BTE6000 - Series

Precision stainless steel pressure transmitters

FEATURES

- **0 ... -1 bar to 0 ... 350 bar gage or absolute**
- **For corrosive media**
- **Flush mount versions**
- **0 - 10 V, 1 ... 6 V, 0 - 20 mA, 4 ... 20 mA output**
- **Field interchangeable**
- **For harsh environments**

Scale: 1cm
1 inch

SERVICE

Pressure inlet: any liquid, gas or vapor compatible with 303 stainless steel.
Housing: 303 stainless steel, protection class IP65 according to DIN40050[1]

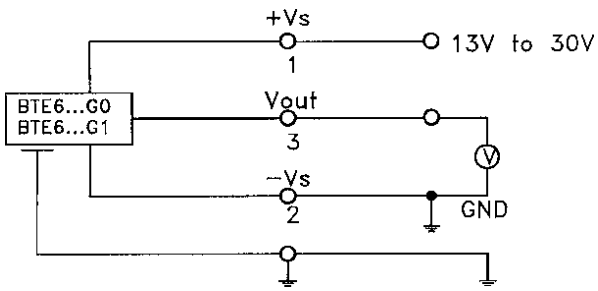
SPECIFICATIONS

Maximum ratings

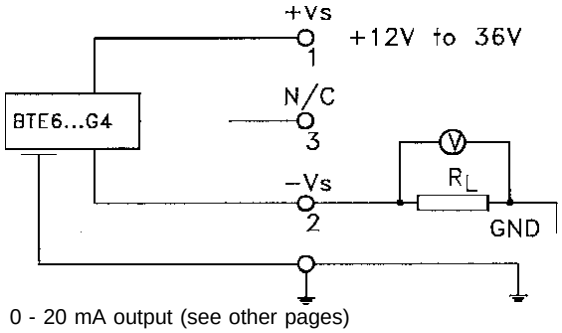
Supply voltage (reverse polarity protection)	
BTE6...G0, BTE6...G1	13 ... 30 V
BTE6...G4, BTE6...G5[2]	12 ... 36 V
Maximum load current	
BTE6...G0, BTE6...G1	10 mA
Temperature limits	
Storage	-55°C to 100°C
Operating	-40°C to 100°C
Compensated	0°C to 70°C
Humidity limits	0 - 95 %RH
Vibration (5 Hz to 500 Hz)	10 g_{RMS}
Mechanical shock	50 g
Proof pressure[3]	2 x rated pressure

ELECTRICAL CONNECTION

0 - 10 V, 1 - 6 V output



4 - 20 mA output



0 - 20 mA output (see other pages)

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COMMON PERFORMANCE CHARACTERISTICS[1]

Characteristics		Min.	Typ.	Max.	Unit
Operating pressure	BTE6001...	-1		1	bar
	BTE6N01...	-1		+1	
	BTE6P01...			0	
	BTE6002...			2	
	BTE6005...			5	
	BTE6010...			10	
	BTE6016...	0		16	
	BTE6035...	0		35	
	BTE6070...	0		70	
	BTE6350...			350	
Thermal effects (0 to 70°C)[4]					%FSO/°C
Offset			0.02	0.05	
Span			0.02	0.05	
Thermal effects (-40°C to 0°C, 70°C to 100°C)					
Offset			0.03		
Span			0.03		
Non-linearity and hysteresis (BSL)[5]			±0.2		%FSO
Repeatability			±0.1		
Long term stability[6]			±0.2		
Output noise (0 < f < 1 kHz)			±0.04		
Response time (10% to 90%)			1		ms
Power supply rejection					%FSO/V
Offset			0.05		
Span			0.05		

INDIVIDUAL PERFORMANCE CHARACTERISTICS[1]

(unless otherwise noted, V_S = 15 V, R_L > 100 kΩ, t_{amb} = 25°C)

0 - 10 V output, BTE6...0

Characteristics		Min.	Typ.	Max.	Unit
Zero pressure offset	BTE6N...	4.85	5.0	5.15	V
	all other	-0.15	0	0.15	
Full scale span[7]	BTE6N...	4.9	5.0	5.1	
	all other	9.9	10.0	10.1	
Output impedance				50	Ω
Power consumption (no load)			100		mW

1 - 6 V output, BTE6...1

Characteristics		Min.	Typ.	Max.	Unit
Zero pressure offset	BTE6N...	3.35	3.5	3.65	V
	all other	0.85	1.0	1.15	
Full scale span[7]	BTE6N...	2.4	2.5	2.6	
	all other	4.9	5.0	5.1	
Full scale output			6.0		Ω
Output impedance				50	mW
Power consumption (no load)			100		

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INDIVIDUAL PERFORMANCE CHARACTERISTICS[1]

(unless otherwise noted, V_S = 15 V, R_L = 100 Ω, t_{amb} = 25°C)

4 - 20 mA output, BTE6...4

Characteristics		Min.	Typ.	Max.	Unit
Zero pressure offset	BTE6N... all other	11.85 3.85	12.0 4.0	12.15 4.15	mA
Full scale span[7]	BTE6N... all other	7.9 15.9	8.0 16.0	8.1 16.1	
Output impedance			0.1		Ω
Power consumption (I_L = 20 mA)			260		mW

0 - 20 mA output, BTE6...5

Characteristics		Min.	Typ.	Max.	Unit
Zero pressure offset	BTE6N... all other	9.85 -0.15	10.0 0	10.15 0.15	mA
Full scale span[7]	BTE6N... all other	9.9 19.9	10.0 20.0	10.1 20.1	
Output impedance			0.1		Ω
Power consumption (I_L = 20 mA)			260		mW

Specification Notes (for all devices)

1. The package is a all-sealed housing. IP65 protection is given when the connector is locked with a rubber washer. 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 diagrams.
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°C to 70°C relative to 25°C. All specifications shown are relative to 25°C.
5. Non-linearity refers to the **B**est **S**traight **L**ine fit measured for offset, full scale span and 1/2 full scale span.
6. Change after one year or 1 million pressure cycles.
7. Span is the arithmetic difference in transmitter output signal measured at zero pressure and the maximum operating pressure.
8. Test are in accordance with EN50082-2, Jan. 93.

ELECTROMAGNETIC CAPABILITY[8]

	Test conditions		Interference
Radiated, radio frequency electromagnetic field immunity (RFI)	IEC801-3:	Grade 3 10V/m, 1MHz to 1000 MHz unmodulated and 80% modulated	<1% FSO
Electrical fast transient/burst immunity (EFT)	IEC 801-4:	Grade 3 ±2 kV	<1% FSO
Electrostatic discharge immunity (ESD)	IEC 801-2:	Grade 3 ±8 kV, contact discharge	<1% FSO

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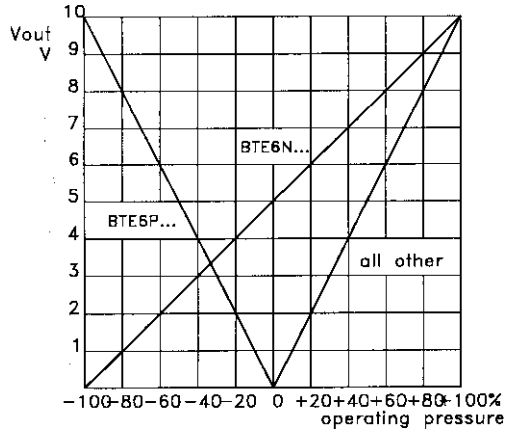
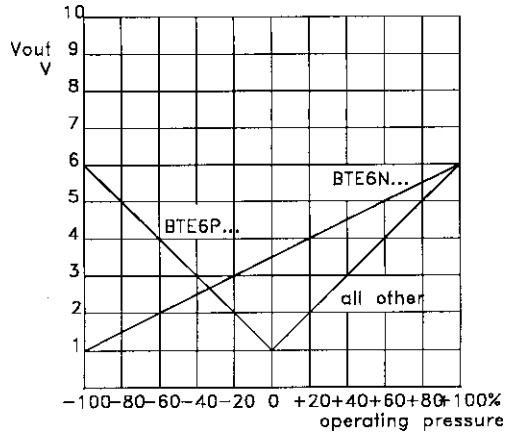
OUTPUT CHARACTERISTICS

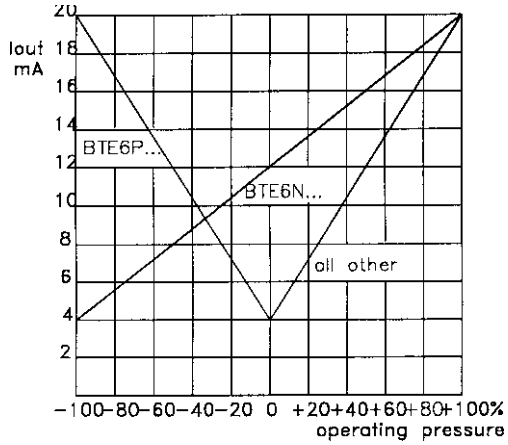
0 - 10 V output version



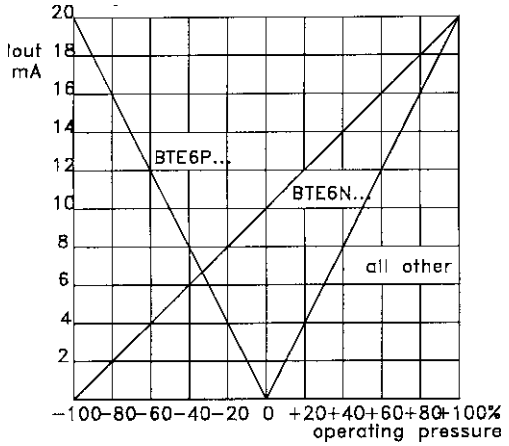
1 - 6 V output version



4 - 20 mA output version

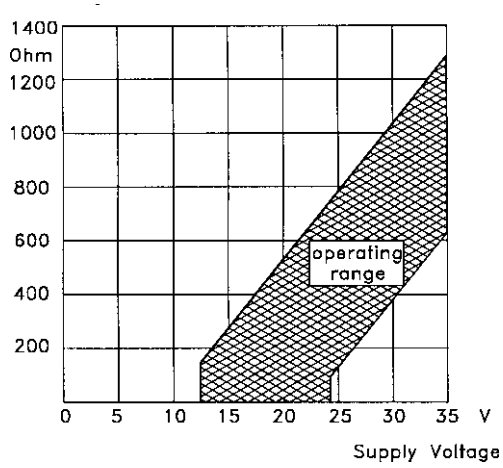


0 - 20 mA output version



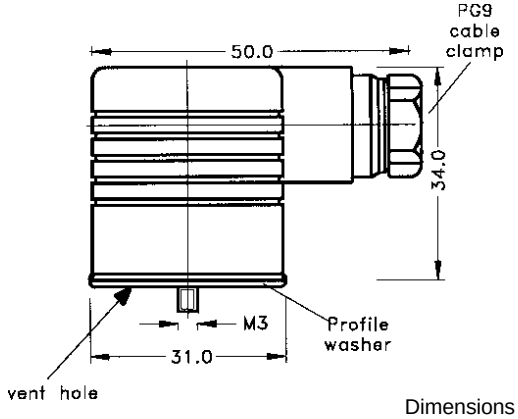
LOAD LIMITATION

0 - 20 mA output version
4 - 20 mA output version



Recommended plug (DIN43650A)

Plug and profile washer included in delivery !



Dimensions in mm

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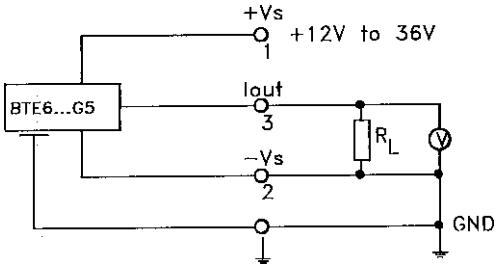
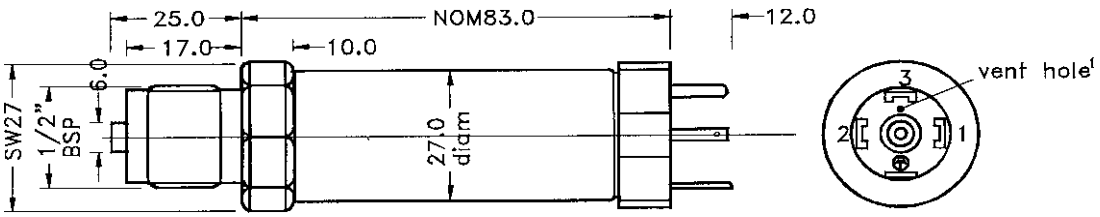
ELECTRICAL CONNECTION

0 - 20 mA output version

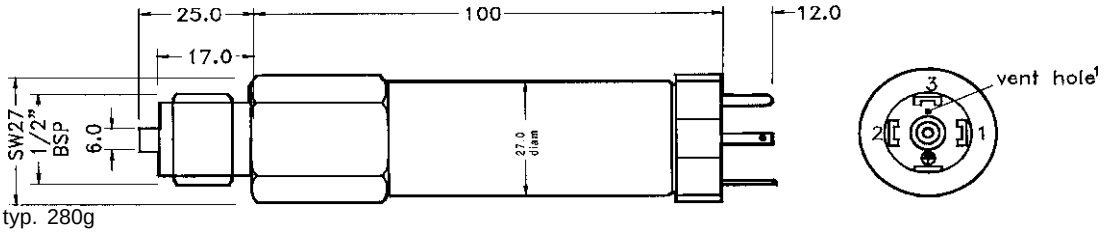


OUTLINE DRAWING BTE6... (up to 16 bar devices)



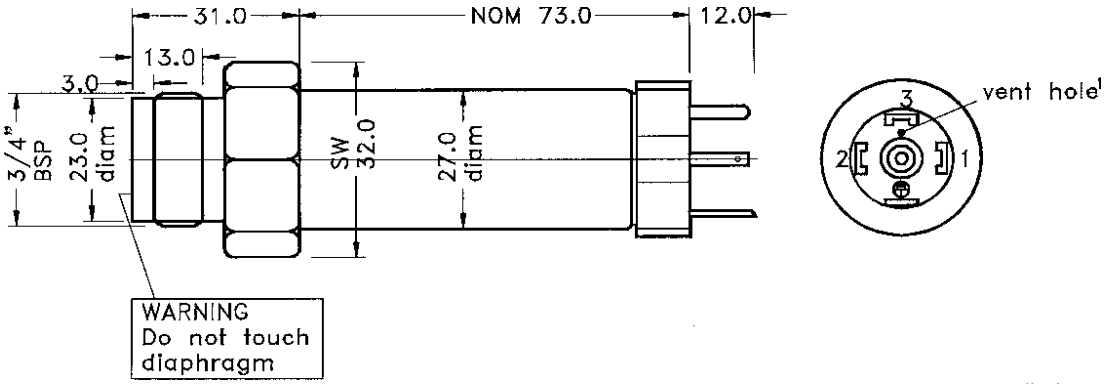
Mass: typ. 190g

OUTLINE DRAWING BTE6... (for devices from 35 bar to 350 bar)



Mass: typ. 280g

OUTLINE DRAWING BTE6...-FL



Mass: typ. 190g

All Dimensions in mm

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ORDERING INFORMATION

Operating pressure	0 - 10 V output		1 - 6 V output	
	$^1/_2$" manometer thread	flush mount	$^1/_2$" manometer thread	flush mount
0 to 1 bar absolute	BTE6001A0	BTE6001A0-FL	BTE6001A1	BTE6001A1-FL
0 to 2 bar absolute	BTE6002A0	BTE6002A0-FL	BTE6002A1	BTE6002A1-FL
0 to 5 bar absolute	BTE6005A0	BTE6005A0-FL	BTE6005A1	BTE6005A1-FL
0 to 10 bar absolute	BTE6010A0	BTE6010A0-FL	BTE6010A1	BTE6010A1-FL
0 to 16 bar absolute	BTE6016A0	BTE6016A0-FL	BTE6016A1	BTE6016A1-FL
0 to 35 bar absolute	BTE6035A0	---	BTE6035A1	---
0 to 70 bar absolute	BTE6070A0	---	BTE6070A1	---
0 to 350 bar absolute	BTE6350A0	---	BTE6350A1	---
0 to 35 bar sealed gage	BTE6035G0	---	BTE6035G1	---
0 to 70 bar sealed gage	BTE6070G0	---	BTE6070G1	---
0 to 350 bar sealed gage	BTE6350G0	---	BTE6350G1	---
0 to 1 bar gage	BTE6001G0	BTE6001G0-FL	BTE6001G1	BTE6001G1-FL
0 to -1 bar gage	BTE6P01G0	BTE6P01G0-FL	BTE6P01G1	BTE6P01G1-FL
0 to ±1 bar gage	BTE6N01G0	BTE6N01G0-FL	BTE6N01G1	BTE6N01G1-FL
0 to 2 bar gage	BTE6002G0	BTE6002G0-FL	BTE6002G1	BTE6002G1-FL
0 to 5 bar gage	BTE6005G0	BTE6005G0-FL	BTE6005G1	BTE6005G1-FL
0 to 10 bar gage	BTE6010G0	BTE6010G0-FL	BTE6010G1	BTE6010G1-FL
0 to 16 bar gage	BTE6016G0	BTE6016G0-FL	BTE6016G1	BTE6016G1-FL

Operating pressure	4 - 20 mA output		0 - 20 mA output	
	$^1/_2$" manometer thread	flush mount	$^1/_2$" manometer thread	flush mount
0 to 1 bar absolute	BTE6001A4	BTE6001A4-FL	BTE6001A5	BTE6001A5-FL
0 to 2 bar absolute	BTE6002A4	BTE6002A4-FL	BTE6002A5	BTE6002A5-FL
0 to 5 bar absolute	BTE6005A4	BTE6005A4-FL	BTE6005A5	BTE6005A5-FL
0 to 10 bar absolute	BTE6010A4	BTE6010A4-FL	BTE6010A5	BTE6010A5-FL
0 to 16 bar absolute	BTE6016A4	BTE6016A4-FL	BTE6016A5	BTE6016A5-FL
0 to 35 bar absolute	BTE6035A4	---	BTE6035A5	---
0 to 70 bar absolute	BTE6070A4	---	BTE6070A5	---
0 to 350 bar absolute	BTE6350A4	---	BTE6350A5	---
0 to 35 bar sealed gage	BTE6035G4	---	BTE6035G5	---
0 to 70 bar sealed gage	BTE6070G4	---	BTE6070G5	---
0 to 350 bar sealed gage	BTE6350G4	---	BTE6350G5	---
0 to 1 bar gage	BTE6001G4	BTE6001G4-FL	BTE6001G5	BTE6001G5-FL
0 to -1 bar gage	BTE6P01G4	BTE6P01G4-FL	BTE6P01G5	BTE6P01G5-FL
0 to ±1 bar gage	BTE6N01G4	BTE6N01G4-FL	BTE6N01G5	BTE6N01G5-FL
0 to 2 bar gage	BTE6002G4	BTE6002G4-FL	BTE6002G5	BTE6002G5-FL
0 to 5 bar gage	BTE6005G4	BTE6005G4-FL	BTE6005G5	BTE6005G5-FL
0 to 10 bar gage	BTE6010G4	BTE6010G4-FL	BTE6010G5	BTE6010G5-FL
0 to 16 bar gage	BTE6016G4	BTE6016G4-FL	BTE6016G5	BTE6016G5-FL

January 1998/102

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