PRESSURE TRANSMITTER

# Model IDP10

## FEATURES

- **HART and/or 4-20 mA or 1 to 5 Vdc output**
- **Spans from 0.5 WC to 3000 PSI (206 bar)**
- **30:1 ranging**
- **Exotic wetted materials available**
- **Push button configuration and calibration**
- **Local digital indicator**

## TYPICAL APPLICATIONS

- **Fuel tank level**
- **Filter differential**
- **Flow rate of liquids, gas & steam**
- **Offshore oil rigs**
- **Pulp & paper**
- **Chemical process**

## AVAILABLE IN FIVE SENSOR RANGES

Covering differential pressure ranges from 0.5" WC through 3000 PSI (206 bar), the Model IDP10 is available in five sensor ranges with 30:1 turn-down capability. The instrument has a high static line pressure capability of 3625 PSI (249 bar).

HART communication allows remote configuration and calibration for economical system start up and commissioning. In addition, the IDP10 is fully capable of square root calculations for accurate process flow measurement.

The low power version features a 1 to 5 Vdc output that will function with as little as 9 Vdc and 3 mA input power.

Standard product consists of 316 stainless steel process covers and sensor, providing excellent corrosion protection. A variety of other materiels are available, including Hastelloy C, Monel, Tantalum for particularly demanding applications. An integral LCD is standard to display in many desired units and provides push buttons for local configuration and calibration.

An external zero adjustment is also available which makes it easier to zero the transmitter in the field, especially in hazardous locations.

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## SPAN LIMIT CODES

| Span Code | Span Limits | | | Range Limits(a) | | |
|---|---|---|---|---|---|---|
| | in H2O | PSI | mbar | in H2O | PSI | mbar |
| A | 0.5 and 30 | 0.17 and 1.09 | 1.2 and 75 | -30 and +30 | -1.09 and +1.09 | 75 and +75 |
| B | 3.5 and 200 | 0.12 and 7.25 | 8.7 and 500 | -200 and +200 | -7.25 and +7.25 | -500 and +500 |
| C | 28 and 840 | 1.01 and 30.45 | 70 and 2100 | -840 and + 840 | -30.45 and +30.45 | -2100 and + 2100 |
| | PSI | PSI | bar | PSI | PSI | bar |
| D | 10 and 300 | 10.15 and 304.58 | 0.7 and 21 | -30 and + 300 | 30.46 and +304.58 | -2.1 and +21 |
| E(b) | 100 and 3000 | 10.15 and 3045 | 7 and 210 | -30 and + 3000 | -30.46 and +3045 | -2.1 and +210 |

(a) Positive values indicate HI side of sensor at the high pressure and negative values indicate LO side of the sensor at high pressure

(b) Limits may be derated when DIN 19213 flange option(s) ordered - consult factory

## ACCURACY (INCLUDES LINEARITY, HYSTERESIS, REPEATABILITY) % SPAN

| Electronic Signal | Configured Output Signal | Common Span Accuracy | Small Span Accuracy | | |
|---|---|---|---|---|---|
| | | | Span Code B | Span Code C, D & E | Span Code A |
| -T | Digital Linear | ±0.07(b) | (spans <5 URL) | (spans <6.7% URL) | (spans <10% URL) |
| | Digital Square Root | ±0.10(b) | ±(0.0035)(URL/Span) | ±(0.0047)(URL/Span) | ±[(0.08)+(0.002)(URL/Span)] |
| | 4 to 20 mA Linear | ±0.10(b) | ±(0.0067)(URL/Span) | ±(0.0067)(URL/Span) | ±[(0.008)+(0.003)(URL/Span)] |
| | 4 to 20 mA Square Root | ±0.13(b) | ±[(0.03)+(0.0035)(URL/Span)] | ±[(0.03)+(0.0047)(URL/Span)] | ±[(0.11)+(0.002)(URL/Span)] |
| -A | 4 to 20 mA Linear Sq Root | ±0.2 | ±[(0.03)+(0.005)(URL/Span)] | ±[(0.03)+(0.0067)(URL/Span)] | ±[(0.11)+(0.003)(URL/Span)] |
| -V | 1 to 5 Vdc Linear Sq Root | ±0.2 | ±[(0.10)+(0.005)(URL/Span)] | ±[(0.10)+(0.0067)(URL/Span)] | ±[(0.10)+(0.0067)(URL/Span)] |

## STATIC PRESSURE

Maximum Static Pressure: 3625 PSI (249 bar) (standard construction)

Static Pressure Effect - per 1000 PSI (68 bar)

| Span Code | Zero Shift | Span Shift |
|---|---|---|
| A | ±0.30% URL(a) | ±0.30% Span |
| B & C | ±0.10% URL | ±0.25% Span |
| D | ±0.75% URL | ±0.25% Span |
| E | ±0.50% URL | ±0.25% Span |

(a) for Span Code A, add ±0.03% to the accuracy values listed

## TEMPERATURE

Temperature Compensation: -20°F TO 180°F (-28°C to 82°C)

Process Temperature Range: -50°F TO 250°F (-45°C to 121°C)
-20°F TO 250°F (-28°C to 121°C)

Ambient Temperature Range: -40°F TO 185°F (-40°C to 85°C)

Ambient Temperature Effect: (per 100°F)

| Span Code | Zero Shift | Span Shift |
|---|---|---|
| A | ±(0.355% URL + 0.145% Span) | ±(0.355% URL + 0.3% Span) |
| B & C | ±(0.0625% URL + 0.225% Span) | ±(0.0625% URL + 0.3925% Span) |
| D | ±(0.1% URL + 0.1875% Span) | ±(0.1% URL + 0.355% Span) |
| E | ±(0.155% URL + 0.145% Span) | ±(0.155% URL + 0.3% Span) |

## PERFORMANCE

| | |
|---|---|
| Zero Suppression | To the upper range limit minus the span |
| Zero Elevation | Top the lower range limit |
| Enclosure Classification | Meets IEC IP66 and NEMA 4X |
| Sensor Fill Fluid | Dow Corning DC200 or 3M Fluorinert FC43 |
| Supply Voltage | 1-5 Vdc: 9 to 15.5 Vdc |
| | 4-20 ma: 11.5V to 442V |
| | HART: 17V to 42V |
| Minimum resistance | 250 Ohms for HART communication |
| Response Time | Normally 10 seconds |
| | Electronically step adjustable from 0 to 32 sec |

## CERTIFICATIONS

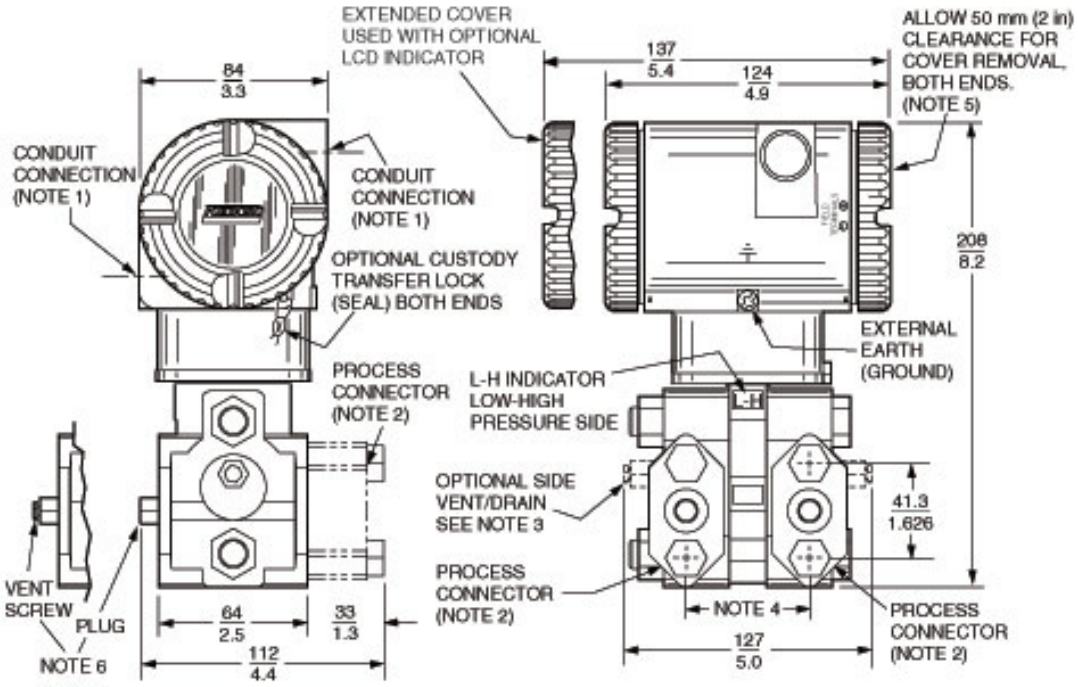
FM/CSA

Intrinsic Safety: (F and C versions) Class 1, Division 1, Groups A, B, C, D; Class II, Division 1, Groups E, F, G; Class III, Division 1

Explosion Proof/Dust Ignition Proof: (F and C versions) Class 1, Division 1, Groups B,C, D; Class II, Division 1, Groups E, F, G; Class III, Division 1

Nonincendive (F and C versions): Class 1, Division 2, Groups A, B, C, D; Class II, Division 2, Groups E, F, G; Class III, Division 2

TRANSMITTER WITH TRADITIONAL STRUCTURE




NOTES:
1. CONDUIT CONNECTION 1/2 NPT, M20, OR PG 13.5, BOTH SIDES; PLUG UNUSED CONNECTION WITH METAL PLUG (SUPPLIED).
2. PROCESS CONNECTORS MAY BE REMOVED AND CONNECTIONS MADE DIRECTLY TO PROCESS COVER USING 1/4 NPT INTERNAL THREAD IN PROCESS COVER.
3. PROCESS COVER CAN BE INVERTED MAKING OPTIONAL SIDE VENTS OR SIDE DRAINS
4. PROCESS CONNECTORS CAN BE INVERTED TO GIVE EITHER 51, 54, OR 57 mm (2.0, 2.125, OR 2.25 in) CENTER-TO-CENTER DISTANCE BETWEEN HIGH AND LOW PRESSURE CONNECTIONS.
5. TOPWORKS CAN BE ROTATED TO ANY POSITION WITHIN ONE TURN COUNTERCLOCKWISE OF THE FULLY TIGHTENED POSITION.
6. END PLUGS ARE SUBSTITUTED FOR VENT SCREWS WHEN OPTIONAL SIDE VENTS (NOTE 3) ARE SPECIFIED.



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