

HP/HPH3000 High Static Pressure, Differential Pressure Transmitters

FOR POWER GENERATION, GAS PIPELINE, COMPRESSOR, CHEMICAL, OIL, AND GAS APPLICATIONS



HIGH STATIC PRESSURE, DIFFERENTIAL PRESSURE TRANSMITTER

AMETEK's HP/HPH3000 High Static Pressure Differential Pressure Transmitters are designed to accurately measure differential pressures as low as 0-6" WC at high static pressures up to 10,000 psi. This model offers all 316 SST welded hermetically sealed construction, making it ideal for severe environment and submersible applications to a depth of 1500 meters. The HP/HPH3000 also has a standard 300ms response time or a 7ms fast response option, as well as a High Temperature (220°F) option.

The fast response option makes the unit ideal for process surge control and critical media monitoring and control. High line pressure capability is ideal for well injection or high pressure flow applications. The high temperature option allows location closer to the point of measurement, improving response time and reducing installation costs.

FEATURES AND BENEFITS

- 6,000 psi Static Working Pressure (SWP) standard, 8,000 and 10,000 psi SWPs are optional
- 4-20 mA output
- $\pm 0.25\%$ accuracy ($\pm 0.1\%$ optional)
- Fast 7ms response time (optional)
- Hermetically sealed submersible 316 SST housing is protective to 1500 meters
- Explosion-proof and intrinsically safe certifications, FMS, CSA, CENELEC ATEX
- HT (high temperature) option to 200°F



SPECIFICATIONS

FUNCTIONAL DATA

Service

- Gas, liquid or vapor

Power Required

- 12-55 VDC (30 VDC maximum hazardous locations)
Reverse polarity protected

Output

- 4-20 mA, (28 mA maximum)

Static Pressure Limits

- 6,000 psig (41.4 MPa)
- 8,000 psig (55.1 MPa)
- 10,000 psig (68.8 MPa)

Overpressure Limits

- 3000 psig (20.7 MPa) at either connection without damage to transmitter, 2000 psig (13.8 MPa) for 0-30" and 0-100" ranges

Temperature Limits

- Operating: -20 to 180°F (-29 to 82°C)
- Maximum Process: -65 to 250°F (-54 to 121°C)
- Storage: -65 to 200°F (-54 to 93°C)

HT Option

- Operating: -40 to 220°F (-40 to 149°C)
- Maximum Process: -40 to 300°F (-40 to 149°C)
- Storage: -65 to 220°F (-54 to 104°C)

Humidity Limits

- 0-100% RH

AMETEK[®]

**POWER
INSTRUMENTS**

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SPECIFICATIONS

PERFORMANCE

(% of Factory calibrated span or URL)
 Note: Performance is based on HP/HPH3000 with CRES 316 or Hastelloy C-276 diaphragms and Silicone Oil DC-200 fill fluid.

Accuracy

- $\pm 0.25\%$ or $\pm 0.1\%$ of factory calibrated span, including non-linearity, hysteresis & repeatability

Repeatability (included in above specifications):

- $\pm 0.1\%$ of URL

Stability

- $\pm 0.25\%$ of URL for 6 months

Response Time

- 300 msec for 63% step input, optional < 7 msec

Ambient Temperature Effect

- $\pm 1.5\%$ URL from -20 to 180°F (-29 to 82°C) reference at 80°F (27°C)

HT Option

- $\pm 1.5\%$ URL from -40 to 220°F (-40 to 104°C) reference at 80°F (27°C)

Static Pressure Effects

- Zero Error: $\pm 0.5\%$ at URL/1000 psi (6.9 MPa); except $\pm 1.0\%$ at URL/1000 psi for 0-30" H₂O range
- Span Error: $\pm 0.2\%$ of factory calibrated span (zero errors can be corrected for a particular line pressure.)

Response Time

- 300 msec. for 63% step input optional < 7 msec

Vibration Effect

- $< 2"$ H₂O/g (< 0.5 kPa/g) at URL perpendicular to diaphragms and $< 0.1"$ H₂O/g (< 0.025 kPa/g) parallel to diaphragms.

Mounting Position Effect

- Up to 2" H₂O (0.5 kPa) zero shift perpendicular to diaphragms (corrected by zero adjustment) No effect in plane of diaphragms; no span effect.

RFI/EMI Effect

- Negligible to 500 MHz at 5 watts direct contact

Zero/Span Adjustability

- 5:1 turndown

Zero Elevation

- -100% of full range

Zero Suppression

- +80% of full range

Note: Elevation or suppression cannot exceed maximum range of transmitters.

PHYSICAL MATERIALS

Pressure Retaining

- CRES 316

Mounting Bracket

- CS (standard), CRES (optional)

Process Connection

- 1/4" NPTF on 2-1/8" centers

Electrical Connection

- 3/4" NPTM

Weights

- Transmitter: 16.3 lbs. (7.4kg)
- Junction Box: 2.3 lbs. (1.1 kg)
- Meter: 4.0 lbs. (1.8 kg)
- Bracket: 2.0 lbs. (0.9 kg)

APPROVALS

Enclosure Rating(s):

- NEMA 3, 4, 6, 7 & 9

CE Mark

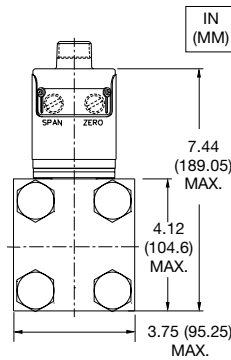
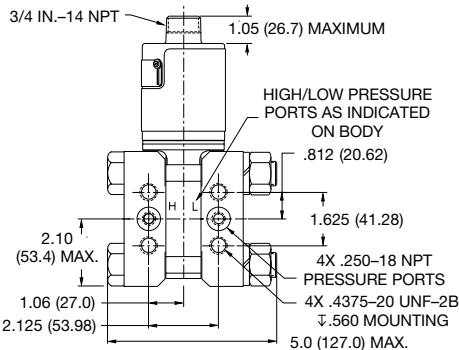
NACE

- MR-01-75 (95)

ELECTRICAL TERMINATIONS

Leads

- White: Negative, Black: Positive, Green: Ground



HP/HPH3000 Ordering Information

TYPICAL MODEL NUMBER (coded by color)

HPH3000	-100	-B	2	-21	-27	-1	3	-13
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Code Description

HP/HPH3000 Sealed Adjustable Differential Pressure Transmitter
 HP/HPH3000 HT Sealed Adjustable Differential Pressure Transmitter (high temperature)

Pressure Range

030	0-6" to 0-30" H ₂ O	030	0-6 to 0-30 psid
100	0-20" to 0-100" H ₂ O	100	0-20 to 0-100 psid
200	0-40" to 0-200" H ₂ O	300	0-60 to 0-300 psid
400	0-80" to 0-400" H ₂ O	01M	0-200 to 0-1000 psid

Pressure Cap Configuration

- B 6,000 psi Static Working Pressure (SWP) with plugs
- C 8,000 psi Static Working Pressure (SWP) with plugs
- D 10,000 psi Static Working Pressure (SWP) with plugs
- E 6,000 psi Static Working Pressure (SWP) with F-250 Autoclave Ports
- F 8,000 psi Static Working Pressure (SWP) with F-250 Autoclave Ports
- G 10,000 psi Static Working Pressure (SWP) with F-250 Autoclave Ports
- L 10,000 psi Static Working Pressure (SWP) with F-250 Autoclave Ports (FMS)

Electrical Terminations

- 0 3 conductor cable, 18 AWG, TEFLON[®] insulation, 5' length standard
- 2 3 leads, 3' length standard, PVC insulation, 3rd wire is ground
- 6 Factory molded submersible neoprene cable, 10' length standard (specify length to 500")
- 8 Factory mounting of electrical accessory (e.g. MA136 Junction Box)

Process Wetted Parts

	PRESSURE CAP & PLUGS	DIAPHRAGMS/BOLTS	FILL FLUID
21	316 SST	HASTELLOY C-276/316 SST	Silicone Oil DC-200*
22	316 SST	316 SST/316 SST	Silicone Oil DC-200

Electrical Accessories (Mounted)

- XX None
- 02 TP114 - Transient Protector, 55 V Maximum
- 07 C100 - Electrical Connector (Receptacle)
- 08 C100 and C101 Electrical Connectors (Receptacle/Plug)
- 19 MA134 - Linear Meter (0-100%)
- 20 MA135 - Square Root Meter (0-100%)
- 21 MA136 - Junction Box, short
- 25 MA134 with TP131 - Transient Protector
- 27 MA135 with TP131 - Transient Protector
- 29 MA136 with TP131 - Transient Protector

Mechanical Accessories

- 0 None
- 1 Standard Mounting Bracket B1 (CS)
- 2 Optional Mounting Bracket B7 (CRES 316)

Accuracy and Response Selection

	ACCURACY	RESPONSE
0	Standard accuracy = $\pm 0.25\%$	Standard response - 300ms
1	Standard accuracy = $\pm 0.25\%$	Fast response - 7ms
2	High accuracy = $\pm 0.1\%$	Standard response - 300ms
3	High accuracy = $\pm 0.1\%$	Fast response - 7ms

Certification Agency

Agency	Agency	Agency
00 None		
11 FMS	I.S.	CL I, Div I, GRP A, B, C, D (10K Psi)
12 FMS	Exp	CL II, Div I, GRP E, F, G
		CL I, Div I, GRP A, B, C, D (10K Psi)
13 FMS	I.S. & Exp	CL II, Div I, GRP E, F, G
		CL I, Div I, GRP A, B, C, D (10K Psi)
		CL II, Div I, GRP E, F, G
32 CENELEC ATEX	Exp	EEx ds- <i>II</i> C T5 (Std) T4 (HT) (10K Psi)
42 CENELEC ATEX	Exp	EEx ds- <i>II</i> C T5 (Std) T4 (HT) (6K Psi)
51 CENELEC ATEX	I.S.	EEx ia <i>II</i> C T5 (Std) T4 (HT) (8K Psi)
FMS & CSA	I.S.	CL I, Div I, GRP A, B, C, D
		CL II, Div I, GRP E, F, G
52 CENELEC ATEX	Exp	EEx ds- <i>II</i> C T5 (Std) T4 (HT) (6K Psi)
FMS & CSA	Exp	CL I, Div I, GRP A, B, C, D
		CL II, Div I, GRP E, F, G
61 CENELEC ATEX	I.S.	EEx ia <i>II</i> C T5 (Std) T4 (HT) (6K Psi)
62 CENELEC ATEX	Exp	EEx ds- <i>II</i> C T5 (Std) T4 (HT) (6K Psi)
91 FMS & CSA	I.S.	CL I, Div I, GRP A, B, C, D (6K Psi)
		CL II, Div I, GRP E, F, G
92 FMS & CSA	Exp	CL I, Div I, GRP A, B, C, D (6K Psi)
		CL II, Div I, GRP E, F, G
93 FMS & CSA	I.S. & Exp	CL I, Div I, GRP A, B, C, D (6K Psi)
		CL II, Div I, GRP E, F, G

*Unit not certified for this configuration

Option availability is subject to change without notice.

*All other company, product, and service names and logos are registered trademarks of their respective owners.



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