

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

Series 2200



CE

cRU<sup>US</sup>

Series 2600



CE

cRU<sup>US</sup>

## Individual Specifications

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

## Electromagnetic Capability

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

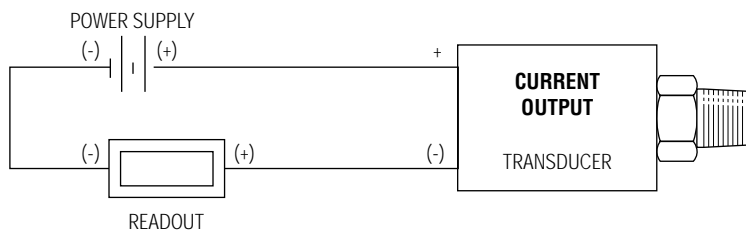
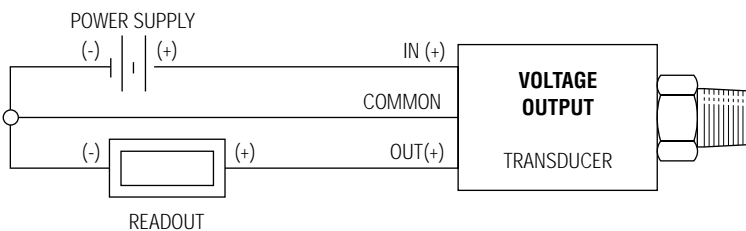
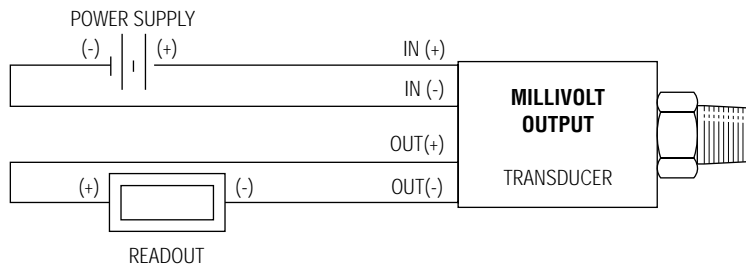
Test Data:

- 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 <math>\leq \pm 1\%</math>
- ENV50204 Radiated RF Susceptibility to Mobile Telephones. 10V/m, 900MHz. Maximum recorded output error was <math>\leq \pm 1\%</math>
- 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 <math>\leq \pm 1\%</math>

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	Y	BL	G	R	W	Y	DRAIN	R	BL	DRAIN
M, P "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:

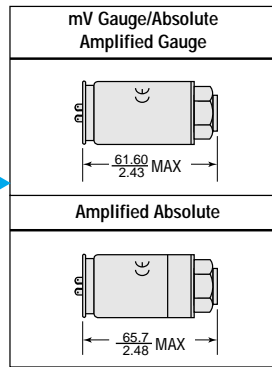
- R = Red
- BL = Blue
- BK = Black
- W = White
- Y = Yellow



## Dimensions

### 2200 Series

Mini 4 Pin - No Connector	
Code B	
Mini 4 Pin - With Connector	
Code A	 26.0 1.02
IP67 Cable (Waterproof)	
Code F	 35.0 1.37
24 AWG Shielded PVC	
IP65 or NEMA4 Cable	
Code D or 2	 70.1 2.76
24 AWG Shielded PVC	

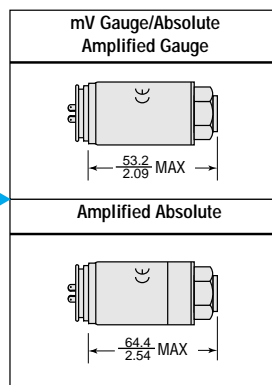


Maximum diameter 27.3 mm (1.07")

1/8-27 NPT	
Code 08	 15 0.59
1/4 - 18 NPT	
Code 02 with	 20 0.79
Code OJ with snubber	
1/4-18 NPT Internal	
Code 0E	 24 .95
1/2-14 NPT	
Code 0H	 26.0 1.02
7/16-20 UNF-2A	
Code 04	 19 0.75
9/16-18 UNF-2A	
Code 1P	 17 0.67
G 1/8 Internal	
Code 09	
G 1/4 External	
Code 01	 17 0.67
R 1/4	
Code 0A	 20 .79

### 2600 Series

10-6 or 8-4 Mil-C Connector	
10-6 Code C	
8-4 Code 1	 22 0.87
Large DIN 43650 Plug	
Code G	 68 2.65 33 1.30
Conduit Connector with Cable	
Code 3	 1/2" NPT 43 1.70
24 AWG Shielded PVC	
Conduit Connector with Flying Leads	
Code 3	 1/2" NPT 43/1.70
with length "U"	
Moulded, Immersible Cable <150M	
Code M	 23 0.90
24 AWG, Vent, Shielded, Polyurethane	
Moulded, Immersible Cable >150M	
Code P	 30 1.18
24 AWG, Vent, Shielded, Polyurethane	



Maximum diameter 27.3 mm (1.07")

Nose Cone - Black Acetal	
Code 19	 19 .75
Nose Cone Sink Weight	
Code 29	 121/4.76 Through hole Ø 10.0 Ø 7.20

mm  
inch

PRESSURE TRANSDUCERS

## 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 (Note 4) 26 ET (Note 4)**

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 – psi (See Notes)

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

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

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

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

Cable Length (Note 1)  
**U** - No Cable Fitted (See Notes 1 and 2)  
**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

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 Max. (<150 M Submersible Cable)  
**P** - Moulded Immersible Cable (>150 M Submersible Cable)  
**1** - Fixed Plug Size 8-4 Mating Plug Not Supplied  
**3** - Conduit Connector 1/2NPT Ext. 1M Cable (See Note 2)

Notes:

- When electrical connection is cable please select a cable length from Table 1. 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 (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).

**PRESSURE TRANSDUCERS**

### Table 1 - Cable Units

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

Code	Length (M)	Code	Length (M)	Code	Length (M)	Code	Length (M)
U	No Cable Fitted	F	5	K	25	P	75
		G	10	L	30	O	100
D	1	H	15	M	40	R	125
E	3	J	20	N	50	S	150

