Model 415

Two-Wire Gage/Absolute Pressure Transmitter

DESCRIPTION

Two-wire transmitter Model 415 offers rugged, stainless steel construction suitable for even the harshest working environments. These models are available with zero and span adjustments and operate with a supply voltage from 9 Vdc to 32 Vdc.

Two-wire, 4 mA to 20mA output is provided. The Model 415 offers an accuracy of 0.1 %. A wide range of electrical connectors are offered.

FEATURES

- 2 psig/a to 20000 psig/a range
- Two-wire, 4 mA to 20 mA output
- 0.1 % accuracy
- Intrinsically safe available (2N option only)[5]
- CE approved[6]

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PERFORMANCE SPECIFICATIONS

Characteristic	Measure
Accuracy[4]	±0.1 % full scale
Non-linearity and hysteresis	±0.10 % best-fit straight line
Non-repeatability	0.10 % best-fit straight line
Output	4 mA to 20 mA
Resolution	Infinite

ENVIRONMENTAL SPECIFICATIONS

Characteristic	Measure
Temperature, operating	-29 °C to 93 °C [-20 °F to 200 °F]
Temperature, compensated	16 °C to 71 °C [60 °F to 160 °F]
Temperature effect, zero	0.005 % full scale/°F
Temperature effect, span	0.007 % reading/°F

ELECTRICAL SPECIFICATIONS

Characteristic	Measure
Excitation (acceptable)	15 Vdc to 32 Vdc
Insulation resistance	5000 mOhm @ 50 Vdc
Electrical termination (std)	PTIH-10-6P or equiv. (Hermetic stainless)
Mating connector (not incl)	PT06A-10-6S or equiv. (AA111)

MECHANICAL SPECIFICATIONS

Characteristic	Measure
Media	Gases, liquids compatible with wetted material
Overload, safe	50 % over capacity
Pressure port	
2 psig/a to 10000 psig/a	1/4-18 NPT female
15000 psig/a to 20000 psig/a	9/16-18 UNF per Autoclave AE F250-C
Dead volume	See table
Wetted parts material	number here
2 psig/a to 1500 psig/a	17-4 PH stainless steel
>1500 psig/a	15-5 PH stainless steel
Weight	13 oz
Case material	Stainless steel

RANGE CODES

Range Code	Available ranges
AR	2 psig/a
AT	5 psig/a
AV	10 psig/a
BJ	15 psig/a
BL	25 psig/a
BN	50 psig/a
BP	75 psig/a
BR	100 psig/a
CL	200 psig/a
CP	300 psig/a
CR	500 psig/a
CT	750 psig/a
CV	1000 psig/a
DJ	1500 psig/a
DL	2000 psig/a
DN	3000 psig/a
DR	5000 psig/a
DT	7500 psig/a
DV	10000 psig/a
EJ	15000 psig/a
EL	20000 psig/a

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INTERNAL AMPLIFIERS

Amplifier specifications	Current two-wire: Option 2k	Intrinsically safe amp: Option 2n (2N)*
Output signal	4 mA to 20 mA	4 mA to 20 mA
Input power (voltage)	15 Vdc to 32 Vdc	15 Vdc to 28 Vdc
Input power (current)	4 mA to 24 mA	4 mA to 24 mA
Frequency response	2500 Hz	2000 Hz
Power supply rejection	60 db	60 db
Operating temperature	-29 °C to 93 °C [-20 °F to 200 °F]	-29 °C to 93 °C [-20 °F to 200 °F]
Reverse voltage protection	Yes	Yes
Short circuit protection	Yes	Yes
Wiring code: connector (std)	A (+) Supply B No connection C No connection D (+) Output E Case ground F No connection	A (+) Supply B No connection C No connection D (+) Output E Case ground F No connection
Wiring code: cable[2]	R (+) Supply Bl (+) Output W Case ground	R (+) Supply Bl (+) Output W Case ground

* See Honeywell's Web site for the most up-to-date information regarding intrinsically safe approvals, ref. #008-0547-00.

RANGE CODES

Pressure range	2	5	10	15	25	50	75	100	150	200	300	500	750	1000	1500	2000	3000	5000	7500	10000	15000	20000
RANGE CODE	**AR**	**AT**	**AV**	**BJ**	**BL**	**BN**	**BP**	**BR**	**CJ**	**CL**	**CP**	**CR**	**CT**	**CV**	**DJ**	**DL**	**DN**	**DR**	**DT**	**DV**	**EJ**	**EL**
D mm [in]	57 [2.25]		38 [1.50]																			
L mm [in] psia	91 [3.57]		85 [3.36]									95 [3.74]				76 [3.0]					78 [3.06]	
L mm [in] psig	79 [3.10]		85 [3.36]									95 [3.74]				76 [3.0]					78 [3.06]	
Over pressure (test) (psi)	150 % full scale																					
Over pressure (burst) (psi)	50		100		200		400		800		2K	3K	3.5K	4K		8K	12K	20K	25K	25K	40K	45K
Port volume cm³ [in³]	5,2 [0.32]		4,1 [0.25]			2,8 [0.17]										3,1 [0.12]					1,5 [0.06]	
Natural frequency (Hz)	550	1 K	1.3 K	2.1 K	2.5 K	2.9 K	3.5 K	4.6 K	6 K	7 K	9 K	9.5 K	12 K	17 K	20 K	35 K	40 K	54 K	60 K	80 K	100 K	>100 K

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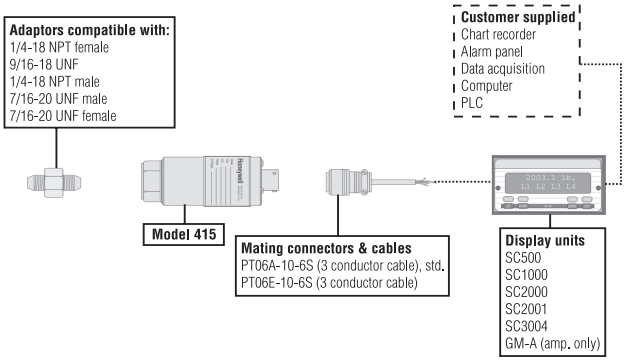
OPTION CODES

Range Code	**Many range/option combinations are available in our quick-ship and fast-track manufacture programs. Please see http://sensing.honeywell.com/TMsensor-ship for updated listings.**	
Pressure ranges	2, 5, 10, 15, 25, 50, 75, 100, 150, 200, 300, 500, 750, 1000, 1500, 2000, 3000, 5000, 7500, 10000, 15000, 20000 psig/a	
Temperature compensation	1a. 60 °F to 160 °F 1b. 30 °F to 130 °F 1c. 0 °F to 185 °F	1d. -20 °F to 130 °F 1e. -20 °F to 200 °F
Internal amplifiers	2k. 4 mA to 20 mA (two wire) output 2n (2N). Intrinsically safe amp	
Pressure ports[3]	5a. 1/4-18 NPT female (2 to 10000 psi) 5b. 1/4-18 NPT male 5c. 7/16-20 UNF female	5d. 7/16-20 UNF male 5u. 9/16-18 UNF female per Autoclave F-250-C (15000 & 20000 psi)
Electrical termination	6a. Bendix PTIH-10-6P (or equivalent) 6-pin (max 400 °F) 6e. Integral cable: Teflon (-65 °F to 475 °F) 6f. Integral cable: PVC (-20 °F to 160 °F) 6g. Integral cable: Neoprene (0 °F to 180 °F)[1]	6h. Integral cable: Silicone (-65 °F to 300 °F) 6i. Integral underwater cable (max, 180 °F) 6j. 1/2-14 conduit fitting with 1.83 m [5 ft] of 4 conductor cable (may be used with 6e-i)
Shunt calibration	3d. Remote buffered shunt cal	
Special calibration[3]	9a. 10 point (5 up/5 down) 20 % increments @ 70 °F 9a. 20 point (10 up/10 down) 10 % increments @ 70 °F	
Wetted diaphragm[3]	10a. 316 stainless steel 10b. Cruicible A-286 10c. Hastelloy-C	
Zero and span adjustment	14a. No access to pots 14b. Top access to pots	
Shock and vibration	44a. Shock and vibration resistance	

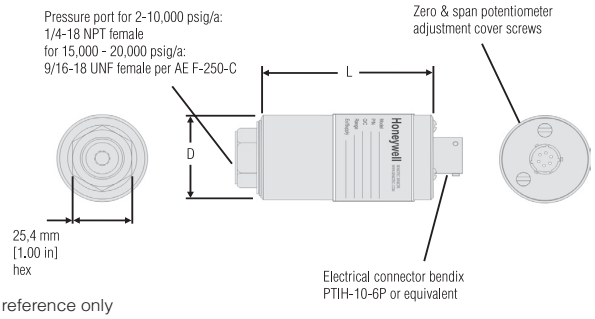
WIRING CODES

Connector	Two-wire current, 4 mA to 20 mA
A	(+) Supply
B	No connection
C	No connection
D	(+) output 4 mA to 20 mA
E	Case ground
F	No connection

TYPICAL SYSTEM DIAGRAM



MOUNTING DIMENSIONS AND CHARACTERISTICS



For reference only

SPECIAL REQUIREMENTS (CONSULT FACTORY)

Have a special requirement? New case pressure, different cable lengths, electrical connectors, or materials? Consult our factory by calling +1 614-850-5000 (800-848-6564). Customization is key to our test and measurement business. Special outputs, wiring codes, and calibrations are all standard to us.

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NOTES

2. G=Green; B=Blue; W=White; Bl=Black; Br=Brown; Y=Yellow; R=Red; O=Orange; color specifying cable and number or letter specifying connector.
3. Availability varies with range.
4. Accuracies stated are expected for best-fit straight line for all errors including linearity, hysteresis & non-repeatability thru zero.
5. Range dependent; consult factory.
6. Termination dependent; consult factory.

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