

IDP10 I/A Series® Intelligent d/p cell® Transmitters



- Application Versatility
 - ✓ 316 ss Process Covers and 316L ss Sensor materials standard
 - ✓ Choice of Traditional or Low Profile Process Cover/Sensor Structures
 - ✓ Static Pressure Rating of 25 MPa, 3625 psi, 250 bar or kg/cm²; Options to 40 MPa, 5800 psi, 400 bar or kg/cm²
- Installation Versatility
 - ✓ Traditional "right angle" structure with process connections in horizontal plane
 - ✓ Low Profile "in line" structures with process connections in vertical plane
- Two Low Profile Structures
 - ✓ LP1 Structure — economical, small, light weight for direct manifold mounting in vertical or horizontal positions
 - ✓ LP2 Structure — designed for bracket or manifold mounting in vertical position
- Superior Performance
 - ✓ Accuracy to $\pm 0.05\%$ of span
- Choice of Electronics Modules
 - ✓ Intelligent HART, Foundation Fieldbus, FoxCom and 4 to 20 mA versions
 - ✓ Economical 4 to 20 mA and 1 to 5 Vdc versions
- LCD Indicator/Pushbutton Configurator
 - ✓ Optional on Foundation Fieldbus, FoxCom/4-20 mA, and HART/4-20 mA versions
 - ✓ Standard on 4-20 mA and 1-5 Vdc versions
- Electrical Classification:
 - ✓ Various agency certifications for Zone and Division hazardous locations. Refer to Product Specification sheets for complete specifications.
- Standard Warranty 5 Years

This transmitter measures the difference between two pressures and transmits a proportional or square root (flow) 4-20mA, 1-5Vdc, or digital output signal over a pair of wires.

For complete specifications, refer to Product Specification Sheet PSS 2A-1C14 A, B, & C, and PSS 2A-1C13 D, E, and J.

Output signal and configuration:

Version	Output Choices	Configure From
-D	✓ FoxCom Digital ✓ FoxCom/4 to 20 mA	✓ I/A Series Workstation ✓ Hand-Held Terminal ✓ Personal Computer ✓ Optional Pushbuttons
-T	✓ HART/ 4 to 20mA	✓ Communicator ✓ Workstation ✓ Personal Computer
-F	✓ Foundation Fieldbus	✓ Workstation
-A,	✓ 4 to 20mA	✓ Standard Pushbuttons
-V	✓ 1-5 Vdc	✓ Standard Pushbuttons

Span and Range Limits:

Span Limits Code	Span Limits		
A	0.12 & 7.5 kPa	0.5 & 30 inH ₂ O	1.2 & 75 mbar
B	0.87 & 50 kPa	3.5 & 200 inH ₂ O	8.7 & 500 mbar
C	7 & 210 kPa	28 & 840 inH ₂ O	70 & 2100 mbar
D	0.07 & 2.1 MPa	10 & 300 psi	0.7 & 21 bar or kg/cm ²
E	0.7 & 21 MPa	100 & 3000 psi	7 & 210 bar or kg/cm ²

	Range Limits ⁽¹⁾		
A	-7.5 & +7.5 kPa	-30 & +30 inH ₂ O	-75 & +75 mbar
B	-50 & +50 kPa	-200 & +200 inH ₂ O	-500 & +500 mbar
C	-210 & +210 kPa	-840 & +840 inH ₂ O	-2100 & +2100 mbar
D	-0.21 & +2.1 MPa	-30 & +300 psi	-2.1 & +21 bar or kg/cm ²
E	-0.21 & +21 MPa	-30 & 3000 psi	-2.1 & +210 bar or kg/cm ²

Maximum Static and Overrange Pressures			
Transmitter Configuration (See Model Code for Description of Options)	Pressure Rating		
	MPa	psi	bar or kg/cm ²
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 (pvd insert)	2.1	300	21
With Option -D9 or -Y	40	5800	400

Performance Specifications

Accuracy (Includes Linearity, Hysteresis, and Repeatability):

Version	Output	Signal Accuracy in % of Calib. Span
-D or -T	Digital 4 to 20 mA	±0.05 ±0.075
-F	Digital 4 to 20 mA	±0.05 ±0.20
-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) and with square root output

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 Process Covers with 316L ss Sensor.

Enclosure Classification: Meets IEC IP66 and NEMA Type 4X.

Sensor Fill Fluid: Dow Corning dimethylsiloxane (DC 200) or fluorinated hydrocarbon (3M Fluorinert FC 77), as specified.

How to Order – Specify Model Number IDP10**Electronic Versions and Output Signals**

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 five groups:**1. Transmitter With Traditional Structure**

Process Covers	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
pvsf Insert (Kynar)	Tantalum	Silicone (Used w/Process Connector Type 7)	78
pvsf Insert (Kynar)	Tantalum	Fluorinert (Used w/Process Connector Type 7)	79

2. Transmitter With Low Profile Structure LP1 (No Seals)

Process Covers	Sensor	Fill Fluid	
316 ss	316L ss	Silicone	LL
316 ss	316L ss	Fluorinert	LM
316 ss	Hastelloy C	Silicone	LC
316 ss	Hastelloy C	Fluorinert	LD

3. Transmitter With Low Profile Structure LP2 (No Seals)

Process Covers	Sensor	Fill Fluid	
316 ss	316L ss	Silicone	.52
316 ss	316L ss	Fluorinert	.53
316 ss	Hastelloy C	Silicone	.56
316 ss	Hastelloy C	Fluorinert	.57

4. Transmitter (Traditional Structure) Prepared for Foxboro Model Coded Seals⁽²⁾

Direct Connect Seal on HI Side; 1/2 NPT Process Connector LO Side; Silicone Fill in Sensor ⁽³⁾	.F1
Direct Connect Seal on HI Side; 1/2 NPT Process Connector LO Side; Fluorinert Fill in Sensor ⁽³⁾	.F2
Direct Connect Seal on HI Side; Remote Seal with Capillary LO Side; Silicone Fill in Sensor ⁽³⁾	.F3
Direct Connect Seal on HI Side; Remote Seal with Capillary LO Side; Fluorinert Fill in Sensor ⁽³⁾	.F4
Remote Seals on Both HI and LO Sides, Silicone Fill in Sensor ⁽⁴⁾	.S1
Remote Seals on Both HI and LO Sides, Fluorinert Fill in Sensor ⁽⁴⁾	.S2
Remote Seal HI Side, 1/2 NPT Connector LO Side, Silicone Fill in Sensor ⁽⁴⁾	.S3
Remote Seal HI Side, 1/2 NPT Connector LO Side, Fluorinert Fill in Sensor ⁽⁴⁾	.S4
Remote Seal LO Side, 1/2 NPT Connector HI Side, Silicone Fill in Sensor ⁽⁴⁾	.S5
Remote Seal LO Side, 1/2 NPT Connector HI Side, Fluorinert Fill in Sensor ⁽⁴⁾	.S6

5. Transmitter (Traditional Structure) Prepared for non-Foxboro Seals

Remote Seal on High and Low Sides; Silicone Fill in Sensor	.SA
Remote Seal on High and Low Sides; Inert Fill in Sensor	.SB
Remote Seal on High Side and 1/2 NPT Connector on Low Side, Silicone Fill in Sensor	.SC
Remote Seal on High Side and 1/2 NPT Connector on Low Side, Inert Fill in Sensor	.SD
Remote Seal on Low Side and 1/2 NPT Connector on High Side, Silicone Fill in Sensor	.SE
Remote Seal on Low Side and 1/2 NPT Connector on High Side, Inert Fill in Sensor	.SF

Span Limits – Differential Pressure Units

kPa	inH ₂ O	mbar	
0.12 and 7.5	0.5 and 30	1.2 and 75	.A
0.87 and 50	3.5 and 200	8.7 and 500	.B
7 and 210	28 and 840	70 and 2100	.C
MPa	psi	bar or kg/cm ²	
0.07 and 2.1	10 and 300	0.7 and 21	.D
0.7 and 21	100 and 3000	7 and 210	.E

Process Connector Type (Material Same as Process Cover Material)

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

Conduit Connection and Housing Material

1/2 NPT Conduit Connections, Aluminum Housing	.1
PG 13.5 Conduit Connections, Aluminum Housing	.2
1/2 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 ½ 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 IDP10, -T, and -F only ⁽⁵⁾	-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 ¾ inch Bolting	-D3
Double Ended Process Cover with ¾ inch Bolting (Blind Kidney Flange on Back)	-D4
Single Ended Process Covers with 316 ss ¾ inch Bolting	-D5
Double Ended Process Covers with 316 ss ¾ inch Bolting (Blind Kidney Flange on Back)	-D6
Single Ended Process Covers with 17-4 ss ¾ inch Bolting	-D7
Double Ended Process Covers with 17-4 ss ¾ inch Bolting (Blind Kidney Flange on Back)	-D8
Single Ended Process Covers with 17-4 ss ¾ inch Bolting an 40 MPa (400 bar or kg/cm ² , 5800 psi) static pressure rating	-D9

Cleaning and Preparation—Specify Only One

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

Bolting for Process Covers and Process Connectors – Specify Only One

316 ss Bolts and Nuts (Maximum Static Pressure 150 bar or kg/cm ² , 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 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
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Vent Screw in Process Cover

Supply Vent Screw in Side of Each Process Cover (Available only on Traditional Process Cover Structure Codes 22 to 47)	-V
Omit Vent Screw in Side of Each Process Cover (Available only on Type LP1 Low Profile Process Cover Structures Codes LL, LM, LC, and LD)	-V1

Adapters for Direct Mount to Competitive Manifolds (See Product Specification Sheet for manifold compatibility)

Adapter plate, Bolts, and Gaskets for Coplanar Manifolds	-P1
Not available with:	
Bolting Options -B1, -B2, and -B3;	
DIN 19213 Construction Options -D1, -D2, -D4, -D5, -D6, -D7, and -D8	

Miscellaneous Optional Selections

Five-Year Warranty.	-W
Supplemental Customer Tag	-T
High Static Pressure Rating (40 MPa, 5800 psi, 400 bar or kg/cm ²)	-Y
Low Temperature Operative Limit of -50C (-58F) for Entire Transmitter	-J
Gasket for Vacuum Service with Pressure Seals ⁽⁸⁾	-G1

Specify calibrated differential pressure range**Specify information for instrument tag****Notes**

- 1 Upper Range Limit is the lower of the values in this table and in the Maximum static and Overrange Table, which lists the derated pressures associated with various options.
- 2 Refer to Section "Pressure Seals and Industry-Specific Connection" 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 F1-F4, S1-S6, or SA-SF) will be used on vacuum applications. This option substitutes vacuum service metal gaskets for the standard ptfe Process Cover Gasket.