

# 3100 Series and 3200 Heavy Duty Series

## Compact OEM Pressure Transmitters

- ▶ Exceptional Long Term Stability
- ▶ 0-100 psi to 0-30,000 psi Ranges (0-7 bar to 0-2,200 bar)
- ▶ High Proof Pressures with All Stainless Steel Wetted Parts
- ▶ Broad Choice of Outputs, Electrical Connectors, and Pressure Ports
- ▶ Dual Pressure and Temperature Sensing option

3100 and 3200 Series offer high levels of stability and reliability with proven sputtered thin film technology and unbeatable price performance ratio in a small package size. A broad choice of electrical and pressure connections allow stock configurations to suit most applications without modification.

### Specifications

Performance	
<b>Long Term Drift</b>	0.2% FS/YR (non-cumulative)
<b>Accuracy</b>	
<b>3100</b>	0.25% FS
<b>3200</b>	0.25% FS for >1000 psi (60 bar) 0.50% FS for <1000 psi (60 bar)
<b>Thermal Error</b>	
<b>3100</b>	0.83% FS/100°F (1.5% FS/100°C)
<b>3200</b>	2% FS/100°C for <1000 psi (60 bar)
<b>Compensated Temperatures</b>	-40°F to +257°F (-40°C to +125°C)
<b>Operating Temperatures</b>	-40°F to +257°F (-40°C to +125°C) for elec. codes B, C, E, G, 6, 8, 9, Y -5°F to +180°F (-20°C to +80°C) for elec. codes F, 3, W
<b>Zero Tolerance</b>	
<b>3100</b>	0.5% of span
<b>3200</b>	0.50% of span for >1000 psi (60 bar) 1.00% of span for <1000 psi (60 bar)
<b>Span Tolerance</b>	
<b>3100</b>	0.5% of span
<b>3200</b>	0.50% of span for >1000 psi (60 bar) 1.00% of span for <1000 psi (60 bar)
<b>Response Time</b>	1 ms
<b>Fatigue Life</b>	Designed for more than 100 M cycles
<b>Mechanical Configuration</b>	
<b>Pressure Port</b>	See under "How to Order," last page
<b>Wetted Parts</b>	17-4 PH Stainless Steel
<b>Housing</b>	304 Stainless Steel
<b>Electrical Connection</b>	See under "How to Order," last page
<b>Enclosure</b>	IP67 (IP65 for electrical codes G & W)
<b>Vibration</b>	40G peak to peak sinusoidal, (Random Vibration: 20 to 1000 Hz @ approx. 40G peak per MIL-STD-810E)
<b>Shock</b>	Withstands free fall to IEC 68-2-32 procedure 1
<b>EMC (Radiated Immunity)</b>	100 V/m
<b>Approvals</b>	CE, conforms to European Pressure Directive, Fully RoHS compliant, CRN Registered to ANSI/ASME B31.3, UL recognized files # E219842 & E174228
<b>Weight</b>	1.8 - 5.3 ounces (50 - 150 grams). Configuration dependent.
<b>Voltage</b>	
<b>Output (3-wire)</b>	0 V min. to 10 V max. See under "How to Order," last page
<b>Supply Voltage</b>	2 Volts above full scale to 30 VDC max @ 4.5 mA (6.5 mA on dual output version)
<b>Source and Sinks</b>	2 mA
<b>Current</b>	
<b>Output (2-wire)</b>	4-20 mA
<b>Supply Voltage</b>	8-30 VDC
<b>Maximum Loop Resistance</b>	(Supply Voltage-8) x 50 ohms
<b>Ratiometric</b>	
<b>Output</b>	0.5 to 4.5 VDC @ 4 mA (6.5 mA on dual output version)
<b>Supply Voltage</b>	5 VDC ±10%



### Integral Connector Versions



### Wire & Cable Options



**Pressure Capability**

Pressure Range PSI (Bar)	Proof Pressure (x Full Scale)		Burst Pressure (x Full Scale)	
	3100	3200	3100	3200
100-300 (7-25)	3.00 x FS	3.00 x FS	40 x FS	
500-1,500 (40-100)			20 x FS	
2,000-6,000 (160-400)			10 x FS	
7,500-9,000 (600)			10 x FS	
10,000 (700)	2.50 x FS	2.50 x FS	4 x FS	
15,000 (1,000)			>60,000 PSI (4,000 bar)	
25,000 (1,800)				
30,000 (2,200)	1.40 x FS	—	1.5 x FS	

**Pressure Ports**

NPT and SAE Dimensions in Inches. Metric and BSP Dimensions in MM.

<b>Fitting Code</b> <b>08</b> = 1/8"-27 NPT	<b>4D</b> = 1/8"-27 NPTF Dryseal	<b>02</b> = 1/4"-18 NPT	<b>0E</b> = 1/4"-18 NPT Internal
<b>Torque</b> 2-3 TFFT*	2-3 TFFT*	2-3 TFFT*	2-3 TFFT*
<b>Fitting Code</b> <b>4C</b> = 1/4"-18 NPTF Dryseal	<b>4N</b> = 3/8"-24 UNF	<b>1J</b> = 7/16"-20 UNF	<b>04</b> = 7/16"-20 UNF with 37° Flare
<b>Torque</b> 2-3 TFFT*	18-20 NM	18-20 NM	15-16 NM
<b>Fitting Code</b> <b>1G</b> = SAE 4 Female 7/16" Schraeder	<b>1P</b> = 9/16"-18 "Heavy Duty"	<b>6B</b> = Autoclave F250C	<b>01</b> = G1/4"-19 A
<b>Torque</b> 18-20 NM	18-20 NM	18-20 NM	30-35 NM
<b>Fitting Code</b> <b>05</b> = G1/4"-19 A Integral Face-Seal	<b>0L</b> = M12 x 1.5	<b>2T</b> = M12x1.5 HP Metal Washer Seal	<b>4J</b> = M14 x 1.5
<b>Torque</b> 30-35 NM	28-30 NM	30-35 NM	30-35 NM

\*NPT Threads 2-3 turns from finger tight. Wrench tighten 2-3 turns.

General Notes:

1. The diameter of all cans is 19 mm (0.748")
2. Hex is 22 mm (0.866") Across Flats (A/F) for deep socket mounting
3. O-Ring material, where applicable, is Viton® unless otherwise specified.

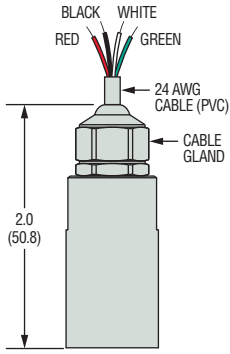
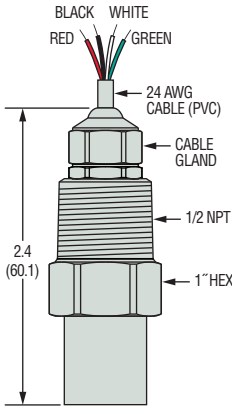
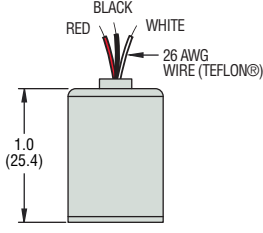
## Integral Connector Versions

DIN 9.4 mm			M12 x 1P			Amp Superseal 1.5			Deutsch DT04-4P					
<p>POLARIZING WIDE CONTACT</p>														
<b>Code B</b>			<b>Code R</b>			<b>Code E</b>			<b>Code 6</b>			<b>Code 8</b>		
Pin #	Voltage Mode	Current Mode	Voltage Mode	Current Mode	Voltage Mode	Current Mode	Voltage Mode	Current Mode	Voltage Mode	Current Mode	Voltage Mode	Current Mode		
1	$V_{out1}$ (pressure)	Do Not Connect	+IN	+IN	+IN	+IN	$V_{out}$	Do Not Connect	0V	0V	0V	0V		
2	+IN	+IN	0V	0V	$V_{out1}$ (pressure)	Do Not Connect	0V	0V	+IN	+IN	+IN	+IN		
3	PE or $V_{out2}$ (temp)*	PE	$V_{out}$	Do Not Connect	0V	0V	+IN	+IN	PE or $V_{out2}$ (temp)*	PE	PE or $V_{out2}$ (temp)*	PE		
4	0V	0V	PE	PE	PE or $V_{out2}$ (temp)*	PE	—	—	$V_{out1}$ (pressure)	Do Not Connect	$V_{out1}$ (pressure)	Do Not Connect		

Mil-C 10-6P (26482)			Deutsch DT04-3P			Packard MetriPack			DIN 43650A		
<b>Code C</b>			<b>Code Y</b>			<b>Code 9</b>			<b>Code G</b>		
Pin ID	Voltage Mode	Current Mode	Voltage Mode	Current Mode	Voltage Mode	Current Mode	Pin #	Voltage Mode	Current Mode		
A	+IN	+IN	+IN	+IN	0V	0V	1	+IN	+IN		
B	$V_{out1}$ (pressure)	0V	0V	0V	+IN	+IN	2	0V	0V		
C	0V	Do Not Connect	$V_{out}$	Do Not Connect	$V_{out}$	Do Not Connect	3	$V_{out1}$ (pressure)	Do Not Connect		
E	PE or $V_{out2}$ (temp)*	PE	—	—	—	—	E	PE or $V_{out2}$ (temp)*	PE		

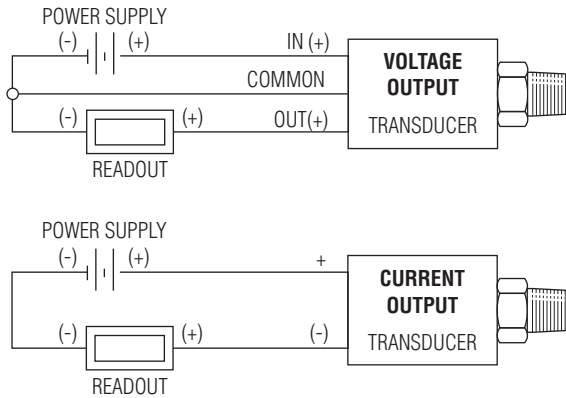
\*This pin is used for temperature sensing output when this option is utilized. Otherwise, the pin is used for PE.

**Wire & Cable Options**

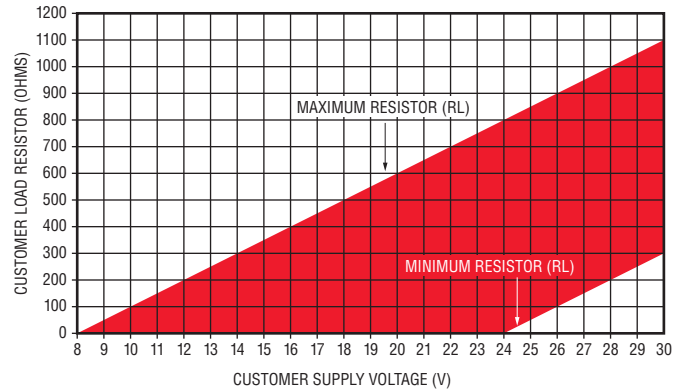
Cable			1/2" Conduit Connection		Flying Lead	
						
<b>Code F</b>			<b>Code 3</b>		<b>Code W</b>	
Wire Color	Voltage Mode	Current Mode	Voltage Mode	Current Mode	Voltage Mode	Current Mode
Red	+IN	+IN	+IN	+IN	+IN	+IN
Black	0V	0V	0V	0V	0V	0V
White	V <sub>out 1</sub> (pressure)	Do Not Connect	V <sub>out 1</sub> (pressure)	Do Not Connect	V <sub>out</sub>	Do Not Connect
Green	PE or V <sub>out 2</sub> (temp)*	PE	PE or V <sub>out 2</sub> (temp)*	PE	—	—

\*This pin is used for temperature sensing output when this option is utilized. Otherwise, the pin is used for PE.

**Wiring Diagram**



**Current Output Mode (Load Resistor Range)**



Minimum Resistor Value =  $50 \times (+V - 24)$  for  $+V > 24V$   
 Maximum Resistor Value =  $50 \times (+V - 8)$  for  $+V > 8V$

Note: Mating connectors available upon request - contact factory.

## How to Order

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

			<b>3100</b>	<b>B</b>	<b>200PG</b>	<b>02</b>	<b>B</b>	<b>R</b>	<b>01</b>	
Series	<p><b>3100 / 3200</b> - Pressure Transducer Combination Pressure and Temperature<sup>1</sup>  <b>3101 / 3201</b> - Temp. Output Range -40°C to 125°C  <b>3102 / 3202</b> - Temp. Output Range 0°C to 100°C  <b>3103 / 3203</b> - Temp. Output Range 0°C to 80°C</p>									Cable Length (For electrical connections F & 3 only)
Output	<p><b>B</b> - 4-20 mA      <b>C</b> - 1-6 V      <b>H</b> - 1-5 V  <b>N</b> - 0.5-4.5 V    <b>R</b> - 0-5 V<sup>2</sup>      <b>S</b> - 0-10 V<sup>2</sup>  <b>T</b> - 0.5-4.5 V Ratiometric</p>									Optional Restrictor (3200 only)
Pressure Range – psi	<p><b>100PG</b> - 0-100 psiG    <b>10CPG</b> - 0-1,000 psiG    <b>10KPS</b> = 0-10,000 psiS  <b>150PG</b> - 0-150 psiG    <b>15CPS</b> - 0-1,500 psiS    <b>15KPS</b> - 0-15,000 psiS<sup>4</sup>  <b>200PG</b> - 0-200 psiG    <b>20CPS</b> - 0-2,000 psiS    <b>20KPS</b> - 0-20,000 psiS<sup>4</sup>  <b>300PG</b> - 0-300 psiG    <b>25CPS</b> - 0-2,500 psiS    <b>25KPS</b> - 0-25,000 psiS<sup>4</sup>  <b>500PG</b> - 0-500 psiG<sup>3</sup>    <b>30CPS</b> - 0-3,000 psiS    <b>32KPS</b> - 0-32,000 psiS<sup>4</sup>  <b>600PG</b> - 0-600 psiG    <b>35CPS</b> - 0-3,500 psiS  <b>750PG</b> - 0-750 psiG    <b>40CPS</b> - 0-4,000 psiS                                    <b>50CPS</b> - 0-5,000 psiS                                    <b>60CPS</b> - 0-6,000 psiS                                    <b>75CPS</b> - 0-7,500 psiS</p>									Electrical Connection <sup>6</sup>
Pressure Range - bar	<p><b>0007G</b> - 0-7 barG      <b>0160S</b> - 0-160 barS      <b>1000S</b> - 1,000 barS<sup>4</sup>  <b>0010G</b> - 0-10 barG    <b>0250S</b> - 0-250 barS      <b>1600S</b> - 1,600 barS<sup>4</sup>  <b>0016G</b> - 0-16 barG    <b>0400S</b> - 0-400 barS      <b>2200S</b> - 2,200 barS<sup>4</sup>  <b>0025G</b> - 0-25 barG    <b>0600S</b> - 0-600 barS  <b>0040G</b> - 0-40 barG  <b>0060G</b> - 0-60 barG  <b>0100S</b> - 0-100 barS</p>									Pressure Port <sup>5</sup>
Notes:	<p>1. Temperature outputs are for voltage output pressure sensors only (applies to codes <b>-C</b>, <b>-H</b>, <b>-N</b>, and <b>-T</b> only) and limited to electrical codes <b>-B</b>, <b>-C</b>, <b>-E</b>, <b>-F</b>, <b>-G</b>, <b>-3</b>, and <b>-8</b>. Accuracy is 3.5% of temperature span. Requires additional 2mA of power.  2. For use with pull-up or pull-down resistors, contact factory.  3. <b>500PG</b> - 0-500 psiG not available as 3200 Series in output code <b>-B</b> - 4-20 mA.  4. Ranges 15,000 psi (1,000 bar) and above available with <b>-2T</b> &amp; <b>-6B</b> pressure ports only.  5. Pressure ports <b>0E</b>, <b>6B</b>, and <b>1G</b> are not available with the <b>-R</b> Restrictor option.  6. For electrical codes <b>F</b> &amp; <b>3</b>, specify cable length in meters.</p>									
										<p><b>B</b> - Industrial DIN 9.4 mm (mating connector not supplied)  <b>C</b> - Mil-C 10-6P (26482)  <b>E</b> - M12 x 1P (4-Pin)  <b>F</b> - Cable version  <b>G</b> - Large DIN  <b>R</b> - Industrial DIN 9.4 mm (alternate pin out)  <b>W</b> - Flying lead (12 inches/300mm)  <b>Y</b> - Deutsch DT04-3P  <b>3</b> - 1/2" NPT Male Conduit  <b>6</b> - Amp - Superseal 1.5 Series  <b>8</b> - Deutsch DT04-4P  <b>9</b> - Packard MetriPack</p> <p><b>08</b> - 1/8-27 NPT External  <b>02</b> - 1/4-18 NPT External  <b>04</b> - 7/16-20 External (SAE #4, J514)  <b>0E</b> - 1/4-18 NPT Internal  <b>1G</b> - Schrader SAE #4, 7/16" Internal  <b>1J</b> - 7/16-20 External (SAE #4, J1926-2)  <b>1P</b> - SAE 6 (9/16"-18 UNF 2A)  <b>4C</b> - 1/4-18 NPTF External (Dryseal)  <b>4D</b> - 1/8-27 NPTF External (Dryseal)  <b>4N</b> - 3/8-24 UNF External (SAE J1926)  <b>6B</b> - Autoclave 250C Internal (15,000 psi, &gt;1000 bar)</p> <p>European Threads  <b>01</b> - G1/4 A External  <b>05</b> - G1/4 A External Soft Seal  <b>0L</b> - M12 x 1.5 (&lt;1,000 bar, 15,000 psi)  <b>2T</b> - M12 x 1.5 (6g) (≥1,000 bar, 15,000 psi)  <b>4J</b> - M14 x 1.5 Straight</p>

