

CANADA SENSORS TECHNOLOGY INC.



Manufacturer of Advanced Technology Pressure & Level Transmitters

CRN Approval ISO 9001:2015



CI D2 Grp ABCD Class I Zone 2
AEx ec IIC T4 Gc, Ex ec IIC T4 Gc

DIFFERENTIAL PRESSURE TRANSMITTER – PROCESS 9-HYD-IS Increased Safety Model for Differential Pressure and Hydrogen Service

Canada Sensors Technology Inc. offers an affordable solution with the Process 9-IS-HYD Differential Pressure Transmitter without sacrificing quality or longevity of use.

FEATURES, SPECIFICATIONS & TECHNICAL DATA

- ✓ Increased Safety for Class I, Div. 2, Zone 2 Hazardous Locations and Hydrogen Service
- ✓ 4 – 20 mA Two Wire, Voltage, MODbus, CANbus, J1939, USB, Ethernet
- ✓ 0.25% BSL Accuracy
- ✓ Zero & Span Function
- ✓ >50 million Cycles
- ✓ Line Pressure Ranges to 1,000 PSI
- ✓ Differential Pressures from 0 – 2 PSID to 0 – 200 PSID
- ✓ Heavy Duty 316SS Powder Coated Canister
- ✓ Maximum Operating Temperature -40C to +95C
- ✓ Ingress Protection IP65 (up to IP67 on request)
- ✓ Multiple Electrical Connectors & Housings Available
- ✓ Multiple Process Connection Materials & Connection Threads Available
- ✓ Laser Engraved Product Information
- ✓ RoHS Compliant
- ✓ 2 Year Conditional Warranty (Serial Number Traceability)
- ✓ Unparalleled Value



Contact Us:

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Manufacturer of Advanced Technology
Level and Pressure Transmitters



Technical Specifications - Process 9 - HYD - IS

| Performance | |
|--------------------|-------------------------------|
| Accuracy: | 0.25% Full Scale Output |
| Stability: | < 0.1% Full Scale Output/Year |
| Temperature Range: | -40C to +95C |

| Environmental Data | |
|--------------------|--|
| Temperature | |
| Operating: | -40C to +95C (product accessories may alter temperature ratings) |
| Storage: | -55C to +125C |

| | |
|------------------------|-----------------------------|
| Temperature Accuracy: | 1% Full Scale Output @ +50C |
| Pressure Cycles: | > 100 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: | 10 - 28 VDC (product accessories may alter excitation values) |
| Comms: | 4-20 mA, 0-5 VDC or 0-10 VDC or Ratio Metric, RS485-Modbus, CANopen, J939 |
| Current Consumption: | 5 mA |
| Zero Offset: | 0.5% Full Scale Output |
| Span Tolerance: | 0.5% Full Scale Output |
| Output Load: | 9 Volts typical @ 24 VDC 750 OHMS |
| Increased Safety for Zone 2 Division 2 Hazardous Locations | |

Pollution Degree 4

Installation Category I

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

Note: Electrical Connection: Big-DIN 43650A is limited to Class I Div II installations

Thermal Limits

| | |
|--------------------|-----------------------------|
| Compensated Range: | 0 to +50C |
| Temp Comp Zero: | 1% Full Scale Output @ +50C |
| Temp Comp Span: | 1% Full Scale Output @ +50C |

Physical Data

| | |
|--|---|
| Sensor: | Monolithic Block NOT Available on this model |
| Vibration: | 25gRMS from 20Hz to 2000Hz |
| Shock: | 100g , half sine, 11mSec. |
| Sensor: | Hardened 316SS is standard on all Silicone Oil Filled or Gold Coated ASTM F519 |
| Vibration: | 25gRMS from 20Hz to 2000Hz |
| Shock: | 100g , half sine, 11mSec. |
| NOTE: Silicone Oil Filled Sensors are a factory option for low pressure | |
| Process Connection: | 1/4" MNPT; 1/4" FNPT; 1/2" MNPT; 1/2" FNPT; G-1/4"; G-1/2" |
| NOTE: ANSI Regulations dictate that NPT Thread should not to exceed 8,000 PSI @ +125C | |
| Electrical Connection: | 316SS Thread-on 1/2" MNPT Solid Conduit Fitting or w/ Aluminum XP Heads; Big-DIN 43650A; Bendix Twist 6 Pin (PTIH-10-6P); M12 |

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

Product Weights:

| | OZ | LBS | KG |
|---|-------|-----|------|
| Process 9-IS-HYD w/ 316SS Thread-on 1/2" MNPT Solid Conduit Fitting (2 ft Lead) | 20.5 | 1.3 | 0.58 |
| Process 9-IS-HYD w/ Big-DIN (43650A 90 Degree Hirschmann) Bendix Twist 6 Pin (PTIH-10-6P) or M12 | 11.5 | 0.7 | 0.33 |
| Process 9-IS-HYD w/ Aluminum XP Head (1/2" FNPT x 3) - 316SS Thread-on 1/2" MNPT Solid Conduit Fitting - Blank - No Window | 55.5 | 3.5 | 1.57 |
| Process 9-IS-HYD w/ Aluminum XP Head (1/2" FNPT x 3) - 316SS Thread-on 1/2" MNPT Solid Conduit Fitting w/ 3 1/2 + Digits LCD Loop Powered Display | 68.5 | 4.3 | 1.94 |
| Process 9-IS-HYD w/ Aluminum XP Head (1/2" FNPT x 3) - 316SS Thread-on 1/2" MNPT Solid Conduit Fitting w/ 5 Digits LCD Loop Powered Display | 108.5 | 6.8 | 3.08 |
| Process 9-IS-HYD w/ Aluminum XP Head (1/2" FNPT x 1, 3/4" FNPT x 2) - 316SS Thread-on 1/2" MNPT Solid Conduit Fitting w/ 5 or 7 Digits LCD Loop Powered Flow Rate Totalizer | 108.5 | 6.8 | 3.08 |

Process Connections:



1/4" MNPT



1/4" FNPT



1/2" MNPT



1/2" FNPT



G-1/4"



G-1/2"

Electrical Connections:



1/2" MNPT SOLID
CONDUIT FITTING



43650A DIN CONNECTOR
(BIG-DIN HIRSCHMANN)



BENDIX TWIST CONNECTOR
6 PIN



M12 - 4 PIN

Product Accessories

Aluminum XP Head (1/2" FNPT x 3) - 316SS Thread-on 1/2" MNPT Solid Conduit Fitting - Blank - No Window

Aluminum XP Head (1/2" FNPT x 3) - 316SS Thread-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 Thread-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 Thread-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 9-IS-HYD

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

09-IS-HYD-01-03-04-051-02-02-12-03-02:

Process 9-IS-HYD Differential Transmitter, 4-20 mA, Zero and Span, Differential, 0 - 50 PSID, 1/4" FNPT, 316SS Wetted Parts, 316SS Thread-on 1/2" MNPT Solid Conduit Fitting with 2 ft Lead Extension Wire, Gold Coating, 0.25% Accuracy

| | A | B | C | D | E | F | G | H | I | J |
|--------------------------------|---|---|---|---|---|---|---|---|---|---|
| Model | | | | | | | | | | |
| 09-IS-HYD | - | Process 9-IS-HYD | | | | | | | | |
| Output | | | | | | | | | | |
| 01 | - | 4-20 mA | | | | | | | | |
| 02 | - | 0-5 Volts | | | | | | | | |
| 03 | - | 0-10 Volts | | | | | | | | |
| 04 | - | RS485 – Modbus | | | | | | | | |
| 05 | - | CANopen | | | | | | | | |
| 06 | - | J1939 | | | | | | | | |
| Calibration Adjustment | | | | | | | | | | |
| 03 | - | Zero and Span | | | | | | | | |
| Pressure Reference | | | | | | | | | | |
| 04 | - | Differential | | | | | | | | |
| Pressure Range | | | | | | | | | | |
| 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 | | | | | | | | |
| Process Connection | | | | | | | | | | |
| 01 | - | ¼" MNPT | | | | | | | | |
| 02 | - | ¼" FNPT | | | | | | | | |
| 03 | - | ½" MNPT | | | | | | | | |
| 04 | - | ½" FNPT | | | | | | | | |
| 07 | - | G-¾" | | | | | | | | |
| 08 | - | G-1/2" | | | | | | | | |
| Wetted Parts | | | | | | | | | | |
| 02 | - | 316SS | | | | | | | | |
| Electrical Connection | | | | | | | | | | |
| 12 | - | 316SS Thread-on ½" MNPT Solid Conduit Fitting (2 ft Lead Extension Wire) | | | | | | | | |
| 13 | - | 316SS Thread-on ½" MNPT Solid Conduit Fitting (4 ft Lead Extension Wire) | | | | | | | | |
| 14 | - | 316SS Thread-on ½" MNPT Solid Conduit Fitting (6 ft Lead Extension Wire) | | | | | | | | |
| 15 | - | 316SS Thread-on ½" MNPT Solid Conduit Fitting (10 ft Lead Extension Wire) | | | | | | | | |
| 22 | - | Big-DIN (DIN 43650A 90 Degree Hirschmann) | | | | | | | | |
| 31 | - | Bendix Twist Connector 6 Pin (PTIH-10-6P) | | | | | | | | |
| 32 | - | M12 | | | | | | | | |
| 36 | - | Aluminum XP Head (1/2" FNPT x 3) - 316SS Thread-on 1/2" MNPT Solid Conduit Fitting - Blank - No Window | | | | | | | | |
| 39 | - | Aluminum XP Head (1/2" FNPT x 3) - 316SS Thread-on 1/2" MNPT Solid Conduit Fitting w/ 3 1/2 + Digits LCD Loop Powered Display | | | | | | | | |
| 42 | - | Aluminum XP Head (1/2" FNPT x 3) - 316SS Thread-on 1/2" MNPT Solid Conduit Fitting w/ 5 Digits LCD Loop Powered Display | | | | | | | | |
| 49 | - | Aluminum XP Head (1/2" FNPT x 1, 3/4" FNPT x 2) - 316SS Thread-on 1/2" MNPT Solid Conduit Fitting w/ 5 or 7 Digits LCD Loop Powered Flow Rate Totalizer | | | | | | | | |
| Environmental Treatment | | | | | | | | | | |
| 02 | - | No Treatment | | | | | | | | |
| 03 | - | Gold Coating | | | | | | | | |
| Accuracy | | | | | | | | | | |
| 02 | - | 0.25 % | | | | | | | | |

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 H₂O (60° F)

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

mm H₂O (4° C)

| | | | |
|----------------------------|---------------------------|---|--|
| mm H ₂ O (4° C) | 046 - mm H ₂ O | - | 0 - 1400 mm H ₂ OD (4° C) |
| mm H ₂ O (4° C) | 047 - mm H ₂ O | - | 0 - 3500 mm H ₂ OD (4° C) |
| mm H ₂ O (4° C) | 048 - mm H ₂ O | - | 0 - 7000 mm H ₂ OD (4° C) |
| mm H ₂ O (4° C) | 049 - mm H ₂ O | - | 0 - 10000 mm H ₂ OD (4° C) |
| mm H ₂ O (4° C) | 050 - mm H ₂ O | - | 0 - 20000 mm H ₂ OD (4° C) |
| mm H ₂ O (4° C) | 051 - mm H ₂ O | - | 0 - 35000 mm H ₂ OD (4° C) |
| mm H ₂ O (4° C) | 052 - mm H ₂ O | - | 0 - 70000 mm H ₂ OD (4° C) |
| mm H ₂ O (4° C) | 053 - mm H ₂ O | - | 0 - 100000 mm H ₂ OD (4° C) |
| mm H ₂ O (4° C) | 054 - mm H ₂ O | - | 0 - 140000 mm H ₂ 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/cm²) | | | |
|--------------------------------|-----------|---|-------------------------------------|
| ata (kg/cm ²) | 046 - ata | - | 0 - 0.14 ata (kg/cm ²)D |
| ata (kg/cm ²) | 047 - ata | - | 0 - 0.35 ata (kg/cm ²)D |
| ata (kg/cm ²) | 048 - ata | - | 0 - 0.7 ata (kg/cm ²)D |
| ata (kg/cm ²) | 049 - ata | - | 0 - 1 ata (kg/cm ²)D |
| ata (kg/cm ²) | 050 - ata | - | 0 - 2.1 ata (kg/cm ²)D |
| ata (kg/cm ²) | 051 - ata | - | 0 - 3.5 ata (kg/cm ²)D |
| ata (kg/cm ²) | 052 - ata | - | 0 - 7 ata (kg/cm ²)D |
| ata (kg/cm ²) | 053 - ata | - | 0 - 10 ata (kg/cm ²)D |
| ata (kg/cm ²) | 054 - ata | - | 0 - 14 ata (kg/cm ²)D |