

## 2200 Series / 2600 Series – General Purpose Industrial Pressure Transducers

- ▶ Gauge, Absolute, Vacuum and Compound Pressure Models Available
- ▶ Submersible, General Purpose and Wash Down Enclosures
- ▶ High Stability Achieved by CVD Sensing Element
- ▶ Millivolt, Voltage and Current Output Models

The 2200 series features stability and accuracy in a variety of enclosure options. The 2600 series extends the packaging options via an all welded stainless steel back end for demanding submersible and industrial applications. The 2200 and the 2600 feature proven CVD sensing technology, an ASIC (amplified units), and modular packaging to provide a sensor line that can easily accommodate specials while not sacrificing high performance.

### Specifications

<b>Input</b>	
<b>Pressure Range</b>	Vacuum to 6000 psi (400 bar)
<b>Proof Pressure</b>	2 x Full Scale (FS) (1.5 x Fs for 400 bar, ≥ 5000 psi)
<b>Burst Pressure</b>	>35 x FS ≤ 100 psi (6 bar); >20 x FS ≥ 1000 psi (60 bar); >5 x FS ≤ 6000 psi (400 bar)
<b>Fatigue Life</b>	Designed for more than 100 million FS cycles
<b>Performance</b>	
<b>Long Term Drift</b>	0.2% FS/year (non-cumulative)
<b>Accuracy</b>	0.25 % FS typical (optional 0.15% FS)
<b>Thermal Error</b>	1.5% FS typical (optional 1% FS)
<b>Compensated Temperatures</b>	-5°F to +180°F (-20°C to +80°C)
<b>Operating Temperatures</b>	-40°F to +260°F (-40°C to +125°C) for elec. codes A, B, C, 1 -5°F to +180°F (-20°C to +80°C) for elec. codes 2, D, G, 3 -5°F to +125°F (-20°C to +50°C) for elec. codes F, M, P Amplified units >100°C maximum 24 VDC supply
<b>Zero Tolerance</b>	1% of span
<b>Span Tolerance</b>	1% of span
<b>Response Time</b>	0.5 ms
<b>Mechanical Configuration</b>	
<b>Pressure Port</b>	See ordering chart
<b>Wetted Parts</b>	17-4 PH Stainless Steel
<b>Electrical Connection</b>	See ordering chart
<b>Enclosure</b>	316 ss, 17-4 PH ss IP65 NEMA 4 for elec. codes A, B, C, D, G, 1, 2, 3 IP67 for elec. code "F" IP68 for elec. codes M, (max depth 200 meters H <sub>2</sub> O) IP30 for elec. code "3" with flying leads
<b>Vibration</b>	70g, peak to peak sinusoidal, 5 to 2000 Hz (Random Vibration: 20 to 2000 Hz @ ≈20g Peak per MIL-STD.-810E Method 514.4)
<b>Acceleration</b>	100g steady acceleration in any direction 0.032% FS/g for 15 psi (1 bar) range decreasing logarithmically to 0.0007% FS/g for 6000 psi (400 bar) range.
<b>Shock</b>	20g, 11 ms, per MIL-STD.-810E Method 516.4 Procedure I
<b>Approvals</b>	CE, UR (22ET, 26ET Intrinsically Safe)
<b>Weight</b>	Approx. 100 grams (additional cable; 75 g/m)

Series 2200



Series 2600



## Individual Specifications

<b>Millivolt Output units</b>	
Output	100 mV (10 mv/v)
Supply Voltage (Vs)	10 VDC (15 VDC max.) Regulated
Bridge resistance	2600-6000 ohms
<b>Voltage Output units</b>	
Output	see ordering chart
Supply Voltage (Vs)	1.5 VDC above span to 35 VDC @ 6 mA
Supply Voltage Sensitivity	0.01% FS/Volt
Min. Load Resistance	(FS output / 2) Kohms
Current Consumption	approx 6 mA at 7.5V output
<b>Current Output units</b>	
Output	4-20 mA (2 wire)
Supply Voltage (Vs)	24 VDC, (7-35 VDC)
Supply Voltage Sensitivity	0.01% FS/Volt
Max. Loop Resistance	(Vs-7) x 50 ohms

## Electromagnetic Capability

Meets the requirement for CE marking of EN50081-2 for emissions and EN50082-2 for susceptibility.

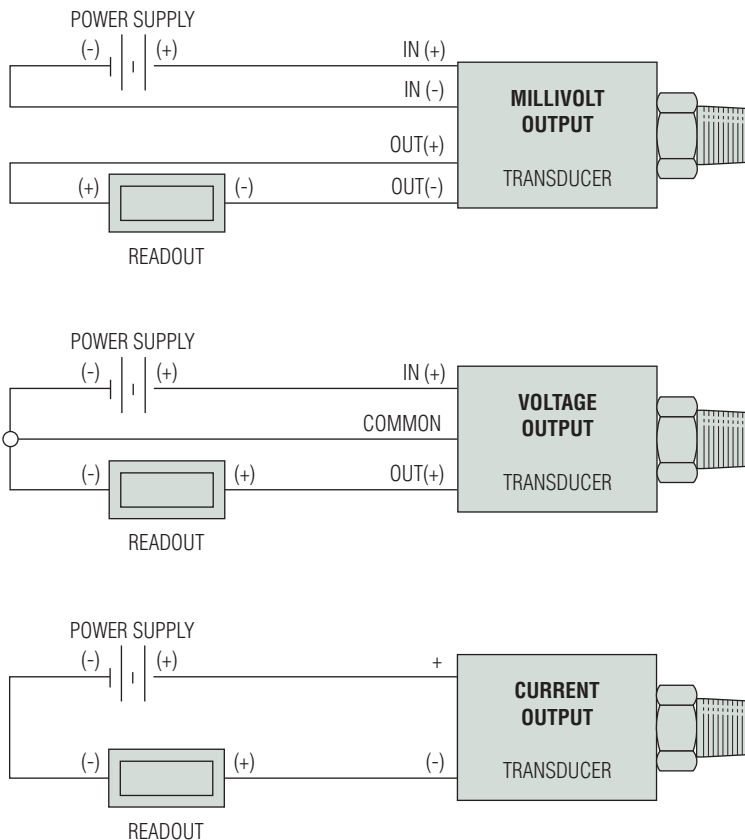
Test Data:

- EN61000-4-2 Electrostatic Discharge. 8kV air discharge, 4kV contact discharge. Unit survived.
- ENV50140 Radiated RF Susceptibility. 10V/m, 80MHz-1GHz, 1kHz mod. Maximum recorded output error was  $<\pm 1\%$
- ENV50204 Radiated RF Susceptibility to Mobile Telephones. 10V/m, 900MHz. Maximum recorded output error was  $<\pm 1\%$ .
- EN61000-4-4 Fast Burst Transient. 2kV, 5/50ns, 5kHz for 1 minute. Unit survived.
- ENV50141 Conducted RF Susceptibility. 10Vms, 1kHz mod, 150kHz - 80MHz. Maximum recorded output error was  $<\pm 1\%$

Connection Code		mV units				Voltage units				Current units (4-20mA)		
		IN+	OUT+	OUT-	IN-	IN+	COM	OUT+	EARTH	(+)	(-)	EARTH
A, B, G	"DIN" PIN	1	2	3	E	1	2	3	4	1	2	4
C	"10-6 Bayonet" PIN	A	B	C	D	A	C	B	E	A	B	E
D	"cable"	R	Y	BL	G	R	BK	W	DRAIN	R	BK	DRAIN
F	"IP 67 cable"	R	W	G	BK	R	BK	W	DRAIN	R	BK	DRAIN
M	"Immersible"	R	Y	BL	W	R	W	Y	DRAIN	R	BL	DRAIN
1	"8-4 Bayonet" PIN	A	B	C	D	A	C	B	D	A	B	D
2	"cable"	R	W	G	BK	R	BK	W	DRAIN	R	BK	DRAIN
3	"conduit & cable"	R	W	G	BK	R	BK	W	DRAIN	R	BK	DRAIN


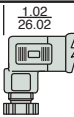
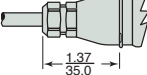
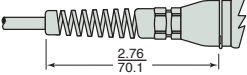
### Cable Legend:

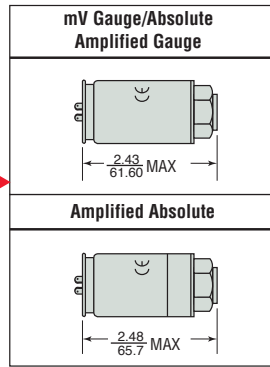
R = Red  
 BL = Blue  
 BK = Black  
 W = White  
 Y = Yellow













## Dimensions

### 2200 Series


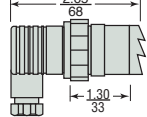

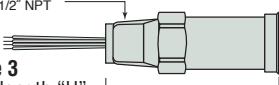
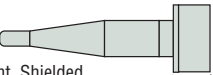
<b>Mini 4 Pin - No Connector</b>
<b>Code B</b> 
<b>Mini 4 Pin - With Connector</b>
<b>Code A</b>  1.02 26.02
<b>IP67 Cable (Waterproof)</b>
<b>Code F</b>  1.37 35.0
24 AWG Shielded PVC
<b>IP65 or NEMA4 Cable</b>
<b>Code D or 2</b>  2.76 70.1
24 AWG Shielded PVC

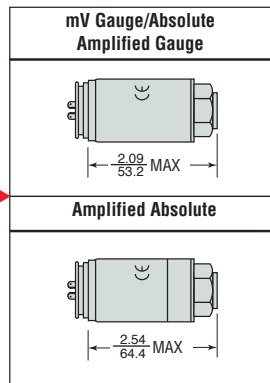


Maximum diameter 1.07" (27.3 mm)


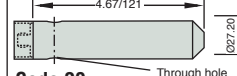
<b>1/8-27 NPT</b>
<b>Code 08</b>  0.59 15
<b>1/4 - 18 NPT</b>
<b>Code 02 with snubber</b>  0.79 20
<b>Code OJ with snubber</b> 
<b>1/4-18 NPT Internal</b>
<b>Code 0E</b>  0.95 24
<b>1/2-14 NPT</b>
<b>Code 0H</b>  1.02 26.0
<b>7/16-20 UNF-2A</b>
<b>Code 04</b>  0.75 19
<b>9/16-18 UNF-2A</b>
<b>Code 1P</b>  0.67 17
<b>G 1/8 Internal</b>
<b>Code 09</b> 
<b>G 1/4 External</b>
<b>Code 01</b>  0.67 17
<b>R 1/4</b>
<b>Code 0A</b>  0.79 20

### 2600 Series

<b>10-6 or 8-4 Mil-C Connector</b>
<b>10-6 Code C</b>  0.87 22
<b>8-4 Code 1</b>
<b>Large DIN 43650 Plug</b>
<b>Code G</b>  2.65 68 1.30 33
<b>Conduit Connector with Cable</b>
<b>Code 3</b> 1/2" NPT  43 1.70
24 AWG Shielded PVC
<b>Conduit Connector with Flying Leads</b>
<b>Code 3</b> 1/2" NPT with length "U"  1.70/43
<b>Moulded, Immersible Cable</b>
<b>Code M</b> 24 AWG, Vent, Shielded, Polyurethane  0.90 23



Maximum diameter 1.07" (27.3 mm)

<b>Nose Cone - Black Acetal</b>
<b>Code 19</b>  0.75 19
<b>Nose Cone Sink Weight</b>
<b>Code 29</b>  4.67/121 0.87/20 Through hole Ø 10.0

inch  
mm

## How to Order

Use the **bold** characters from the chart below to construct a product code

**2200 B G A60 01 A 3 U A**

**Series**  
**2200**      **2600**      **22 ET<sup>4</sup>**      **26 ET<sup>4</sup>**

**Output**  
**A** - 100 mV    **C** - 1-6V      **J** - 0.5-5.5V    **G** - 0.2-10.2V  
**B** - 4-20mA    **D** - 1-11V     **R** - 0-5V      **F** - 0.1-5.1V  
**H** - 1-5V      **S** - 0-10V

**Pressure Datum**  
**A\*** - Absolute    **G** - Gauge  
 \*Max absolute range is 25 bar. (≤ 300 psi)

**Pressure Range<sup>3</sup> - psi**

<b>F07</b> - 0-7.5	<b>G60</b> - 0-600	<b>Vac</b> = -15 psi
<b>F15</b> - 0-15	<b>H10</b> - 0-1,000	<b>1F5</b> - Vac-0
<b>F30</b> - 0-30	<b>H15</b> - 0-1,500	<b>3F0</b> - Vac-15
<b>F60</b> - 0-60	<b>H20</b> - 0-2,000	<b>6F0</b> - Vac-45
<b>G10</b> - 0-100	<b>H30</b> - 0-3,000	<b>1G0</b> - Vac-85
<b>G15</b> - 0-150	<b>H40</b> - 0-4,000	<b>1G5</b> - Vac-135
<b>G20</b> - 0-200	<b>H50</b> - 0-5,000	<b>2G0</b> - Vac-185
<b>G30</b> - 0-300	<b>H60</b> - 0-6,000	<b>3G0</b> - Vac-285
<b>G50</b> - 0-500		

**Pressure Range - bar**

<b>A10</b> - 0-1	<b>B25</b> - 0-25	<b>Vac</b> = -1 bar
<b>A16</b> - 0-1.6	<b>B40</b> - 0-40	<b>1A0</b> - Vac-0
<b>A25</b> - 0-2.5	<b>B60</b> - 0-60	<b>1A6</b> - Vac-0.6
<b>A40</b> - 0-4	<b>C10</b> - 0-100	<b>2A5</b> - Vac-1.5
<b>A60</b> - 0-6	<b>C16</b> - 0-160	<b>4A0</b> - Vac-3
<b>B10</b> - 0-10	<b>C25</b> - 0-250	<b>6A0</b> - Vac-5
<b>B16</b> - 0-16	<b>C40</b> - 0-400	<b>1B0</b> - Vac-9
		<b>1B6</b> - Vac-15
		<b>2B5</b> - Vac-24
		<b>4B0</b> - Vac-39

**Pressure Port**

<b>08</b> - 1/8-27 NPT External	<b>European Threads</b>
<b>02</b> - 1/4-18 NPT External	<b>09</b> - G1/8 Internal
<b>0J</b> - 1/4 NPT External w/snubber	<b>01</b> - G1/4 External
<b>0E</b> - 1/4 NPT Internal	<b>0A</b> - R1/4 External
<b>0H</b> - 1/2-14 NPT External	Submersible (2600 only)
<b>04</b> - 7/16-20 External (SAE #4, J514)	<b>19</b> - Plastic Nose Cone
<b>1P</b> - 9/16-18 External (SAE #6, J1926-2)	<b>29</b> - Sink Weight Nose Cone
<b>1J</b> - 7/16-20 External (SAE #4, J1926-2)	

**Performance Code**  
**Accuracy/Thermal**  
**A** - .25%/1.5%  
**B** - .15%/1.0%

**Cable Length<sup>1</sup>**  
**U** - No Cable Fitted<sup>1 2</sup>  
**D** - 1 Metre (3 feet)  
**E** - 3 Metres (9 feet)  
**F** - 5 Metres (16 feet)  
**G** - 10 Metres (32 feet)

**Apparatus Protection**  
**2** - mV Only Transient Protection CE Mark, UR  
**3** - Amplified Only RFI Protected CE Mark, UR  
**E** - Amplified only IS mark (Div. 1 only)<sup>4</sup>  
**T** - Amplified only IS mark (Div. 1 and 2)<sup>4 5</sup>

**Electrical Connection (See Notes)**  
 2200 Series  
**A** - 4 PIN DIN (Micro) Mating Connector Supplied  
**B** - 4 PIN DIN (Micro) Mating Connector Not Supplied  
**2** - Cable Nema 4 USA  
**D** - Cable European Color Code  
**F** - Cable Gland Metal IP67

2600 Series  
**C** - Fixed Plug Size 10-6 Mating Plug Not Supplied  
**G** - Fixed Plug To DIN 43650 Mating Plug Supplied  
**M** - Moulded Cable Immersible  
**1** - Fixed Plug Size 8-4 Mating Plug Not Supplied  
**3** - Conduit Connector 1/2NPT Ext. 1M Cable<sup>2</sup>

**Notes:**

- When electrical connection is cable please select a cable length from Table 1 below. When electrical connection is DIN or plug style "U" must be specified.
- Where electrical connection -3 and cable length -U occur in part number, the unit will be supplied with flying leads (4-1/2" IP30). Additional Pressure Ranges are available. Please consult factory.
- Intrinsically safe transducers are available with amplified outputs only. (ETL, entity approved for Class I, Division 1, Groups C & D, hazardous areas; Class I, Divisions 1 and 2, Groups C & D for Electrical Connection Codes -A, -B, -G or -3 only.
- Apparatus Protection Code -T is available for Electrical Connection Codes -A, -B, -G or -3 only.

### Table 1 - Cable Length

(2600 Series) (2200 Series select "U" through "G")

Code	Length (M)	Code	Length (M)
<b>U</b>	No Cable Fitted	<b>M</b>	40
<b>D</b>	1	<b>N</b>	50
<b>E</b>	3	<b>P</b>	75
<b>F</b>	5	<b>Q</b>	100
<b>G</b>	10	<b>R</b>	125
<b>H</b>	15	<b>S</b>	150
<b>J</b>	20	<b>4</b>	170
<b>K</b>	25	<b>5</b>	200
<b>L</b>	30	<b>6</b>	225

