

## 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)<sup>5</sup>
- CE approved<sup>6</sup>

# Model 415

## PERFORMANCE SPECIFICATIONS

Characteristic	Measure
Accuracy <sup>4</sup>	±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 <sup>2</sup>	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 cm <sup>3</sup> [in <sup>3</sup> ]	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	

# Model 415

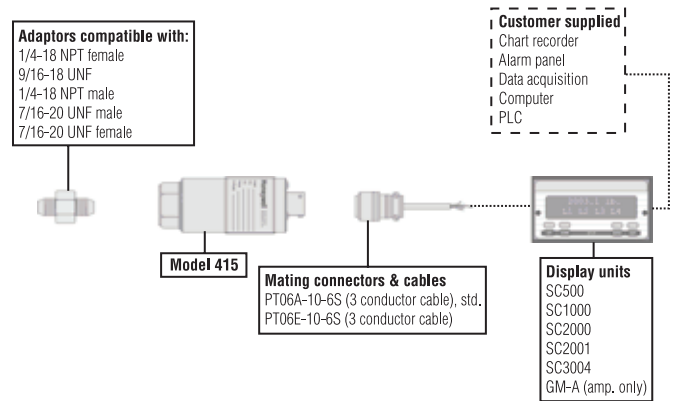
## OPTION CODES

<b>Range Code</b>	Many range/option combinations are available in our quick-ship and fast-track manufacture programs. Please see <a href="http://sensing.honeywell.com/TMsensor-ship">http://sensing.honeywell.com/TMsensor-ship</a> for updated listings.	
<b>Pressure ranges</b>	2, 5, 10, 15, 25, 50, 75, 100, 150, 200, 300, 500, 750, 1000, 1500, 2000, 3000, 5000, 7500, 10000, 15000, 20000 psig/a	
<b>Temperature compensation</b>	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
<b>Internal amplifiers</b>	2k. 4 mA to 20 mA (two wire) output 2n (2N). Intrinsically safe amp	
<b>Pressure ports<sup>3</sup></b>	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)
<b>Electrical termination</b>	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) <sup>1</sup>	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)
<b>Shunt calibration</b>	3d. Remote buffered shunt cal	
<b>Special calibration<sup>3</sup></b>	9a. 10 point (5 up/5 down) 20 % increments @ 70 °F 9a. 20 point (10 up/10 down) 10 % increments @ 70 °F	
<b>Wetted diaphragm<sup>3</sup></b>	10a. 316 stainless steel 10b. Crucible A-286 10c. Hastelloy-C	
<b>Zero and span adjustment</b>	14a. No access to pots 14b. Top access to pots	
<b>Shock and vibration</b>	44a. Shock and vibration resistance	

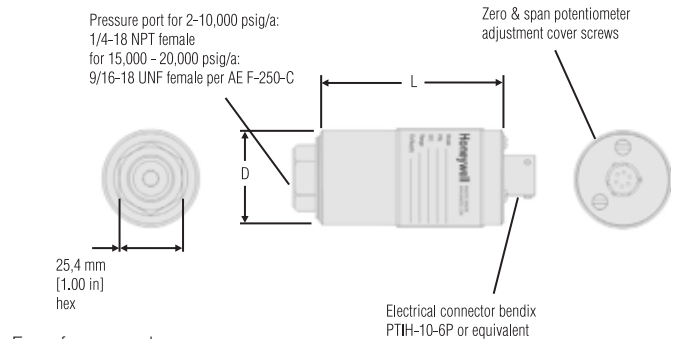
## WIRING CODES

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.

**Warranty.** Honeywell warrants goods of its manufacture as being free of defective materials and faulty workmanship. Honeywell's standard product warranty applies unless agreed to otherwise by Honeywell in writing; please refer to your order acknowledgement or consult your local sales office for specific warranty details. If warranted goods are returned to Honeywell during the period of coverage, Honeywell will repair or replace, at its option, without charge those items it finds defective. **The foregoing is buyer's sole remedy and is in lieu of all warranties, expressed or implied, including those of merchantability and fitness for a particular purpose. In no event shall Honeywell be liable for consequential, special, or indirect damages.**

While we provide application assistance personally, through our literature and the Honeywell web site, it is up to the customer to determine the suitability of the product in the application.

Specifications may change without notice. The information we supply is believed to be accurate and reliable as of this printing. However, we assume no responsibility for its use.

For more information about Sensing and Control products, visit [www.honeywell.com/sensing](http://www.honeywell.com/sensing) or call +1-815-235-6847

Email inquiries to [info.sc@honeywell.com](mailto:info.sc@honeywell.com)

### **WARNING** **PERSONAL INJURY**

- DO NOT USE these products as safety or emergency stop devices or in any other application where failure of the product could result in personal injury.

**Failure to comply with these instructions could result in death or serious injury.**

### **WARNING** **MISUSE OF DOCUMENTATION**

- The information presented in this catalogue is for reference only. DO NOT USE this document as product installation information.
- Complete installation, operation and maintenance information is provided in the instructions supplied with each product.

**Failure to comply with these instructions could result in death or serious injury.**

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008680-1-EN IL50 GLO  
May 2008  
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