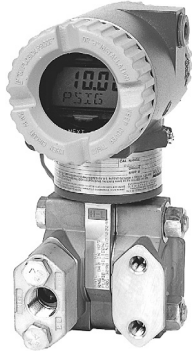


# IGP20 I/A Series® Intelligent Gauge Pressure Transmitters



- Choice of Mounting Styles
  - ✓ IGP20, bracket mounted, for lower ranges, more material options, vacuum measurement.
- Rugged & Dependable
  - ✓ Field-proven silicon strain gauge technology
  - ✓ Corrosion-resistant epoxy finish
- Superior Performance
  - ✓ Accuracy to  $\pm 0.05\%$  of span
  - ✓ Ambient temperature effects to  $\pm(0.03\% \text{ URL} + 0.06\%) \text{ span per } 28^\circ\text{C} (50^\circ\text{F})$
- Choice of Electronics Modules
  - ✓ Intelligent HART, Foundation Fieldbus, Profibus, FoxCom, and 4-20 mA versions
  - ✓ Economical 4-20 mA and 1 to 5 Vdc versions
- LCD Indicator/Pushbutton Configurator
  - ✓ Optional on Foundation Fieldbus, Profibus, FoxCom/4-20 mA, and HART/4-20 versions; Standard on 4-20 mA and 1 to 5 Vdc versions
- Standard Warranty 5 Years

### Functional Specifications

#### Sensor Temperature Limits:

DC200:  $-46$  &  $+121^\circ\text{C} (-50^\circ + 250^\circ\text{F})$   
 FC77:  $-29$  &  $+85^\circ\text{C} (-20^\circ + 185^\circ\text{F})$

#### Ambient Temperature Limits:

DC200:  $-40$  &  $+85^\circ\text{C} (-40^\circ + 185^\circ\text{F})$   
 FC77:  $-29$  &  $+85^\circ\text{C} (-20^\circ + 185^\circ\text{F})$

**Electrical Classification:** Various agency certifications for Zone and Division hazardous locations. Refer to Product Specification sheets for complete specifications.

This transmitter measures gauge pressure and transmits a 4-20 mA, 1 to 5 Vdc, or digital output signal over a pair of wires.

For complete specifications, refer to Product Specification Sheets PSS 2A-1C13 A, B, C, D, E, and J.

### Output signal and configuration:

| Version | Output Choices  | Configure From  |
|---------|---|---|
| -D      | <ul style="list-style-type: none"> <li>✓ FoxCom Digital</li> <li>✓ FoxCom/4 to 20 mA</li> </ul> | <ul style="list-style-type: none"> <li>✓ I/A Series Workstation</li> <li>✓ Hand-Held Terminal</li> <li>✓ Personal Computer</li> <li>✓ Optional Pushbuttons</li> </ul> |
| -T      | <ul style="list-style-type: none"> <li>✓ HART/4 to 20mA</li> </ul>                              | <ul style="list-style-type: none"> <li>✓ Communicator</li> <li>✓ Workstation</li> <li>✓ Personal Computer</li> </ul>  |
| -F      | <ul style="list-style-type: none"> <li>✓ Foundation Fieldbus</li> </ul>                         | <ul style="list-style-type: none"> <li>✓ Workstation</li> </ul>   |
| -A,     | <ul style="list-style-type: none"> <li>✓ 4 to 20mA</li> </ul>                                   | <ul style="list-style-type: none"> <li>✓ Standard Pushbuttons</li> </ul>  |
| -V      | <ul style="list-style-type: none"> <li>✓ 1-5 Vdc</li> </ul>                                     | <ul style="list-style-type: none"> <li>✓ Standard Pushbuttons</li> </ul>  |

### Span, Range and Overrange Limits:

#### Bracket Mounted Gauge Pressure IGP20

| Span Limits Code | Span Limits    |                           |                |
|------------------|----------------|---------------------------|----------------|
| A                | 0.12 & 7.5 kPa | 0.5 & 30 H <sub>2</sub> O | 1.2 & 75 mbar  |
| B                | 0.87 & 50 kPa  | 0.125 & 7 psi             | 8.7 & 500 mbar |
| C                | 7.0 & 210 kPa  | 1.0 & 30 psi              | 70 & 2100 mbar |
| D                | 0.07 & 2.1 MPa | 10 & 300 psi              | 0.7 & 21 bar   |
| E                | 0.70 & 21 MPa  | 100 & 3000 psi            | 7 & 210 bar    |

| Span Limits Code | Range Limits <sup>(1)</sup> |                            |   |
|------------------|-----------------------------|----------------------------|---|
| A                | -7.5 & +7.5 kPa             | -30 & +30 H <sub>2</sub> O | -0.075 & +0.075 bar or kg/cm <sup>2</sup> |
| B                | -50 & +50 kPa               | -7 & +7 psi                | -0.5 & +0.5 bar or kg/cm <sup>2</sup>     |
| C                | -100 & +210 kPa             | -14.7 & +30 psi            | -1 & +2.1 bar or kg/cm <sup>2</sup>       |
| D                | -0.1 & 2.1 MPa              | -14.7 & +300 psi           | -1 & +21 bar or kg/cm <sup>2</sup>        |
| E                | -0.1 & 21 MPa               | -14.7 & +3000 psi          | -1 & +210 bar or kg/cm <sup>2</sup>       |

| Transmitter Configuration<br>(See Model Code for Description of Options) | Maximum Overrange (absolute) |      |                           |
|--|------------------------------|------|---------------------------|
|  | Overrange Pressure Rating    |      |                           |
|  | MPa                          | psi  | bar or kg/cm <sup>2</sup> |
| Standard or with Option -B2, -D3, or -D7                                 | 25                           | 3625 | 250                       |
| With Option -B3  | 20                           | 2900 | 200                       |
| With Option -D1  | 16                           | 2320 | 160                       |
| With Option -B1 or -D5   | 15                           | 2175 | 150                       |
| With Option -D2, -D4, -D6, or -D8  | 10                           | 1500 | 100                       |
| With Structure Codes 78 and 79 (pdf insert)                              | 2.1                          | 300  | 21                        |

**Performance Specifications**

Accuracy (Includes Linearity, Hysteresis, and Repeatability):

| Version  | Output                | Signal Accuracy in % of Calib. Span |
|----------|-----------------------|-------------------------------------|
| -D or -T | Digital<br>4 to 20 mA | ±0.05<br>±0.075                     |
| -F       | Digital               | ±0.05                               |
| -A       | 4 to 20 mA            | ±0.20                               |
| -V       | 1 to 5 Vdc            | ±0.10                               |

Refer to PSSs for accuracies at small spans (less than 10% of URL).

**Physical Specifications**

**Material Combination & Value Package:** Refer to “How To Order” for material versions available. For exceptional value and corrosion resistance, the standard material combination with the lowest price is 316 ss Hi-Side Process Cover with 316L ss Sensor.

**Sensor Fill Fluid:** Dow Corning dimethylsiloxane (DC 200) or fluorinated hydrocarbon (3M Fluorinert FC77), as specified.

**Enclosure Classification:** Meets IEC IP66 & NEMA Type 4X.

**How to Order – Specify Model IGP20**

**Electronics Versions and Output Signal**

|                     |    |
|---------------------|----|
| 4-20 mA/FoxCom      | .D |
| 4 to 20 mA/HART     | .T |
| Foundation Fieldbus | .F |
| 4 to 20 mA          | .A |
| 1 to 5 V dc         | .V |

**Structure Code – Select from one of the following three groups**

**1. Transmitter**

**Hi-Side**

**Process Cover**

**Sensor**

**Sensor Fill Fluid**

|                      |                      |   |     |
|----------------------|----------------------|---|-----|
| Steel                | Co-Ni-Cr             | Silicone  | .10 |
| Steel                | Co-Ni-Cr             | Fluorinert  | .11 |
| Steel                | 316L ss              | Silicone  | .12 |
| Steel                | 316L ss              | Fluorinert  | .13 |
| Steel                | Hastelloy C          | Silicone  | .16 |
| Steel                | Hastelloy C          | Fluorinert  | .17 |
| 316 ss               | Co-Ni-Cr             | Silicone  | .20 |
| 316 ss               | Co-Ni-Cr             | Fluorinert  | .21 |
| 316 ss               | 316L ss              | Silicone  | .22 |
| 316 ss               | 316L ss              | Fluorinert  | .23 |
| 316 ss               | 316L ss, Gold Plated | Silicone  | .2G |
| 316 ss               | Monel                | Silicone  | .24 |
| 316 ss               | Monel                | Fluorinert  | .25 |
| 316 ss               | Hastelloy C          | Silicone  | .26 |
| 316 ss               | Hastelloy C          | Fluorinert  | .27 |
| Monel                | Monel                | Silicone  | .34 |
| Monel                | Monel                | Fluorinert  | .35 |
| Hastelloy C          | Hastelloy C          | Silicone  | .46 |
| Hastelloy C          | Hastelloy C          | Fluorinert  | .47 |
| Hastelloy C          | Tantalum             | Silicone  | .48 |
| Hastelloy C          | Tantalum             | Fluorinert  | .49 |
| pvdF Insert (Kynar®) | Tantalum             | Silicone (used with Process Connector Type 7 below)   | .78 |
| pvdF Insert (Kynar)  | Tantalum             | Fluorinert (used with Process Connector Type 7 below) | .79 |

**2. Transmitter Prepared for Foxboro Model Coded Seals<sup>(2)</sup>**

|  |     |
|--|-----|
| Transmitter Prepared for Foxboro Direct Connect Seal; Silicone Fill in Sensor <sup>(3)</sup>   | .F1 |
| Transmitter Prepared for Foxboro Direct Connect Seal; Fluorinert Fill in Sensor <sup>(3)</sup> | .F2 |
| Transmitter Prepared for Foxboro Remote Mount Seal; Silicone Fill in Sensor <sup>(4)</sup>     | .S3 |
| Transmitter Prepared for Foxboro Remote Mount Seal; Fluorinert Fill in Sensor <sup>(4)</sup>   | .S4 |

**3. Transmitter Prepared for non-Foxboro Seals**

|   |     |
|---|-----|
| Transmitter Prepared for Remote Seal; Silicone Fill in Sensor   | .SC |
| Transmitter Prepared for Remote Seal; Fluorinert Fill in Sensor | .SD |

**Span Limits**

| kPa          | psi          | mbar  | inH <sub>2</sub> O |   |
|--------------|--------------|---|--------------------|---|
| 0.12 and 7.5 | –            | 1.2 and 75  | 0.5 and 30         | A |
| 0.87 and 50  | 0.125 and 7  | 8.7 and 500                                       | 3.5 and 200        | B |
| 7 and 210    | 1 and 30     | 70 and 2100                                       | 28 and 840         | C |
| MPa          | psi          | bar or kg/cm <sup>2</sup>                         |                    |   |
| 0.07 and 2.1 | 10 and 300   | 0.70 and 21                                       |                    | D |
| 0.70 and 21  | 100 and 3000 | 7.0 and 210 (not with Structure Code 78/79 above) |                    | E |

**Process Connector Type (Material Same as Process Cover Material)**

|  |   |
|--|---|
| None, Covers Tapped for 1/4 NPT  | 0 |
| ¼ NPT  | 1 |
| ½ NPT  | 2 |
| Rc ¼   | 3 |
| Rc ½   | 4 |
| ½ Schedule 80 Welding Neck   | 6 |
| None, pvdf (Kynar) insert tapped for ½ NPT (used with Structure Codes 78 & 79) | 7 |

**Conduit Connection and Housing Material**

|  |   |
|--|---|
| ½ NPT Conduit Connections, Aluminum Housing          | 1 |
| PG 13.5 Conduit Connections, Aluminum Housing        | 2 |
| ½ NPT Conduit Connections, 316 ss Housing            | 3 |
| PG 13.5 Conduit Connections, 316 ss Housing          | 4 |
| M20 Conduit Connection, Both Sides, Aluminum Housing | 5 |
| M20 Conduit Connection, Both Sides, 316 ss Housing   | 6 |

**Electrical Safety (See PSS for Description and Restrictions)**

|  |    |
|--|----|
| ATEX II GD, EEx ia IIC, or II 1/2 GD, EEx ib IIC     | .E |
| ATEX Flameproof; II 2 GD, EEx d IIC, Zone 1          | .D |
| ATEX II 3 GD, EEx nL IIC                             | .N |
| ATEX Multiple Certifications (E, D, and N)           | .M |
| CSA Certified  | .C |
| CSA Certified (including Flameproof Zones)           | .B |
| FM approved  | .F |
| FM approved (including Flameproof Zones)             | .G |
| IECEX Intrinsically Safe, Ex ia IIC T4               | .T |
| IECEX Intrinsically Safe, Protection n; Ex nL IIC T4 | .U |

**Optional Selections**

**Mounting Bracket Set—Specify Only One**

|  |     |
|--|-----|
| Painted Steel Bracket with Plated Steel Bolts                | -M1 |
| Stainless Steel Bracket with Stainless Steel Bolts           | -M2 |
| Universal Stainless Steel Bracket with Stainless Steel Bolts | -M3 |

**Indicator with Internal Pushbuttons**

|  |     |
|--|-----|
| Digital Indicator, Pushbuttons, and Window Cover for IGP20-D, -T, -P, and -F only <sup>(5)</sup> | -L1 |
| Blind (solid) cover over the std. LCD on -A, or -V   | -L2 |

**DIN 19213 Construction—Specify Only One and**

**Specify Process Connector Code 0**

|   |     |
|---|-----|
| Single Ended Process Cover with M10 Bolting   | -D1 |
| Double Ended Process Cover with M10 Bolting (Blind Kidney Range on Back)              | -D2 |
| Single Ended Process Cover with ⅝ inch Bolting  | -D3 |
| Double Ended Process Cover with ⅝ inch Bolting (Blind Kidney Flange on Back)          | -D4 |
| Single Ended Process Covers with 316 ss ⅝ inch Bolting                                | -D5 |
| Double Ended Process Covers with 316 ss ⅝ inch Bolting (Blind Kidney Flange on Back)  | -D6 |
| Single Ended Process Covers with 17-4 ss ⅝ inch Bolting                               | -D7 |
| Double Ended Process Covers with 17-4 ss ⅝ inch Bolting (Blind Kidney Flange on Back) | -D8 |

**Cleaning and Preparation—Specify Only One**

|   |     |
|---|-----|
| Unit Degreased (not for Oxygen/Chlorine Service) <sup>(6)</sup> | -X1 |
| Cleaned and Prepared for Oxygen Service <sup>(7)</sup>          | -X2 |
| Cleaned and Prepared for Chlorine Service <sup>(7)</sup>        | -X3 |

**Bolting for Process Covers and Process Connectors – Specify Only One**

|   |     |
|---|-----|
| 316 ss Bolts and Nuts (Maximum Static Pressure 150 bar or kg/cm <sup>2</sup> , 2175psi) . . . . . | -B1 |
| 17-4 ss Bolts and Nuts. . . . .   | -B2 |
| B7M Bolts and Nuts (NACE) (Pressure de-rated, refer to table) . . . . .                           | -B3 |

**Conduit Thread Adapters – Specify Only One**

|   |     |
|---|-----|
| Hawk-Type ½ NPT Cable Gland for use with Conduit Connection Codes 1 & 3 . . . . .                                 | -A1 |
| Plastic PG 13.5 Connector for use with Conduit Connection Codes 2 & 4 . . . . .                                   | -A2 |
| M20 Connector for use with Conduit Connection Codes 1 & 3. . . . .  | -A3 |
| Trumpet shaped PG 13.5 Cable Gland (Nickel Plated Brass) for use<br>with Conduit Connection Codes 2 & 4 . . . . . | -A4 |

**Electronic Housing Features–Specify Only One**

|   |     |
|---|-----|
| External Zero Adjustment. . . . .                                   | -Z1 |
| Custody Transfer Lock & Seal. . . . .                               | -Z2 |
| External Zero Adjustment and Custody Transfer Lock & Seal . . . . . | -Z3 |

**Ermeto Connectors–Specify Only One**

|   |     |
|---|-----|
| Steel, Connecting 6 mm Tubing to ¼ NPT Process Connector . . . . .  | -E1 |
| Steel, Connecting 12 mm Tubing to ½ NPT Process Connector . . . . . | -E2 |
| 316 ss, Connecting 6 mm Tubing to ¼ NPT Process Connector. . . . .  | -E3 |
| 316 ss, Connecting 12 mm Tubing to ½ NPT Process Connector. . . . . | -E4 |

**Factory Configuration–Specify Only One**

|   |     |
|---|-----|
| Digital Output (FoxCom only). . . . .                             | -C1 |
| Full Factory Configuration (Requires Configuration Form). . . . . | -C2 |

**Instruction Book Options**

|   |     |
|---|-----|
| Without Instruction Book & CD . . . . . | -K1 |
|---|-----|

**Miscellaneous Optional Selections**

|   |     |
|---|-----|
| Vent Screw In Side of Process Cover. . . . .                                      | -V  |
| Five-Year Warranty . . . . .  | -W  |
| Supplemental Customer Tag . . . . .   | -T  |
| Low Temperature Operative Limit of -50°C (-58°F) for Entire Transmitter . . . . . | -J  |
| Gasket for Vacuum Service with Pressure Seals <sup>(8)</sup> . . . . .            | -G1 |

**Specify calibrated range**

**Specify information for instrument tag**

**Notes**

- 1 Upper Range Limit is the lower of the values in this table and in the Maximum Overrange Table, which lists the de-rated pressures associated with various options.
- 2 Refer to Section "Pressure Seals and Industry-Specific Connections" for additional information.
- 3 Direct Mount seals that may be specified are models PSFLT, PSSCT, and PSSST.
- 4 Remote Mount seals that may be specified are models PSFPS, PSFES, PSFAR, PSTAR, PSISR, PSSCR, and PSSSR.
- 5 Standard equipment on IGP20-A, and -V.
- 6 Available only with Structure Codes having Silicone Fill Fluid.
- 7 Available only with Structure Codes having Fluorinert Fill Fluid and not available with carbon steel Process Cover.
- 8 Option -G1 is required when pressure seal (Structure Codes S3, S4, F1, F2, SC, or SD) will be used on vacuum applications. This option substitutes a vacuum service gasket for the standard ptfе Process Cover gasket.