

# BTE2000 / PTE2000 Series

## Precision stainless steel pressure transmitters



### FEATURES

- 0...0.35 to 0...35 bar,  
0...5 to 0...500 psi gage<sup>1</sup>
- For corrosive media in harsh environments
- 1...6 V or 4...20 mA output
- Field interchangeable
- All welded stainless steel diaphragm construction

### MEDIA COMPATIBILITY

Wetted materials:  
stainless steel 1.4404 (316)

Housing:  
stainless steel 1.4305 (303), protection class IP 65  
(according to DIN EN 60529) respectively NEMA 4X<sup>1</sup>

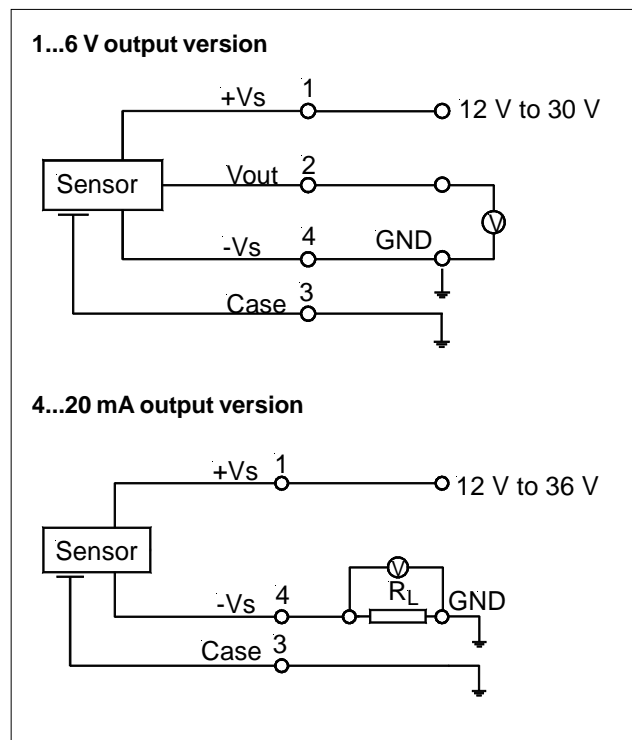


### SPECIFICATIONS<sup>8,9</sup>

#### Maximum ratings

|  |                    |
|--|--------------------|
| Supply voltage (reverse polarity protection) |                    |
| BTE(M)/PTE2...G1...                          | 12...30 V          |
| BTE(M)/PTE2...G4... <sup>2</sup>             | 12...36 V          |
| Maximum load current                         |                    |
| BTE(M)/PTE2...G1... only                     | 20 mA              |
| Temperature limits                           |                    |
| Storage                                      | -55 to 100°C       |
| Operating                                    | -40 to 100°C       |
| Media  | -40 to 125°C       |
| Compensated                                  | 0 to 70°C          |
| Humidity limits                              | 0 - 100 %RH        |
| Vibration (5 to 500 Hz)                      | 2 g                |
| Mechanical shock                             | 50 g               |
| Proof pressure <sup>3</sup>                  |                    |
| BTEM2350...                                  | 1000 mbar          |
| PTE2005...                                   | 15 psi             |
| all others                                   | 2 x rated pressure |

### ELECTRICAL CONNECTION



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### COMMON PERFORMANCE CHARACTERISTICS<sup>1</sup>

| Characteristics  |                                      | Min. | Typ.  | Max. | Unit   |
|--|--------------------------------------|------|-------|------|--------|
| Operating pressure   | BTEM2350...                          | 0    |       | 0.35 | bar    |
|  | BTE2001...                           | 0    |       | 1    |        |
|  | BTE2002...                           | 0    |       | 2    |        |
|  | BTE2005...                           | 0    |       | 5    |        |
|  | BTE2010...                           | 0    |       | 10   |        |
|  | BTE2020...                           | 0    |       | 20   |        |
|  | BTE2025...                           | 0    |       | 25   |        |
|  | BTE2035...                           | 0    |       | 35   |        |
|  | PTE2005...                           | 0    |       | 5    | psig   |
|  | PTE2015...                           | 0    |       | 15   |        |
|  | PTE2030...                           | 0    |       | 30   |        |
|  | PTE2100...                           | 0    |       | 100  |        |
|  | PTE2300...                           | 0    |       | 300  |        |
|  | PTE2500...                           | 0    |       | 500  |        |
| Repeatability  |                                      |      | ±0.1  |      | %FSO   |
| Long term stability <sup>5</sup>                           |                                      |      | ±0.2  |      |        |
| Output noise   |                                      |      | ±0.04 |      |        |
| Non-linearity and hysteresis (BSL) <sup>6</sup>            |                                      |      | ±0.2  | ±0.5 |        |
| Thermal effects <sup>4</sup><br>(combined offset and span) | (0 to 70°C) BTEM.../PTE2005...       |      | ±0.6  | ±2.5 |        |
|  | (-40 to 0°C, 70 to 100°C) all others |      | ±0.5  | ±1.5 |        |
| Frequency response (10 to 90 %)                            |                                      |      | 1     |      | ms     |
| Power supply rejection                                     | Offset                               |      | 0.05  |      | %FSO/V |
|  | Span                                 |      | 0.03  |      |        |

### INDIVIDUAL PERFORMANCE CHARACTERISTICS<sup>1</sup>

**1...6 V output version** (unless otherwise noted,  $V_s = 15\text{ V}$ ,  $t_{amb} = 25^\circ\text{C}$ ,  $R_L > 100\text{ k}\Omega$ )

| Characteristics             | Min. | Typ. | Max. | Unit     |
|-----------------------------|------|------|------|----------|
| Zero pressure offset        | 0.90 | 1.00 | 1.10 | V        |
| Full scale span             | 4.95 | 5.00 | 5.05 |          |
| Full scale output           |      | 6.0  |      |          |
| Output impedance            |      |      | 50   | $\Omega$ |
| Power consumption (no load) |      | 100  |      | mW       |

**4...20 mA output version** (unless otherwise noted,  $V_s = 15\text{ V}$ ,  $t_{amb} = 25^\circ\text{C}$ ,  $R_L = 100\text{ }\Omega$ )

| Characteristics                            | Min. | Typ. | Max. | Unit |
|--|------|------|------|------|
| Zero pressure offset                       | 3.9  | 4.0  | 4.1  | mA   |
| Full scale span                            | 15.9 | 16.0 | 16.1 |      |
| Full scale output                          |      | 20.0 |      |      |
| Power consumption ( $I_L = 20\text{ mA}$ ) |      | 260  |      | mW   |

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### Specification notes:

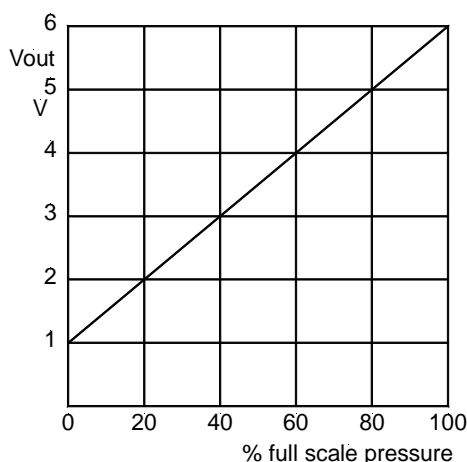
1. IP 65 protection is given when the connector is locked. For proper function the gage port is vented to the atmosphere through the connector/cable assembly. Thus the cable end must have access to the ambient pressure.
2. The minimum supply voltage is directly proportional to the load resistance seen by the transmitter. For more details see the load limitation diagram.
3. Proof pressure is the maximum pressure which may be applied without causing damage to the sensing element.
4. Thermal effects tested and guaranteed from 0 to 70°C relative to 25°C. All specifications shown are relative to 25°C.
5. Long term stability is the change in output after one year or 1 million pressure cycles.
6. Non-linearity refers to the **Best Straight Line** fit measured for offset, full scale span and 1/2 full scale span.
7. Tests are in accordance with EN61000-6-2, April 1999.
8. CE-labelling is in accordance with 89/336/EEC.
9. The pressure transmitters must not be used as safety accessories according to article 1, 2.1.3 of the directive 97/23/EC.

### ELECTROMAGNETIC CAPABILITY<sup>7</sup>

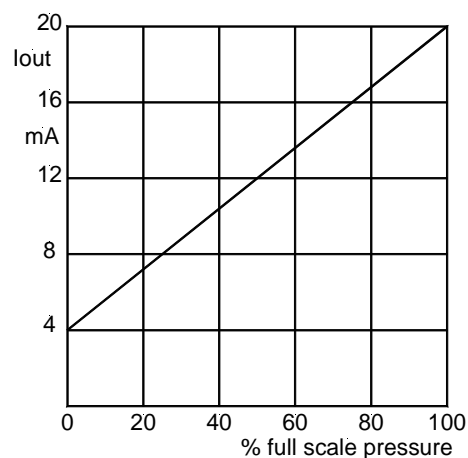
|  | Test conditions  | Criterion | Interference |
|--|--|-----------|--------------|
| Radiated, radio frequency electromagnetic field immunity (RFI)       | EN61000-4-3: Grade 3<br>10 V/m, 80 MHz to 1000 MHz<br>80 % AMC (1 kHz) | A         | <1 % FSO     |
| Electrical fast transient / burst immunity (EFT)                     | EN61000-4-4: Grade 3<br>±2 kV  | B         | <1 % FSO     |
| Electrostatic discharge immunity test (ESD)                          | EN61000-4-2: Grade 4<br>±8 kV, contact discharge                       | B         | <1 % FSO     |
| Immunity to conducted disturbances induced by radio-frequency fields | EN61000-4-6: Grade 3<br>0,15 to 80 MHz<br>10 V, 80 % AMC (1 kHz)       | A         | <1 % FSO     |

### OUTPUT CHARACTERISTIC

#### 1...6 V output version



#### 4...20 mA output version



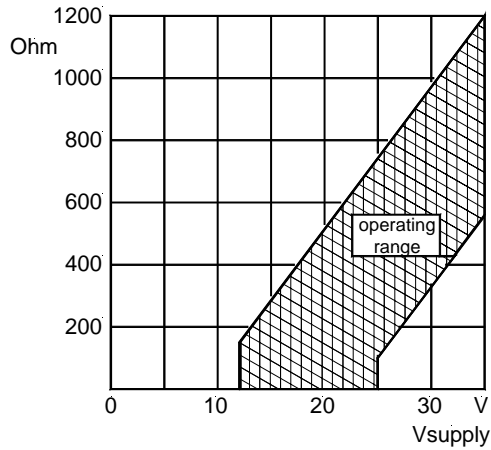
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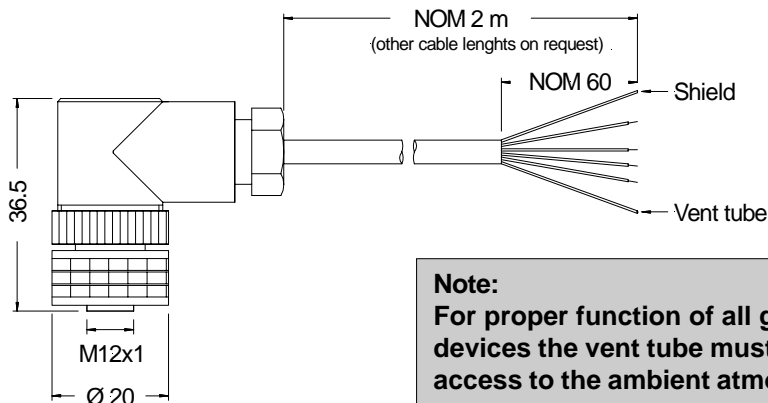
### LOAD LIMITATION

4...20 mA output version



### RECOMMENDED ACCESSORY (included in delivery)

ZK000101: Connector/cable assembly (different cable lengths available)



| PIN CONNECTION |                  |
|----------------|------------------|
| Pin            | Flying lead end  |
| 1              | Brown            |
| 2              | Green            |
| 3              | White and shield |
| 4              | Yellow           |

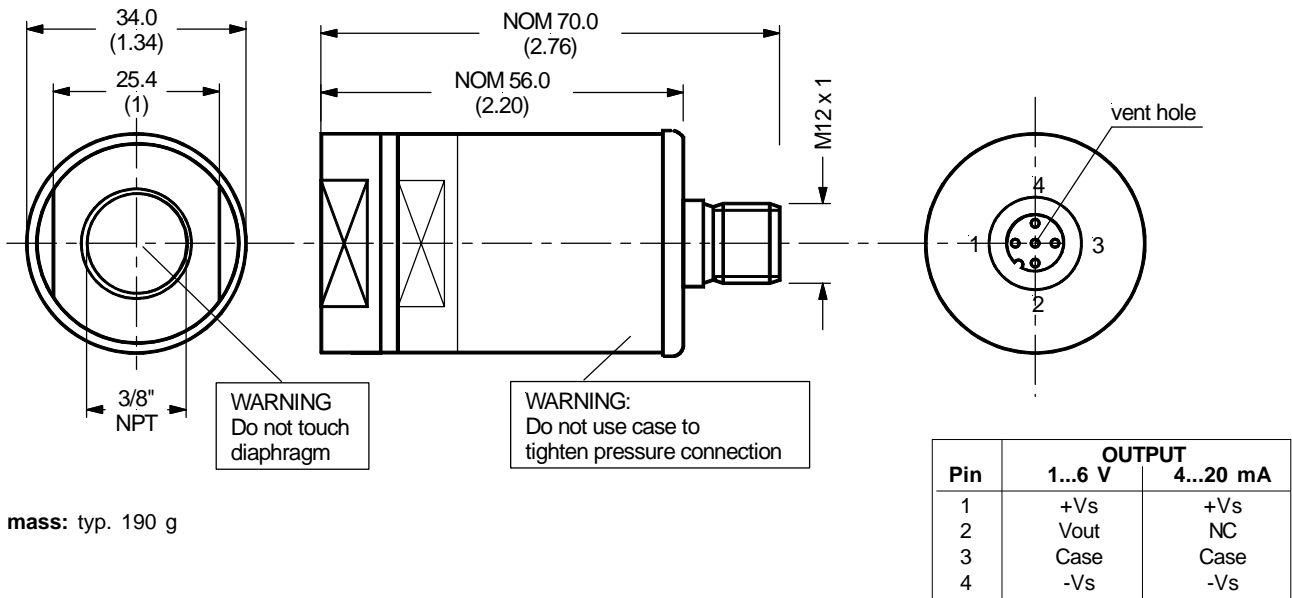
dimensions in mm

# BTE2000 / PTE2000 Series

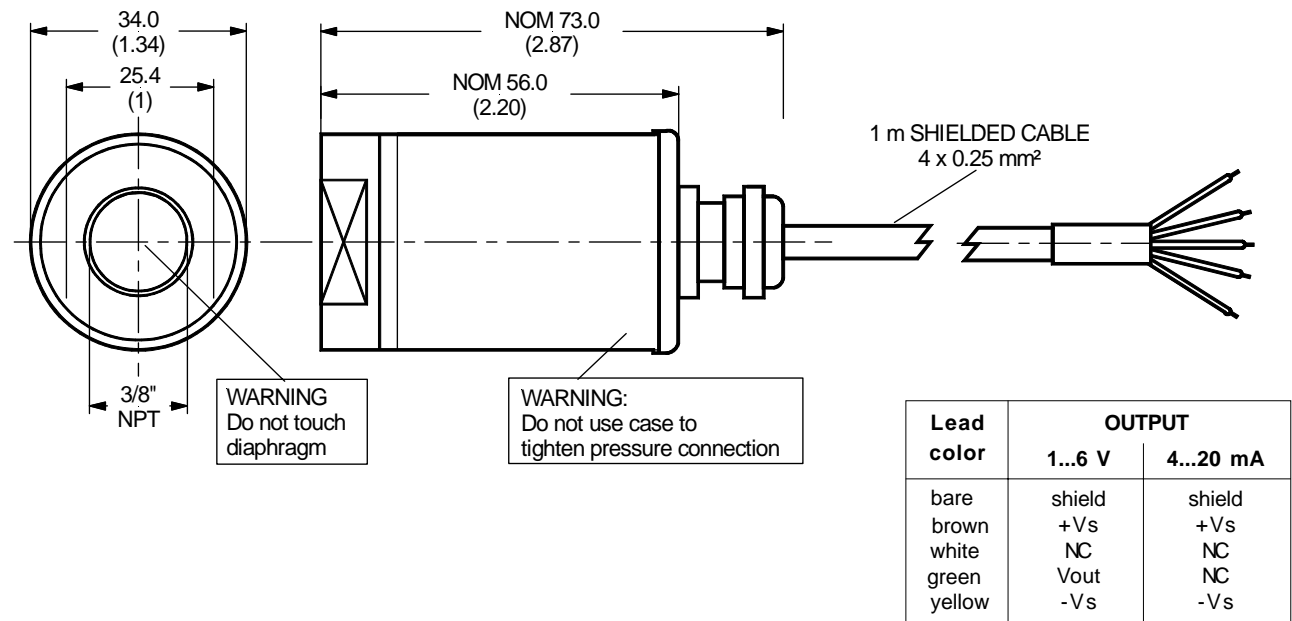
## Precision stainless steel pressure transmitters

### OUTLINE DRAWING

#### Connector version



#### Cable version



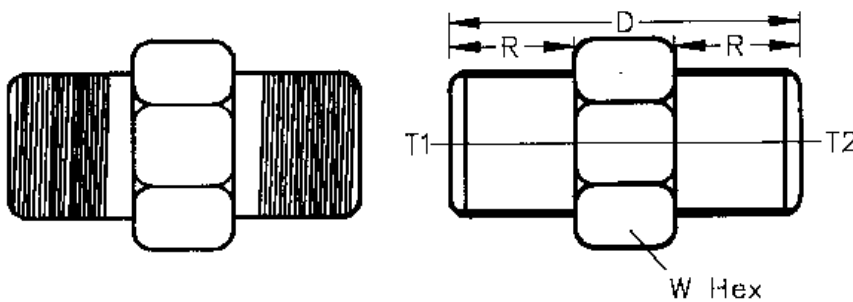
dimensions in mm (inches)

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### OPTIONAL PIPE FITTING DRAWINGS

| Part No. | Thread     |            | W<br>Hex | D       |      | R    |      | Maximum<br>working<br>pressure<br>(psig) |
|----------|------------|------------|----------|---------|------|------|------|--|
|          | Male<br>T1 | Male<br>T2 |          | in.     | mm.  | in.  | mm.  |  |
|          | SFIT62     | 3/8 NPT    |          | 1/8 NPT | 3/4  | 1.27 | 32.3 |  |
| SFIT64   | 3/8 NPT    | 1/4 NPT    | 3/4      | 1.45    | 37.0 | 0.56 | 14.2 | 7200                                     |
| SFIT68   | 3/8 NPT    | 1/8 BSP    | 3/4      | 1.45    | 37.0 | 0.56 | 14.2 | 7200                                     |



**Material:**  
stainless steel 316

### ORDERING INFORMATION

| Operating pressure | Part number       |               |                   |               |
|--------------------|-------------------|---------------|-------------------|---------------|
|                    | 1...6 V output    |               | 4...20 mA output  |               |
|                    | Connector version | Cable version | Connector version | Cable version |
| 0 - 0.35 bar       | BTEM2350G1A       | BTEM2350G1C   | BTEM2350G4A       | BTEM2350G4C   |
| 0 - 1 bar          | BTE2001G1A        | BTE2001G1C    | BTE2001G4A        | BTE2001G4C    |
| 0 - 2 bar          | BTE2002G1A        | BTE2002G1C    | BTE2002G4A        | BTE2002G4C    |
| 0 - 5 bar          | BTE2005G1A        | BTE2005G1C    | BTE2005G4A        | BTE2005G4C    |
| 0 - 10 bar         | BTE2010G1A        | BTE2010G1C    | BTE2010G4A        | BTE2010G4C    |
| 0 - 20 bar         | BTE2020G1A        | BTE2020G1C    | BTE2020G4A        | BTE2020G4C    |
| 0 - 25 bar         | BTE2025G1A        | BTE2025G1C    | BTE2025G4A        | BTE2025G4C    |
| 0 - 35 bar         | BTE2035G1A        | BTE2035G1C    | BTE2035G4A        | BTE2035G4C    |
| 0 - 5 psig         | PTE2005G1A        | PTE2005G1C    | PTE2005G4A        | PTE2005G4C    |
| 0 - 15 psig        | PTE2015G1A        | PTE2015G1C    | PTE2015G4A        | PTE2015G4C    |
| 0 - 30 psig        | PTE2030G1A        | PTE2030G1C    | PTE2030G4A        | PTE2030G4C    |
| 0 - 100 psig       | PTE2100G1A        | PTE2100G1C    | PTE2100G4A        | PTE2100G4C    |
| 0 - 300 psig       | PTE2300G1A        | PTE2300G1C    | PTE2300G4A        | PTE2300G4C    |
| 0 - 500 psig       | PTE2500G1A        | PTE2500G1C    | PTE2500G4A        | PTE2500G4C    |

**Note:** Other pressure ranges and options are widely available.  
Please contact your nearest Sensortechincs sales representative.

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