# 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

| | |
|---|---|
| **Performance** | |
| **Long Term Drift** | 0.2% FS/YR (non-cumulative) |
| **Accuracy** | 0.25% FS |
| **Thermal Error** | |
| **3100** | ±1.5% max, ±1% typical / 100°C (212°F) |
| **3200** | ±2% FS / 100°C (212°F) |
| **Compensated Temperatures** | -40°C to +120°C (-40°F to +250°F) |
| **Operating Temperatures** | -40°C to +120°C (-40°F to +250°F) |
| **Zero Tolerance** | ±0.5% of span |
| **Span Tolerance** | ±0.5% of span |
| **Fatigue Life** | Designed for more than 100 M cycles |
| **Mechanical Configuration** | |
| **Pressure Port** | See under "How to Order," last page |
| **Wetted Parts** | 17-4 PH Stainless Steel |
| **Electrical Connection** | See under "How to Order," last page |
| **Enclosure** | IP67 (IP65 for electrical codes B, R and G) |
| **Vibration** | BSEN 60068-2-6 (FC) Sine (20G)<br>BSEN 60068-2-64 (FH) Random (14.1 Grms) |
| **Shock** | BSEN 60068-2-27 (Ea) (50G, 11ms) |
| **Approvals** | CE |
| **Weight** | 50-150 grams (1.8 to 5.3 ounces). Configuration dependant |

## EMC Specifications

**Emissions Tests:** EN61326-1:2006 and EN61326-2-3:2006

| | | |
|---|---|---|
| **EN55016-2-3:2006** | Radiated Emissions: | 30-230MHz 30dB µV/M @10M<br>230-1000MHz 37dB µV/M @10M |

**Immunity Tests:** EN61326-1:2006 and EN61326-2-3:2006

| | | |
|---|---|---|
| **EN61000-4-2:1995** | Electrostatic Discharge: | ±4Kv contact<br>±8Kv air |
| **EN61000-4-3:2006** | Radiated Immunity: | 100V/M 80-1000MHz |
| **EN61000-4-4:2004** | Fast Transients: | ±4Kv |
| **EN61000-4-6:2007** | Conducted Immunity: | 10V 0.15 to 80MHz 80% 1 Khz modulation |

## Individual Specifications

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



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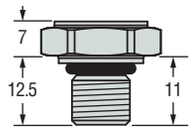
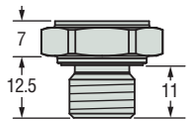
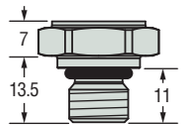
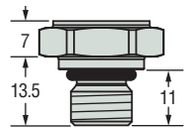
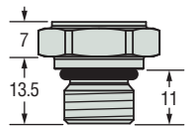
http://www.appeng.co.uk
email: info@appeng.co.uk
TEL: + 44 1825 764737
FAX: + 44 1825 768330

## Pressure Capability

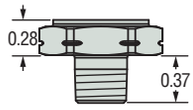
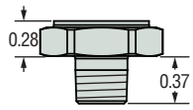
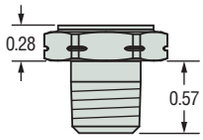
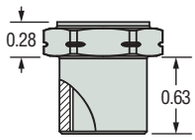
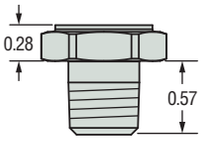
| Pressure Range Bar (PSI) | Proof Pressure (x Full Scale) | | Burst Pressure (x Full Scale) | |
|---|---|---|---|---|
| | 3100 | 3200 | 3100 | 3200 |
| 7-20 (100-300) | 3.00 x FS | 3.00 x FS | 40 x FS | |
| 40-100 (500-1,500) | 2.00 x FS | | 20 x FS | |
| 140-400 (2,000-6,000) | | | 10 x FS | |
| 700 (10,000) | | | > 4,000 bar (60,000 PSI) | |
| 1,000 (15,000) | | 2.50 x FS | | |
| 1,800 (25,000) | 1.40 x FS | 1.70 x FS | | |
| 2,200 (30,000) | | — | | |

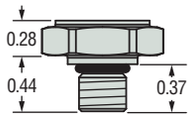
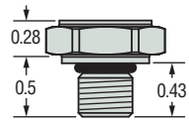
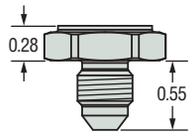
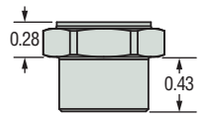
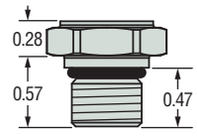
## Pressure Ports

### BSP & Metric

| | G1/4″-19 External w/O-Ring | G1/4″-19 A Integral Face Seal | M12 x 1.5 w/O-Ring | M12x1.5 HP w/O-Ring | M14 x 1.5 w/O-Ring |
|---|---|---|---|---|---|
| Dimensions in MM |   |   |   |   |   |
| **Fitting Code** | **01** | **05** | **OL** | **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 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 w/O-Ring | 7/16″-20 UNF w/O-Ring | 7/16″-20 UNF with 37° Flare | SAE 4 Female 7/16″ Schraeder | 9/16-18 "Heavy Duty" w/O-Ring |
|---|---|---|---|---|---|
| Dimensions 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.



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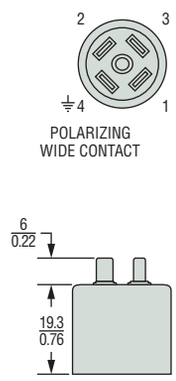
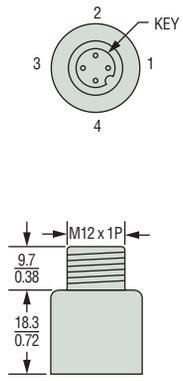
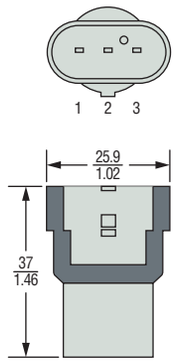
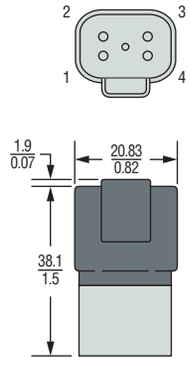
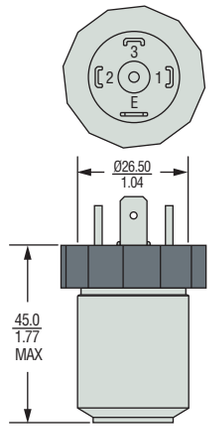
UCKFIELD, EAST SUSSEX, TN22 1QG, UK
http://www.appeng.co.uk
email: info@appeng.co.uk
TEL: + 44 1825 764737
FAX: + 44 1825 768330

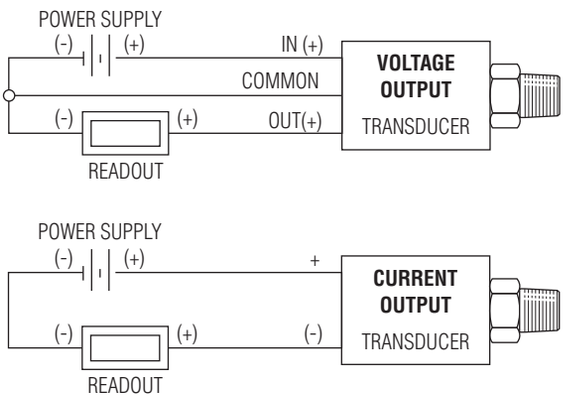
## Electrical Connector

| DIN 9.4 mm | M12 x 1P | Amp Superseal 1.5 | Deutsch DT04-4P | DIN 43650A |
|---|---|---|---|---|
|  |  |  |  |  |



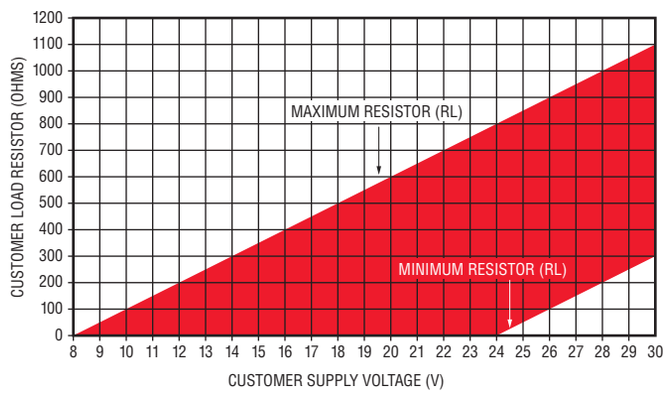
| Pin # | Code R Voltage Mode | Code R Current Mode | Code E Voltage Mode | Code E Current Mode | Code 6 Voltage Mode | Code 6 Current Mode | Code 8 Voltage Mode | Code 8 Current Mode | Code G Voltage Mode | Code G Current Mode |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | $V_{supply}$ | Supply | $V_{supply}$ | Supply | $V_{out}$ | No Connect | Ground | Return | $V_{supply}$ | Supply |
| 2 | Ground | Return | $V_{out}$ | No Connect | Ground | Return | $V_{supply}$ | Supply | Ground | Return |
| 3 | $V_{out}$ | No Connect | Ground | Return | $V_{supply}$ | Supply | No Connect | No Connect | $V_{out}$ | No Connect |
| 4 | No Connect | No Connect | No Connect | No Connect | — | — | $V_{out}$ | No Connect | No Connect | No Connect |

## Wiring Diagram





## Current Output Mode (Load Resistor Range)





Minimum Resistor Value = 50∗(+V – 24) for +V > 24V
Maximum Resistor Value = 50∗(+V – 8) for +V > 8V



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http://www.appeng.co.uk
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TEL: + 44 1825 764737
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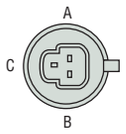
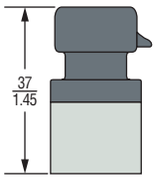
## Cable-Out Types

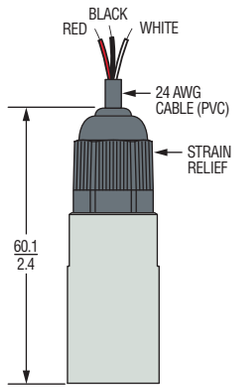
**Packard MetriPack**



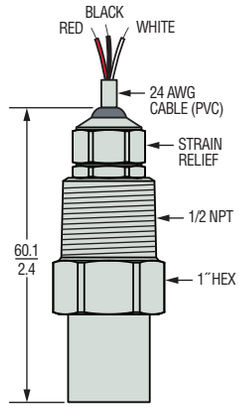




| Code 9 | | |
|---|---|---|
| Pin ID | Voltage Mode | Current Mode |
| C | $V_{out}$ | No Connect |
| A | Ground | Return |
| B | $V_{supply}$ | Supply |
| — | — | — |

**Cable**




**1/2″ Conduit Connection**




| Code F | | | Code 3 | |
|---|---|---|---|---|
| Wire Color | Voltage Mode | Current Mode | Voltage Mode | Current Mode |
| Red | Supply | Supply | Supply | Supply |
| Black | Ground | Return | Ground | Return |
| White | $V_{out}$ | No Connect | $V_{out}$ | 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 |



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http://www.appeng.co.uk
email: info@appeng.co.uk
TEL: + 44 1825 764737
FAX: + 44 1825 768330

## How to Order

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

**3100 B 200PG 02 B R 01**

Series
- **3100 / 3200** - Pressure Transducer

Output
- **B** - 4-20 mA
- **N** - 0.5-4.5 V
- **T** - 0.5-4.5 V Ratiometric
- **C** - 1-6 V
- **R** - 0-5 V
- **H** - 1-5 V
- **S** - 0-10 V

Pressure Range - bar
- **0007G** - 0-7 barG
- **0010G** - 0-10 barG
- **0016G** - 0-16 barG
- **0025G** - 0-25 barG
- **0040G** - 0-40 barG
- **0060G** - 0-60 barG
- **0100G** - 0-100 barG
- **0160S** - 0-160 barS
- **0250S** - 0-250 barS
- **0400S** - 0-400 barS
- **0600S** - 0-600 barS
- **1000S** - 1,000 barS[2]
- **1600S** - 1,600 barS[2]

Pressure Range – psi
- **100PG** - 0-100 psiG
- **150PG** - 0-150 psiG
- **200PG** - 0-200 psiG
- **300PG** - 0-300 psiG
- **500PG** - 0-500 psiG
- **600PG** - 0-600 psiG
- **750PG** - 0-750 psiG
- **10CPG** - 0-1,000 psiG
- **15CPG** - 0-1,500 psiG
- **20CPS** - 0-2,000 psiS
- **25CPS** - 0-2,500 psiS
- **30CPS** - 0-3,000 psiS
- **35CPS** - 0-3,500 psiS
- **40CPS** - 0-4,000 psiS
- **50CPS** - 0-5,000 psiS
- **60CPS** - 0-6,000 psiS
- **75CPS** - 0-7,500 psiS
- **10KPS** = 0-10,000 psiS
- **15KPS** - 0-15,000 psiS[2]
- **20KPS** - 0-20,000 psiS[2]
- **25KPS** - 0-25,000 psiS[2]

Pressure Port[4]
- **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)

Electrical Connection
- **E** - M12 x 1P (4-Pin)
- **F** - Cable version[3]
- **G** - Large DIN
- **R** - Industrial DIN 9.4 mm
- **3** - 1/2˝ NPT Male Conduit[3]
- **6** - Amp - Superseal 1.5 Series
- **8** - Deutsch DT04-4P
- **9** - Packard MetriPack

Optional Restrictor (3200 only)
- **R** - Restrictor
- **0** - No Restrictor

Cable Length (For electrical connections F & 3 only)
- **00** - No Cable
- **01** - 1 metre
- **02** - 2 metres
- **03** - 3 metres
- **04** - 4 metres
- **05** - 5 metres

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



APPLICATIONS ENGINEERING LTD
16 HORSTED SQUARE, BELLBROOK INDUSTRIAL ESTATE,
UCKFIELD, EAST SUSSEX, TN22 1QG, UK
http://www.appeng.co.uk
email: info@appeng.co.uk
TEL: + 44 1825 764737
FAX: + 44 1825 768330