

# CANADA SENSORS TECHNOLOGY INC.



Manufacturer of Advanced Technology Pressure & Level Transmitters

CRN Approval, ISO 9001:2015 Certified



## DIFFERENTIAL PRESSURE TRANSMITTER – PROCESS 8-HYD

### HART™ Enabled Inherently Safe Model, HART™ Enabled General Purpose Model for Differential Pressure and Hydrogen Service

Canada Sensors *intelligent* transmitters bring the latest technology to the pressure transmitter & related instrumentation market-place with self-diagnostic features which will maintain consistent accuracy throughout temperature and pressure scales.

#### FEATURES

- ✓ HART™ Protocol
- ✓ Inherently Safe – HazLoc Zone 0
- ✓ On-board Barometric Sensor
- ✓ Eliminate Output Drift
- ✓ Self-Adjusting Real Time Data
- ✓ Real Time Temperature Compensation
- ✓ On-board RTD
- ✓ Line Pressure Ranges up to 1,000 PSI
- ✓ Differential Pressures from 0 - 2 PSID to 0 to 200 PSID
- ✓ Characterized Sensor Head
- ✓ Full Scale Accuracy 0.1%
- ✓ RoHS2 Compliant
- ✓ 1 Year Conditional Warranty

#### TECHNICAL DATA

HART™ Enabled

Two Wire 4-20 mA Output Pressure Transmitter

Process 8 Differential Pressure Transmitters are scaled & digitally mapped to temperatures from -40C to +85C

Temperature compensation, through a mathematical formula, will occur at multiple levels throughout the range of the pressure transmitter offering highly accurate information.

The Process 8 differential transmitter has an on-board barometric calibration chip. This is a self-zeroing and self-adjusting feature with zero drift at any altitude or day or night. The transmitter does not require any external adjustments.

Highly accurate and repeatable 0.075% full scale accuracy

Inherently Safe - HazLoc Zone 0

Ingress Protection is minimum IP67

Operating pressure ranges to 1,000 PSI

Digitally mapped error correction throughout the pressure range

Individually characterized sensor head - 316SS silicone oil filled sensor is standard

Corrosion Inhibiting feature is standard on the Process 8 models. This PTFE corrosion protection protects from ambient conditions such as UV rays, humidity, sand, sea-spray, hydrogen sulfide environments, and most chemicals.

Gold coating on the process connection provides protection from hydrogen molecule migration and hydrogen embrittlement to ASTM F519

Multiple Electrical Connectors & Housings Available

Multiple Process Connection Threads Available in 316SS material only



**Contact Us:**

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**Manufacturer of Advanced Technology  
Level and Pressure Transmitters**

**Additional Features:** Powder Coated Canister  
Engraved Product Information  
Laser Welded  
1 Year Conditional Warranty (Serial Number Traceability)

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**Advanced Technology ... Improving Business**  
**Smart THROUGH and THROUGH**  
**This transmitter packs a powerful punch**  
**No drift. No set-up. It just works.**

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**MISSION STATEMENT**

Canada Sensors Technology Inc. strives to build a mutually positive and beneficial relationship with our customers, ensuring their long-term success, through the understanding of their needs and the needs of their customers.

We will listen to our customers and constantly improve our technologies as our customers' needs change with time.

Canada Sensors Technology Inc. is committed to providing the highest level of product quality and customer service. Canada Sensors Technology Inc. is ISO 9001:2015 certified.

**Technical Specifications - Process 8 - HYD**

**Performance**

Accuracy:	0.075% Full Scale Output
Stability:	< 0.075% Full Scale Output
Temperature Range:	-40C to +85C Calibrated
Temperature Accuracy:	< 0.075% Full Scale Output
Pressure Cycles:	> 50 Million
Over Range Protection:	2 x Full Scale Output
Burst Pressure:	5 x Full Scale Output

**NOTE: Over Range Protection and Burst Pressure shall be reduced to 1.5 x Full Scale Output for pressures exceeding 1,000 PSI due to thread limitations**

**Electrical Data**

Excitation:	14-33 VDC (product accessories may alter excitation values)
Comms:	HART Protocol & Modbus in Development
Current Consumption:	3.6 mA
Zero Offset:	4 mA
Span Tolerance:	Range or Sensor with Turndown
Output Load:	500 OHMS
Barometric Chip:	Monitoring Range 88KPA ( 12.76 PSI ) to 108 KPA ( 15.7 PSI )
RTD Temperature:	On Board 100 ohm Platinum
Intrinsically Safe - HazLoc Zone 0	

**NOTE: An Ex Barrier is required for any connections that cross the boundary from an Ordinary Location (Non-Classified/Non-Hazardous) to a Classified (Hazardous) location**

**Environmental Data**

<b>Temperature</b>	
Operating:	-40C to +85C (product accessories may alter temperature ratings)
Storage:	-55C to +125C
<b>Thermal Limits</b>	
Compensated Range:	-40C to +85C
Temp Comp Zero:	0.075% Full Scale Output @ +85C
Temp Comp Span:	0.075% Full Scale Output @ +85C

**Physical Data**

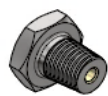
Sensor:	<b>Monolithic Block NOT Available on this model</b>
Vibration:	25gRMS from 20Hz to 2000Hz
Shock:	100g , half sine, 11mSec.
Sensor:	Gold Coated ASTM F519 Treatment is standard on all Silicone Oil Filled - 316SS
Vibration:	25gRMS from 20Hz to 2000Hz
Shock:	100g , half sine, 11mSec.
<b>NOTE: Silicone Oil Filled Sensors are a factory option for low pressure</b>	
Process Connection:	1/4" MNPT; 1/4" FNPT; 1/2" MNPT; 1/2" FNPT; G-1/4"; G-1/2"
<b>NOTE: ANSI Regulations dictate that NPT Thread should not to exceed 8,000 PSI @ +125C</b>	
Electrical Connection:	316SS Weld-on: 6 Pin 90 Degree Military Connector; 1/2" MNPT Solid Conduit; 1/2" MNPT Positional Swivel Conduit; or w/ Aluminum XP Heads; Bendix Twist Connector 6 Pin (PTIH-10-6P); M12

**NOTE: 316SS Wetted Parts are the minimum requirement for NACE compliance**

**Product Weights:**

	<b>OZ</b>	<b>LBS</b>	<b>KG</b>
Process 8-HYD w/ 316SS Weld-on 6 Pin 90 Degree Military Connector	17.5	1.1	0.50
Process 8-HYD w/ 316SS Weld-on x 1/2 MNPT Positional Swivel Conduit Fitting (2 ft Flying Lead)	25.5	1.6	0.72
Process 8-HYD w/ 316SS Weld-on 1/2" MNPT Solid Conduit Fitting (2 ft Flying Lead); Bendix Twist Connector 6 Pin (PTIH-10-6P); M12	23.5	1.5	0.67
Process 8-HYD w/ Aluminum XP Head (1/2" FNPT x 3) - 316SS Weld-on 1/2" MNPT Positional Swivel Conduit Fitting - Blank - No Window	60.5	3.8	1.72
Process 8-HYD w/ Aluminum XP Head (1/2" FNPT x 3) - 316SS Weld-on 1/2" MNPT Solid Conduit Fitting - Blank - No Window	58.5	3.7	1.66
Process 8-HYD w/ Aluminum XP Head (1/2" FNPT x 3) - 316SS Weld-on 1/2" MNPT Positional Swivel Conduit Fitting w/ 3 1/2 + Digits LCD Loop Powered Display	73.5	4.6	2.08
Process 8-HYD w/ Aluminum XP Head (1/2" FNPT x 3) - 316SS Weld-on 1/2" MNPT Solid Conduit Fitting w/ 3 1/2 + Digits LCD Loop Powered Display	71.5	4.5	2.03
Process 8-HYD w/ Aluminum XP Head (1/2" FNPT x 3) - 316SS Weld-on 1/2" MNPT Positional Swivel Conduit Fitting w/ 5 Digits LCD Loop Powered Display	113.5	7.1	3.22
Process 8-HYD w/ Aluminum XP Head (1/2" FNPT x 3) - 316SS Weld-on 1/2" MNPT Solid Conduit Fitting w/ 5 Digits LCD Loop Powered Display	111.5	7.0	3.16
Process 8-HYD w/ Aluminum XP Head (1/2" FNPT x 1, 3/4" FNPT x 2) - 316SS Weld-on 1/2" MNPT Positional Swivel Conduit Fitting w/ 5 or 7 Digits LCD Loop Powered Flow Rate Totalizer	113.5	7.1	3.22
Process 8-HYD w/ Aluminum XP Head (1/2" FNPT x 1, 3/4" FNPT x 2) - 316SS Weld-on 1/2" MNPT Solid Conduit Fitting w/ 5 or 7 Digits LCD Loop Powered Flow Rate Totalizer	111.5	7.0	3.16

**Process Connections:**



1/4" MNPT



1/4" FNPT



1/2" MNPT



1/2" FNPT

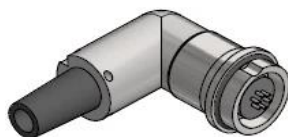


G-1/4"



G-1/2"

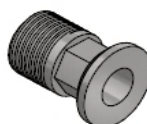
**Electrical Connections:**



6 PIN 90 DEGREE  
MILITARY CONNECTOR



1/2" MNPT POSITIONAL  
SWIVEL CONDUIT FITTING



1/2" MNPT SOLID  
CONDUIT FITTING



BENDIX TWIST CONNECTOR  
6 PIN



M12

**Product Accessories:**

- Aluminum XP Head (1/2" FNPT x 3) - 316SS Weld-on 1/2" MNPT Positional Swivel Conduit Fitting - Blank - No Window
- Aluminum XP Head (1/2" FNPT x 3) - 316SS Weld-on 1/2" MNPT Solid Conduit Fitting - Blank - No Window
- Aluminum XP Head (1/2" FNPT x 3) - 316SS Weld-on 1/2" MNPT Positional Swivel Conduit Fitting w/ 3 1/2 + Digits LCD Loop Powered Display
- Aluminum XP Head (1/2" FNPT x 3) - 316SS Weld-on 1/2" MNPT Solid Conduit Fitting w/ 3 1/2 + Digits LCD Loop Powered Display
- Aluminum XP Head (1/2" FNPT x 3) - 316SS Weld-on 1/2" MNPT Positional Swivel Conduit Fitting w/ 5 Digits LCD Loop Powered Display
- Aluminum XP Head (1/2" FNPT x 3) - 316SS Weld-on 1/2" MNPT Solid Conduit Fitting w/ 5 Digits LCD Loop Powered Display
- Aluminum XP Head (1/2" FNPT x 1, 3/4" FNPT x 2) - 316SS Weld-on 1/2" MNPT Positional Swivel Conduit Fitting w/ 5 or 7 Digits LCD Loop Powered Flow Rate Totalizer
- Aluminum XP Head (1/2" FNPT x 1, 3/4" FNPT x 2) - 316SS Weld-on 1/2" MNPT Solid Conduit Fitting w/ 5 or 7 Digits LCD Loop Powered Flow Rate Totalizer



**Product Nomenclature**

**MODEL: Differential Pressure Transmitter - Process 8-HYD**

PN Example: A-B-C-D-E-F-G-H-I-J

08-HYD-01-01-04-051-02-02-08-03-01:

Process 8-HYD Differential Transmitter, 4-20 mA, HART Enabled, Differential, 0 - 50 PSID, 1/4" FNPT, 316SS Wetted Parts, 316SS Weld-on 1/2" MNPT Solid Conduit Fitting with 2 ft Flying Lead, Gold Plating, 0.075% Accuracy

	A	B	C	D	E	F	G	H	I	J
<b>Model</b>	08-HYD	-	Process 8-HYD							
<b>Output</b>	01	-	4-20 mA							
<b>Calibration Adjustment</b>	01	-	HART Enabled							
<b>Pressure Reference</b>	04	-	Differential							
<b>Pressure Range</b>	046	-	0 - 2 PSID							
	047	-	0 - 5 PSID							
	048	-	0 - 10 PSID							
	049	-	0 - 15 PSID							
	050	-	0 - 30 PSID							
	051	-	0 - 50 PSID							
	052	-	0 - 100 PSID							
	053	-	0 - 150 PSID							
	054	-	0 - 200 PSID							
<b>Process Connection</b>	01	-	1/4" MNPT (Maximum Pressure 10,000 PSI)							
	02	-	1/4" FNPT (Maximum Pressure 10,000 PSI)							
	03	-	1/2" MNPT (Maximum Pressure 10,000 PSI)							
	04	-	1/2" FNPT (Maximum Pressure 10,000 PSI)							
	07	-	G-1/4" (Maximum Pressure 5,000 PSI)							
	08	-	G-1/2" (Maximum Pressure 5,000 PSI)							
<b>Wetted Parts</b>	02	-	316SS							
<b>Electrical Connection</b>	01	-	316SS Weld-on 6 Pin 90 Degree Military Connector							
	02	-	316SS Weld-on 1/2" MNPT Positional Swivel Conduit Fitting (2 ft Flying Lead)							
	03	-	316SS Weld-on 1/2" MNPT Positional Swivel Conduit Fitting (4 ft Flying Lead)							
	04	-	316SS Weld-on 1/2" MNPT Positional Swivel Conduit Fitting (6 ft Flying Lead)							
	05	-	316SS Weld-on 1/2" MNPT Positional Swivel Conduit Fitting (10 ft Flying Lead)							
	07	-	316SS Weld-on 1/2" MNPT Solid Conduit Fitting (2 ft Flying Lead)							
	08	-	316SS Weld-on 1/2" MNPT Solid Conduit Fitting (4 ft Flying Lead)							
	09	-	316SS Weld-on 1/2" MNPT Solid Conduit Fitting (6 ft Flying Lead)							
	10	-	316SS Weld-on 1/2" MNPT Solid Conduit Fitting (10 ft Flying Lead)							
	31	-	316SS Weld-on Bendix 6-Pin							
	32	-	316SS Weld-on M12							
	34	-	Aluminum XP Head (1/2" FNPT x 3) - 316SS Weld-on 1/2" MNPT Positional Swivel Conduit Fitting - Blank - No Window							
	35	-	Aluminum XP Head (1/2" FNPT x 3) - 316SS Weld-on 1/2" MNPT Solid Conduit Fitting - Blank - No Window							
	37	-	Aluminum XP Head (1/2" FNPT x 3) - 316SS Weld-on 1/2" MNPT Positional Swivel Conduit Fitting w/ 3 1/2 + Digits LCD Loop Powered Display							
	38	-	Aluminum XP Head (1/2" FNPT x 3) - 316SS Weld-on 1/2" MNPT Solid Conduit Fitting w/ 3 1/2 + Digits LCD Loop Powered Display							
	40	-	Aluminum XP Head (1/2" FNPT x 3) - 316SS Weld-on 1/2" MNPT Positional Swivel Conduit Fitting w/ 5 Digits LCD Loop Powered Display							
	41	-	Aluminum XP Head (1/2" FNPT x 3) - 316SS Weld-on 1/2" MNPT Solid Conduit Fitting w/ 5 Digits LCD Loop Powered Display							
	47	-	Aluminum XP Head (1/2" FNPT x 1, 3/4" FNPT x 2) - 316SS Weld-on 1/2" MNPT Positional Swivel Conduit Fitting w/ 5 or 7 Digits LCD Loop Powered Flow Rate Totalizer							
	48	-	Aluminum XP Head (1/2" FNPT x 1, 3/4" FNPT x 2) - 316SS Weld-on 1/2" MNPT Solid Conduit Fitting w/ 5 or 7 Digits LCD Loop Powered Flow Rate Totalizer							
<b>Environmental Treatment</b>	03	-	Gold Coating							
<b>Accuracy</b>	01	-	0.075 %							

**E: Alternate Pressure Range Units**

**kPa**

kPa	046 - kPa	-	0 - 15 kPaD
kPa	047 - kPa	-	0 - 35 kPaD
kPa	048 - kPa	-	0 - 70 kPaD
kPa	049 - kPa	-	0 - 100 kPaD
kPa	050 - kPa	-	0 - 200 kPaD
kPa	051 - kPa	-	0 - 350 kPaD
kPa	052 - kPa	-	0 - 700 kPaD
kPa	053 - kPa	-	0 - 1000 kPaD
kPa	054 - kPa	-	0 - 1400 kPaD

**mBar**

mBar	046 - mBar	-	0 - 150 mBarD
mBar	047 - mBar	-	0 - 350 mBarD
mBar	048 - mBar	-	0 - 700 mBarD
mBar	049 - mBar	-	0 - 1000 mBarD
mBar	050 - mBar	-	0 - 2000 mBarD
mBar	051 - mBar	-	0 - 3500 mBarD
mBar	052 - mBar	-	0 - 7000 mBarD
mBar	053 - mBar	-	0 - 10000 mBarD
mBar	054 - mBar	-	0 - 14000 mBarD

**mm Hg**

mm Hg	046 - mm Hg	-	0 - 100 mm HgD
mm Hg	047 - mm Hg	-	0 - 250 mm HgD
mm Hg	048 - mm Hg	-	0 - 500 mm HgD
mm Hg	049 - mm Hg	-	0 - 800 mm HgD
mm Hg	050 - mm Hg	-	0 - 1500 mm HgD
mm Hg	051 - mm Hg	-	0 - 2500 mm HgD
mm Hg	052 - mm Hg	-	0 - 5000 mm HgD
mm Hg	053 - mm Hg	-	0 - 8000 mm HgD
mm Hg	054 - mm Hg	-	0 - 10000 mm HgD

**in H<sub>2</sub>O (60° F)**

in H <sub>2</sub> O (60° F)	046 - in H <sub>2</sub> O	-	0 - 60 in H <sub>2</sub> OD (60° F)
in H <sub>2</sub> O (60° F)	047 - in H <sub>2</sub> O	-	0 - 150 in H <sub>2</sub> OD (60° F)
in H <sub>2</sub> O (60° F)	048 - in H <sub>2</sub> O	-	0 - 300 in H <sub>2</sub> OD (60° F)
in H <sub>2</sub> O (60° F)	049 - in H <sub>2</sub> O	-	0 - 400 in H <sub>2</sub> OD (60° F)
in H <sub>2</sub> O (60° F)	050 - in H <sub>2</sub> O	-	0 - 800 in H <sub>2</sub> OD (60° F)
in H <sub>2</sub> O (60° F)	051 - in H <sub>2</sub> O	-	0 - 1500 in H <sub>2</sub> OD (60° F)
in H <sub>2</sub> O (60° F)	052 - in H <sub>2</sub> O	-	0 - 3000 in H <sub>2</sub> OD (60° F)
in H <sub>2</sub> O (60° F)	053 - in H <sub>2</sub> O	-	0 - 4000 in H <sub>2</sub> OD (60° F)
in H <sub>2</sub> O (60° F)	054 - in H <sub>2</sub> O	-	0 - 5000 in H <sub>2</sub> OD (60° F)

**mm H<sub>2</sub>O (4° C)**

mm H <sub>2</sub> O (4° C)	046 - mm H <sub>2</sub> O	-	0 - 1400 mm H <sub>2</sub> OD (4° C)
mm H <sub>2</sub> O (4° C)	047 - mm H <sub>2</sub> O	-	0 - 3500 mm H <sub>2</sub> OD (4° C)
mm H <sub>2</sub> O (4° C)	048 - mm H <sub>2</sub> O	-	0 - 7000 mm H <sub>2</sub> OD (4° C)
mm H <sub>2</sub> O (4° C)	049 - mm H <sub>2</sub> O	-	0 - 10000 mm H <sub>2</sub> OD (4° C)
mm H <sub>2</sub> O (4° C)	050 - mm H <sub>2</sub> O	-	0 - 20000 mm H <sub>2</sub> OD (4° C)
mm H <sub>2</sub> O (4° C)	051 - mm H <sub>2</sub> O	-	0 - 35000 mm H <sub>2</sub> OD (4° C)
mm H <sub>2</sub> O (4° C)	052 - mm H <sub>2</sub> O	-	0 - 70000 mm H <sub>2</sub> OD (4° C)
mm H <sub>2</sub> O (4° C)	053 - mm H <sub>2</sub> O	-	0 - 100000 mm H <sub>2</sub> OD (4° C)
mm H <sub>2</sub> O (4° C)	054 - mm H <sub>2</sub> O	-	0 - 140000 mm H <sub>2</sub> OD (4° C)

**in Hg (32° F)**

in Hg (32° F)	046 - in Hg	-	0 - 5 in HgD(32° F)
in Hg (32° F)	047 - in Hg	-	0 - 10 in HgD(32° F)
in Hg (32° F)	048 - in Hg	-	0 - 20 in HgD(32° F)
in Hg (32° F)	049 - in Hg	-	0 - 30 in HgD(32° F)
in Hg (32° F)	050 - in Hg	-	0 - 30 in HgD(32° F)
in Hg (32° F)	051 - in Hg	-	0 - 100 in HgD(32° F)
in Hg (32° F)	052 - in Hg	-	0 - 200 in HgD(32° F)
in Hg (32° F)	053 - in Hg	-	0 - 300 in HgD(32° F)
in Hg (32° F)	054 - in Hg	-	0 - 400 in HgD(32° F)

**Bar**

Bar	046 - Bar	-	0 - 0.15 BarD
Bar	047 - Bar	-	0 - 0.35 BarD
Bar	048 - Bar	-	0 - 0.7 BarD
Bar	049 - Bar	-	0 - 1 BarD
Bar	050 - Bar	-	0 - 2 BarD
Bar	051 - Bar	-	0 - 3.5 BarD
Bar	052 - Bar	-	0 - 7 BarD
Bar	053 - Bar	-	0 - 10 BarD
Bar	054 - Bar	-	0 - 14 BarD

ata (kg/cm <sup>2</sup> )	046 - ata	-	0 - 0.14 ata (kg/cm <sup>2</sup> )D
ata (kg/cm <sup>2</sup> )	047 - ata	-	0 - 0.35 ata (kg/cm <sup>2</sup> )D
ata (kg/cm <sup>2</sup> )	048 - ata	-	0 - 0.7 ata (kg/cm <sup>2</sup> )D
ata (kg/cm <sup>2</sup> )	049 - ata	-	0 - 1 ata (kg/cm <sup>2</sup> )D
ata (kg/cm <sup>2</sup> )	050 - ata	-	0 - 2.1 ata (kg/cm <sup>2</sup> )D
ata (kg/cm <sup>2</sup> )	051 - ata	-	0 - 3.5 ata (kg/cm <sup>2</sup> )D
ata (kg/cm <sup>2</sup> )	052 - ata	-	0 - 7 ata (kg/cm <sup>2</sup> )D
ata (kg/cm <sup>2</sup> )	053 - ata	-	0 - 10 ata (kg/cm <sup>2</sup> )D
ata (kg/cm <sup>2</sup> )	054 - ata	-	0 - 14 ata (kg/cm <sup>2</sup> )D