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Product Data Sheet
"S" Series I/A Pressure Transmitters for Non-Safety Applications

Considered the one transmitter that can do it all, the IAP10S, IGP10S, and IDP10S pressure transmitters cover most of your application needs with a single range. These transmitters offer embedded FoxCal™ technology and multiple points of calibration, which allow you to benefit from wide rangeability and one of the best reference accuracy turndowns on the market.

- These transmitters have an accuracy of up to ±0.05% of reading and HART transmitters are SIL 2 certified.
- These pressure transmitters provide absolute pressure (AP), gauge pressure (GP), and differential pressure (DP) measurement.
- Absolute pressure transmitters measure pressure relative to vacuum. Gauge pressure transmitters measure pressure relative to ambient air pressure. Both absolute and gauge transmitters are used in a wide variety of oil, gas, water and industrial applications.
- Differential pressure transmitters measure the difference between two pressures applied to opposite sides of the sensor. The output signal is proportional to either the differential pressure or its square root.
- Differential pressure transmitters are often used for measuring fluid flow rates across a primary device such as an orifice plate, but can also be used for other types of differential pressure measurements such as liquid level, interface level, or density measurements.
- Transmitters can be connected in series to instruments such as recorders, controllers, and indicators.

Specifications

NAME	DESCRIPTION
Process Covers and Connections	Direct Connect AP/GP: 316L ss or nickel alloy; Biplanar AP/GP: 316 ss, carbon steel, Monel, PVDF, or nickel alloy; DP: 316 ss, carbon steel, Monel, nickel alloy CW2M or PVDF (Kynar™) inserts in 316 ss covers for transmitters with traditional structures; and 316 ss for transmitters with low profile structures
Process Cover Nuts and Bolts	Biplanar AP/GP and DP: ASTM A193, Grade B7 high strength alloy steel for bolts, and ASTM A194 Grade 2H high strength alloy steel for nuts are standard. Options include NACE Class B7M bolting, 17-4 ss bolting, and 316 ss bolting.
Sensor Diaphragm	Biplanar AP/GP: 316 ss, gold-plated 316L ss, Co-Ni-Cr, Monel, tantalum, or nickel alloy ; Direct Connect AP/GP: 316L ss, Co-Ni-Cr, or nickel alloy; DP: 316L ss, gold-plated 316L ss, Co-Ni-Cr, Monel, tantalum, or nickel alloy21 for transmitters with traditional structures; and 316L ss or nickel alloy21 for transmitters with low profile structures
Gaskets	Direct Connect AP/GP Biplanar AP/GP: Glass-filled PTFE or Viton; DP: Glass filled PTFE or Viton™ when Structure Codes 78/79 (PVDF inserts) are used
Sensor Fill Fluid	Silicone fluid — dodecamethylpentasiloxane; 3M™ Fluorinert™ Electronic Liquid FC-43 — perfluorotributylamine; NEOBEE® M-20 — propylene glycol di(octanoate/decanoate)
Environmental Protection	The transmitter's enclosure has the weatherproof, dust-tight, and water-tight rating of IP66/67 as defined by IEC 60529, and provides the environmental and corrosion resistant protection rating of NEMA Type 4X.
Approximate Mass	Direct Connect AP or GP, Aluminum Housing: 1.4 kg (3.1 lb); Biplanar or Traditional DP Structure, Aluminum, without Process Connectors: 3.5 kg (7.8 lb); Biplanar or Traditional DP Structure, Aluminum, with Process Connectors: 4.2 kg (9.2 lb); Optional Display add 0.2 kg (.4 lb); 316 ss Housing: Add 1.1 kg (2.4 lb)

NAME	DESCRIPTION
Span and Range Limits	For Specific Models see "Span and Range Limits" in Documents Section below.
Output Signal	For HART transmitters, 4 to 20 mA dc square root (for DP only) or 4 to 20 mA dc linear with digital HART communication. The output is software-selectable and remotely configurable from the HART Communicator, and locally configurable with the pushbuttons on the optional display. For FOUNDATION Fieldbus transmitters, square root (for DP only) or linear. The digital output is software-selectable and remotely configurable from a FOUNDATION Fieldbus host computer or a console equipped with a FOUNDATION Fieldbus Interface Module. It is also locally configurable with the pushbuttons on the optional display.
Minimum Allowable Absolute Pressure vs. Process Temperature	With silicone fill fluid: up to 121°C (250°F) at full vacuum; With inert fill fluid: refer to the graph
Supply Voltage for Hart Transmitters	See Documents Section for 4 to 20 mA Ouptput Supply Voltage vs. Output Load
FOUNDATION Fieldbus Transmitters	The power supply (a FOUNDATION Fieldbus Power Supply Module) must be capable of providing at least 17 mA for each transmitter connected. Minimum Supply Voltage 9 Vdc, Recommended Supply Voltage: 24 Vdc; Maximum Supply Voltage32 Vdc.
Adjustable Damping	Hart (-T) Transmitters: Damping is user-selectable to values of 0, 0.25, 0.5, 1, 2, 4, 8, 16, or 32 seconds. FOUNDATION Fieldbus (-F) Transmitters: Damping is user-selectable to values of 0.25, 0.5, 1, 2, 4, 8, 16, or 32 seconds.
Accuracy	See Documents section "S Series Accuracies" for each models type
Stability	Long term drift for Advanced Performance Pressure transmitters is <+/-0.03%/yr.

NAME	DESCRIPTION
Turndown Ratio	400:1
Electrical Certification	Multiple Certification, Types of Protection, and Area Classification are available.

Features

- The Advanced Performance pressure transmitters offer the following features:
- HART digital outputs, FOUNDATION Fieldbus digital outputs, 4 to 20 mA outputs
- TüV SIL 2 certification for HART transmitters
- 5-year proof test interval for pressure transmitters installed in SIL 2 Safety loops
- Accuracy up to ±0.05% of reading
- Response time of 100 ms for AP/GP transmitters and 125 ms for DP transmitters
- Innovative and dynamic FoxCal™ technology allows the transmitter to store multiple factory-preset calibration ranges up to 30:1 turndown, while maintaining published accuracy without the need for field calibration
- Time in Service meter features cumulative power-up time and time powered since last user reset for HART and FOUNDATION Fieldbus transmitters
- High Turndown Capabilities2 (up to 400:1)
- Ability to locally configure the device with pushbuttons on the optional local display
- Ability to remotely communicate with and configure the device using the device descriptor (DD), Device Type Manager (DTM), or the Field Device Integration (FDI) package
- Optional External Zero Adjustment
- Field-proven piezoresistive silicon microsensors help ensure excellent measurement performance
- Simple, elegant sensor design with very few parts achieves exceptional reliability
- Durable aluminum or 316 ss housing options are available; both meet NEMA Type 4X and IEC IP66/67 ratings
- Absolute and Gauge Pressure transmitters are available with a Direct Connect or BiPlaner structures
- Depending on transmitter structure, sensor diaphragm materials include 316L ss, nickel alloy3, Co-Ni-Cr, Monel™, or Tantalum™
- ½ NPT male, ½ NPT female, or M20 male process connections
- Numerous mounting bracket set options
- Process venting and bleeding options
- Special degreasing and cleaning options
- Low-temperature options
- Custody transfer lock and seal options
- Many configurations of direct connect or capillary connected seals
- Dual Seal certified by CSA to meet ANSI/ISA 12.27.01-2003 requirements

- Complies with electromagnetic compatibility requirements of European EMC Directive 2014/30/EU by conforming to following EN and IEC Standard: EN 61326-1:2013
- NACE MR0175 and MR0103 compliant for all process wetted parts; optional NACE approved bolt material available
- Optional certification options allow transmitters to meet numerous requirements for hazardous and non-hazardous locations
- CE marked; meets the requirements of applicable EMC, ATEX, RoHS, and PED European Union Directives

Documents

NAME	VIEW / DOWNLOAD
4 to 20 mA Output Supply Voltage vs. Output Load	View / Download
S Series Accuracies	View / Download
BiPlanar AP/GP Range And Span Limits	View / Download
Direct Connect AP/GP Range and Span Limits	View / Download
DP Range and Span Limits	View / Download

Accessories

AP/GP Transmitters with Direct Connect Flameproof Structure	M7 or M8 Mounting Bracket