BTE2000 / PTE2000 Series

Precision stainless steel pressure transmitters

FEATURES

- **0...0.35 to 0...35 bar, 0...5 to 0...500 psi gage[1]**
- **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[1]

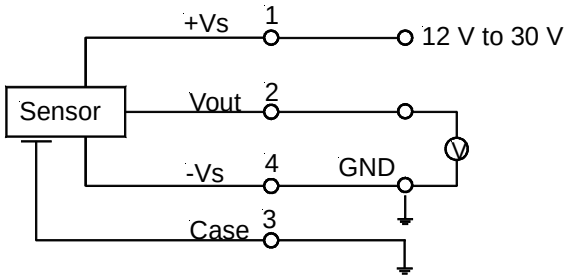
SPECIFICATIONS[8,9]

Maximum ratings

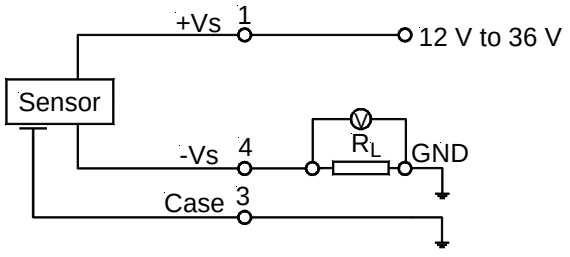
Supply voltage (reverse polarity protection)	
BTE(M)/PTE2...G1...	12...30 V
BTE(M)/PTE2...G4...[2]	12...36 V
Maximum load current	
BTE(M)/PTE2...G1... only	20 mA
Temperature limits	
Storage	-55...100°C
Operating	-40...100°C
Media	-40...125°C
Compensated	0...70°C
Humidity limits	0...100 %RH
Vibration (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



COMMON PERFORMANCE CHARACTERISTICS[1]

Characteristics			Min.	Typ.	Max.	Unit
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 CHARACTERISTICS[1]

1...6 V output version (V_S = 15 V, t_{amb} = 25°C, R_L > 100 kOhm)

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 (V_S = 15 V, t_{amb} = 25°C, R_L = 100 Ohm)

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 mA)		260		mW

Specification notes:

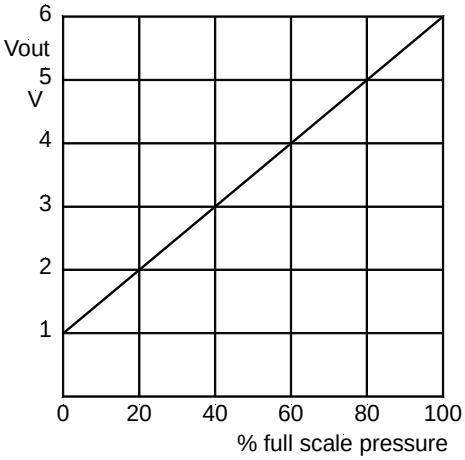
1. IP 65 protection is given when the connector is locked. For proper function the gage port is vented to the atmosphere through the connector/cable assembly. Thus the cable end must have access to the ambient pressure.
2. The minimum supply voltage is directly proportional to the load resistance seen 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 **B**est **S**traight **L**ine fit measured for offset, full scale span and 1/2 full scale span.
7. Tests are in accordance with EN 61000-6-2.
8. CE-labelling is in accordance with 2004/108/EC.
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[7]

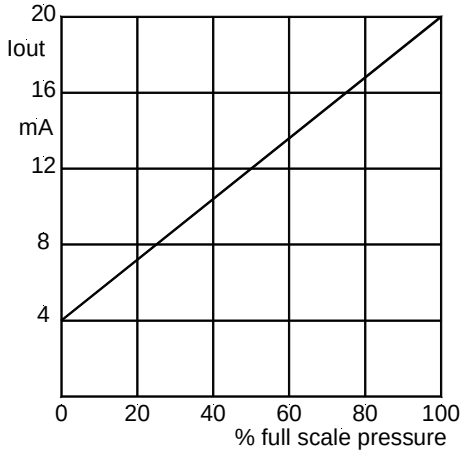
	Test conditions		Criterion	Interference
Radiated, radio frequency electromagnetic field immunity (RFI)	EN61000-4-3:	10 V/m, 80 to 1000 MHz 80 % AMC (1 kHz)	A	<1 %FSO
Electrical fast transient / burst immunity (EFT)	EN61000-4-4:	±2 kV	B	<1 %FSO
Electrostatic discharge immunity test (ESD)	EN61000-4-2:	±4 kV, contact discharge ±8 kV, air discharge	B	<1 %FSO
Immunity to conducted disturbances induced by radio-frequency fields	EN61000-4-6:	0.15 to 80 MHz 10 V, 80 % AMC (1 kHz)	A	<1 %FSO

OUTPUT CHARACTERISTIC

1...6 V output version

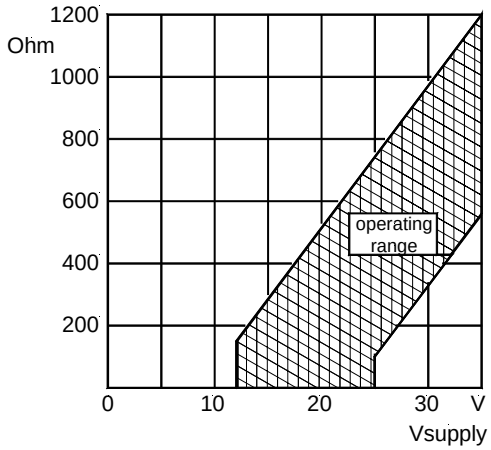


4...20 mA output version



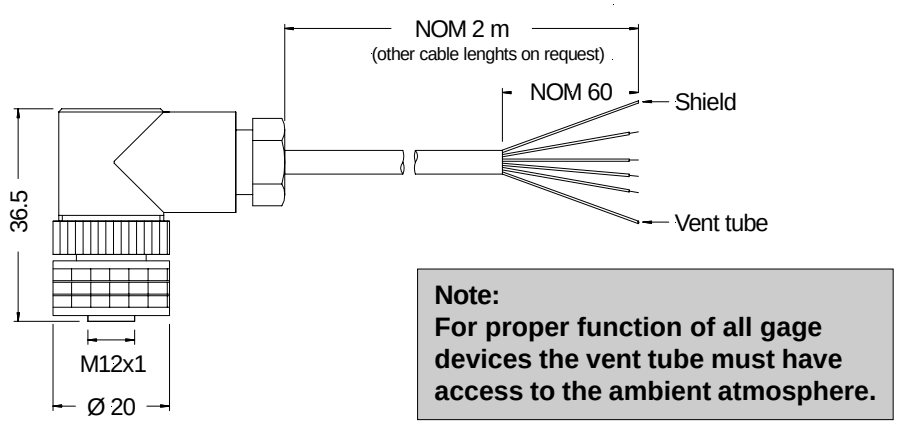
LOAD LIMITATION

4...20 mA output version



RECOMMENDED ACCESSORY (included in delivery)

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



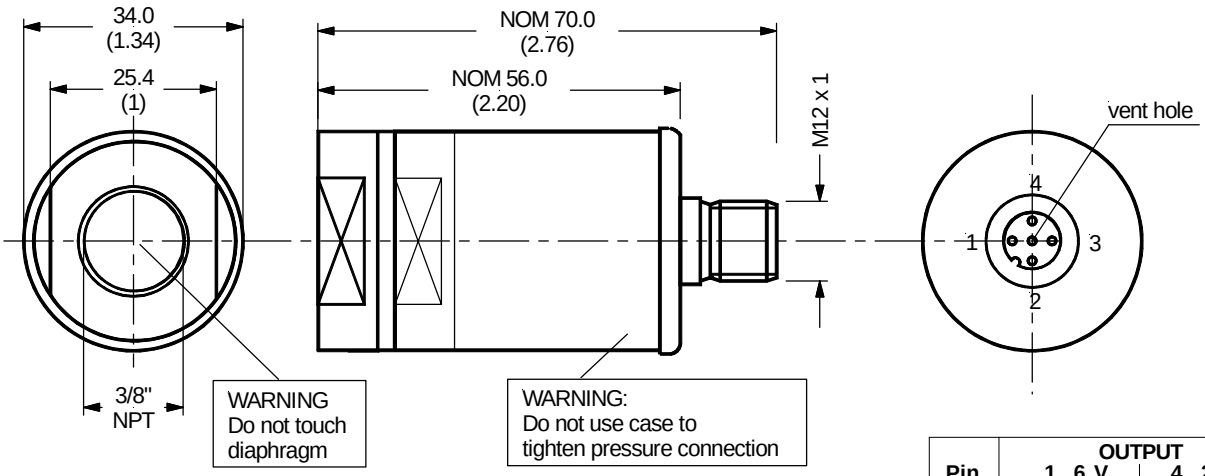
PIN CONNECTION	
Pin	**Flying lead end**
1	Brown
2	Green
3	White and shield
4	Yellow

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

dimensions in mm

OUTLINE DRAWING

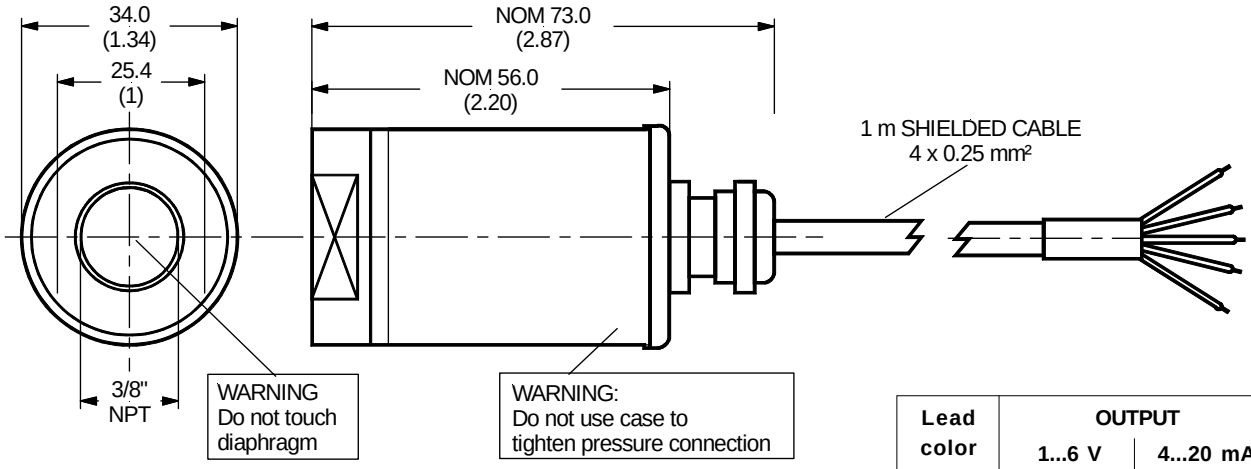
Connector version



Pin	OUTPUT 1...6 V	OUTPUT 4...20 mA
1	+Vs	+Vs
2	Vout	NC
3	Case	Case
4	-Vs	-Vs

mass: typ. 190 g

Cable version



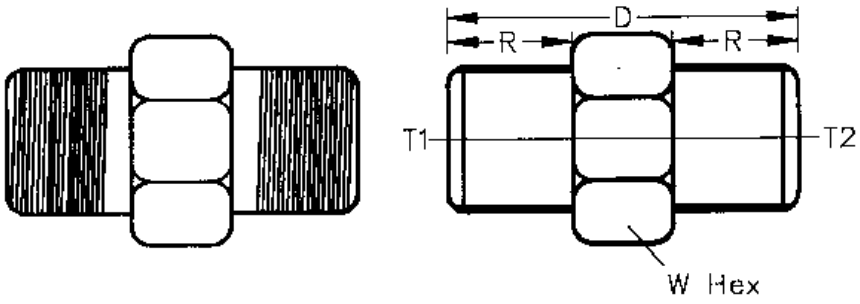
Lead color	OUTPUT 1...6 V	OUTPUT 4...20 mA
bare	shield	shield
brown	+Vs	+Vs
white	NC	NC
green	Vout	NC
yellow	-Vs	-Vs

mass: typ. 190 g

dimensions in mm (inches)

OPTIONAL PIPE FITTING DRAWINGS

Part No.	Thread Male T1	Thread Male T2	W Hex	D in.	D mm.	R in.	R mm.	Maximum working pressure (psig)
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

BTE/PTE (M) 2xxx G x x

Calibration
BTE: mbar/bar calibration
PTE: psi calibration

For mbar ranges only

Pressure range

BTE2000 series
350: 0...350 mbar
001: 0...1 bar
002: 0...2 bar
005: 0...5 bar
010: 0...10 bar
020: 0...20 bar
025: 0...25 bar
035: 0...35 bar

PTE2000 series
005: 0...5 psi
015: 0...15 psi
030: 0...30 psi
100: 0...100 psi
300: 0...300 psi
500: 0...500 psi

Pressure mode
G: gage pressure[1]

Output signal
1: 1...6 V
4: 4...20 mA

Electrical connection
A: Connector version
C: Cable version

Other pressure ranges and options are widely available. Please contact Sensortechnics.

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