

# Industrial Pressure Transducer

## BOT Series

### Features

- Heavy-duty, rugged construction with 316 and 17-4 stainless steel for superior corrosion resistance
- Up to 23X rating over-pressure protection to protect against pressure hammering and burst pressures
- Advanced digital electronics reduce the effects of EMI/EMC according to IEC 61000 standards and provide excellent longterm stability
- Thermally compensated sensors ensure high accuracy over wide temperature ranges to mitigate thermal errors on sensitive components
- Modular design platform to support fully customizable pressure ranges, mechanical or electrical connections, and other application-specific requirements

### Applications

- General industrial equipment
- Pumps and compressors
- Mobil hydraulic equipment
- Off-highway vehicles
- Integration equipment systems
- Medical gas systems
- Hydrogen systems

### General Specifications

Sensor element	Ceramic sensor (-C) Piezoresistive sensor (-P) Welded stainless steel (-W)
Supply	BT2: 10 VDC BT3: 7 to 33 VDC BT4: 4.5 to 5.5 VDC ratiometric BT5: 8 to 33 VDC BT6: 12 to 33 VDC
Output	BT2: 100 mv/V BT3: 1 to 5 VDC BT4: 0.5 to 4.5 VDC ratiometric BT5: 4 to 20 mA BT6: 0 to 10 VDC
Pressure Range	0 to 400 bar (-C Class) 0 to 600 bar (-P Class) 0 to 200 bar (-W Class)
Operating Temperature	-40 to 100 °C (-40 to 212 °F)
Compensated Temperature Range	-P, -W Class: -18 to 74 °C (0 to 165 °F) -C Class: 25 to 85 °C (77 to 185 °F)
Accuracy (BFSL@25°C)	-P, -W Class: ± 0.25% FSO -C Class: ± 0.5% FSO
Proof Pressure	2X Pressure range
Zero Offset	± 1% FSO (P,W) ± 2% FSO (C)
Span Offset	± 1% FSO
Lifecycle	10M pressure cycles
Long-Term Stability	± 0.2% FSO (per year, typical)
Response Time	1-5ms Typical
No-Load Supply Current	15 mA maximum consumed



Exactly What OEMs Want...Without the Wait

### Environmental Specifications

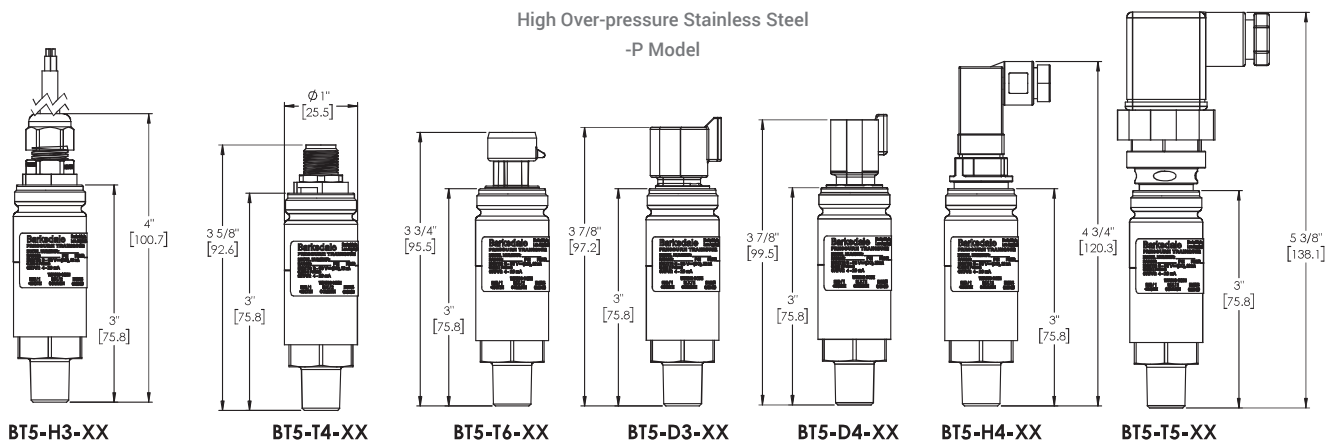
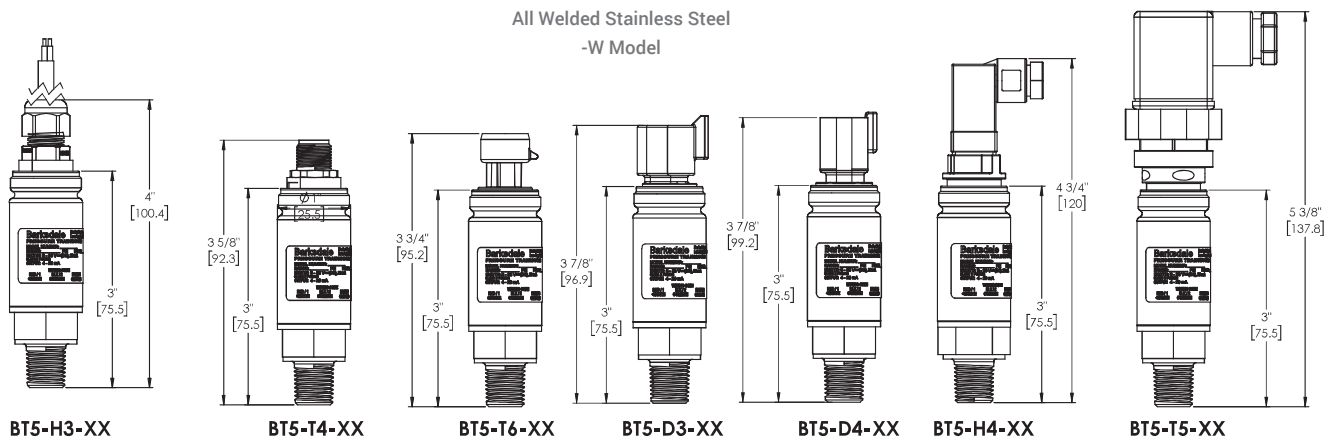
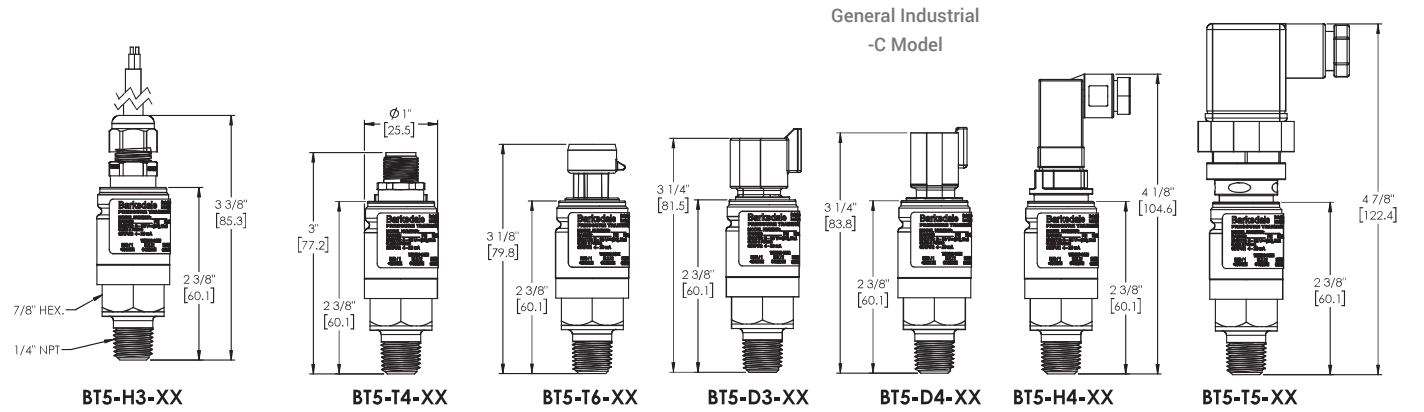
Shock	50 g's, 11 ms, MIL-STD 202 Method 213, Cond. G	
Vibration	15 g's, 10 to 2,000 Hz, MIL-STD 202	
Storage Temperature	-40 to 125 °C (-40 to 257 °F)	
Media Temperature	-40 to 125 °C (-40 to 257 °F)	
Wetted Materials	17-4 PH SS, NBR (-P Class) 316 SS, ceramic, FKM (-C Class) 316 SS all welded construction (-W Class)	
Ingress Protection	IP67 (-H3, -T4) IP65 (-H4, -T5, -T6, -D3, -D4)	
Reverse Polarity and Miswiring Protection	Yes	
Enclosure	NEMA 4X	
Approvals	UL 508, UL 61010-1	
Compliance	REACH, RoHS, CE	
Weight	450 g (approximately)	
EMC/ESD Compliance	IEC 61000-4-2: Electrostatic discharge (ESD) IEC 61000-4-3: Radiated immunity IEC 61000-4-4: Burst (fast transient) IEC 61000-4-5: Surge IEC 61000-4-6: Conducted RF IEC 61326-1: CISPR 16-1 and CISPR 16-2	
Media Compatibility	Medical	Medical gases* (O <sub>2</sub> , air, CO <sub>2</sub> , N <sub>2</sub> ), instrument air
	Pumps	Water, hydraulic fluid
	Compressors	Compressed air
	HVAC	Refrigerants (R-410A)
	Transportation	Coolants, diesel fuel, engine oil*
Hydrogen	Consult factory	

\* Requires Z1 Option

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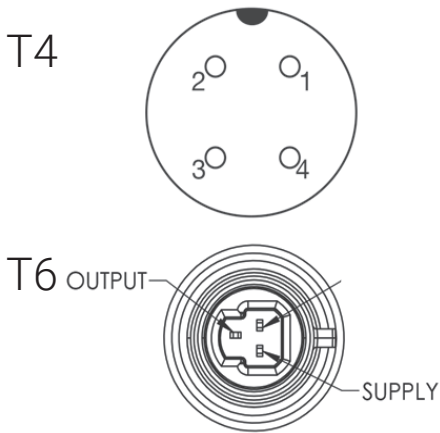
### Sizes and Dimensions



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## Pin Out Diagram



## Wiring Code

Connection	Voltage Output				
	H3	H4	T4	T5	Q50 (T4 European ASAM)
+ Excitation	Red (rot)	1	1	1	1
Common	Black (schwarz)	2	2	2	3
+ Output	White (weiß)	3	3	3	2
Case Ground	Drain	4	4	4	4

Connection	Current Output				
	H3	H4	T4	T5	Q50 (T4 European ASAM)
+ Excitation	Red (rot)	1	1	1	1
- Excitation	Black (schwarz)	2	2	2	3
Not Used	White (weiß)	3	3	3	2
Case Ground	Drain	4	4	4	4

Deutsch Connector PIN					
Connection	Voltage Output		Connection	Current Output	
	D3	D4		D3	D4
+ Excitation	PIN A/1	PIN A/1	+ Excitation	PIN A/1	PIN A/1
- Excitation	PIN B/2	PIN B/2	- Excitation	PIN B/2	PIN B/2
Voltage Output	PIN C/3	PIN C/3	Earth Ground	PIN C/3	PIN C/3
Earth Ground	N/A	PIN D/4	N/A	N/A	N/A

## Order Code

### Base Model

BT2	100mV full scale output (10mV/V)
BT3	1-5 VDC analog output
BT4	0.5-4.5 VDC ratiometric analog output
BT5	4-20 mA analog output
BT6	0-10 VDC analog output

### Electrical Connection

-H3	PVC jacketed cable 24 AWG (1 meter)
-H4 <sup>1</sup>	Mini-DIN 43650 Type "C" [mating connector NOT included]
-T4 <sup>1</sup>	M12 circular connector
-T5 <sup>1</sup>	Standard DIN 43650 Type 'A' [mating connector NOT included]
-T6 <sup>1</sup>	Aptiv/Delphi Metripack 150 Series
-D3 <sup>1</sup>	3-Pin Deutsch Connector - DT04-3P
-D4 <sup>1</sup>	4-Pin Deutsch Connector - DT04-4P
Q50	M12 circular connector pinning acc. To European ASAM standard, [without UL approval; mating connector not included]

### Pressure Range<sup>5</sup>

-27 <sup>2</sup>	0-1 psi	0-0.1 BAR
-25 <sup>2</sup>	0-5 psi	0-0.3 BAR
-38 <sup>2</sup>	0-7 psi	0-0.5 BAR
-01 <sup>2,5</sup>	0-15 psi	0-1 BAR
-39 <sup>5</sup>	0-25 psi	0-1.6 BAR
-21 <sup>5</sup>	0-30 psi	0-2 BAR
-40 <sup>5</sup>	0-36 psi	0-2.5 BAR
-03 <sup>5</sup>	0-50 psi	0-3.5 BAR
-22 <sup>5</sup>	0-60 psi	0-4 BAR
-41 <sup>5</sup>	0-87 psi	0-6 BAR
-04 <sup>5</sup>	0-100 psi	0-7 BAR
-05 <sup>5</sup>	0-150 psi	0-10 BAR
-06 <sup>5</sup>	0-200 psi	0-14 BAR
-42 <sup>5</sup>	0-230 psi	0-16 BAR
-07 <sup>5</sup>	0-300 psi	0-20 BAR
-43	0-360 psi	0-25 BAR
-08	0-500 psi	0-34.5 BAR
-44	0-580 psi	0-40 BAR
-45	0-725 psi	0-50 BAR
-46	0-870 psi	0-60 BAR
-10	0-1000 psi	0-69 BAR
-11 <sup>3</sup>	0-1500 psi	0-100 BAR
-12 <sup>3</sup>	0-2000 psi	0-138 BAR
-47 <sup>3</sup>	0-2300 psi	0-160 BAR
-13 <sup>3</sup>	0-3000 psi	0-200 BAR
-48 <sup>3</sup>	0-3600 psi	0-250 BAR
-14 <sup>3</sup>	0-4000 psi	0-300 BAR
-15 <sup>3</sup>	0-5000 psi	0-345 BAR
-16 <sup>3</sup>	0-6000 psi	0-400 BAR
-17 <sup>2,3</sup>	0-7500 psi	0-520 BAR
-36 <sup>2,3</sup>	0-9000 psi	0-600 BAR

### Pressure Unit and Type

G	PSI - Sealed gauge pressure (standard)
A <sup>4</sup>	PSI - Absolute pressure (requires piezoresistive sensor / code P)
BG	Bar - Gauge pressure
BA <sup>4</sup>	Bar - Absolute pressure (requires piezoresistive sensor / code P)

### Process Connection

Blank	1/4" NPT male
-P3	7/16-20 UNF male (JIC 37°)
-P9	G1/4 male (gasket seal)
-P2	7/16-20 SAE #4 ORB
-P7	1/8" NPT male

### Sensor

C	±0.5% FSO
P	±0.25% FSO
W	±0.25% FSO

### Options

Blank	Standard
Z1	Cleaned for oxygen service
	Custom Voltage Output
01	1-6 VDC Output
02	0.5 to 4.5 VDC Output (Non-Ratiometric)
Z17	Larger pressure port orifice for pressure ranges greater than 100 bar
A	+6 ft cable
B	+10 ft cable
C	+15 ft cable
SXXY	Special pressure ranges; consult factory
Q1-Q999	Custom and proprietary options; consult factory
U	UL Approved
Q50	M12 Wiring pinout per European ASAM standard – with UL needs to be in combination with T4 and suffix -U

### Example

BT5 -T5 -11 BG -P9 C

<sup>1</sup>) Mating connector not included

<sup>2</sup>) Only available with -P model accuracy

<sup>3</sup>) High pressure models includes built-in surge dampener with 0.03 in (0,76 mm) diameter orifice for pressure spike protections.

Add -Z17 option for larger pressure orifice 0.125 in (3,1 mm) opening.

<sup>4</sup>) Only available on pressure ranges options from 15 psi (1 bar) to 300 psi (20 bar) pressure ports.

<sup>5</sup>) Available as absolute pressure, only in combination with P-model