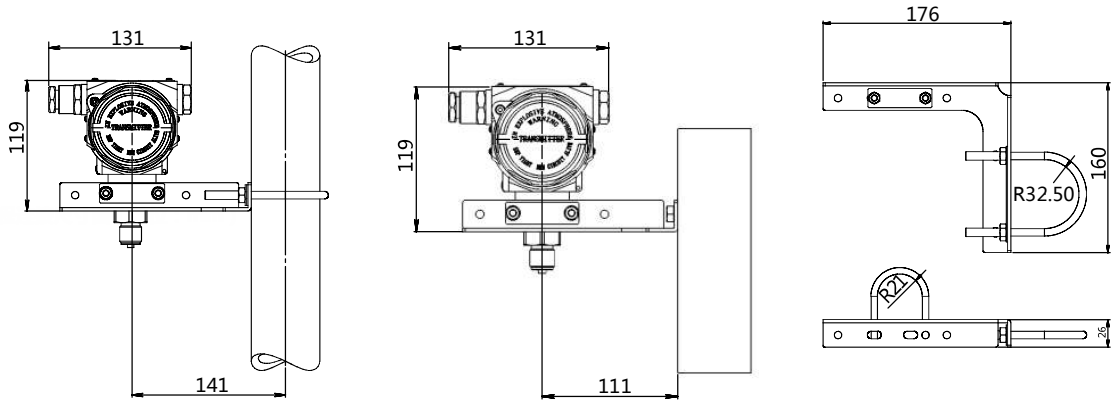
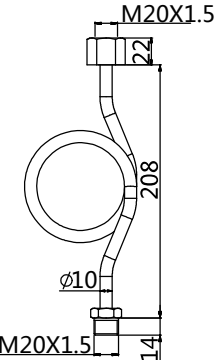
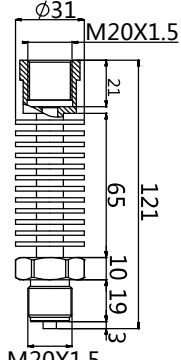
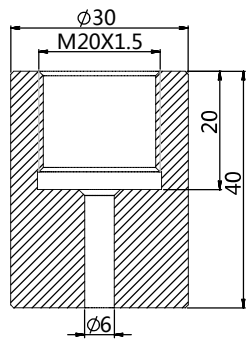
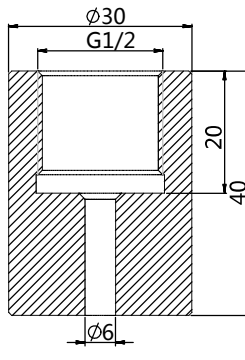
<sup>3</sup> Not available with ATEX / IECEx Approvals

<sup>4</sup> Requires 2M Process Connection Size

<sup>5</sup> Requires 2G Process Connection Size

<sup>6</sup> Form 1835\_1800 Series SC Accessory Data Sheet must be completed and submitted with order

Dimensions = mm

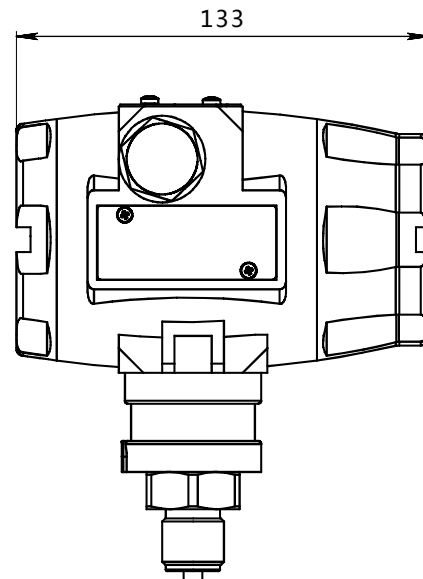
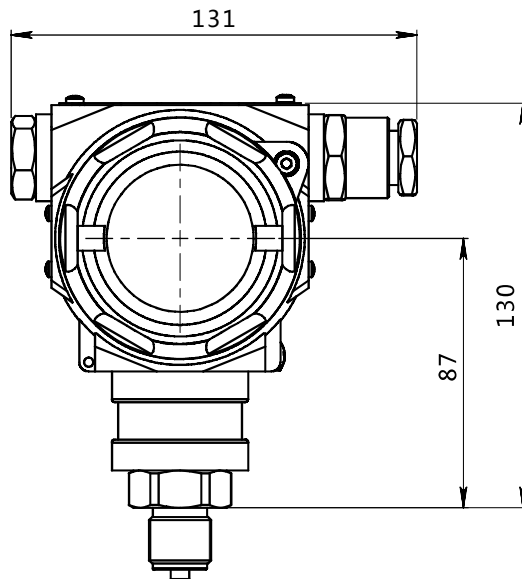
| PK - Pipe Mounting Kit                                                               |                                                                                     |                                                                                      |                                                                                       |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|  |                                                                                     |                                                                                      |                                                                                       |
| ET - Coiled Tube Heat Exchange Connector                                             | FE - Finned Heat Exchange Connector                                                 | WM - Welding Adapter M20 x 1.5(M)                                                    | WG - Welding Adapter G1/2(F)                                                          |
|   |  |  |  |

# 1800 Series Pressure Transmitters

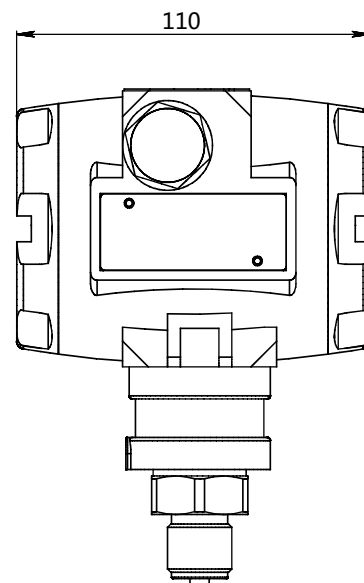
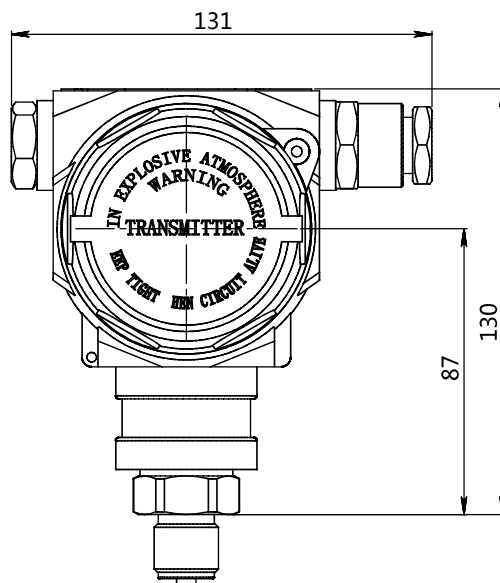
## Dimensions 1800PT/PR

Dimensions shown are for reference only.  
Dimensions = mm

### With Integral LCD Display (option IN)



### Without Display (option 00)



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# 1800 Series Differential Pressure Transmitter

## Product Specifications 1800DP



### Product Specifications - 1800DP

|                                                 |                                 |                                           |                                                                                                                                                            |
|-------------------------------------------------|---------------------------------|-------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Output</b>                                   |                                 | 4-20mA                                    |                                                                          |
| Linear (default) or Square Root                 |                                 |                                           |                                                                                                                                                            |
| 1-5VDC Low Power                                |                                 |                                           |                                                                                                                                                            |
| HART 5 (Optional)                               |                                 |                                           |                                                                                                                                                            |
| Modbus                                          |                                 |                                           |                                                                                                                                                            |
| <b>Accuracy</b>                                 |                                 | (Linearity, Hysteresis and Repeatability) | Long Term Stability ≤ ±0.2% URL per 5 years<br>Response Time ≤ 200 ms<br>Damping Time 0-100 s (Configurable)<br>Startup Time ≤ 6 s                         |
| ± 0.075% (± 0.2% at max turndown)               |                                 |                                           |                                                                                                                                                            |
| *Square Root Output Accuracy                    |                                 |                                           |                                                                                                                                                            |
| = 1.5 x Linear Output Accuracy                  |                                 |                                           |                                                                                                                                                            |
| <b>Static Pressure Effects</b>                  |                                 |                                           |                                                                                                                                                            |
| Effect on Zero                                  |                                 | ± 15% URL/580 psi                         | Supply Voltage<br>4-20mA 10.5-55 VDC<br>1-5VDC Low Power 9-32 VDC<br>HART® with 250 Ω load 16.5-55 VDC<br>Modbus 5-32 VDC                                  |
| Effect on Full Scale                            |                                 | ± 0.2% URL/580 psi                        |                                                                                                                                                            |
| <b>Temperature Effect</b>                       |                                 | ± 10.1% URL                               |                                                                                                                                                            |
|                                                 |                                 | @ -4 to 176°F                             |                                                                                                                                                            |
| <b>Temperature Range</b>                        |                                 |                                           |                                                                                                                                                            |
| Compensated                                     |                                 | -4 to 176°F                               | Loop Resistance 0-2119 Ω<br>HART® Protocol 250-600 Ω<br>Circuit Protection Reverse Polarity and EMC (EMI/RFI) protected                                    |
| Ambient (Limited by both Approvals and Display) |                                 |                                           |                                                                                                                                                            |
| No Approvals or Display                         |                                 | -40 to 185°F                              |                                                                                                                                                            |
| With Integral LCD Display                       |                                 | -4 to 158°F                               |                                                                                                                                                            |
| (No Approvals)                                  |                                 |                                           |                                                                                                                                                            |
| Intrinsically Safe                              |                                 | -40 to 140°F                              | Power Consumption ≤ 500mW @ 24VDC, 20.8mA<br>Power Supply Effects < ±0.005% URL/V<br>Mounting Position Effect ≤ 0.06 psi<br>Can be corrected by re-zeroing |
| Flameproof                                      |                                 | -13 to 140°F                              |                                                                                                                                                            |
| <b>Process</b>                                  |                                 |                                           |                                                                                                                                                            |
| Silicone Oil Fill Fluid                         |                                 | -40 to 248°F                              |                                                                                                                                                            |
| Fluorocarbon Oil Fill Fluid                     |                                 | -40 to 185°F                              |                                                                                                                                                            |
| Flameproof                                      | Limits Max Temperature to 176°F |                                           | Vibration Effect < 0.1% URL<br>IEC61928-3 tests<br>Relative Humidity 5-100% R.H. @ 104°F<br>Construction Aluminum Ex-Pf Housing<br>IP Rating IP67          |
| Intrinsically Safe                              | Limits Max Temperature to 248°F |                                           |                                                                                                                                                            |
| <b>Storage</b>                                  |                                 |                                           |                                                                                                                                                            |
| No Display                                      |                                 | -40 to 230°F                              |                                                                                                                                                            |
| With Integral LCD Display                       |                                 | -40 to 185°F                              |                                                                                                                                                            |
|                                                 |                                 |                                           | Weight (No Adapters or Brackets) 8.82 lbs                                                                                                                  |
|                                                 |                                 |                                           | Warranty 3 years                                                                                                                                           |

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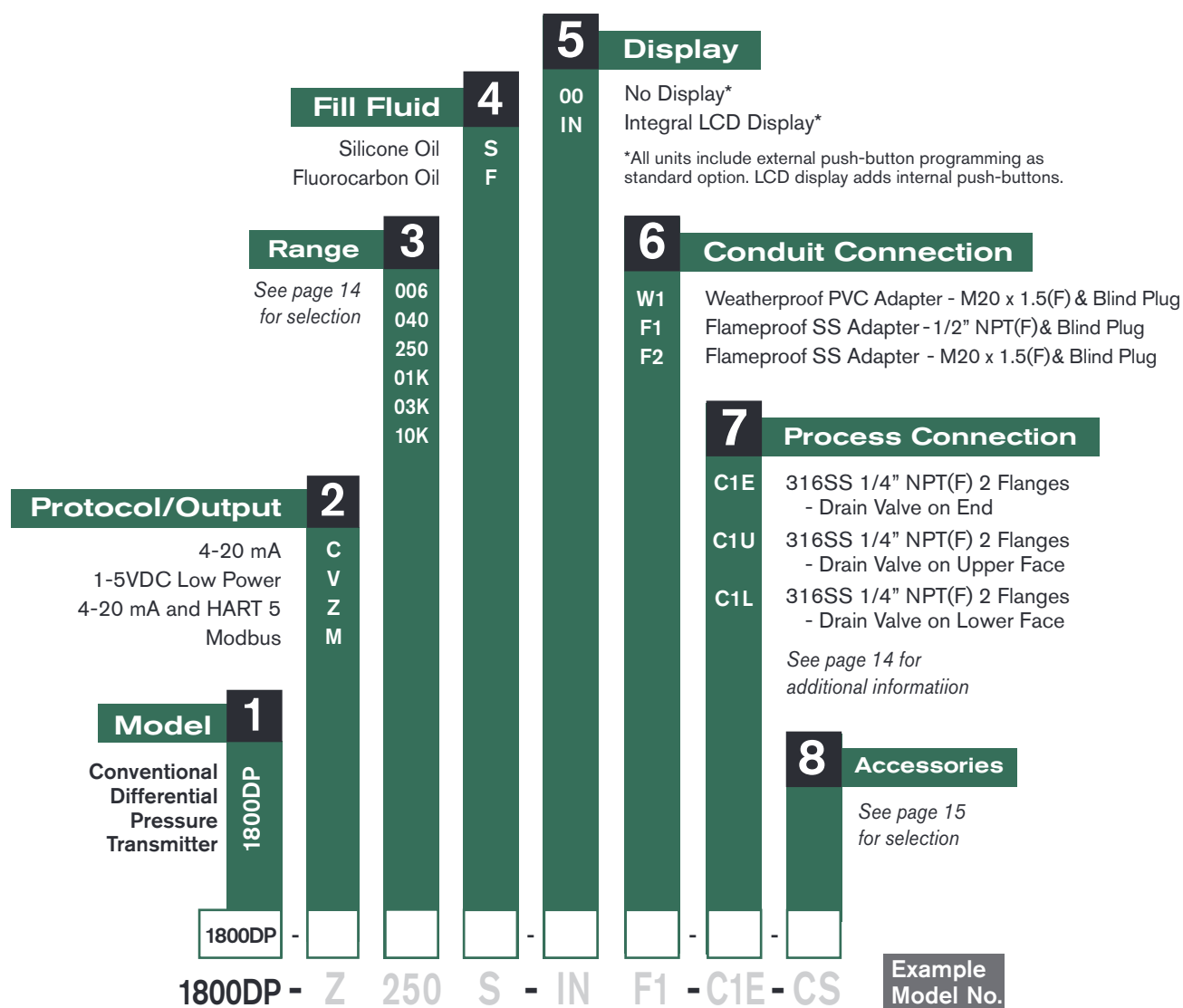
# 1800 Series Differential Pressure Transmitter

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**1800DP**

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- Reference tables, charts and additional information are provided throughout the catalog to help you make your selections, see pages noted in the tree.



See page 32 for agency and options.

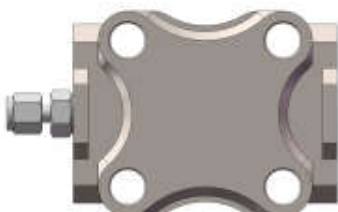
### Ranges

| Designator | LRL                      | URL                    | Smallest Possible Span | Max Static Pressure  | Hi-Side Over Pressure | Lo-Side Over Pressure |
|------------|--------------------------|------------------------|------------------------|----------------------|-----------------------|-----------------------|
| 006        | -0.87 psid<br>(-6 kPa)   | 0.87 psid<br>(6 kPa)   | 0.03 psid<br>(200 Pa)  | 3626 psi<br>(25 MPa) | 3626 psid<br>(25 MPa) | 2321 psid<br>(16 MPa) |
| 040        | -5.8 psid<br>(-40 kPa)   | 5.8 psid<br>(40 kPa)   | 0.06 psid<br>(400 Pa)  | 5801 psi<br>(40 MPa) | 3626 psid<br>(25 MPa) | 2321 psid<br>(16 MPa) |
| 250        | -36.3 psid<br>(-250 kPa) | 36.3 psid<br>(250 kPa) | 0.36 psid<br>(2.5 kPa) | 5801 psi<br>(40 MPa) | 3626 psid<br>(25 MPa) | 2321 psid<br>(16 MPa) |
| 01K        | -72.5 psid<br>(-500 kPa) | 145 psid<br>(1 MPa)    | 1.45 psid<br>(10 kPa)  | 5801 psi<br>(40 MPa) | 3626 psid<br>(25 MPa) | 2321 psid<br>(16 MPa) |
| 03K        | -72.5 psid<br>(-500 kPa) | 435 psid<br>(3 MPa)    | 4.35 psid<br>(30 kPa)  | 5801 psi<br>(40 MPa) | 3626 psid<br>(25 MPa) | 2321 psid<br>(16 MPa) |
| 10K        | -72.5 psid<br>(-500 kPa) | 1450 psid<br>(10 MPa)  | 14.5 psid<br>(100 kPa) | 5801 psi<br>(40 MPa) | 3626 psid<br>(25 MPa) | 2321 psid<br>(16 MPa) |

To determine if desired Measuring Range is achievable for a specific range option:

1. Lower End of Measuring Range  $\geq$  LRL
2. Upper End of Measuring Range  $\leq$  URL
3. Measuring Range Span = Upper End – Lower End  $\geq$  Smallest Possible Span

### Process Connections

| C1E<br>Drain Valve on Flange End                                                    | C1U<br>Drain Valve on Flange Upper Face                                             | C1L<br>Drain Valve on Flange Lower Face                                               |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|  |  |  |

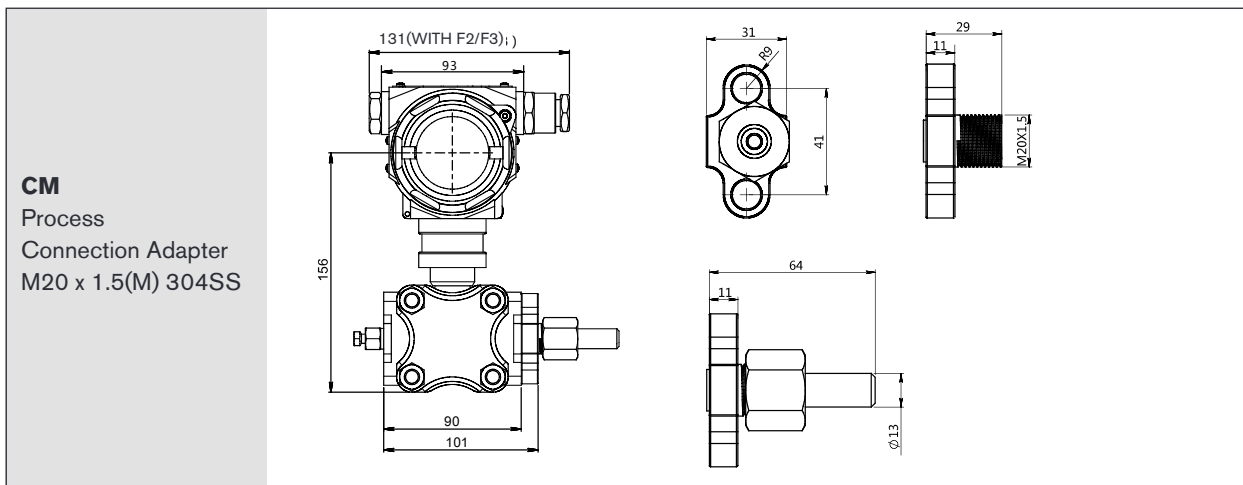
### Accessories

| Description                                                                                              | Designator |
|----------------------------------------------------------------------------------------------------------|------------|
| Process Connection Adapter M20 x 1.5(M) 304SS <i>Dimension drawing below.</i>                            | CM         |
| Process Connection Adapter 1/2" NPT(F) 304SS <i>Dimension drawing page 16.</i>                           | CN         |
| Pipe Mounting Kit (Stainless Steel Bent Bracket for 2" Pipe) <i>Dimension drawing page 16.</i>           | PK         |
| Plate Mounting Kit (Stainless Steel Bent Bracket) <i>Dimension drawing page 16.</i>                      | PL         |
| Pipe Mounting Kit (Stainless Steel Flat Bracket for 2" Pipe) <i>Dimension drawing page 16.</i>           | PM         |
| Customer-Specified Display Settings <sup>1, 4</sup>                                                      | SC         |
| ATEX / IECEx Flameproof Ex db IIC T6 Gb, Ex tb IIIC T80°C Db <sup>1, 2</sup>                             | CL         |
| CSA Explosion Proof Class I, II, III, Div. 1, Grps. A, B, C, D, T6; Grps. E, F, G, T80°C <sup>2, 3</sup> | CS         |
| ATEX / IECEx Intrinsically Safe Ex ia IIC T4 Ga <sup>1</sup>                                             | CK         |
| CE Certificate                                                                                           | CE         |
| Degrease Treatment of Wetted Parts                                                                       | BB         |
| Electropolishing Treatment of Wetted Parts                                                               | CC         |
| Calibration Certificate                                                                                  | C1         |
| Static Pressure Report                                                                                   | C2         |
| Compliance to NACE Certification MR0 175/ISO 15156                                                       | NC         |
| Password protected settings menu lockout                                                                 | LK         |

<sup>1</sup> Requires Display option IN    <sup>2</sup> Requires Conduit Connection option F1 or F2    <sup>3</sup> Not available with ATEX / IECEx Approvals

<sup>4</sup> Form 1835\_1800 Series SC Accessory Data Sheet must be completed and submitted with order

Dimensions = mm



# 1800 Series Differential Pressure Transmitter

## Accessories 1800DP

Dimensions = mm

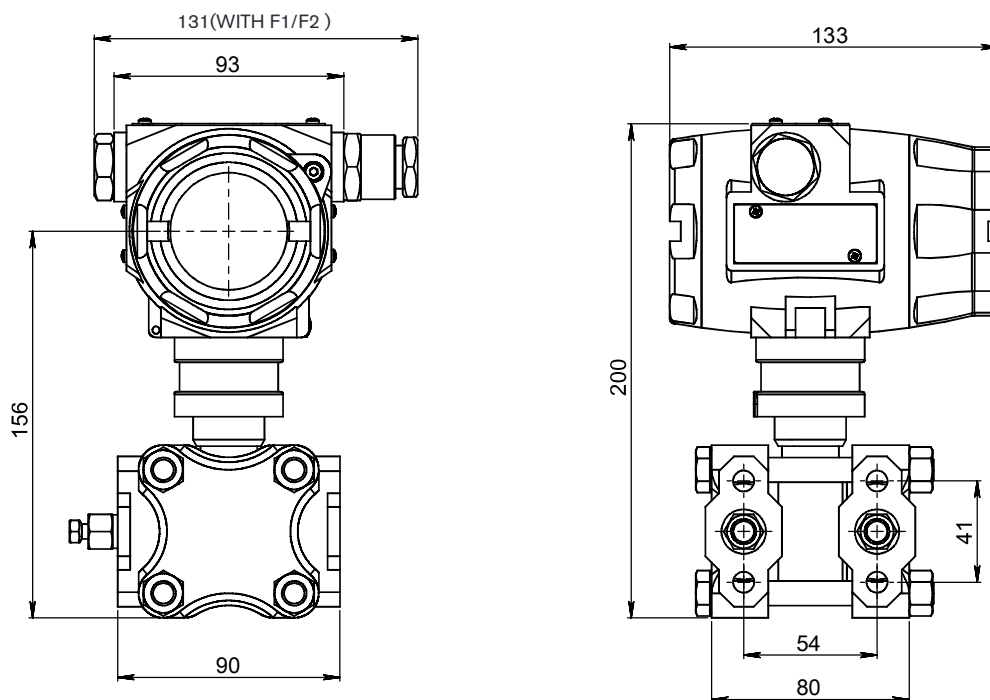
|                                                                                           |  |
|-------------------------------------------------------------------------------------------|--|
| <p><b>CN</b><br/>Process<br/>Connection Adapter<br/>1/2" NPT(F) 304SS</p>                 |  |
| <p><b>PK</b><br/>Pipe Mounting Kit<br/>(Stainless Steel Bent<br/>Bracket for 2" Pipe)</p> |  |
| <p><b>PL</b><br/>Plate Mounting Kit<br/>(Stainless Steel Bent<br/>Bracket)</p>            |  |
| <p><b>PM</b><br/>Pipe Mounting Kit<br/>(Stainless Steel Flat<br/>Bracket for 2" Pipe)</p> |  |

# 1800 Series Differential Pressure Transmitter

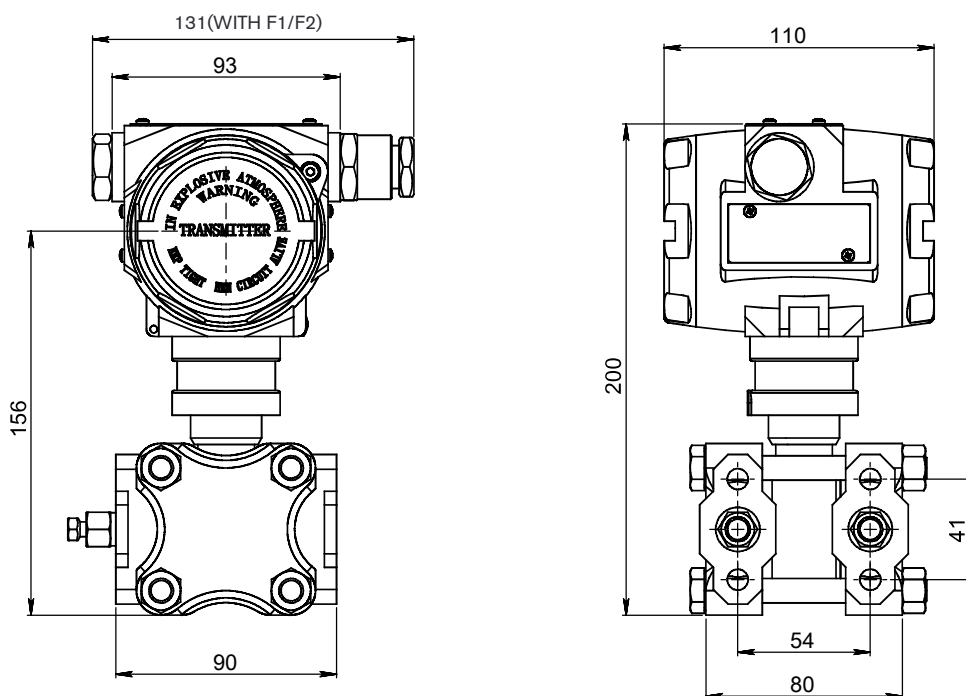
Dimensions  
**1800DP**

Dimensions shown are for reference only.  
Dimensions = mm

## With Integral LCD Display (option IN)



## Without Display (option 00)



*Design and specifications are subject to change without notice. For latest revision, see [SORInc.com](http://SORInc.com).*

# 1800 Series Differential Pressure Transmitter

## Product Specifications 1800DM

### Product Specifications - 1800DM

|                                                 |                                                                                                                                                             |                                                                                    |
|-------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| Output                                          | 4-20mA<br>Linear (default) or Square Root<br>HART 5 (Optional)<br>Modbus                                                                                    |  |
| Accuracy                                        | (Linearity, Hysteresis and Repeatability)<br>$\pm 0.075\%$ ( $\pm 0.2\%$ at max turndown)<br>*Square Root Output Accuracy<br>= 1.5 x Linear Output Accuracy |                                                                                    |
| Static Pressure Effects                         |                                                                                                                                                             |                                                                                    |
| Effect on Zero                                  | $\pm 6\%$ URL/580 psi                                                                                                                                       |                                                                                    |
| Effect on Full Scale                            | $\pm 0.2\%$ URL/580 psi                                                                                                                                     |                                                                                    |
| Temperature Effect                              | $\pm 0.5\%$ URL<br>@ -4 to 176°F                                                                                                                            |                                                                                    |
| Temperature Range                               |                                                                                                                                                             |                                                                                    |
| Compensated                                     | -4 to 176°F                                                                                                                                                 |                                                                                    |
| Ambient (Limited by both Approvals and Display) |                                                                                                                                                             |                                                                                    |
| No Approvals or Display                         | -40 to 185°F                                                                                                                                                |                                                                                    |
| With Integral LCD Display<br>(No Approvals)     | -4 to 158°F                                                                                                                                                 |                                                                                    |
| Intrinsically Safe                              | -40 to 140°F                                                                                                                                                |                                                                                    |
| Flameproof                                      | -13 to 140°F                                                                                                                                                |                                                                                    |
| Process                                         |                                                                                                                                                             |                                                                                    |
| Silicone Oil Fill Fluid                         | -49 to 401°F                                                                                                                                                |                                                                                    |
| Hi-Temp Silicone Oil Fill Fluid                 | 32 to 599°F                                                                                                                                                 |                                                                                    |
| Hygienic NEOBEE® M-20 Fill Fluid                | 14 to 356°F                                                                                                                                                 |                                                                                    |
| Flameproof                                      | Limits Max Temperature to 176°F                                                                                                                             |                                                                                    |
| Intrinsically Safe                              | Limits MaxTemperature to 248°F                                                                                                                              |                                                                                    |
| Storage                                         |                                                                                                                                                             |                                                                                    |
| No Display                                      | -40 to 230°F                                                                                                                                                |                                                                                    |
| With Integral LCD Display                       | -40 to 185°F                                                                                                                                                |                                                                                    |
| Long Term Stability                             | $\leq \pm 0.2\%$ URL per 5 years                                                                                                                            |                                                                                    |
| Response Time                                   | $\leq 200$ ms                                                                                                                                               |                                                                                    |
| Damping Time                                    | 0-100 s (Configurable)                                                                                                                                      |                                                                                    |
| Startup Time                                    | $\leq 6$ s                                                                                                                                                  |                                                                                    |
| Supply Voltage                                  |                                                                                                                                                             |                                                                                    |
| 4-20mA                                          | 10.5-55 VDC                                                                                                                                                 |                                                                                    |
| HART® with 250 $\Omega$ load                    | 16.5-55 VDC                                                                                                                                                 |                                                                                    |
| Modbus                                          | 5-32 VDC                                                                                                                                                    |                                                                                    |
| Loop Resistance                                 | 0-2119 $\Omega$                                                                                                                                             |                                                                                    |
| HART® Protocol                                  | 250-600 $\Omega$                                                                                                                                            |                                                                                    |
| Circuit Protection                              | Reverse Polarity and<br>EMC (EMI/RFI) protected                                                                                                             |                                                                                    |
| Power Consumption                               | $\leq 500$ mW @ 24 VDC, 20.8 mA                                                                                                                             |                                                                                    |
| Power Supply Effects                            | $< \pm 0.005\%$ URL/V                                                                                                                                       |                                                                                    |
| Mounting Position Effect                        | $\leq 0.06$ psi<br>Can be corrected by re-zeroing                                                                                                           |                                                                                    |
| Vibration Effect                                | $< 0.1\%$ URL<br>IEC61928-3 tests                                                                                                                           |                                                                                    |
| Relative Humidity                               | 5-100% R.H. @ 104°F                                                                                                                                         |                                                                                    |
| Construction                                    | Aluminum Ex-Pf Housing                                                                                                                                      |                                                                                    |
| IP Rating                                       | IP67                                                                                                                                                        |                                                                                    |
| Weight                                          |                                                                                                                                                             |                                                                                    |
| 2" Flange                                       | 17.9 lbs                                                                                                                                                    |                                                                                    |
| 3" Flange                                       | 23.1 lbs                                                                                                                                                    |                                                                                    |
| Warranty                                        | 3 years                                                                                                                                                     |                                                                                    |

Design and specifications are subject to change without notice. For latest revision, see [SORInc.com](http://SORInc.com).

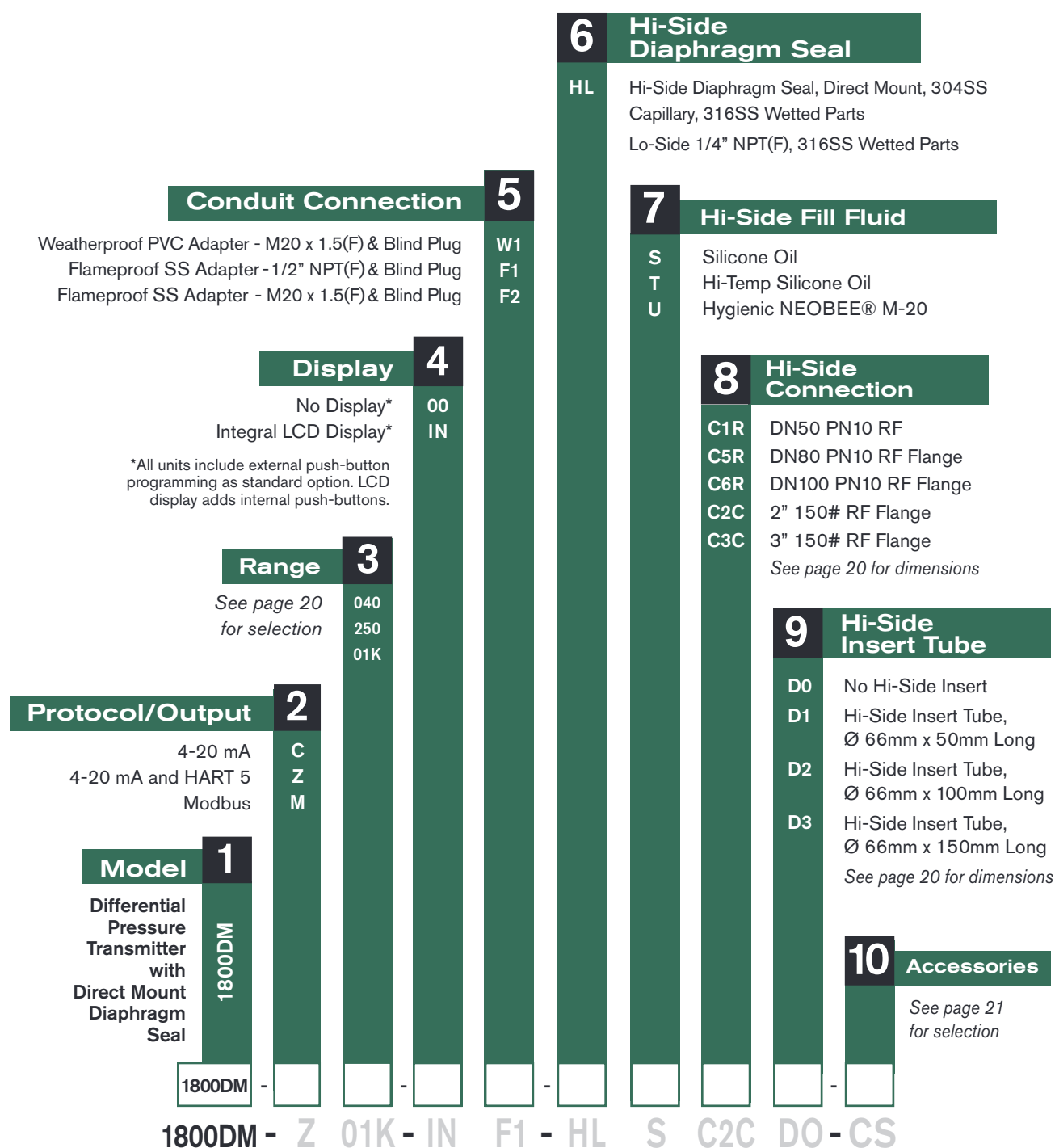
# 1800 Series Pressure Transmitters

## How to Order 1800DM

### How to Order

Below is the SOR quick select model number tree that provides you with all the options to configure and order a product for your application.

- You must select a designator for each component
- Reference tables, charts and additional information are provided throughout the catalog to help you make your selections, see pages noted in the tree.



See page 32 for agency and options.

### Ranges

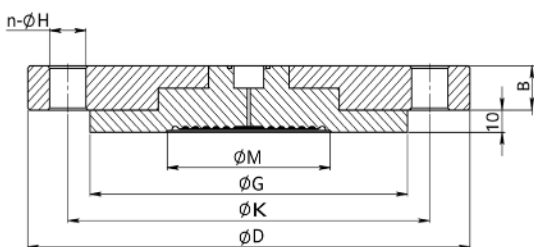
| Designator | LRL             | URL           | Smallest Possible Span | Max Static Pressure | Hi-Side Over Pressure | Lo-Side Over Pressure |
|------------|-----------------|---------------|------------------------|---------------------|-----------------------|-----------------------|
|            | psid (kPa)      | psid (kPa)    | psid (kPa)             | psi (MPa)           | psid (MPa)            | psid (MPa)            |
| 040        | -5.8<br>(-40)   | 5.8<br>(40)   | 1.45<br>(10)           | 1450<br>(10)        | 1450<br>(10)          | 1450<br>(10)          |
| 250        | -36.3<br>(-250) | 36.3<br>(250) | 1.81<br>(12.5)         | 1450<br>(10)        | 1450<br>(10)          | 72.5<br>(0.5)         |
| 01K        | -72.5<br>(-500) | 145<br>(1000) | 7.25<br>(50)           | 1450<br>(10)        | 1450<br>(10)          | 72.5<br>(0.5)         |

To determine if desired Measuring Range is achievable for a specific range option:

1. Lower End of Measuring Range  $\geq$  LRL
2. Upper End of Measuring Range  $\leq$  URL
3. Measuring Range Span = Upper End – Lower End  $\geq$  Smallest Possible Span

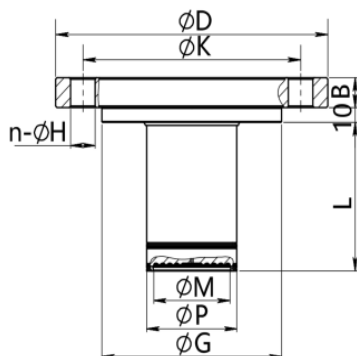
### Process Connection Dimensions

#### No Insert Tube



| Option                    | C1R | C5R | C6R |
|---------------------------|-----|-----|-----|
| Outer Diameter (ØD)       | 165 | 200 | 200 |
| Thickness (B)             | 19  | 20  | 20  |
| Hole Circumference (ØK)   | 125 | 160 | 160 |
| Raised Face Diameter (ØG) | 102 | 138 | 158 |
| Hole Diameter (ØH)        | 18  | 18  | 18  |
| Number (n)                | 4   | 8   | 8   |
| Corrugation Size (ØM)     | 56  | 71  | 71  |

#### Option C5R with Insert Tube



| Option                    | D1  | D2  | D3  |
|---------------------------|-----|-----|-----|
| Outer Diameter (ØD)       | 200 | 200 | 200 |
| Thickness (B)             | 20  | 20  | 20  |
| Hole Circumference (ØK)   | 160 | 160 | 160 |
| Raised Face Diameter (ØG) | 138 | 138 | 138 |
| Hole Diameter (ØH)        | 18  | 18  | 18  |
| Number (n)                | 8   | 8   | 8   |
| Corrugation Size (ØM)     | 42  | 42  | 42  |
| Insert Tube Diameter (ØP) | 66  | 66  | 66  |
| Insert Tube Length (L)    | 50  | 100 | 150 |

# 1800 Series Pressure Transmitters

## Accessories 1800DM

### Accessories

| Description                                                                                              | Designator |
|----------------------------------------------------------------------------------------------------------|------------|
| 304SS T-Shaped M20 x 1.5(M) Adapter for Lo-Side                                                          | CM         |
| 304SS U-Shaped 1/2" NPT Adapter for Lo-Side                                                              | CN         |
| Customer-Specified Display Settings <sup>1, 4</sup>                                                      | SC         |
| ATEX / IECEx Flameproof Ex db IIC T6 Gb, Ex tb IIIC T80°C Db <sup>1, 2</sup>                             | CL         |
| CSA Explosion Proof Class I, II, III, Div. 1, Grps. A, B, C, D, T6; Grps. E, F, G, T80°C <sup>2, 3</sup> | CS         |
| ATEX / IECEx Intrinsically Safe Ex ia IIC T4 Ga <sup>1</sup>                                             | CK         |
| CE Certificate                                                                                           | CE         |
| Degrease Treatment of Wetted Parts                                                                       | BB         |
| Electropolishing Treatment of Wetted Parts                                                               | CC         |
| Calibration Certificate                                                                                  | C1         |
| Static Pressure Report                                                                                   | C2         |

<sup>1</sup> Requires Display option IN    <sup>2</sup> Requires Conduit Connection option F1 or F2    <sup>3</sup> Not available with ATEX / IECEx Approvals

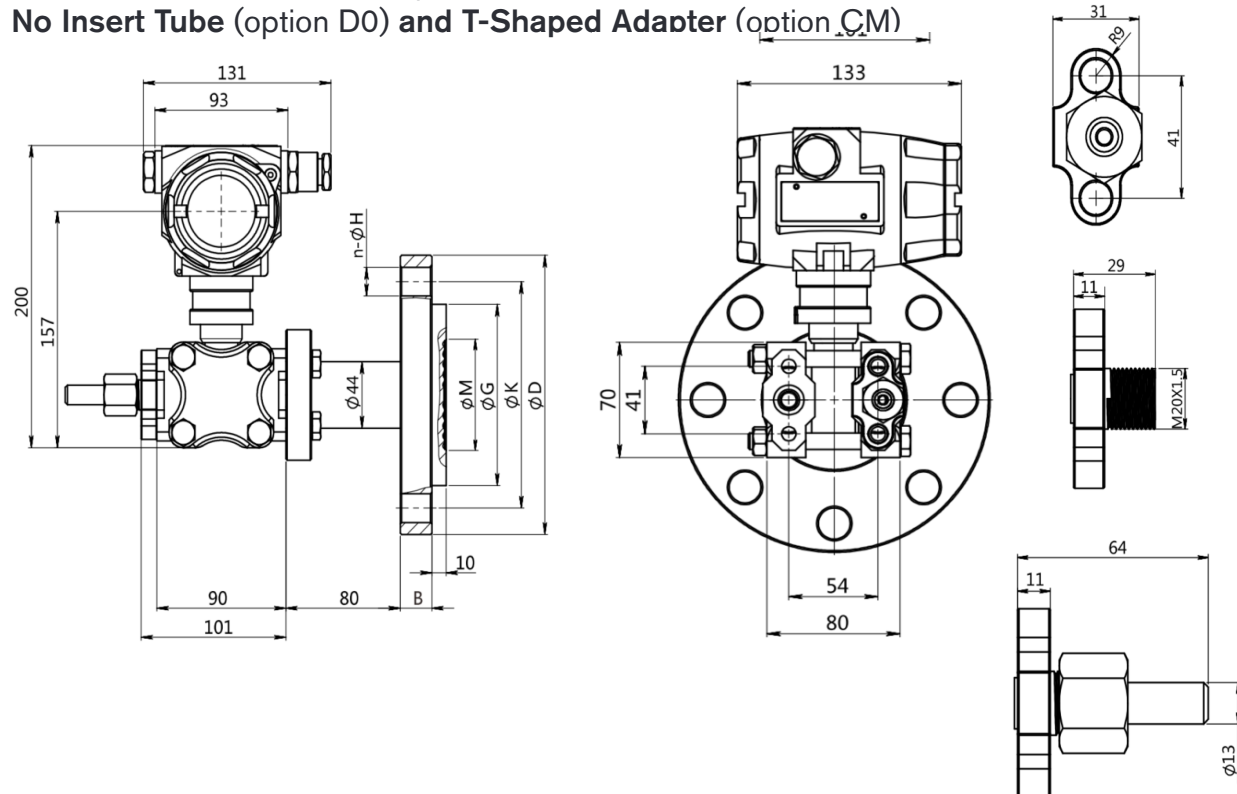
<sup>4</sup> Form 1835\_1800 Series SC Accessory Data Sheet must be completed and submitted with order

# 1800 Series Differential Pressure Transmitter

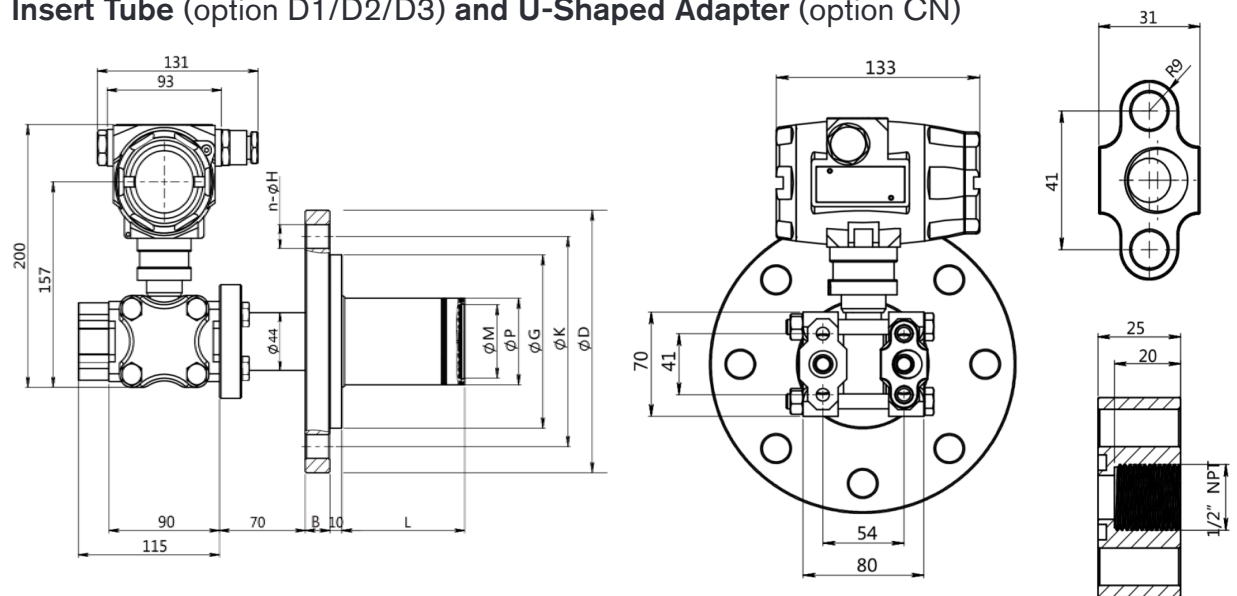
Dimensions  
**1800DM**

Dimensions shown are for reference only.  
Dimensions = mm

**With Integral LCD Display (option IN),  
No Insert Tube (option D0) and T-Shaped Adapter (option CM)**



**With Integral LCD Display (option IN),  
Insert Tube (option D1/D2/D3) and U-Shaped Adapter (option CN)**



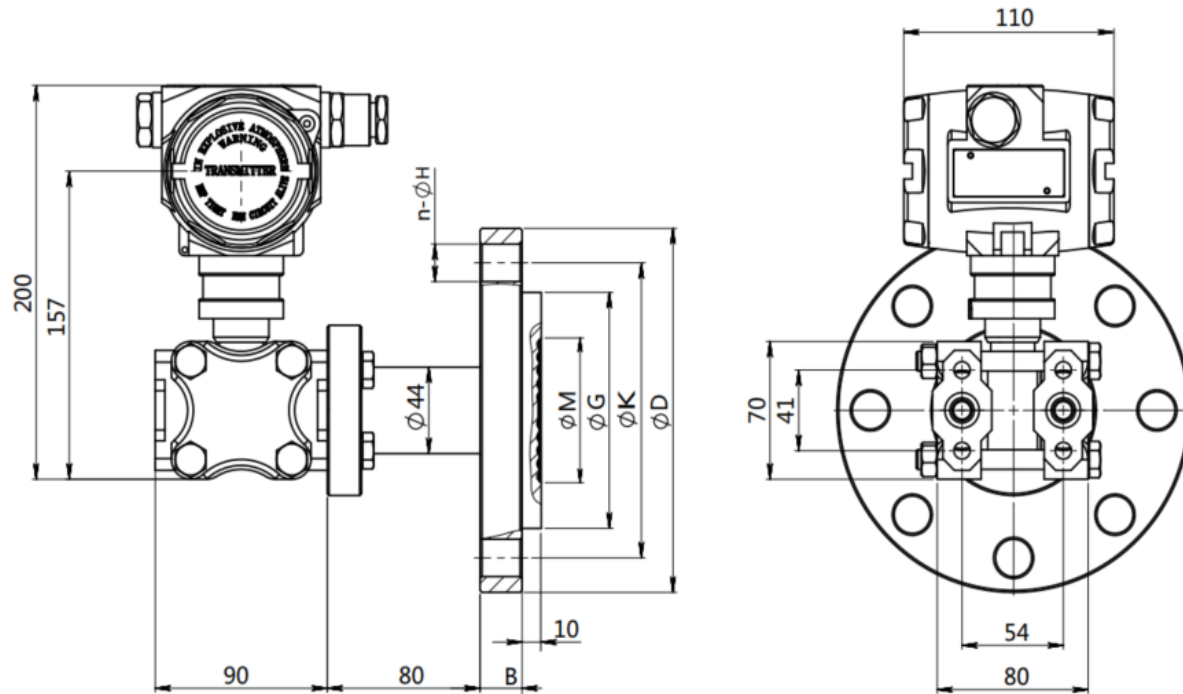
*Design and specifications are subject to change without notice. For latest revision, see SORInc.com.*

# 1800 Series Differential Pressure Transmitter

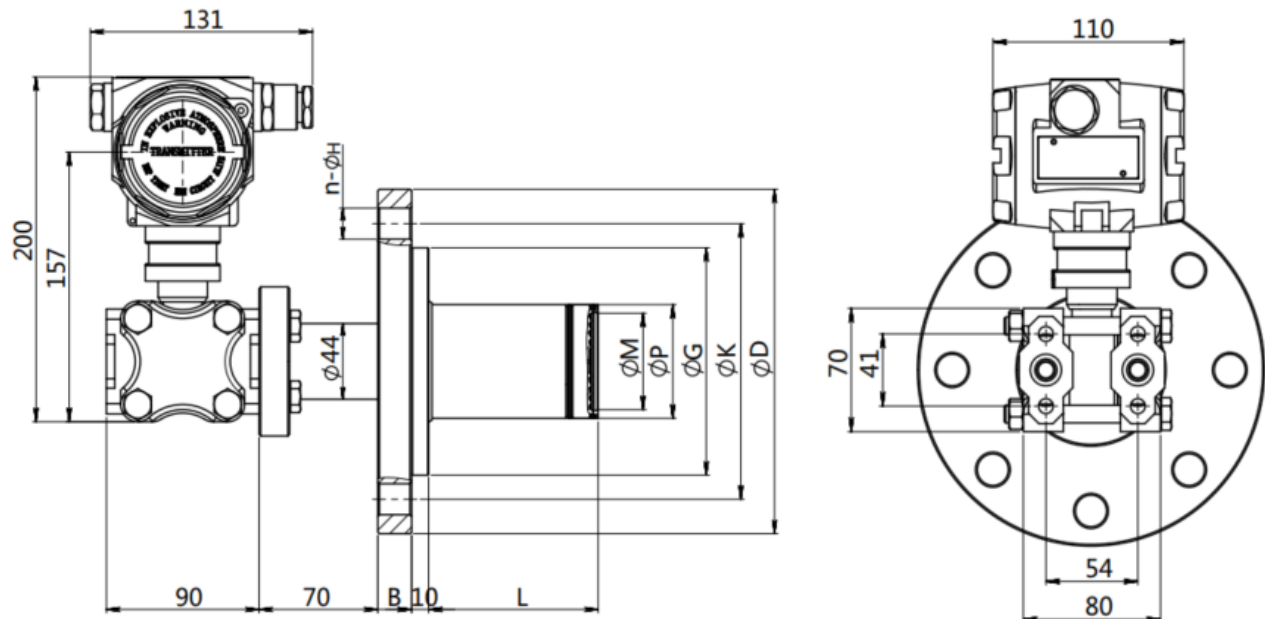
## Dimensions 1800DM

Dimensions shown are for reference only.  
Dimensions = mm

**Without Display (option 00) and No Insert Tube (option D0)**



**Without Display (option 00) and Insert Tube (option D1/D2/D3)**

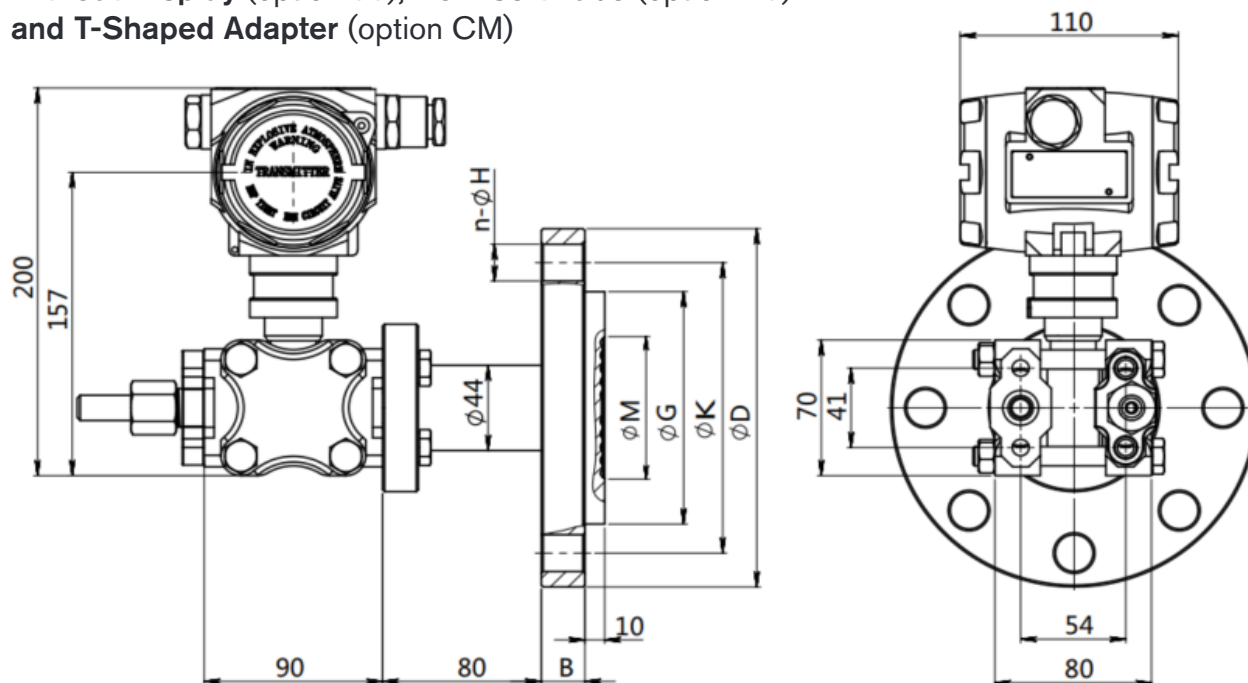


# 1800 Series Differential Pressure Transmitter

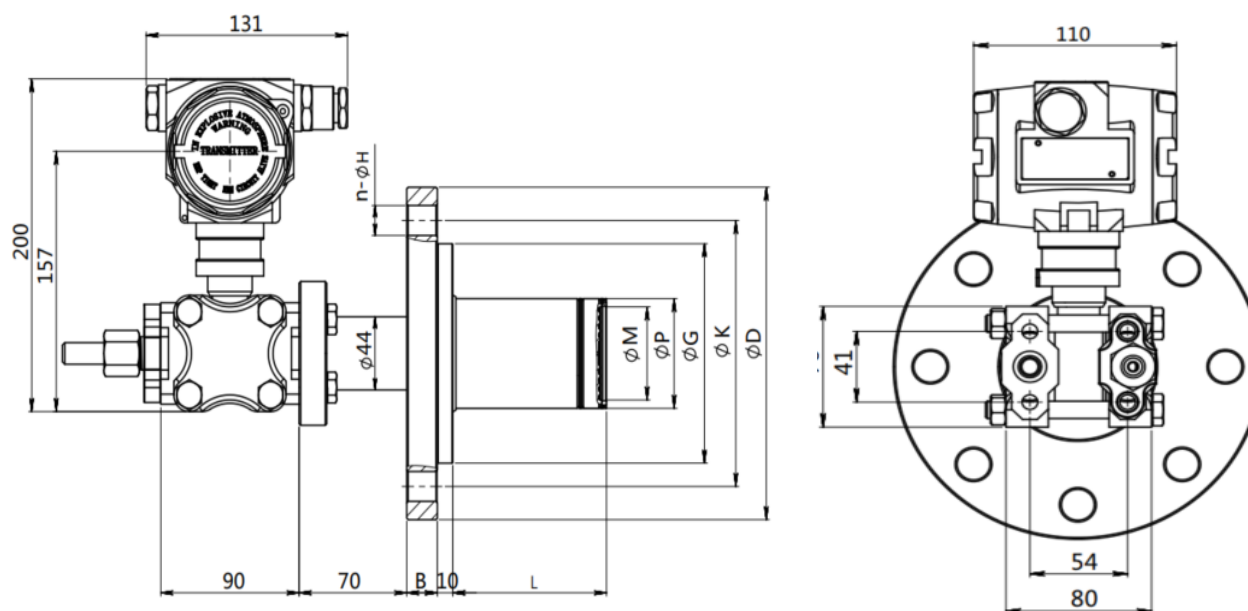
## Dimensions 1800DM

Dimensions shown are for reference only.  
Dimensions = mm

**Without Display** (option 00), **No Insert Tube** (option D0)  
and **T-Shaped Adapter** (option CM)



**Without Display** (option 00), **Insert Tube** (option D0)  
and **T-Shaped Adapter** (option CM)



# 1800 Series Differential Pressure Transmitter

## Product Specifications 1800RM

### Product Specifications - 1800RM

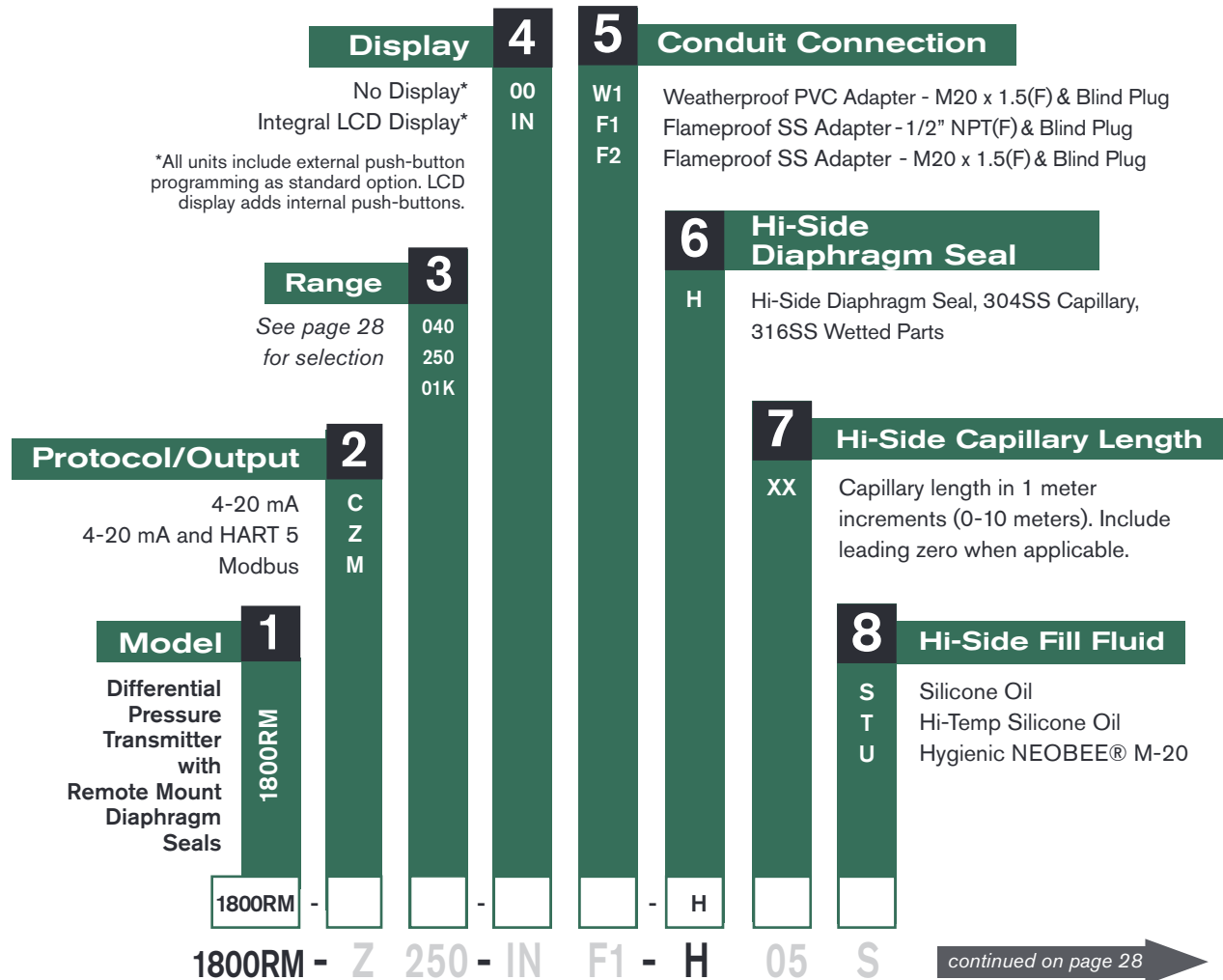
|                                                 |                                                                                                                                                           |                                                                                    |
|-------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| Output                                          | 4-20mA<br>Linear (default) or Square Root<br>HART 5 (Optional)<br>Modbus                                                                                  |  |
| Accuracy                                        | (Linearity, Hysteresis and Repeatability)<br>$\pm 0.2\%$ ( $\pm 0.5\%$ at max turndown)<br>*Square Root Output Accuracy<br>= 1.5 x Linear Output Accuracy |                                                                                    |
| Static Pressure Effects                         |                                                                                                                                                           |                                                                                    |
| Effect on Zero                                  | $\pm 3\%$ URL/580 psi                                                                                                                                     |                                                                                    |
| Effect on Full Scale                            | $\pm 0.2\%$ URL/580 psi                                                                                                                                   |                                                                                    |
| Temperature Effect                              | $\pm 2.1\%$ URL<br>@ -4 to 176°F                                                                                                                          |                                                                                    |
| Temperature Range                               |                                                                                                                                                           |                                                                                    |
| Compensated                                     | -4 to 176°F                                                                                                                                               |                                                                                    |
| Ambient (Limited by both Approvals and Display) |                                                                                                                                                           |                                                                                    |
| No Approvals or Display                         | -40 to 185°F                                                                                                                                              |                                                                                    |
| With Integral LCD Display<br>(No Approvals)     | -4 to 158°F                                                                                                                                               |                                                                                    |
| Intrinsically Safe                              | -40 to 140°F                                                                                                                                              |                                                                                    |
| Flameproof                                      | -13 to 140°F                                                                                                                                              |                                                                                    |
| Process                                         |                                                                                                                                                           |                                                                                    |
| Silicone Oil Fill Fluid                         | -49 to 401°F                                                                                                                                              |                                                                                    |
| Hi-Temp Silicone Oil Fill Fluid                 | 32 to 599°F                                                                                                                                               |                                                                                    |
| Hygienic NEOBEE® M-20 Fill Fluid                | 14 to 356°F                                                                                                                                               |                                                                                    |
| Flameproof                                      | Limits Max Temperature to 176°F                                                                                                                           |                                                                                    |
| Intrinsically Safe                              | Limits MaxTemperature to 248°F                                                                                                                            |                                                                                    |
| Storage                                         |                                                                                                                                                           |                                                                                    |
| No Display                                      | -40 to 230°F                                                                                                                                              |                                                                                    |
| With Integral LCD Display                       | -40 to 185°F                                                                                                                                              |                                                                                    |
| Long Term Stability                             | $\leq \pm 0.2\%$ URL per 5 years                                                                                                                          |                                                                                    |
| Response Time                                   | $\leq 200$ ms                                                                                                                                             |                                                                                    |
| Damping Time                                    | 0-100 s (Configurable)                                                                                                                                    |                                                                                    |
| Startup Time                                    | $\leq 6$ s                                                                                                                                                |                                                                                    |
| Supply Voltage                                  | 4-20mA<br>HART® with 250 $\Omega$ load<br>Modbus                                                                                                          | 10.5-55 VDC<br>16.5-55 VDC<br>5-32 VDC                                             |
| Loop Resistance                                 | HART® Protocol                                                                                                                                            | 0-2119 $\Omega$<br>250-600 $\Omega$                                                |
| Circuit Protection                              |                                                                                                                                                           | Reverse Polarity and<br>EMC (EMI/RFI) protected                                    |
| Power Consumption                               |                                                                                                                                                           | $\leq 500$ mW @ 24 VDC, 20.8 mA                                                    |
| Power Supply Effects                            |                                                                                                                                                           | $< \pm 0.005\%$ URL/V                                                              |
| Mounting Position Effect                        |                                                                                                                                                           | $\leq 0.06$ psi<br>Can be corrected by re-zeroing                                  |
| Vibration Effect                                |                                                                                                                                                           | $< 0.1\%$ URL<br>IEC61928-3 tests                                                  |
| Relative Humidity                               |                                                                                                                                                           | 5-100% R.H. @ 104°F                                                                |
| Construction                                    |                                                                                                                                                           | Aluminum Ex-Pf Housing                                                             |
| IP Rating                                       |                                                                                                                                                           | IP67                                                                               |
| Weight                                          |                                                                                                                                                           |                                                                                    |
| Tri-Clamp with No Brackets                      |                                                                                                                                                           | 14.0 lbs                                                                           |
| 2" Flange (One Side)                            |                                                                                                                                                           | 17.9 lbs                                                                           |
| 2" Flanges (Both Sides)                         |                                                                                                                                                           | 25.1 lbs                                                                           |
| 3" Flange (One Side)                            |                                                                                                                                                           | 23.1 lbs                                                                           |
| 3" Flanges (Both Sides)                         |                                                                                                                                                           | 35.7 lbs                                                                           |
| Warranty                                        |                                                                                                                                                           | 3 years                                                                            |

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### How to Order

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- You must select a designator for each component
- Reference tables, charts and additional information are provided throughout the catalog to help you make your selections, see pages noted in the tree.



See page 32 for agency and options.

# 1800 Series Pressure Transmitters

How to Order  
**1800RM**

| Lo-Side Capillary Length                                                                    |     | 12 | 13                                                                                                                                                                                                                          | Lo-Side Fill Fluid                                            |  |
|---------------------------------------------------------------------------------------------|-----|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|--|
| Capillary length in 1 meter increments (0-10 meters). Include leading zero when applicable. |     | XX | S<br>T<br>U                                                                                                                                                                                                                 | Silicone Oil<br>Hi-Temp Silicone Oil<br>Hygienic NEOBEE® M-20 |  |
| Lo-Side Diaphragm Seal                                                                      |     | 11 | 14 Lo-Side Connection                                                                                                                                                                                                       |                                                               |  |
| Lo-Side Diaphragm Seal, 304SS<br>Capillary, 316SS Wetted Parts                              |     | L  | C1R DN50 PN40 RF Flange<br>C5R DN80 PN10 RF Flange<br>C6R DN100 PN10 RF Flange<br>C1T 1-1/2" Tri-Clamp<br>C2T 2" Tri-Clamp<br>C2C 2" 150# ANSI RF Flange<br>C3C 3" 150# ANSI RF Flange<br><i>See page 28 for dimensions</i> |                                                               |  |
| Hi-Side Insert Tube                                                                         |     | 10 | 15 Lo-Side Insert Tube                                                                                                                                                                                                      |                                                               |  |
| No Hi-Side Insert Tube                                                                      | D0  |    |                                                                                                                                                                                                                             |                                                               |  |
| Hi-Side Insert Tube,<br>Ø 66mm x 50mm Long                                                  | D1  |    |                                                                                                                                                                                                                             |                                                               |  |
| Hi-Side Insert Tube,<br>Ø 66mm x 100mm Long                                                 | D2  |    |                                                                                                                                                                                                                             |                                                               |  |
| Hi-Side Insert Tube,<br>Ø 66mm x 150mm Long                                                 | D3  |    | D3 Lo-Side Insert Tube,<br>Ø 66mm x 150mm Long<br><i>See page 28 for dimensions</i>                                                                                                                                         |                                                               |  |
| Hi-Side Connection                                                                          |     | 9  | 16 Accessories                                                                                                                                                                                                              |                                                               |  |
| DN50 PN40 RF Flange                                                                         | C1R |    | See page 29 for selection                                                                                                                                                                                                   |                                                               |  |
| DN80 PN10 RF Flange                                                                         | C5R |    |                                                                                                                                                                                                                             |                                                               |  |
| DN100 PN10 RF Flange                                                                        | C6R |    |                                                                                                                                                                                                                             |                                                               |  |
| 1-1/2" Tri-Clamp                                                                            | C1T |    |                                                                                                                                                                                                                             |                                                               |  |
| 2" Tri-Clamp                                                                                | C2T |    |                                                                                                                                                                                                                             |                                                               |  |
| 2" 150# ANSI RF Flange                                                                      | C2C |    |                                                                                                                                                                                                                             |                                                               |  |
| 3" 150# ANSI RF Flange                                                                      | C3C |    |                                                                                                                                                                                                                             |                                                               |  |
| <i>See page 28 for dimensions</i>                                                           |     |    |                                                                                                                                                                                                                             |                                                               |  |

continued from page 27

C2C DO - L 05 S C2C DO - CS

**Example  
Model No.**

See page 32 for agency and options.

### Ranges

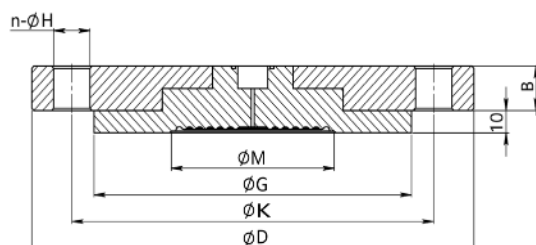
| Designator | LRL             | URL           | Smallest Possible Span | Max Static Pressure | Hi-Side Over Pressure | Lo-Side Over Pressure |
|------------|-----------------|---------------|------------------------|---------------------|-----------------------|-----------------------|
|            | psid (kPa)      | psid (kPa)    | psid (kPa)             | psi (MPa)           | psid (MPa)            | psid (MPa)            |
| 040        | -5.8<br>(-40)   | 5.8<br>(40)   | 0.58<br>(4)            | 1450<br>(10)        | 1450<br>(10)          | 1450<br>(10)          |
| 250        | -36.3<br>(-250) | 36.3<br>(250) | 3.63<br>(25)           | 1450<br>(10)        | 1450<br>(10)          | 72.5<br>(0.5)         |
| 01K        | -72.5<br>(-500) | 145<br>(1000) | 14.5<br>(100)          | 1450<br>(10)        | 1450<br>(10)          | 72.5<br>(0.5)         |

To determine if desired Measuring Range is achievable for a specific range option:

1. Lower End of Measuring Range  $\geq$  LRL
2. Upper End of Measuring Range  $\leq$  URL
3. Measuring Range Span = Upper End – Lower End  $\geq$  Smallest Possible Span

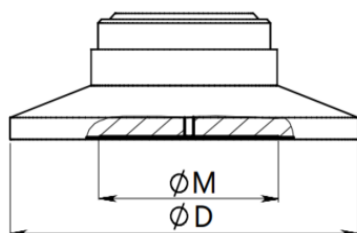
### Process Connection Dimensions

#### No Insert Tube



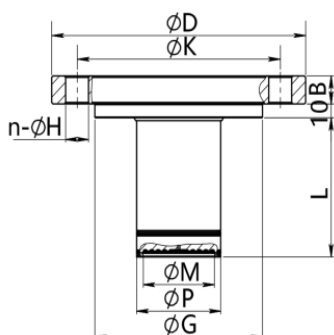
| Option                    | C1R | C5R | C6R |
|---------------------------|-----|-----|-----|
| Outer Diameter (ØD)       | 165 | 200 | 200 |
| Thickness (B)             | 19  | 20  | 20  |
| Hole Circumference (ØK)   | 125 | 160 | 160 |
| Raised Face Diameter (ØG) | 102 | 138 | 158 |
| Hole Diameter (ØH)        | 18  | 18  | 18  |
| Number (n)                | 4   | 8   | 8   |
| Corrugation Size (ØM)     | 56  | 71  | 71  |

#### Tri-Clamp



| Option                | C1T | C2T |
|-----------------------|-----|-----|
| Size (ØD)             | 165 | 200 |
| Corrugation Size (ØM) | 56  | 71  |

#### Option C5R with Insert Tube



| Option                    | D1  | D2  | D3  |
|---------------------------|-----|-----|-----|
| Outer Diameter (ØD)       | 200 | 200 | 200 |
| Thickness (B)             | 20  | 20  | 20  |
| Hole Circumference (ØK)   | 160 | 160 | 160 |
| Raised Face Diameter (ØG) | 138 | 138 | 138 |
| Hole Diameter (ØH)        | 18  | 18  | 18  |
| Number (n)                | 8   | 8   | 8   |
| Corrugation Size (ØM)     | 42  | 42  | 42  |
| Insert Tube Diameter (ØP) | 66  | 66  | 66  |
| Insert Tube Length (L)    | 50  | 100 | 150 |

### Accessories

| Description                                                                                             | Designator |
|---------------------------------------------------------------------------------------------------------|------------|
| Pipe Mounting Kit (Stainless Steel Bent Bracket for 2" Pipe) <i>Dimension drawing below.</i>            | PK         |
| Plate Mounting Kit (Stainless Steel Bent Bracket) <i>Dimension drawing page 30.</i>                     | PL         |
| Pipe Mounting Kit (Stainless Steel Flat Bracket for 2" Pipe) <i>Dimension drawing page 30.</i>          | PM         |
| Clamp for 1-1/2" Tri-Clamp, One Side <sup>1</sup> <i>Dimension drawing page 30.</i>                     | F1         |
| Clamp for 2" Tri-Clamp, One Side <sup>2</sup> <i>Dimension drawing page 30.</i>                         | F2         |
| Clamps for 1-1/2" Tri-Clamps, Both Sides <sup>3</sup> <i>Dimension drawing page 30.</i>                 | F3         |
| Clamps for 2" Tri-Clamps, Both Sides <sup>4</sup> <i>Dimension drawing page 30.</i>                     | F4         |
| Gasket for 1-1/2" Tri-Clamp, One Side <sup>1</sup> <i>Dimension drawing page 30.</i>                    | G1         |
| Gasket for 2" Tri-Clamp, One Side <sup>2</sup> <i>Dimension drawing page 30.</i>                        | G2         |
| Gaskets for 1-1/2" Tri-Clamps, Both Sides <sup>3</sup> <i>Dimension drawing page 30.</i>                | G3         |
| Gaskets for 2" Tri-Clamps, Both Sides <sup>4</sup> <i>Dimension drawing page 30.</i>                    | G4         |
| Welding Adapter for 1-1/2" Tri-Clamp, One Side <sup>1</sup> <i>Dimension drawing page 30.</i>           | W1         |
| Welding Adapter for 2" Tri-Clamp, One Side <sup>2</sup> <i>Dimension drawing page 30.</i>               | W2         |
| Welding Adapters for 1-1/2" Tri-Clamps, Both Sides <sup>3</sup> <i>Dimension drawing page 30.</i>       | W3         |
| Welding Adapters for 2" Tri-Clamps, Both Sides <sup>4</sup> <i>Dimension drawing page 30.</i>           | W4         |
| Customer-Specified Display Settings <sup>5,6</sup>                                                      | SC         |
| ATEX / IECEx Flameproof Ex db IIC T6 Gb, Ex tb IIIC T80°C Db <sup>5,7</sup>                             | CL         |
| CSA Explosion Proof Class I, II, III, Div. 1, Grps. A, B, C, D, T6; Grps. E, F, G, T80°C <sup>7,8</sup> | CS         |
| ATEX / IECEx Intrinsically Safe Ex ia IIC T4 Ga <sup>5</sup>                                            | CK         |
| CE Certificate                                                                                          | CE         |
| Degrease Treatment of Wetted Parts                                                                      | BB         |
| Electropolishing Treatment of Wetted Parts                                                              | CC         |
| Calibration Certificate                                                                                 | C1         |
| Static Pressure Report                                                                                  | C2         |

<sup>1</sup> Requires C1T for Hi and/or Lo-Side Flange

<sup>2</sup> Requires C2T for Hi and/or Lo-Side Flange

<sup>3</sup> Requires C1T for both Hi and Lo-Side Flange

<sup>4</sup> Requires C2T for both Hi and Lo-Side Flange

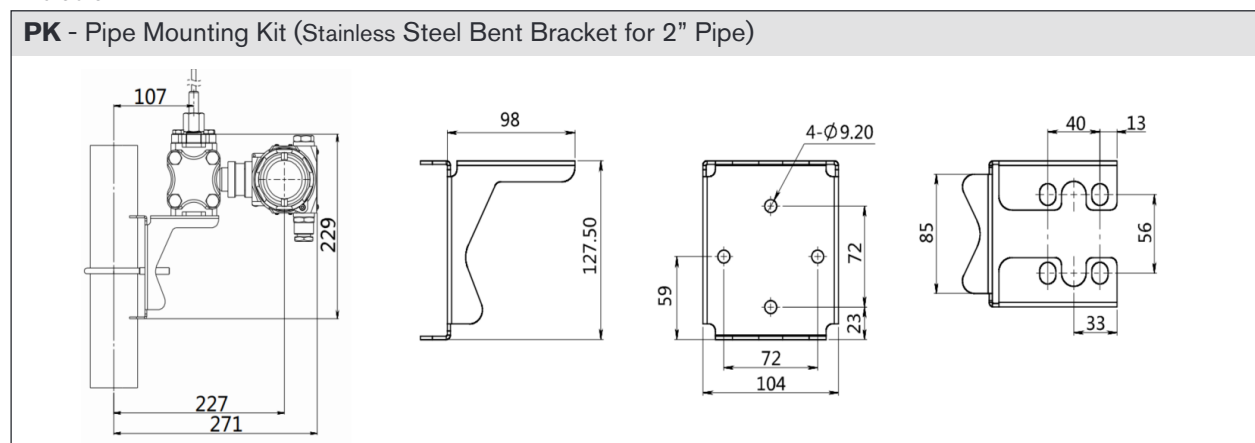
<sup>5</sup> Requires Display option IN

<sup>6</sup> Form 1835\_1800 Series SC Accessory Data Sheet must be completed and submitted with order

<sup>7</sup> Requires Conduit Connection option F1 or F2

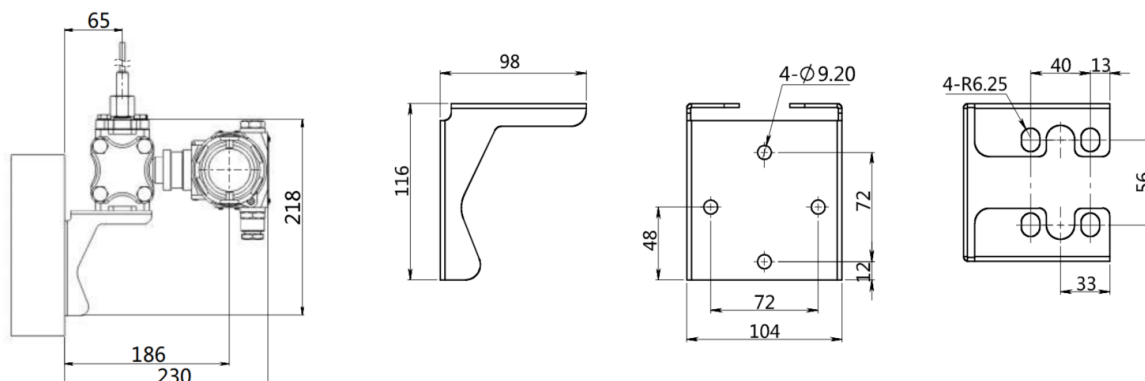
<sup>8</sup> Not available with ATEX / IECEx Approvals

Dimensions = mm

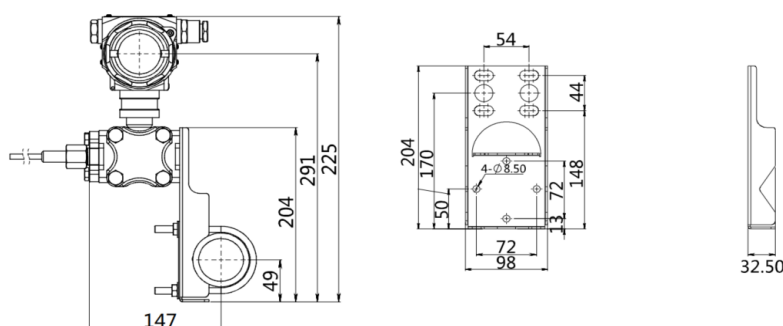


Dimensions = mm

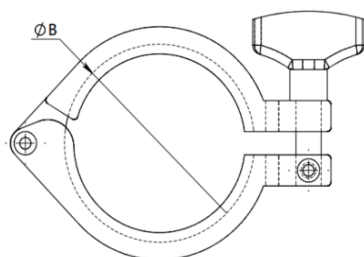
### PL - Plate Mounting Kit (Stainless Steel Bent Bracket)



### PM - Pipe Mounting Kit (Stainless Steel Flat Bracket for 2" Pipe)

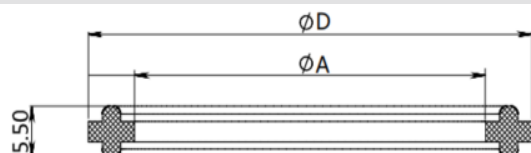


### F1/F2/F3/F4 - Tri-Clamp



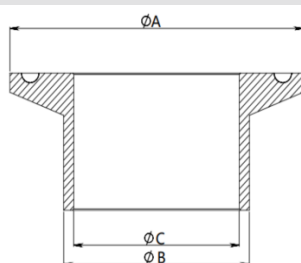
| Option    | F1/F3 (1-1/2" Clamp) | F2/F4 (2" Clamp) |
|-----------|----------------------|------------------|
| Size (ØB) | 53.9                 | 67.4             |

### G1/G2/G3/G4 - Tri-Clamp Gasket



| Option    | G1/G3 (1-1/2" Clamp) | G2/G4 (2" Clamp) |
|-----------|----------------------|------------------|
| Size (ØD) | 50.5                 | 64               |
| Size (ØA) | 35                   | 47.8             |

### W1/W2/W3/W4 - Tri-Camp Welding Adapter



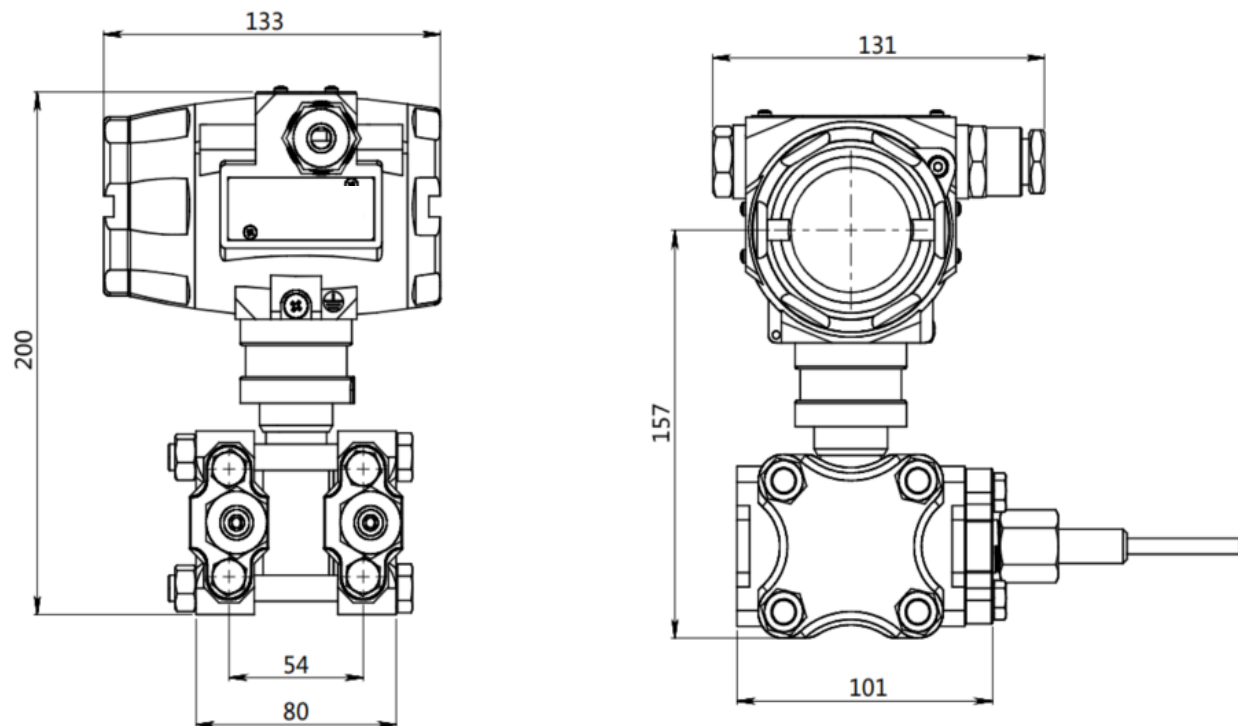
| Option    | W1/W3 (1-1/2" Clamp) | W2/W4 (2" Clamp) |
|-----------|----------------------|------------------|
| Size (ØA) | 50.5                 | 64               |
| Size (ØB) | 38                   | 51               |
| Size (ØC) | 35.6                 | 48.6             |

# 1800 Series Differential Pressure Transmitter

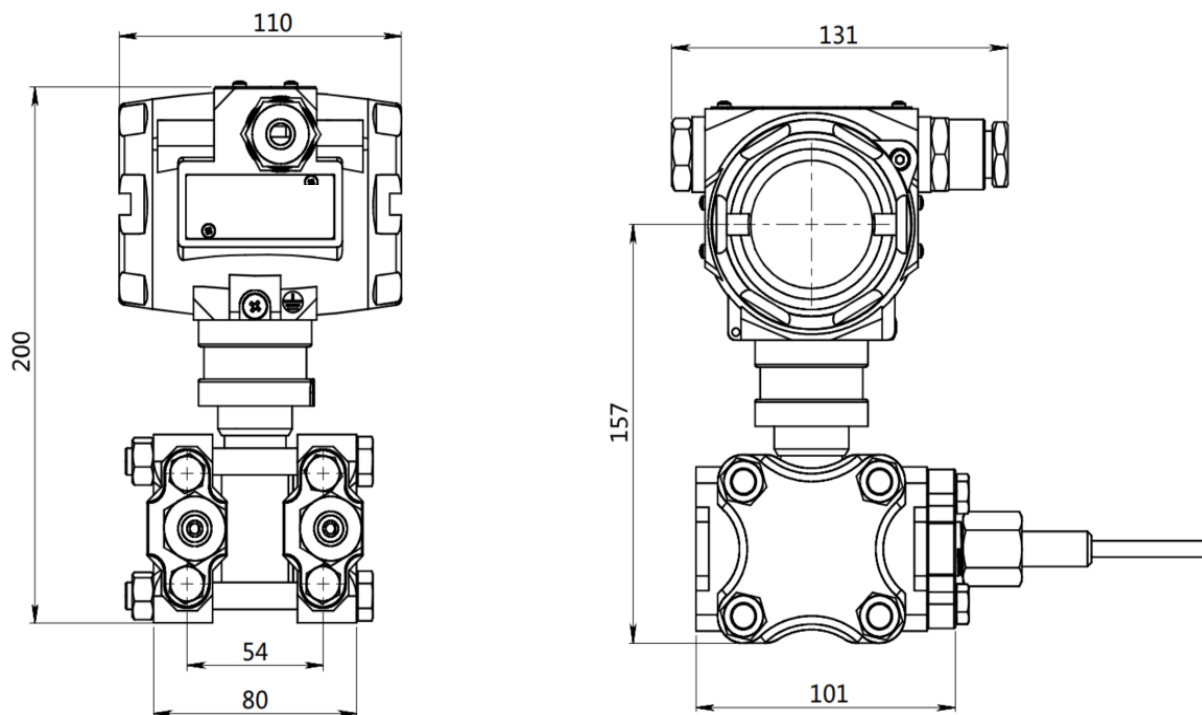
Dimensions  
**1800RM**

Dimensions shown are for reference only.  
Dimensions = mm

## With Integral LCD Display (option IN)



## Without Display (option 00)



# 1800 Series Pressure Transmitters

## Agency and Options

### Agency Approvals

| Approved              | Safety Method      | Approval                                                            |
|-----------------------|--------------------|---------------------------------------------------------------------|
| ATEX / IECEx          | Intrinsically Safe | EX ia IIC T4 Ga                                                     |
|                       | Flameproof         | Ex db IIC T6 Gb<br>Ex tb IIIC T80°C Db                              |
| CSA (U.S. and Canada) | Explosion Proof    | Class I, II, III; Division 1<br>Groups A-D; T6<br>Groups E-G; T80°C |

### Manifolds

The 1800 Series Conventional Pressure Transmitters are available with two, three, or five-valve manifolds. The information in the Product Specifications table and Pressure-Temperature Limit chart below applies to all manifold models.

### Product Specifications

#### Materials of Construction

|            |                        |
|------------|------------------------|
| Valve Body | 304SS or 316SS         |
| Valve Seat | Stainless Steel        |
| Valve Tip  | Duplex Stainless Steel |
| Stop Pin   | Stainless Steel        |
| Packing    | PTFE                   |

|                     |              |
|---------------------|--------------|
| Process Temperature | ≤ 302°F      |
| Ambient Temperature | -22 to 199°F |

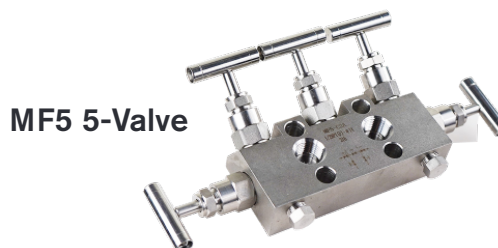
*Design and specifications are subject to change without notice.  
For latest revision, see SORInc.com.*



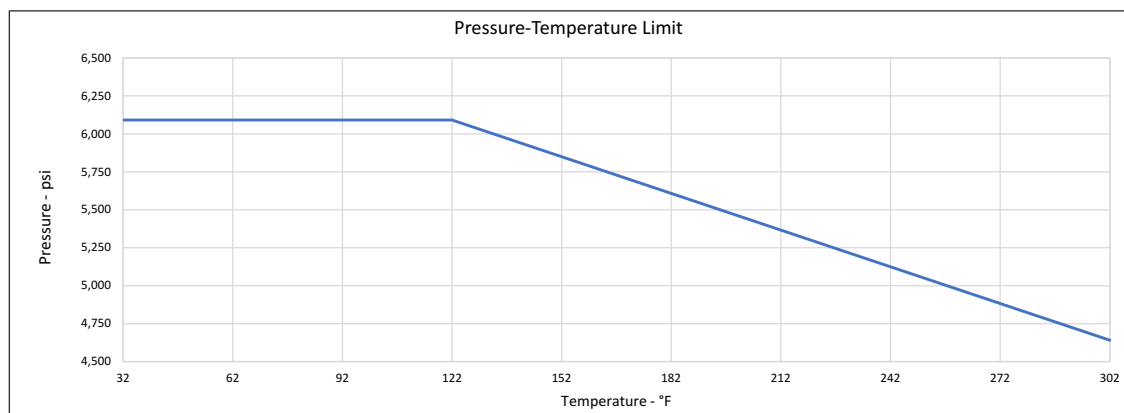
**MF2 2-Valve**



**MF3 3-Valve**



**MF5 5-Valve**



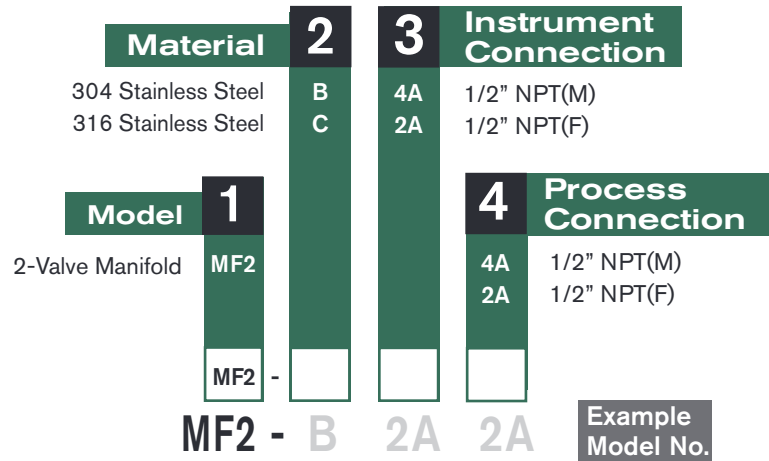
# 1800 Series Pressure Transmitters

## 2-Valve Manifold

### How to Order

Below is the SOR quick select model number tree that provides you with all the options to configure and order a product for your application.

- You must select a designator for each component



Alternative materials and connections are available. Consult factory for details.

Dimensions = mm

| Connections                                       |  |
|---------------------------------------------------|--|
| Instrument - 1/2" NPT(F)<br>Process - 1/2" NPT(F) |  |
| Instrument - 1/2" NPT(M)<br>Process - 1/2" NPT(F) |  |
| Instrument - 1/2" NPT(M)<br>Process - 1/2" NPT(M) |  |

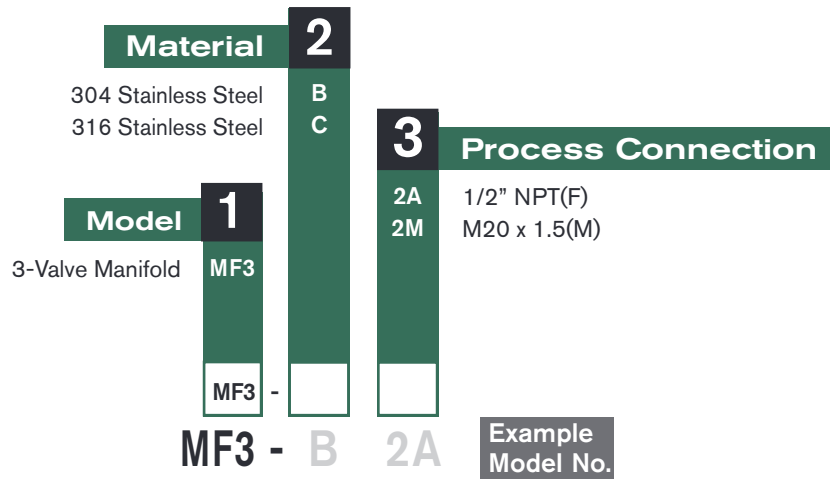
# 1800 Series Pressure Transmitters

## 3-Valve Manifold

### How to Order

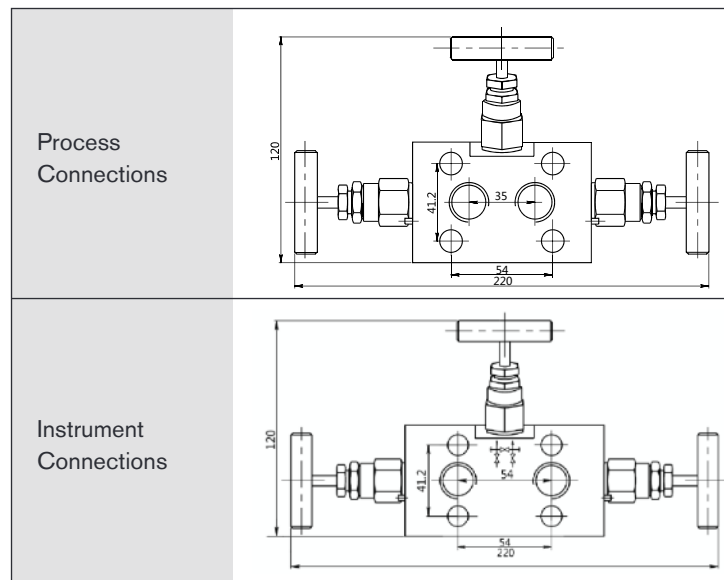
Below is the SOR quick select model number tree that provides you with all the options to configure and order a product for your application.

- You must select a designator for each component



Alternative materials and connections are available. Consult factory for details.

Dimensions = mm



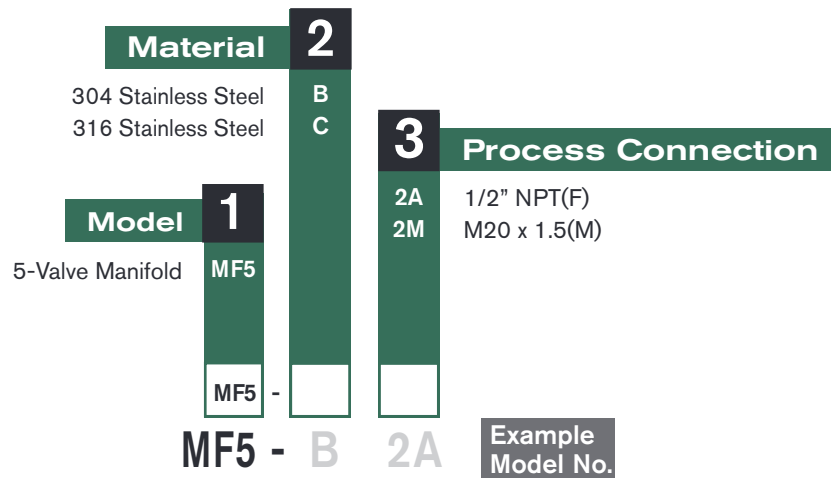
# 1800 Series Pressure Transmitters

## 5-Valve Manifold

### How to Order

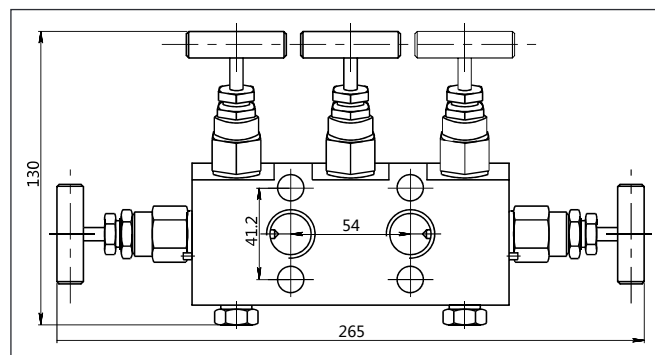
Below is the SOR quick select model number tree that provides you with all the options to configure and order a product for your application.

- You must select a designator for each component



Alternative materials and connections are available. Consult factory for details.

Dimensions = mm





MEASUREMENT AND CONTROL

Lenexa, KS USA | 913-888-2630 | Fax 913-888-0767 | [SORInc.com](http://SORInc.com)