

IAP10 I/A Series® Intelligent Absolute Pressure Transmitters



- Choice of Mounting Styles
 - ✓ IAP10 for compact light weight and direct-to-process mounting (bracket optionally available)
- 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, FoxCom, and 4-20 mA versions
 - ✓ Economical 4-20 mA and 1 to 5 Vdc versions
- LCD Indicator/Pushbutton Configurator
 - ✓ Optional on Foundation Fieldbus, 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° & $+250^\circ\text{F}$)
 FC77: -29 & $+85^\circ\text{C}$ (-20 & $+185^\circ\text{F}$)

Ambient Temperature Limits:

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

Electrical Classification:

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

This transmitter measures absolute 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, J, K, and L.

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	✓ HART Communicator ✓ Workstation ✓ Personal Computer
-F	✓ Foundation Fieldbus	✓ Workstation
-A	✓ 4 to 20mA	✓ Standard Pushbuttons
-V	✓ 1-5 Vdc	✓ Standard Pushbuttons

Span, range and overrange limits:

Direct Connected Absolute Press. IAP10

Span Limits Code	Span Limits		
C	0.007 & 0.21 MPa	1 & 30 psi	0.07 & 2.1 bar or kg/cm ²
D	0.07 & 2.1 MPa	10 & 300 psi	0.70 & 21 bar or kg/cm ²
E	0.70 & 21 MPa	100 & 3000 psi	7.0 & 210 bar or kg/cm ²

	Range Limits (absolute)		
C	0 & 0.21 MPa	0 & 30 psi	0 & 2.1 bar or kg/cm ²
D	0 & 2.1 MPa	0 & 300 psi	0 & 21 bar or kg/cm ²
E	0 & 21 MPa	0 & 3000 psi	0 & 210 bar or kg/cm ²

	Maximum Overage (absolute)		
C	0.31 MPa	45 psi	3.15 bar or kg/cm ²
D	3.1 MPa	450 psi	31.5 bar or kg/cm ²
E	31 MPa	4500 psi	315 bar or kg/cm ²

Performance Specifications*Accuracy (Includes Linearity, Hysteresis, and Repeatability):*

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

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

Physical Specifications

Material Combinations and 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 316L ss Process Connection 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 number IAP10**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 eight groups:**1. Transmitter Only (no seals)**

Process	Sensor	Fill Fluid	Connection Type	
316L ss	Co-Ni-Cr	Silicone	½ NPT External Thread, ¼ NPT Internal Thread	20
316L ss	Co-Ni-Cr	Fluorinert	½ NPT External Thread, ¼ NPT Internal Thread	21
316L ss	316L ss	Silicone	½ NPT External Thread, ¼ NPT Internal Thread	22
316L ss	316L ss	Fluorinert	½ NPT External Thread, ¼ NPT Internal Thread	23
316L ss	Hastelloy C	Silicone	½ NPT External Thread, ¼ NPT Internal Thread	30
316L ss	Hastelloy C	Fluorinert	½ NPT External Thread, ¼ NPT Internal Thread	31
Hastelloy C	Hastelloy C	Silicone	½ NPT External Thread, ¼ NPT Internal Thread	32
Hastelloy C	Hastelloy C	Fluorinert	½ NPT External Thread, ¼ NPT Internal Thread	33

2. Flameproof Transmitter Only (no seals)

Process	Sensor	Fill Fluid	Connection Type	
316L ss	316L ss	Silicone	½ NPT External Thread, ¼ NPT Internal Thread	52
316L ss	316L ss	Fluorinert	½ NPT External Thread, ¼ NPT Internal Thread	53
316L ss	Hastelloy C	Silicone	½ NPT External Thread, ¼ NPT Internal Thread	60
316L ss	Hastelloy C	Fluorinert	½ NPT External Thread, ¼ NPT Internal Thread	61
Hastelloy C	Hastelloy C	Silicone	½ NPT External Thread, ¼ NPT Internal Thread	62
Hastelloy C	Hastelloy C	Fluorinert	½ NPT External Thread, ¼ NPT Internal Thread	63

3. Transmitter with Sanitary Connection⁽¹⁾

Process	Sensor	Fill Fluid	Connection Type	
316L ss	316L ss	NEOBEE M-20	1.5 in Tri-Clamp	TA
316L ss	316L ss	NEOBEE M-20	2.0 in Tri-Clamp	T2
316L ss	316L ss	NEOBEE M-20	3.0 in Tri-Clamp	T3
316L ss	Hastelloy C276	NEOBEE M-20	1.5 in Tri-Clamp	TB
316L ss	Hastelloy C276	NEOBEE M-20	2.0 in Tri-Clamp	T4
316L ss	Hastelloy C276	NEOBEE M-20	3.0 in Tri-Clamp	T5
316L ss	316L ss	NEOBEE M-20	Mini Tank Spud Type, 1½ in extension	M1
316L ss	316L ss	NEOBEE M-20	Mini Tank Spud Type, 6 in extension	M6
316L ss	316L ss	NEOBEE M-20	Mini Tank Spud Type, 9 in extension	M9
316L ss	316L ss	NEOBEE M-20	1 in Threaded Spud Type	PX
316L ss	316L ss	NEOBEE M-20	1.5 in Threaded Spud Type	PZ

4. Transmitter with Pulp & Paper Connection⁽¹⁾

Process Connection	Sensor	Sensor Fill Fluid	Connection Type	
316L ss	316L ss	Silicone	Sleeve Type, 1 inch nominal	PA
316L ss	316L ss	Silicone	Threaded Type, 1 inch nominal	PB
316L ss	316L ss	Silicone	Sleeve Type, 1½ inch nominal	PC
316L ss	316L ss	Silicone	Threaded Type, 1½ inch nominal	PD
316L ss	Hastelloy C276	Silicone	Sleeve Type, 1 inch nominal	PE
316L ss	Hastelloy C276	Silicone	Threaded Type, 1 inch nominal	PF
316L ss	Hastelloy C276	Silicone	Sleeve Type, 1½ inch nominal	PG
316L ss	Hastelloy C276	Silicone	Threaded Type, 1½ inch nominal	PH
316L ss	Hastelloy C276	Silicone	Threaded Type, 1½ inch nominal (fits Ametek spud)	PJ

5. Transmitter Prepared for Foxboro Model Coded Seals⁽²⁾

Transmitter Prepared for Foxboro Direct Connect Seal; Silicone Fill in Sensor ⁽³⁾	D1
Transmitter Prepared for Foxboro Remote Mount Seal; Silicone Fill in Sensor ⁽⁴⁾	S3

6. Transmitters 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

7. Flameproof Transmitter Prepared for Foxboro Model Coded Seals⁽²⁾

Flameproof Transmitter Prepared for Direct Connect Seal; Silicone Fill in Sensor ⁽³⁾	D5
Flameproof Transmitter Prepared for Remote Mount Seal; Silicone Fill in Sensor ⁽⁴⁾	S5

8. Flameproof Transmitter Prepared for non-Foxboro Seals

Flameproof Transmitter Prepared for Remote Seal; Silicone Fill in Sensor	SH
Flameproof Transmitter Prepared for Remote Seal; Fluorinert Fill in Sensor	SJ

Span Limits

MPa	psi	bar or kg/cm ²	
0.007 and 0.21	1 and 30	0.07 and 2.1	C
0.07 and 2.1	10 and 300	0.70 and 21	D
0.7 and 21	100 and 3000	7.0 and 210	E

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 and N)	M
ATEX Multiple Certifications (E, D, and N)	P
CSA Certified	C
CSA Certified (including Flameproof Zones)	B
FM Approved	F
FM Approved (including Flameproof Zones)	G
IECEX Intrinsically Safe, FISCO Ex ia IIC T4	T
IECEX Intrinsically Safe, Protection n; FNICO Ex	U
IECEX Flameproof, Ex d IIC T6	V

Optional Selections**Mounting Bracket Set – Specify Only One**

Painted Steel Bracket with Plated Steel Bolts (for Conduit Connection Codes 1 and 3)	-M1
Stainless Steel Bracket with Stainless Steel Bolts (for Conduit Connection Codes 1 and 3)	-M2
Painted Steel Bracket with Plated Steel Bolts (for Conduit Connection Codes 2 and 4)	-M3
Stainless Steel Bracket with Stainless Steel Bolts (for Conduit Connection Codes 2 and 4)	-M4
Painted Steel Bracket with Plated Steel Bolts for use with M20 (for Conduit Connection Codes 5 & 6)	-M5
Stainless Steel Bracket with Stainless Steel Bolts for use with M20 (for Conduit Connection Codes 5 and 6)	-M6

Digital Indicator with Pushbuttons – Specify Only One

Digital Indicator, Pushbuttons, and Window Cover for IAP10-D, -T, and -F only ⁽⁵⁾	-L1
Blind (solid) cover over the std. LCD on -A, or -V	-L2

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

Vent Screw and Block & Bleed Valve – Specify Only One

Vent screw in process connection	-V1
Block and Bleed Valve -carbon steel	-V2
Block and Bleed Valve -316 ss	-V3
Block and Bleed Valve -316 ss body w/Monel trim	-V4

Electronic Housing Features

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

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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Cleaning and Preparation

Unit Degreased – for Silicone Filled Sensors Only	
Not for Oxygen/Chlorine Service, Option -V1, or Pressure Seals	-X1
Cleaned and Prepared for Oxygen Service – for Fluorinert Filled Sensors Only	
Not with Option -V1, or Pressure Seals	-X2
Cleaned and Prepared for Chlorine Service – with Structure Code 33 or 63 Only	
Not with Option -V1, or Pressure Seals	-X3

Miscellaneous Optional Selections

G ½ B Manometer Process Connection	-G
R ½ Process Connection (½ NPT to R ½ Adapter)	-R
Five-Year Warranty	-W
Supplemental Customer Tag	-T
Low Temperature Operative Limit of -50°C (-58°F) for Entire Transmitter	-J

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

- 1 Refer to Section "Pressure Seals and Industry-Specific Connections" for additional information.
- 2 Both transmitter and pressure seal model codes are required.
- 3 Direct Connect Seal models that may be specified are PSTAD, PSFAD, and PSISD.
- 4 Remote Mount Seal models that may be specified are PSFPS, PSFES, PSFAR, PSTAR, PSISR, PSSCR and PSSSR.
- 5 Standard equipment on IAP10, -A, and -V.