

Foxboro IGP10-T22D1F-L1

Intelligent Gauge Pressure Transmitter



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IGP10, IGP20 Intelligent Gauge Pressure Transmitters

IAP10 Intelligent Absolute Pressure Transmitter

- IGP10 for compact light weight and direct-to-process mounting (bracket optionally available)
- IGP20, bracket mounted, for lower ranges, more material options, and vacuum service
- Field-proven silicon strain gauge technology
- Corrosion-resistant epoxy finish
- Accuracy to $\pm 0.07\%$ of span
- Ambient temperature effects to $\pm 0.2\%$ URL per 55°C (100°F) change
- Intelligent FOXCOM & HART / 4 to 20 mA version or economical 4 to 20 mA version
- LCD Indicator / Pushbutton Configurator to set zero, span, display units, etc.
Optional on Digital / 4 to 20 mA version,
Standard on 4 to 20 mA version



These Intelligent, two-wire transmitters provide precise, reliable, measurement of gauge or absolute pressure, and transmit a 4 to 20 mA output signal with a superimposed HART/ FOXCOM digital signal for remote configuration and monitoring.

IGP10 Span, Range and Overrange Limits

IAP10 Span, Range and Overrange Limits

Span Limits Code	Span Limits			Range Limits			Maximum Overrange		
	kPa	psi	bar (kg/cm ²)	kPa	psi	bar (kg/cm ²)	kPa	psi	bar (kg/cm ²)
C	7 & 210	1 & 30	0.07 & 2.1	0 & 210	0 & 30	0 & 2.1	310	45	3.15
D	70 & 2100	10 & 300	0.7 & 21	0 & 2100	0 & 300	0 & 21	3100	450	31.5
E	700 & 21000	100 & 3000	7 & 210	0 & 21000	0 & 3000	0 & 210	31000	4500	315

IGP20 Span, Range and Overrange Limits

Span Limits Code	Span Limits			Range Limits			Maximum Overrange		
	kPa	psi	bar (kg/cm ²)	kPa	psi	bar (kg/cm ²)	kPa	psi	bar (kg/cm ²)
B	0.87 & 50	0.125 & 7	0.0087 & 0.5	-50 & 50	-7 & 7	-0.5 & 0.5	25000	3625	250
C	7 & 210	1 & 30	0.07 & 2.1	-100 & 210	-14.7 & 30	-1 & 2.1	25000	3625	250
D	70 & 2100	10 & 300	0.7 & 21	-100 & 2100	-14.7 & 300	-1 & 21	25000	3625	250
E	700 & 21000	100 & 3000	7 & 210	-100 & 21000	-14.7 & 3000	-1 & 210	25000	3625	250

Temperature Limits

	Fill fluid Fluorinert	Fill fluid Silicone
Ambient:	-29 to 85 °C (-20 to 185 °F)	-40 to 85 °C (-40 to 185 °F)
Sensor:	-29 to 121 °C (-20 to 250 °F)	-46 to 121 °C (-50 to 250 °F)

Ambient Temperature Effect

Total effect for a 55 °C (100 °F) change within Normal Operating Conditions limit is:

Electronics -D, -T: ± 0.2 % of URL

Electronics -I: $\pm (0.2 \% \text{ of URL} + 0.1 \% \text{ of span})$

Electronics Version	Configured Output Signal	Accuracy in % of Calib. Span
-D & -T	Digital 4 to 20 mA	± 0.07 ± 0.1
-I	4 to 20 mA	± 0.2

For complete specifications, refer to Product Specification Sheet PSS 2A-1C13 B

Model Codes IGP10

Intelligent Direct Connected Gauge Pressure Transmitter			IGP10
Electronics Versions and Output Signal			
Intelligent; Digital FoxCom and/or 4 to 20 mA dc, Configurable			-D
Intelligent; Digital HART and 4 to 20 mA			-T
4 to 20 mA Analog Output, Explosionproof and Intrinsically Safe			-I
Structure Code - Process Connection, Sensor, and Fill Fluid			
Process Connection Mat'l	Sensor	Fill Fluid	
316L ss	Co-Ni-Cr	Silicone	20
316L ss	Co-Ni-Cr	Fluorinert	21
316L ss	316L ss	Silicone	22
316L ss	316L ss	Fluorinert	23
Span Limits - Absolute or Gauge Pressure Units, as Applicable			
MPa	psi	bar or kg/cm²	
0.007 and 0.21	1 and 30	0.07 and 2.1	C
0.07 and 2.1	10 and 300	0.7 and 21	D
0.7 and 21	100 and 3000	7 and 210	E
Conduit Connection			
1/2 NPT Conduit Connection, Both Sides			1
PG 13.5 Conduit Connection, Both Sides (available only with Electrical Safety Codes E & N			2
Electrical Safety (See Electrical Safety Specifications Section)			
CENELEC Certified Intrinsically Safe, ia			E
CSA Certified			N
EUROPEAN Ex, N, IIC. Nonsparking			C
FM Approved			F
SAA Certified, EEx, d, IIC			A
Options			
Mounting Bracket Set			
Painted Steel Bracket with Plated Steel Bolts			M1
Stainless Steel Bracket with Stainless Steel Bolts			M2
Digital Indicator with Pushbuttons (standard equipment on IGP10-I)			
Digital Indicator, Pushbuttons, and Window Cover (for Electr Version D & T only)			-L1
Vent Screw and Block & Bleed Valve			
Vent Screw in Process Connection for IGP10/IAP10; or in High Side Process Cover for IGP20.			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 (NACE Approved)			V4
Conduit Thread Adapters			
Hawke-Type 1/2 NPT Cable Gland for use with Conduit Connection Code "1"			A1
Plastic PG 13.5 Connector for use with Conduit Connection Code "2" (available only with Electrical Safety Codes E & N)			A2
M20 Connector for use with Conduit Connection Code "1"			A3
Electronics Housing Features			
External Zero Adjustment			Z1
Custody Transfer Lock and Seal			Z2
External Zero Adjustment and Custody Transfer Lock and Seal			Z3
Factory Configuration			
Digital Output (4 to 20 mA Default if not selected)			C1
Full Factory Configuration (Requires Configuration Form to be filled out)			C2
Miscellaneous Optional Selections			
G 1/2 B Manometer Process Connection (Not Available with Option "-V1")			G
R 1/2 Process Connection (1/2 NPT to R 1/2 Adapter)			R
Five Year Warranty			W
Supplemental Customer Tag (Stainless Steel Tag wired onto Transmitter)			T

Model Codes IGP20

Intelligent Bracket-Mounted Gauge Pressure Transmitter

IGP20

Electronics Versions and Output Signal

Digital, FOXC0M, or 4 to 20 mA dc, Software Selectable	D
Digital, HART/4 to 20 mA	T
4 to 20 mA	I

Structure Code - Process Cover, Sensor Material, and Sensor Fill Fluid

Hi-Side Cover .	Sensor Material.	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 Value Package	20
316 ss	Co-Ni-Cr.	Fluorinert	21
316 ss	316L ss	Silicone.	22
316 ss	316L ss	Fluorinert	23
316 ss	Hastelloy C	Silicone.	26
316 ss	Hastelloy C	Fluorinert	27
Hastelloy C.	Hastelloy C	Silicone.	46
Hastelloy C.	Hastelloy C	Fluorinert	47

Span Limits (Differential Pressure Units)

kPa	psi	mbar	inH ₂ O	mmHg	
0.87 and 50	0.125 and 7	8.7 and 500	3.5 and 200	6.5 and 375	B
MPa	psi	bar or kg/cm ²	inH ₂ O	mmHg	
0.007 and 0.21	1 and 30	0.07 and 2.1	28 and 840	52 and 1550	C
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, Cover 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

Conduit Connection

1/2 NPT Conduit Connection, Both Sides	1
PG 13.5 Conduit Connection, Both Sides (available only with Electrical Safety Codes E & N)	2

Electrical Safety (See Electrical Safety Specifications Section for Description)

CENELEC Certified Intrinsically Safe, ia	E
CENELEC Certified Flameproof, d.	D
CSA Certified, ia, d, and n	C
EUROPEAN Ex, N, IIC. Nonsparking	N
FM Approved, ia, d, and n	F
SAA Certified, EEx, d, IIC	A

Options

Mounting Bracket Set

Painted Steel Bracket with Plated Steel Bolts	M1
Stainless Steel Bracket with Stainless Steel Bolts	M2

Indicator with Internal Pushbuttons (Standard equipment on Electr. Version I)

Digital Indicator, Pushbuttons, and Window Cover, for Electr. Version D & T only.	L1
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DIN 19213 Construction, used with Process Connector Code 0 and 316 ss Covers Only(b)

Single Ended Process Cover with M10, B7 Steel Bolting	D1
Double Ended Process Cover with M10, B7 Steel Bolting (Blind Kidney Flange on Back)(c)(d).	D2
Single Ended Process Cover with 7/16 in, B7 Steel Bolting.	D3
Double Ended Process Cover with 7/16 in, B7 Steel Bolting (Blind Kidney Flange on Back)(c)(d).	D4

Cleaning and Preparation

Unit Degreased - (Not for Oxygen/Chlorine) (Available only with Structure Codes having Silicone).	X1
Cleaned and Prepared for Oxygen Service (Available only with Structure Codes having Fluorinert and not available with carbon steel process covers)	X2
Cleaned and Prepared for Chlorine Service (Available only with Structure Codes having Fluorinert and not available with carbon steel process covers) (Includes 17-4 ss bolts; do not specify option B2.	X3

Bolting for Process Covers and Process Connectors

316 ss Bolts and Nuts (Maximum upper range limit pressure 150 bar or 2175 psi)	B1
17-4 ss Bolts and Nuts.	B2

(continued on next page)

Model Codes IGP20 (continued)

Options (continued)

Conduit Thread Adapters

Hawke-Type 1/2 NPT Cable Gland (for use with 1/2 NPT Conduit Connection Code 1) A1

Plastic PG 13.5 Connector (for use with PG 13.5 Conduit Connection Code 2)
(available only with Electrical Safety Codes E & N). A2

M20 Connector (for use with 1/2 NPT Conduit Connection Code 1) A3

Electronics Housing Features

External Zero Adjustment Z1

Custody Transfer Lock and Seal Z2

External Zero Adjustment and Custody Transfer Lock and Seal Z3

Factory Configuration

Digital Output (4 to 20 mA Default if not selected) (Electr. Version D only) C1

Full Factory Configuration (Requires Configuration Form) C2

Ermeto Connectors

Steel, Connecting 6 mm Tubing to 1/4 NPT Process Connector E1

Steel, Connecting 12 mm Tubing to 1/2 NPT Process Connector E2

316 ss, Connecting 6 mm Tubing to 1/4 NPT Process Connector E3

316 ss, Connecting 12 mm Tubing to 1/2 NPT Process Connector. E4

Miscellaneous Optional Selections

Vent Screw In Side of Process Cover. V

Five Year Warranty W

Supplemental Customer Tag T

(a) Refer to PSS 2A-1Z9 E for option descriptions, and for additional optional features and accessories not listed in Model Code.

(b) See Functional Specifications section for pressure deratings when certain DIN 19213 versions are specified.

(c) Temperature limits derated to 0 and 60°C (32 and 140°F).

(d) Mounting Set option is not available.

Model Codes IAP10

Intelligent Direct Connected Absolute Pressure Transmitter			IAP10
Electronics Versions and Output Signal			
Digital FOXCOM or 4 to 20 mA dc, Software Selectable			-D
Digital HART and 4 to 20 mA.			-T
4 to 20 mA Analog Output			-I
Structure Code - Process Connection, Sensor, and Fill Fluid			
Process Connection Mat'l	Sensor	Fill Fluid	
316L ss	Co-Ni-Cr	Silicone. Val. Pkg.	20
316L ss	Co-Ni-Cr	Fluorinert	21
316L ss	316L ss	Silicone	22
316L ss	316L ss	Fluorinert.	23
Span Limits - Absolute or Gauge Pressure Units, as Applicable			
MPa	psi	bar or kg/cm²	
0.007 and 0.21	1 and 30	0.07 and 2.1.	C
0.07 and 2.1	10 and 300	0.7 and 21.	D
0.7 and 21	100 and 3000	7 and 210	E
Conduit Connection			
1/2 NPT Conduit Connection, Both Sides			1
PG 13.5 Conduit Connection, Both Sides (available only with Electrical Safety Codes E & N			2
Electrical Safety (See Electrical Safety Specifications Section)			
CENELEC Certified Intrinsically Safe, ia			E
CSA Certified			C
EUROPEAN Ex, N, IIC. Nonsparking			N
FM Approved			F
SAA Certified, EEx, d, IIC			A
Options			
Mounting Bracket Set			
Painted Steel Bracket with Plated Steel Bolts			M1
Stainless Steel Bracket with 316 ss Bolts			M2
Indicator with Pushbuttons (standard equipment on IGP10-I)			
Digital Indicator, Pushbuttons, and Window Cover (for Electr Version D & T only)			-L1
Vent Screw and Block & Bleed Valve			
Vent Screw in Process Connection for IGP10/IAP10; or in High Side Process Cover for IGP20.			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 (NACE Approved)			V4
Conduit Thread Adapters			
Hawke-Type 1/2 NPT Cable Gland for use with Conduit Connection Code "1"			A1
Plastic PG 13.5 Connector for use with Conduit Connection Code "2" (available only with Electrical Safety Codes E & N)			A2
M20 Connector for use with Conduit Connection Code "1"			A3
Electronics Housing Features			
External Zero Adjustment			Z1
Custody Transfer Lock and Seal			Z2
External Zero Adjustment and Custody Transfer Lock and Seal			Z3
Factory Configuration			
Digital Output (4 to 20 mA Default if not selected)			C1
Full Factory Configuration (Requires Configuration Form to be filled out)			C2
Miscellaneous Optional Selections			
G 1/2 B Manometer Process Connection (Not Available with Option "-V1")			G
R 1/2 Process Connection (1/2 NPT to R 1/2 Adapter)			R
Five Year Warranty			W
Supplemental Customer Tag (Stainless Steel Tag wired onto Transmitter)			T

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