



## Model IDT - For Hazardous Area Applications

### INTRINSICALLY SAFE PRESSURE TRANSMITTERS

#### DESCRIPTION

The Model IDT intrinsically safe pressure transmitters are specifically designed for use in hazardous area pressure measurement applications that require a compact design.

Intrinsically safe approvals for the IDT includes FM US and FM Canada (cFMus), ATEX and IECEx for worldwide users' pressure measurement requirements. The IDT offers premium performance and versatility of use for many applications including upstream oil and gas, general industrial end users, and OEMs.

The IDT offers precision accuracy at +/-0.2% FS (BFSL) typical. The design incorporates a stainless steel isolation diaphragm and 316 stainless steel construction for use with most media types.

The IDT is offered in pressure ranges from full vacuum to 5000 psig and 15 psia through 300 psia. The transducer also accepts both regulated and unregulated excitation voltages and provides output signals such as 1-5 VDC, 1-6 VDC, 0-5 VDC, 0.5 to 4.5VDC and 4-20 mA.

The IDT transducer is manufactured in the United States under ISO 9001:2008 and meets ARRA.



**Model IDT Pressure Transducer**

#### FEATURES:

- Compact rugged design for tough applications.
- All 316 Stainless Steel Construction and Wetted Materials- Resists the corrosive effects of caustic medias or wash downs and is compatible with a variety of media.
- Hastelloy diaphragm for Hydrogen Sulfide H<sub>2</sub>S applications. Monel is also available.
- 0.2% Typical Accuracy- Offers superior accuracy to competitive models and can be used on critical applications.
- Factory Calibrated for Pressure and Temperature-No need for field calibration. Plug and Play reliability.
- Wide Pressure Ranges and Types (PSIG, PSIA, PSIS, Compound)- Can be used in a variety of applications.
- RFI/EMI Protection-For use in high noise environments -EN 61326-1
- Transient / Burst / Surge Protection - EN61326-1 Secondary protection available with Model LMA912
- Reverse Polarity Protection- Installation safety and not damaged by reverse wiring.
- Numerous Electrical Outputs and Connections- Allows quick hook-up and use with standard process equipment, conventional receivers, and compatible with microprocessors.
- Low Power Voltage Output- Allows for solar and battery operation and longer life.
- Custom Designs Available- OEM oriented to special needs.





## Model IDT - I.S. Pressure Transmitter

Specification				
<b>Pressure Ranges - Reference Chart Below</b> Consult Factory for Non Standard Ranges	VACUUM Up to 5000 psi PSIG, PSIS, and PSIA Available	0 – 1 PSI	0 – 3 PSI	0 - 6 PSI
<b>Accuracy @25°C Including Linearity (BFSL) Hysteresis &amp; Repeatability</b>	±0.2% FS TYP, ±0.25% FS MAX	±1.0% FS MAX	±0.5% fs MAX	±0.5% FS MAX
<b>1 Yr. Stability</b>	< 0.25% FS	< 1.0% FS	<1.0% fs	< 0.5% FS
<b>Load Limitation</b>	10K Ohms MIN (All Voltage Outputs) 600 OHMS MAX (4-20MA)			
<b>Input/Output</b>	11-28VDC/4-20mA, 9-15VDC/1-6VDC, 8-15VDC/1-5VDC, 8-15VDC/0.5-4.5VDC, 8-15VDC/0-5VDC			
<b>Pressure Response Time (Voltage)</b>	<15mSEC			
<b>Power On Response Time (Voltage)</b>	<100mSEC			
<b>Power (Voltage)</b>	45mW @ 9VDC INPUT, TYPICAL			
<b>Total Error Band (Includes Temperature Effects, Zero &amp; Span Set)</b>	±1% FS	±2.5% FS MAX	±2.5% fs MAX	±1.5% FS MAX
<b>Vibration</b>	IEC 60068-2-6			
<b>Shock</b>	IEC 60068-2-27			
<b>EMC</b>	EN 61326-1			
<b>Process Wetted Material</b>	316 Stainless Steel			
<b>Electrical Housing Material</b>	316 Stainless Steel			
<b>Diaphragm Material</b>	316 Stainless Steel (Standard); Hastelloy or Monel Options			

Standard Pressure Ranges	Overpressure	Burst Pressure
PSI: 1, 3, 6, 15, 30, 60, 100, 150, 200, 300, 500, 1000, 2000, 3000, 4000, 5000	2X	3X
BAR: 0.07, 0.2, 0.4, 1, 2, 4, 6, 10, 13.5, 20, 30, 60, 100, 120, 200, 280, 340	2X	3X

### AGENCY APPROVALS:

U.S./CANADA	ATEX/IECEX
IS CLASS I, DIV 1, GROUPS A,B,C,D IS CLASS II, DIV 1, GROUPS E,F,G; CLASS III IS CLASS I, DIV 1, ZONE 0; AEx/Ex IIC T4, -40°C ≤ Ta ≤ 80°C T6, -40°C ≤ Ta ≤ 60°C IP60, IP65, IP67, IP68, TYPE 4X, TYPE 6P FM/IS CONTROL DWG BK750542 (4-20mA) OR BK750543 (VOLTAGE)	II 1G Ex ia IIC Ga T4, -40°C ≤ Ta ≤ 80°C T6, -40°C ≤ Ta ≤ 60°C IP60, IP65, IP67, IP68, TYPE 4X, TYPE 6P ATEX FM14ATEX0063X IECEX FMG 14.0023X ATEX/IECEX CONTROL DWG BK750544 (4-20mA) OR BK750545 (VOLTAGE)
CLASS I, DIV 2, GROUPS A,B,C,D CLASS II, DIV 2, GROUPS E,F,G; CLASS III Zone 2 AEx/Ex nA IIC T4, -40°C ≤ Ta ≤ 80°C T6, -40°C ≤ Ta ≤ 60°C IP60, IP65, IP67, IP68, TYPE 4X, TYPE 6P	II 3G Ex nA Gc T4, -40°C ≤ Ta ≤ 80°C T6, -40°C ≤ Ta ≤ 60°C IP60, IP65, IP67, IP68, TYPE 4X, TYPE 6P FM14ATEX0073X IECEX FMG 14.0023

### ENTITY PARAMETERS

mA:	VOLTAGE:
Ui = 28Vdc	Ui = 15Vdc
Ii = 100mA	Ii = 148mA
Pi = 0.7W	Pi = 0.7W
Ci = 45nF	Ci = 97uF
Li = 2.5uH	Li = 2.5uH





## Model IDT - I.S. Pressure Transmitter

### WIRING DIAGRAM

Common For DIN Connectors (FM Approval Pending)

Voltage	
Connector Pin	Function
1	+V In
2	-V In
3	V Out
GND	Ground

Current	
Connector Pin	Function
1	+V In
2	-V In
GND	Ground

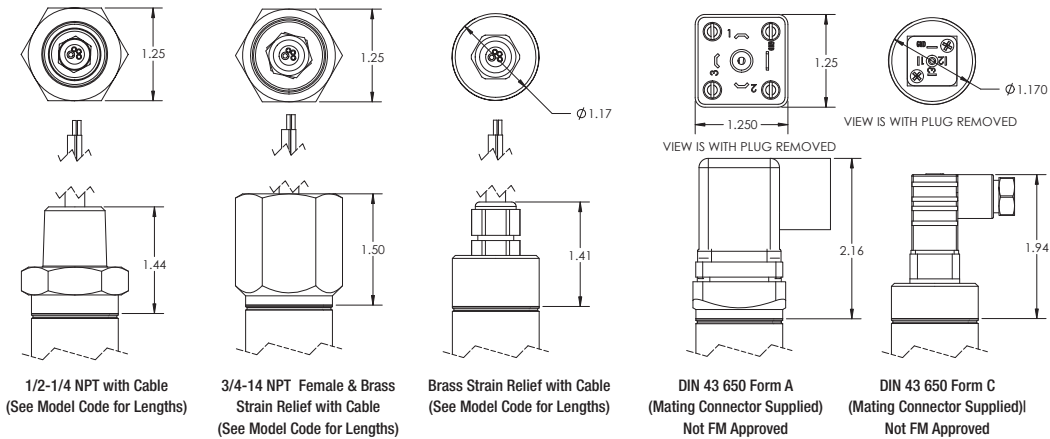
Common For all Cable Options

Voltage	
Color	Function
Red	+V In
Black	-V In
White	V Out
Green/Shield	Ground

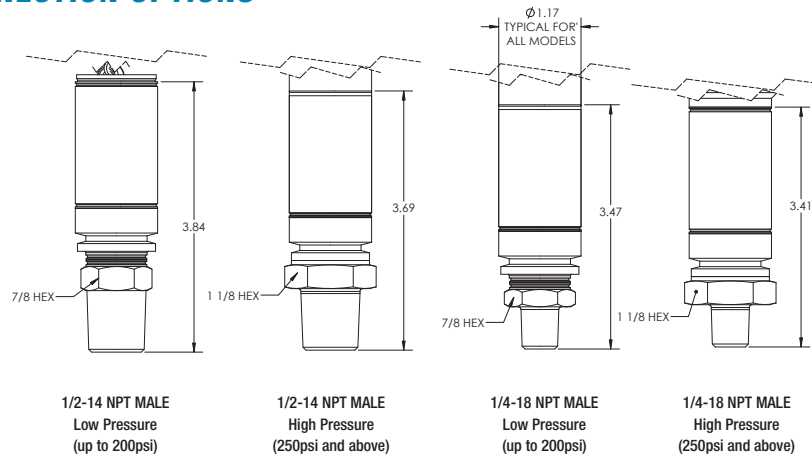
Current	
Color	Function
Red	+V In
Black	-V In
Green/Shield	Ground

Note: See Control Drawings for Hazardous Area Installation

### ELECTRICAL CONNECTION OPTIONS



### PROCESS CONNECTION OPTIONS





## Model IDT - I.S. Pressure Transmitter

### MODEL NUMBERING

#### Transmitter Type

**D** Digitally compensated pressure transmitter for hazardous use

#### Protection Type and Temperature code

- D2** Division 2, Zone 2, potted electronics
- D3** Division 2, Zone 2, conformal coated electronics
- IP** Division 1, Zone 0, Intrinsically safe, potted electronics
- IC** Division 1, Zone 0, Intrinsically safe, conformal coated electronics
- NE** No protection

#### Electrical Input/output

- B** 11-28Vdc/4-20mA
- C** 9-15Vdc/1-6Vdc
- D** 8-15Vdc/1-5Vdc
- E** 8-15Vdc/0.5-4.5Vdc
- F** 8-15Vdc/0-5Vdc

#### Construction Type

**X** Factory Selected

#### Electrical Connector FM Approved Industrial • Division and Zone Safety Approval • Protection IP/Type

- HM2** 1/2 NPT male with 24AWG cable • Div 1, Zone 0 Div 2, Zone 2 • IP67, Type 4X
- PT1** 24AWG cable with PVC jacket • Div 1, Zone 0 • IP65, Type 4X
- PT2** 22AWG cable with PVC jacket • Div 1, Zone 0 • IP65, Type 4X
- PT3** 22AWG cable with Teflon jacket • Div 1, Zone 0 • IP65, Type 4X
- PT4** 24AWG cable with PVC jacket, 3/4" NPT female conduit adapter • Div 1, Zone 0 Div 2, Zone 2 • IP65, Type 4X
- PT5** 22AWG cable with Teflon jacket, 3/4" NPT female conduit adapter • Div 1, Zone 0 Div 2, Zone 2 • IP65, Type 4X
- PT6** 22AWG cable with PVC jacket, 3/4" NPT female conduit adapter • Div 1, Zone 0 Div 2, Zone 2 • IP65, Type 4X

#### Non FM Approved Industrial Model Style

- DAM** DIN 43 650-A plus mate • No approval • N/A
- DAN** DIN 43 650-A, no mate • No approval • N/A
- DCM** DIN 43 650-C, plus mate • No approval • N/A
- DCN** DIN 43 650-C, no mate • No approval • N/A

#### Cable Length

- AA** None
- AB** 18" (1 1/2 feet)
- AD** 36" (3 feet)
- AF** 60" (5 feet)
- BB** 120" (10 feet)
- AZ** Specify inches as separate line item on order

Continued on Next Page

D	XX	X	X	XXX	XX
---	----	---	---	-----	----



## Model IDT - I.S. Pressure Transmitter

### MODEL NUMBERING (CONTINUED)

<table border="1" style="width: 100%; text-align: center;"> <tr> <td style="width: 10%;">D</td> <td style="width: 10%;">XX</td> <td style="width: 10%;">X</td> <td style="width: 10%;">X</td> <td style="width: 10%;">XXX</td> <td style="width: 10%;">XX</td> </tr> </table> <p style="text-align: center;"><b>Safety/Approval Fields</b></p>	D	XX	X	X	XXX	XX	<table border="1" style="width: 100%; text-align: center;"> <tr> <td style="width: 10%;">X</td> <td style="width: 10%;">XX</td> <td style="width: 10%;">X</td> <td style="width: 10%;">XX</td> <td style="width: 10%;">X</td> <td style="width: 10%;">XXXXX</td> <td style="width: 10%;">XXXX</td> </tr> </table> <p style="text-align: center;"><b>Non Safety /Approval Fields</b></p>	X	XX	X	XX	X	XXXXX	XXXX
D	XX	X	X	XXX	XX									
X	XX	X	XX	X	XXXXX	XXXX								

<p><b>Factory Selected</b></p> <p><b>X</b> Factory Selected</p>	<p><b>Process Connection</b></p> <p><b>01</b> 1/4 NPT male</p> <p><b>04</b> 1/2 NPT male</p> <p><b>XX</b> Other optional process connectors</p>
<p><b>Isolation Fill</b></p> <p><b>S</b> Silicone (Standard)</p> <p><b>X</b> Additional fills (Contact Customer Service)</p>	<p><b>Diaphragm Material</b></p> <p><b>HX</b> Hastelloy</p> <p><b>MX</b> Monel</p> <p><b>SX</b> Stainless steel (Standard)</p> <p><b>XX</b> Additional diaphragms (Contact Customer Service)</p>
<p><b>Pressure Type</b></p> <p><b>A</b> Absolute</p> <p><b>C</b> Compound (-14.7psi to full scale)</p> <p><b>E</b> Compound equal (minus pressure equals positive pressure. Ex: 15 to 0 to 5psi)</p> <p><b>G</b> Gage</p> <p><b>V</b> Vacuum (-14.7 to 0psig)</p> <p><b>S</b> Static (sealed sensor, no atmospheric reference)</p> <p><b>X</b> Other pressure types (Contact Customer Service)</p>	<p><b>Pressure Range</b></p> <p><b>XXXXX</b> 0-5000 psi: Standard psi ranges 1, 3, 6, 15, 30, 60, 100, 150, 200, 300, 500, 1000, 2000, 3000, 5000</p> <p><b>BXXXX</b> 0-344 bar: Standard bar ranges 0.07, 0.20, 0.40, 1, 2, 4, 6, 10, 13.5, 20, 30, 60, 100, 120, 200, 340</p>
<p><b>Custom Options</b></p> <p><b>XXXX</b> Additional Ametek options, or customer requested options (Leave Blank if none)</p>	

Contact:  
 Industrial Process Measurement, Inc.  
 3910 Park Avenue, Unit 7  
 Edison, NJ 08820  
 732-632-6400  
 support@instrumentation2000.com  
 http://www.instrumentation2000.com