

BTE2000 / PTE2000 Series

Precision stainless steel pressure transmitters



FEATURES

- 0...0.35 to 0...35 bar,
0...5 to 0...500 psi gage¹
- 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 4X¹



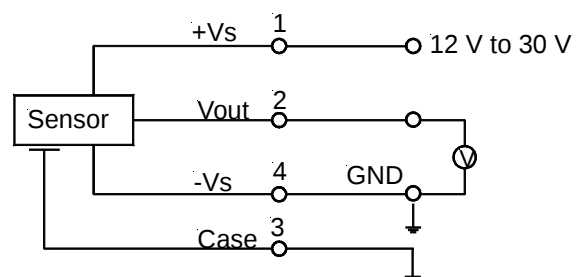
SPECIFICATIONS^{8,9}

Maximum ratings

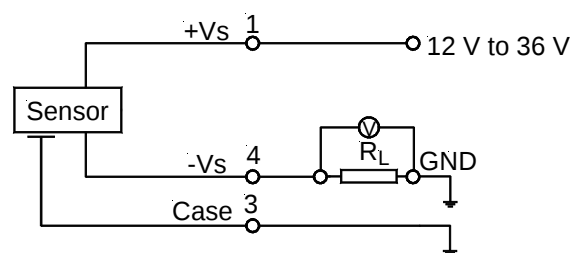
Supply voltage (reverse polarity protection)	
BTE(M)/PTE2...G1...	12...30 V
BTE(M)/PTE2...G4... ²	12...36 V
Maximum load current	
BTE(M)/PTE2...G1... only	20 mA
Temperature limits	
Storage	-55 to 100°C
Operating	-40 to 100°C
Media	-40 to 125°C
Compensated	0 to 70°C
Humidity limits	0 - 100 %RH
Vibration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

ELECTRICAL CONNECTION

1...6 V output version



4...20 mA output version



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COMMON PERFORMANCE CHARACTERISTICS¹

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 ⁵			±0.2		
Output noise			±0.04		
Non-linearity and hysteresis (BSL) ⁶			±0.2	±0.5	
Thermal effects ⁴ (combined offset and span)	(0 to 70°C) BTEM.../PTE2005...		±0.6	±2.5	
	all others		±0.5	±1.5	
	(-40 to 0°C, 70 to 100°C)		±2.0		
Frequency response (10 to 90 %)			1		ms
Power supply rejection	Offset		0.05		%FSO/V
	Span		0.03		

INDIVIDUAL PERFORMANCE CHARACTERISTICS¹

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

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	Ω
Power consumption (no load)		100		mW

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

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:

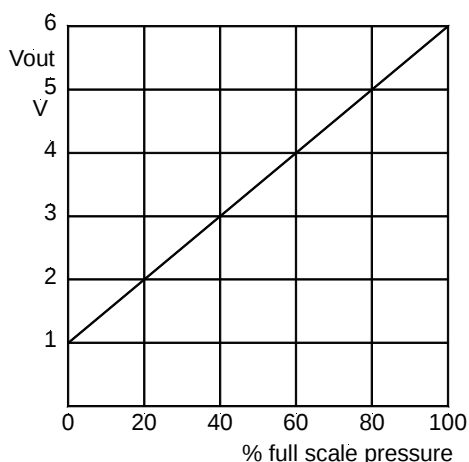
1. IP 65 protection is given when the connector is locked. For proper function the gage port is vented to the atmosphere through the connector/cable assembly. Thus the cable end must have access to the ambient pressure.
2. The minimum supply voltage is directly proportional to the load resistance seen 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 CAPABILITY⁷

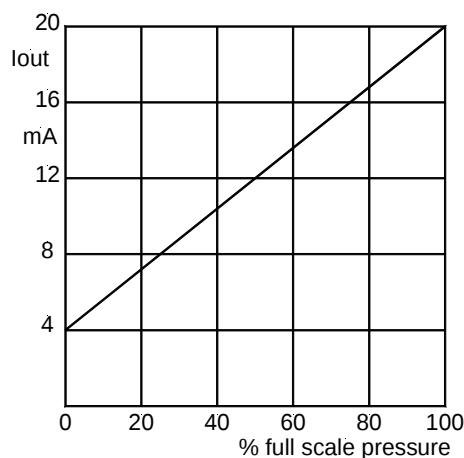
	Test conditions	Criterion	Interference
Radiated, radio frequency electromagnetic field immunity (RFI)	EN61000-4-3: Grade 3 10 V/m, 80 MHz to 1000 MHz 80 % AMC (1 kHz)	A	<1 % FSO
Electrical fast transient / burst immunity (EFT)	EN61000-4-4: Grade 3 ±2 kV	B	<1 % FSO
Electrostatic discharge immunity test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

OUTPUT CHARACTERISTIC

1...6 V output version



4...20 mA output version

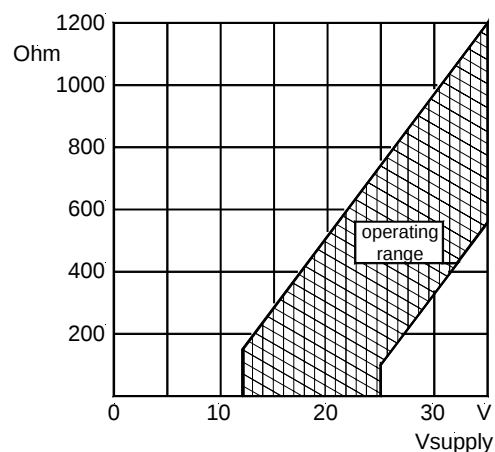


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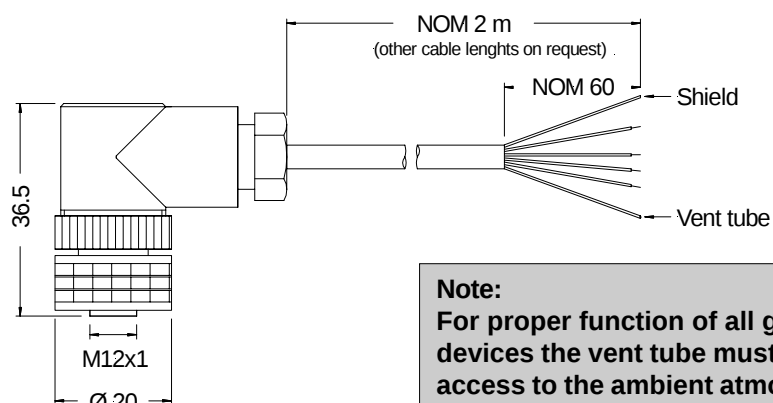
LOAD LIMITATION

4...20 mA output version



RECOMMENDED ACCESSORY (included in delivery)

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



Note:
For proper function of all gage devices the vent tube must have access to the ambient atmosphere.

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

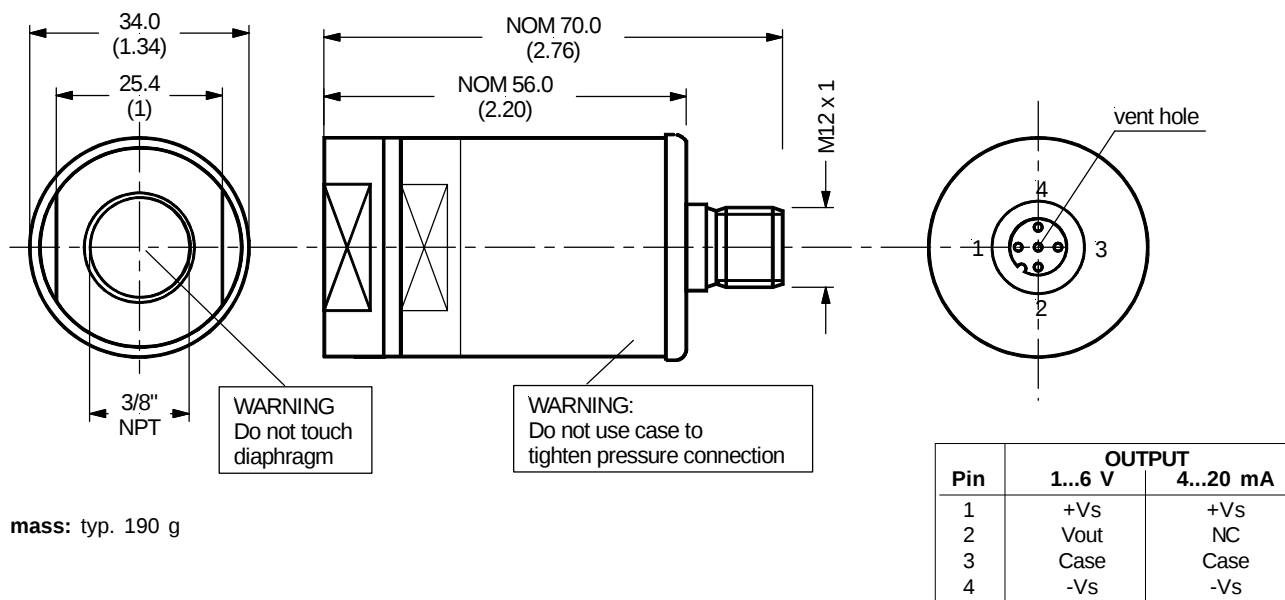
dimensions in mm

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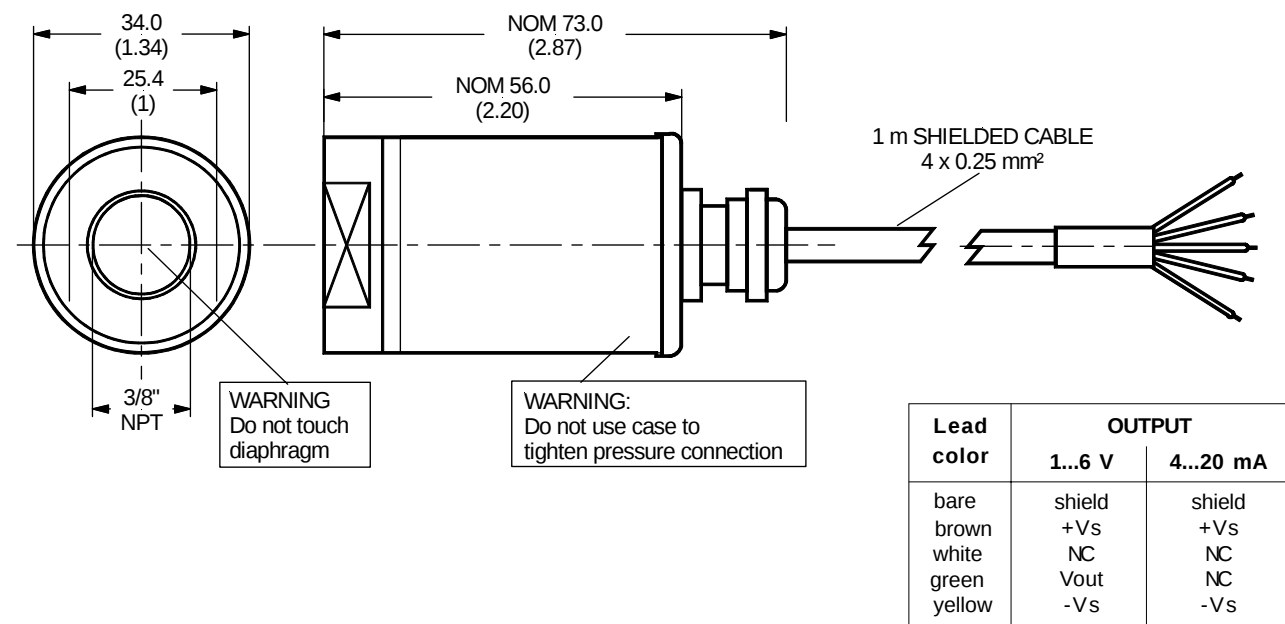
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OUTLINE DRAWING

Connector version



Cable version



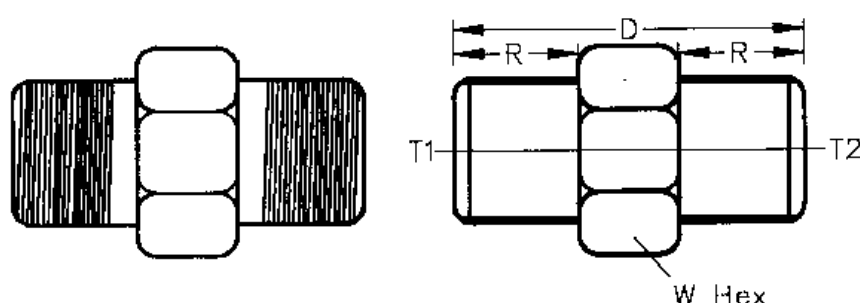
dimensions in mm (inches)

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OPTIONAL PIPE FITTING DRAWINGS

Part No.	Thread		W Hex	D		R		Maximum working pressure (psig)
	Male T1	Male T2						
				in.	mm.	in.	mm.	
SFIT62	3/8 NPT	1/8 NPT	3/4	1.27	32.3	0.56/0.38	14.2/9.7	7200
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 Sensorteknics sales representative.

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