

## 3100 Series and 3200 Heavy Duty Series Compact OEM Pressure Transmitters

- ▶ 0-7 bar to 0-2,200 bar ranges (0-100 psi to 0-30,000 psi)
- ▶ High Proof Pressures
- ▶ Broad Choice of Outputs
- ▶ RoHS Compliant

For OEMs that need consistent high levels of performance, reliability and stability the 31/3200 Series sputtered thin film units offer an unbeatable price performance ratio in a small package size. They feature all-stainless steel wetted parts, a broad selection of electrical and pressure connections, and a wide choice of electrical outputs. Our manufacturing process includes the latest automated equipment, producing consistent sensor performance.

Additionally the 3200 Series transmitters feature a thicker diaphragm and a pressure restrictor to withstand the rigors of cavitations or extreme pressure spikes, delivering years of reliable and stable performance in pulsating applications.

The compact construction of both these series makes them ideal for installation where space is at a premium.

These transmitters are fully RoHS compliant.

### Specifications

|                                 |                                                                           |
|---------------------------------|---------------------------------------------------------------------------|
| <b>Performance</b>              |                                                                           |
| <b>Long Term Drift</b>          | 0.2% FS/YR (non-cumulative)                                               |
| <b>Accuracy</b>                 | 0.25% FS                                                                  |
| <b>Thermal Error</b>            |                                                                           |
| <b>3100</b>                     | ±1.5% max, ±1% typical / 100°C (212°F)                                    |
| <b>3200</b>                     | ±2% FS / 100°C (212°F)                                                    |
| <b>Compensated Temperatures</b> | -40°C to +120°C (-40°F to +250°F)                                         |
| <b>Operating Temperatures</b>   | -40°C to +120°C (-40°F to +250°F)                                         |
| <b>Zero Tolerance</b>           | ±0.5% of span                                                             |
| <b>Span Tolerance</b>           | ±0.5% of span                                                             |
| <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>Electrical Connection</b>    | See under "How to Order," last page                                       |
| <b>Enclosure</b>                | IP67 (IP65 for electrical codes B, R and G)                               |
| <b>Vibration</b>                | BSEN 60068-2-6 (FC) Sine (20G)<br>BSEN 60068-2-64 (FH) Random (14.1 Grms) |
| <b>Shock</b>                    | BSEN 60068-2-27 (Ea) (50G, 11ms)                                          |
| <b>Approvals</b>                | CE                                                                        |
| <b>Weight</b>                   | 50-150 grams (1.8 to 5.3 ounces). Configuration dependant                 |

### EMC Specifications

|                                                             |                          |                                                        |
|-------------------------------------------------------------|--------------------------|--------------------------------------------------------|
| <b>Emissions Tests:</b> EN61326-1:2006 and EN61326-2-3:2006 |                          |                                                        |
| <b>EN55016-2-3:2006</b>                                     | Radiated Emissions:      | 30-230MHz 30dB µV/M @10M<br>230-1000MHz 37dB µV/M @10M |
| <b>Immunity Tests:</b> EN61326-1:2006 and EN61326-2-3:2006  |                          |                                                        |
| <b>EN61000-4-2:1995</b>                                     | Electrostatic Discharge: | ±4Kv contact<br>±8Kv air                               |
| <b>EN61000-4-3:2006</b>                                     | Radiated Immunity:       | 100V/M 80-1000MHz                                      |
| <b>EN61000-4-4:2004</b>                                     | Fast Transients:         | ±4Kv                                                   |
| <b>EN61000-4-6:2007</b>                                     | Conducted Immunity:      | 10V 0.15 to 80MHz 80% 1 Khz modulation                 |



### Individual Specifications

|                                                              |                                                              |
|--------------------------------------------------------------|--------------------------------------------------------------|
| <b>Voltage</b>                                               |                                                              |
| <b>Output (3-wire)</b>                                       | 0 V min. to 10 V max.<br>See under "How to Order," last page |
| <b>Supply Voltage</b>                                        | 1 Volt above full scale to 30 Vdc max @ 4.5 mA               |
| <b>Source and Sinks</b>                                      | 2 mA                                                         |
| <b>Current</b>                                               |                                                              |
| <b>Output (2-wire)</b>                                       | 4-20 mA                                                      |
| <b>Supply Voltage</b>                                        | 8-24 Volts measured at the input to the transducer terminals |
| <b>Maximum Loop Resistance</b> (Supply Voltage – 8) x 50ohms |                                                              |
| <b>Ratiometric</b>                                           |                                                              |
| <b>Output</b>                                                | 0.5 to 4.5 Vdc @ 4 mA<br>(Source and sink 2 mA)              |
| <b>Supply Voltage</b>                                        | 5 Vdc ±10% @ 4.5 mA                                          |

## Pressure Capability

| Pressure Range<br>Bar (PSI) | Proof Pressure<br>(x Full Scale) |           | Burst Pressure<br>(x Full Scale) |      |
|-----------------------------|----------------------------------|-----------|----------------------------------|------|
|                             | 3100                             | 3200      | 3100                             | 3200 |
| 7-20 (100-300)              | 3.00 x FS                        | 3.00 x FS | 40 x FS                          |      |
| 40-100 (500-1,500)          |                                  |           | 20 x FS                          |      |
| 140-400 (2,000-6,000)       |                                  |           | 10 x FS                          |      |
| 700 (10,000)                |                                  |           | > 4,000 bar<br>(60,000 PSI)      |      |
| 1,000 (15,000)              | 2.00 x FS                        | 2.50 x FS |                                  |      |
| 1,800 (25,000)              |                                  | 1.70 x FS |                                  |      |
| 2,200 (30,000)              |                                  | —         |                                  |      |

## Pressure Ports

## BSP &amp; Metric

|                     | G1/4"-19 External<br>w/O-Ring | G1/4"-19 A Integral<br>Face Seal | M12 x 1.5 w/O-Ring | M12x1.5 HP w/O-Ring | M14 x 1.5 w/O-Ring |
|---------------------|-------------------------------|----------------------------------|--------------------|---------------------|--------------------|
| Dimensions<br>in MM |                               |                                  |                    |                     |                    |
| Fitting Code        | 01                            | 05                               | 0L                 | 2T                  | OK                 |
| Torque              | 30-35NM                       | 30-35 NM                         | 28-30 NM           | 30-35 NM            | 2-3 TFFT*          |

## SAE

|                     | 1/8"-27 NPT | 1/8"-27 NPTF Dryseal | 1/4"-18 NPT | 1/4"-18 NPT Internal | 1/4"-18 NPTF Dryseal |
|---------------------|-------------|----------------------|-------------|----------------------|----------------------|
| Dimensions<br>in MM |             |                      |             |                      |                      |
| Fitting Code        | 08          | 4D                   | 02          | 0E                   | 4C                   |
| Torque              | 2-3 TFFT*   | 2-3 TFFT*            | 2-3 TFFT*   | 2-3 TFFT*            | 2-3 TFFT*            |

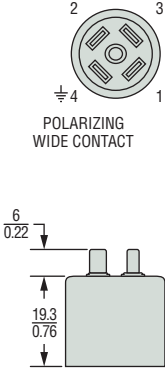
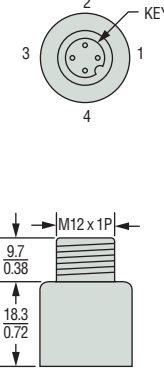
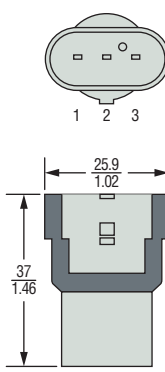
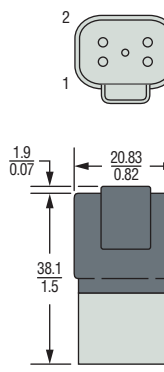
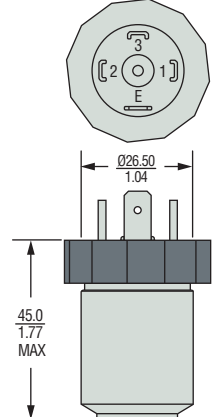
|                     | SAE J1926/2:3/8-24<br>w/O-Ring | 7/16"-20 UNF w/O-Ring | 7/16"-20 UNF<br>with 37° Flare | SAE 4 Female 7/16"<br>Schraeder | 9/16-18 "Heavy Duty"<br>w/O-Ring |
|---------------------|--------------------------------|-----------------------|--------------------------------|---------------------------------|----------------------------------|
| Dimensions<br>in MM |                                |                       |                                |                                 |                                  |
| Fitting Code        | 4N                             | 1J                    | 04                             | 1G                              | 1P                               |
| Torque              | 18-20 NM                       | 18-20 NM              | 15-16 NM                       | 18-20 NM                        | 18-20 NM                         |

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

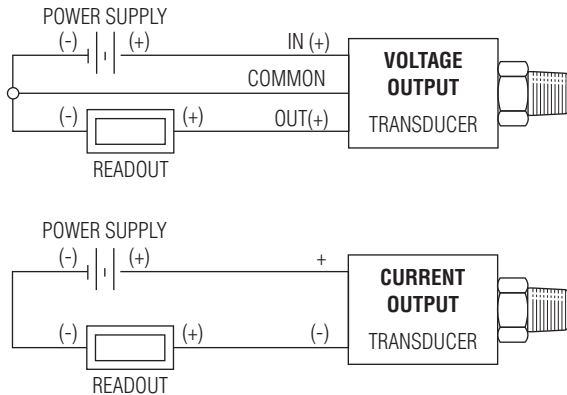
## General Notes:

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.

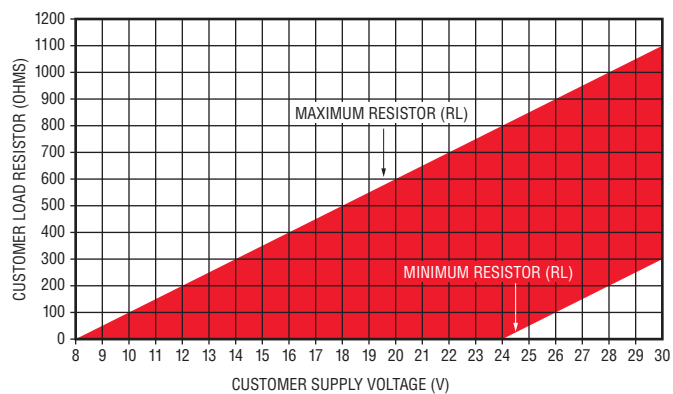
## Electrical Connector

| DIN 9.4 mm                                                                                                       |                     |              | M12 x 1P                                                                          |              | Amp Superseal 1.5                                                                 |              | Deutsch DT04-4P                                                                    |              | DIN 43650A                                                                          |              |
|------------------------------------------------------------------------------------------------------------------|---------------------|--------------|-----------------------------------------------------------------------------------|--------------|-----------------------------------------------------------------------------------|--------------|------------------------------------------------------------------------------------|--------------|-------------------------------------------------------------------------------------|--------------|
|  <p>POLARIZING WIDE CONTACT</p> |                     |              |  |              |  |              |  |              |  |              |
| Code R                                                                                                           |                     |              | Code E                                                                            |              | Code 6                                                                            |              | Code 8                                                                             |              | Code G                                                                              |              |
| Pin #                                                                                                            | Voltage Mode        | Current Mode | Voltage Mode                                                                      | Current Mode | Voltage Mode                                                                      | Current Mode | Voltage Mode                                                                       | Current Mode | Voltage Mode                                                                        | Current Mode |
| 1                                                                                                                | V <sub>supply</sub> | Supply       | V <sub>supply</sub>                                                               | Supply       | V <sub>out</sub>                                                                  | No Connect   | Ground                                                                             | Return       | V <sub>supply</sub>                                                                 | Supply       |
| 2                                                                                                                | Ground              | Return       | V <sub>out</sub>                                                                  | No Connect   | Ground                                                                            | Return       | V <sub>supply</sub>                                                                | Supply       | Ground                                                                              | Return       |
| 3                                                                                                                | V <sub>out</sub>    | No Connect   | Ground                                                                            | Return       | V <sub>supply</sub>                                                               | Supply       | No Connect                                                                         | No Connect   | V <sub>out</sub>                                                                    | No Connect   |
| 4                                                                                                                | No Connect          | No Connect   | No Connect                                                                        | No Connect   | —                                                                                 | —            | V <sub>out</sub>                                                                   | No Connect   | No Connect                                                                          | No Connect   |

## Wiring Diagram



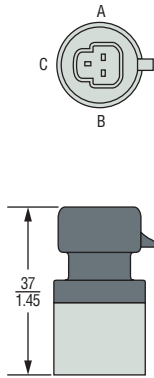
## Current Output Mode (Load Resistor Range)



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

## Cable-Out Types

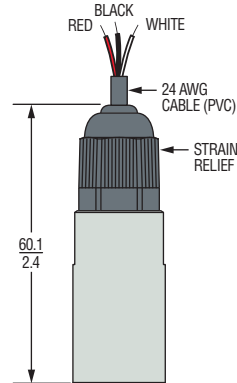
### Packard MetriPack



#### Code 9

| Pin ID | Voltage Mode        | Current Mode |
|--------|---------------------|--------------|
| C      | V <sub>out</sub>    | No Connect   |
| A      | Ground              | Return       |
| B      | V <sub>supply</sub> | Supply       |
| —      | —                   | —            |

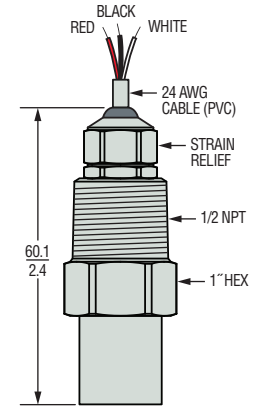
### Cable



#### Code F

| Wire Color | Voltage Mode     | Current Mode |
|------------|------------------|--------------|
| Red        | Supply           | Supply       |
| Black      | Ground           | Return       |
| White      | V <sub>out</sub> | No Connect   |

### 1/2" Conduit Connection



#### Code 3

| Voltage Mode     | Current Mode |
|------------------|--------------|
| Supply           | Supply       |
| Ground           | Return       |
| V <sub>out</sub> | No Connect   |

## Mating Connectors

| Part Number | Description                                                                          | For Use on Elect. Code # |
|-------------|--------------------------------------------------------------------------------------|--------------------------|
| 557701      | Amp Superseal Connector                                                              | 6                        |
| 557254      | DIN 43650A Connector                                                                 | G                        |
| 557230      | Mini DIN Connector                                                                   | B and K                  |
| 557703-0000 | M12X1 for 4mm to 6mm Dia. Cable                                                      | E                        |
| 557818-01M0 | Connector + Cable, Temp -20°C to +80°C (-4°F to +176°F), M12X1 with 1 Metre Cable    | E                        |
| 557818-02M0 | Connector + Cable, Temp -20°C to +80°C (-4°F to +176°F), M12X1 with 2 Metre Cable    | E                        |
| 557818-03M0 | Connector + Cable, Temp -20°C to +80°C (-4°F to +176°F), M12X1 with 3 Metre Cable    | E                        |
| 557818-05M0 | Connector + Cable, Temp -20°C to +80°C (-4°F to +176°F), M12X1 with 5 Metre Cable    | E                        |
| 557818-10M0 | Connector + Cable, Temp -20°C to +80°C (-4°F to +176°F), M12X1 with 10 Metre Cable   | E                        |
| 557813-01M0 | Connector + Cable, Temp -40°C to +150°C (-40°F to +302°F), M12X1 with 1 Metre Cable  | E                        |
| 557813-02M0 | Connector + Cable, Temp -40°C to +150°C (-40°F to +302°F), M12X1 with 2 Metre Cable  | E                        |
| 557813-03M0 | Connector + Cable, Temp -40°C to +150°C (-40°F to +302°F), M12X1 with 3 Metre Cable  | E                        |
| 557813-05M0 | Connector + Cable, Temp -40°C to +150°C (-40°F to +302°F), M12X1 with 5 Metre Cable  | E                        |
| 557813-10M0 | Connector + Cable, Temp -40°C to +150°C (-40°F to +302°F), M12X1 with 10 Metre Cable | E                        |

## How to Order

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

| Series                            | 3100 | B | 200PG | 02 | B | R | 01 |                                                      |
|-----------------------------------|------|---|-------|----|---|---|----|------------------------------------------------------|
| 3100 / 3200 - Pressure Transducer |      |   |       |    |   |   |    | Cable Length (For electrical connections F & 3 only) |
| Output                            |      |   |       |    |   |   |    | 00 - No Cable                                        |
| B - 4-20 mA                       |      |   |       |    |   |   |    | 01 - 1 metre                                         |
| N - 0.5-4.5 V                     |      |   |       |    |   |   |    | 02 - 2 metres                                        |
| T - 0.5-4.5 V Ratiometric         |      |   |       |    |   |   |    | 03 - 3 metres                                        |
| Pressure Range - bar              |      |   |       |    |   |   |    | 04 - 4 metres                                        |
| 0007G - 0-7 barG                  |      |   |       |    |   |   |    | 05 - 5 metres                                        |
| 0010G - 0-10 barG                 |      |   |       |    |   |   |    | Optional Restrictor (3200 only)                      |
| 0016G - 0-16 barG                 |      |   |       |    |   |   |    | R - Restrictor                                       |
| 0025G - 0-25 barG                 |      |   |       |    |   |   |    | 0 - No Restrictor                                    |
| 0040G - 0-40 barG                 |      |   |       |    |   |   |    | Electrical Connection                                |
| 0060G - 0-60 barG                 |      |   |       |    |   |   |    | E - M12 x 1P (4-Pin)                                 |
| 0100G - 0-100 barG                |      |   |       |    |   |   |    | F - Cable version <sup>3</sup>                       |
| Pressure Range - psi              |      |   |       |    |   |   |    | G - Large DIN                                        |
| 100PG - 0-100 psiG                |      |   |       |    |   |   |    | R - Industrial DIN 9.4 mm                            |
| 150PG - 0-150 psiG                |      |   |       |    |   |   |    | 3 - 1/2" NPT Male Conduit <sup>3</sup>               |
| 200PG - 0-200 psiG                |      |   |       |    |   |   |    | 6 - Amp - Superseal 1.5 Series                       |
| 300PG - 0-300 psiG                |      |   |       |    |   |   |    | 8 - Deutsch DT04-4P                                  |
| 500PG - 0-500 psiG                |      |   |       |    |   |   |    | 9 - Packard MetriPack                                |
| 600PG - 0-600 psiG                |      |   |       |    |   |   |    | Pressure Port <sup>4</sup>                           |
| 750PG - 0-750 psiG                |      |   |       |    |   |   |    | 08 - 1/8-27 NPT External                             |
|                                   |      |   |       |    |   |   |    | 02 - 1/4-18 NPT External                             |
|                                   |      |   |       |    |   |   |    | 04 - 7/16-20 External (SAE #4, J514)                 |
|                                   |      |   |       |    |   |   |    | 1J - 7/16-20 External (SAE #4, J1926-2)              |
|                                   |      |   |       |    |   |   |    | 0E - 1/4-18 NPT Internal                             |
|                                   |      |   |       |    |   |   |    | 0K - M14 x 1.5 Straight                              |
|                                   |      |   |       |    |   |   |    | 1G - Schrader SAE #4, 7/16" Internal                 |
|                                   |      |   |       |    |   |   |    | 1P - SAE 6 (9/16"-18 UNF 2A)                         |
|                                   |      |   |       |    |   |   |    | 4C - 1/4-18 NPTF External (Dryseal)                  |
|                                   |      |   |       |    |   |   |    | 4D - 1/8-27 NPTF External (Dryseal)                  |
|                                   |      |   |       |    |   |   |    | 4N - SAE 3 (3/8-24 UNF External)                     |
|                                   |      |   |       |    |   |   |    | 01 - G1/4 External                                   |
|                                   |      |   |       |    |   |   |    | 05 - G1/4 External Soft Seal                         |
|                                   |      |   |       |    |   |   |    | 0L - M12 x 1.5 (<1,000 bar, 15,000 psi)              |
|                                   |      |   |       |    |   |   |    | 2T - M12 x 1.5 (6g) (≥1,000 bar, 15,000 psi)         |

### Notes:

- For use with pull-up or pull-down resistors, contact factory.
- Ranges 1,000 bar (15,000 psi) and above available with -2T pressure port only.
- For electrical codes F & 3, specify cable length in meters.
- Pressure ports 0E and 1G are NOT available with the Restrictor option.