DATASHEET

# HDPTxxxx

H SERIES SENSORS

## Highlights

- Pressure type: differential pressure
- Multiple measurement ranges from -435 to 1500 PSI (-12041 to 41520 inH2O)
- Reference accuracy: ± 0.075% of full span
- Stability: ± 0.2 % Upper Range Limit / 5 years
- Output signal options:
  (1) 1-5 V (2) RS485 Modbus
  (3) 4-20 mA (4) 4-20 mA/HART
- TD ratio of up to 100:1 (accuracy not affected at TD ratio of 10:1 and below)[1]
- All models support PV reversal (high side / low side) except for the 1500 PSI model
- Backlit LCD provided with both internal and external control buttons
- HART support:
  - Universal and Common Practice Commands supported
  - Compatible with most HART Field Communicators
- Operating temperature:
  -40 to 60 °C (-40 to 140 °F)
  LCD: -20 to 60 °C (-4 to 140 °F)
- Diaphragm option: Hastelloy C or 316L SS
- 2X overload pressure using dual diaphragm structure
- Dual seal certified per CSA C22.2 No. 30-20
- Accurate filling fluid technology eliminates effects of temperature and static pressure
- Process temp. measurement tag supported on Modbus and HART, -40 to 85 °C (-40 to 185 °F)[2]
- Explosion-proof (standard on all models)
- Intrinsically Safe (4-20 mA/HART options only)
- NACE MR0175 Compliant

C US RoHS

## The Ideal Choice for Differential Pressure Monitoring Applications

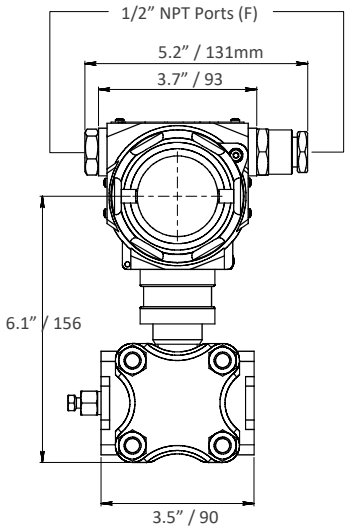
The OleumTech H Series Differential Pressure Transmitter is a high-performance instrument utilizing the world's most advanced monocrystalline silicon pressure sensor and patented encapsulation technology. The Differential Pressure Transmitter is designed for use in rigorous industrial applications with robust resistance to chemical exposures, mechanical loads, and EMI.

The OleumTech Differential Pressure Transmitter is easy to install and operate. It can be ordered with a variety of options to fit your specific needs. The OleumTech H Series DP Transmitter is a natural choice for a wide variety of oil, gas, water, wastewater, and other mission-critical applications that require a high level of accuracy and reliability.

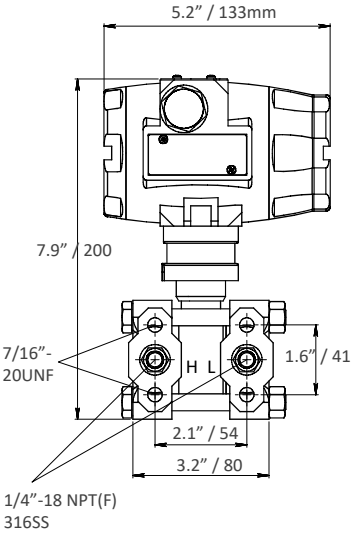
| Part Number | Nominal Value | | Smallest Cal. Span | | Lower Range Limit (LRL) | | Upper Range Limit (URL) | | Static Pressure Limit | | Low Pressure Side Overload Limit | | High Pressure Side Overload Limit | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PSI | inH2O | PSI | inH2O | PSI | inH2O | PSI | inH2O | PSI | inH2O | PSI | inH2O | PSI | inH2O |
| HDPT0005 | 5 | 138 | 0.05 | 1.4 | -5 | -138 | 5 | 138 | 5800 | 160543 | 2320 | 64217 | 3625 | 100340 |
| HDPT0030 | 30 | 830 | 0.3 | 8.3 | -30 | -830 | 30 | 830 | 5800 | 160543 | 2320 | 64217 | 3625 | 100340 |
| HDPT0150 | 150 | 4152 | 1.5 | 41.5 | -150 | -4152 | 150 | 4152 | 5800 | 160543 | 2320 | 64217 | 3625 | 100340 |
| HDPT0400 | 400 | 11072 | 4 | 110.7 | -400 | -11072 | 400 | 11072 | 5800 | 160543 | 2320 | 64217 | 3625 | 100340 |
| HDPT1500[3] | 1500 | 41520 | 15 | 415.2 | -435 | -12041 | 1500 | 41520 | 5800 | 160543 | 2320 | 64217 | 3625 | 100340 |

# Technical Specifications

| | |
|---|---|
| **HARDWARE FEATURES** | |
| Device Functionality | · Differential Pressure Transmitter |
| Output Signal Options | · 1-5 V, 4-20 mA, 4-20 mA + HART, RS485 Modbus |
| Linear Output Accuracy | · TD ≤ 10:1, ± 0.075% URL (With a TD ratio equal to or less than 10:1, the accuracy is 0.075% of URL)<br>· 10:1 < TD ≤ 100:1, ± 0.0075% x TD URL (With a turndown ratio greater than 10:1 but equal to or less than 100:1, the accuracy is 0.0075% times the turndown of the URL) |
| LCD Display Mode | · PV (Process Variable) / mA / % / Voltage |
| Damping Time | · Amplifier: 0-100 Seconds (Adj), Diaphragm Capsule and Silicone Oil Filling: ≤0.2 S, Start After Power Off: ≤ 6 S |
| Unit | · PSI (Factory Default), OSI, Pa, kPa, MPa, BAR, mbar, mmHg, mHg, INHg, mmH2O, mH2O, INH2O, FTH2O, TORR, g/cm2, kg/cm2, ATM, mm, m |
| Analog Output Type | · Linearity |
| Basic Operational Functions | · Set PV = 0, Zero Adj (4 mA Re-range with Pressure), Span Adj (20 mA Re-range with Pressure), Factory Reset |
| **ELECTRICAL SPECIFICATIONS** | |
| Power Supply | · 1-5 V: 9-55 Vdc Max<br>· 4-20 mA: 16.5 Vdc to 55 Vdc Max (28 Vdc Max for IS)<br>· 4-20 mA/HART: 16.5 Vdc to 55 Vdc Max (28 Vdc Max for IS)<br>· RS485 Modbus: 9 to 30 Vdc Max |
| Power Consumption | · 1-5 V: 4 mA (Max) / 4-20 mA/HART: 21 mA (Max) / HART Multi-drop: 4 mA / RS485: 12 mA (Max) |
| Surge Protection | · The transmitter has been tested to withstand a transient surge up to 2000 V (common mode) or 1000 V (normal mode) without damage (Per IEC Std. 61000-4-5) |
| **MECHANICAL SPECIFICATIONS** | |
| Dimensions (LCD) | · 5.2" (W) x 7.9" (H) x 5.2" (D) / 131 mm (W) x 200 mm (H) x 133 mm (D) |
| Weight | · Net: 8.5 lbs. (3.9 kg) / Gross: 9.5 lbs. (4.3 kg) |
| Package Dimensions | · 9.5" (W) x 8" (H) x 8.25" (D) / 241 mm (W) x 203 mm (H) x 210 mm (D) |
| Enclosure Casing Material | · Type 4X Aluminum; IP66 |
| Cable Entry Ports | · (2) 1/2" NPT, 1 Plug Included |
| Flange Options | · H1 (Drain Valve on Rear End of Flange), H2 (Drain Valve on Upper End of Flange), H3 (Drain Valve on Down End of Flange) |
| **CERTIFICATION & COMPLIANCE** | |
| Safety | · IS Option Available on 4-20 mA and 4-20 mA/HART Only, Explosion-proof (Standard) All Models |
| C SP US | · Class I, Division 1, Groups A, B, C, D T6; Class I, Division 2, Groups A, B, C, D T4<br>· Class II, III Division 1, Groups E, F, G T80 °C<br>· Ambient Temperature: Ta = -40 to 60 °C (-40 to 140 °F)<br>· Differential Pressure Transmitters, approved for hazardous locations, are dual seal certified per CSA C22.2 No. 30-20. |
| NACE | · NACE MR0175 Compliant |
| **GENERAL SPECIFICATIONS** | |
| Operating Temperature | · -40 to 60 °C (-40 to 140 °F) / LCD -20 to 60 °C (-4 to 140 °F) |
| Storage Temperature | · -40 to 110 °C / -40 to 230 °F / LCD -20 to 70 °C (-4 to 158 °F) |
| Process Temperature | · Silicone Oil Filling (S): -40 to 120 °C (-40 to 248 °F) |
| Process Temp. Measurement | · -40 to 85 °C (-40 to 185 °F), ± 4 % Accuracy (°C), Supported on Modbus and HART (SV) Models |
| Operating Humidity | · 5 to 100% @ 40 °C (104 °F) |
| Warranty | · 2-Year Parts and Labor |
| **ACCESSORIES** | |
| Mounting Kits | · SX1000-MK10: Wall or 2" Pipe Mounting Kit, Includes Bracket and Hardware |




Rotatable Housing: 90° max left or right




# Ordering Information

HDPT-[ ]-SSP-FC-H2-E1

**Pressure, Nominal**
0005 = 5 PSI / 138 inH2O
0030 = 30 PSI / 830 inH2O
0150 = 150 PSI / 4152 inH2O
0400 = 400 PSI / 11072 inH2O
1500 = 1500 PSI / 41520 inH2O

**Diaphragm Material**
H = Hastelloy C
S = 316L SS

**Sensor Filling Fluid**
S = Silicone Oil

**Sensor Seal**
P = PTFE

**Output Type**
D = 1-5 V
F = 4-20mA
H = 4-20mA/HART
R = RS485 Modbus

**Display Option**
C = LCD Display (Backlit LCD Type)

**Process Connection, 1/4"-18 NPT(F) 316 SS**
H1 = Drain valve on rear end of flange
H2 = Drain valve on upper end of flange (Default)
H3 = Drain valve on down end of flange

**Certification**
E1 = EX: Factory Default
I1 = IS: 4-20 mA or 4-20 mA/HART Only

[1]The span adjustability does not apply to the RS485 model since the reading output is digital.
[2]The limitation of the upper range is due to the industry rating of the sensor components.
[3]All models support PV reversal (high side / low side) except for the 1500 PSI model.

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tf 1.866.508.8586 | ph 1.949.305.9009 | fx 1.949.305.9010 | oleumtech.com | sales@oleumtech.com