

Hydrogen Pressure Transducer

BHyT -BoT Series



Features

- ▶ Zero Leakage due to seal-free technology
- ▶ Offers wide operating temperatures -40 °C to +100 °C and water tight IP67 protection and compatibility with demanding media such as H₂ and O₂.
- ▶ The superior EMC protection according to IEC61000 and active temperature compensation ensure consistently high accuracy under the harshest environmental conditions.
- ▶ Has the ability to measure pressure ranges from 0-700 bar (0-10,000 psi)
- ▶ DNV approved

Applications

- ▶ Hydrogen Fuel Cell
- ▶ Electrolyzers



Technical Data

Supply (Class II power supply)	BT3: 7 to 33 VDC BT4: 4,5 to 5,5 VDC ratiometric BT5: 8 to 33 VDC BT6: 12 to 33 VDC
Output	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 40 bar (0 to 580 psi) /-W Class 0 to 700 bar (0 to 10,000 psi) /-M Class
Operating Temperature	-40 °C to 100 °C (-40 °F to 212 °F)
Compensated Temperature Range	-10 °C to 70 °C (14 °F to 158 °F)
Accuracy (BFSL@25°C)	± 0,25% FSO (W), ± 0,50% FSO (M)
Proof Pressure	2X Typical (Consult factory for specific pressure ranges)
Zero Offset	± 1% FSO
Span Offset	± 1% FSO
Lifecycle	10M cycles
Long-Term Stability	± 0,2% FSO (per year, typical)
Response Time	For current output < 5 ms, For voltage output < 3 ms
Supply Current	BT3, BT4, BT6 : 15 mA max, BT5 : 22mA max

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 °C ... +100 °C (-40 °F ... + 212 °F)
Media Temperature	-40 °C ... +120 °C (-40 °F ... + 248 °F)
Wetted Materials	316 L stainless steel, gold plating
Ingress Protection	IP67
Enclosure	NEMA 4X
Reverse Polarity	Yes
Approvals	UL 508, UL 61010-1 with class II power supply, DNV
Compliance	REACH, RoHS, CE
Weight	ca.120 gr (4.23 oz)
EMI-EMC Compliance	
IEC 61326-1 CISPR11:	60 dBuV C/47dBuV R
IEC 61000-4-2 ESD:	4k VCD/8kV AD
IEC 61000-4-3 Radiated Immunity:	10 V/m 80 MHz - 1 GHz 3 V/m 1.4 GHz - 2 GHz 1 V/m 2GHz - 2,7 GHz
IEC 61000-4-4 Burst:	2kV power supply 1 kV signal line
IEC 61000-4-5 Surge:	0.5 kV
IEC 61000-4-6 Conducted RF:	3V rms 150 KHz - 80 MHz
Media Compatibility	All common industrial gases and fluids. Compatible with hydrogen media

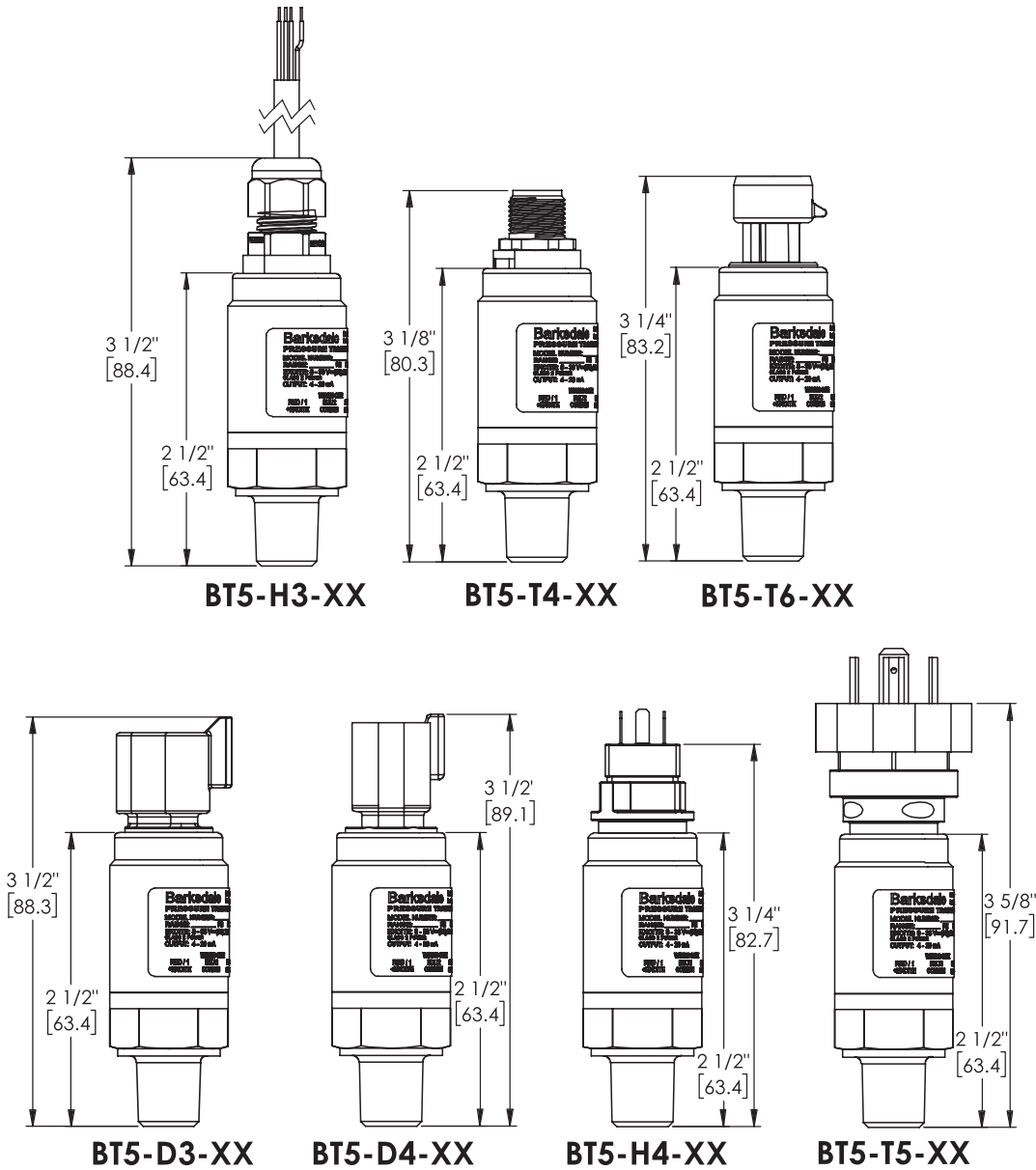
Hydrogen Refuel Transducer

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Electrical Connections

Electrical Signal	Electrical Termination									
	H3		D3/T6		H4/T4/T5		D4		T9	
	Voltage	Current	Voltage	Current	Voltage	Current	Voltage	Current	Voltage	Current
+Excitation	Red	Red	Pin 1	Pin 1	Pin 1	Pin 1	Pin 2	Pin 2	Pin 1	Pin 1
-Excitation (common)	Black	Black	Pin 2	Pin 2	Pin 2	Pin 2	Pin 1	Pin 1	Pin 3	Pin 3
Voltage Output	White	-	Pin 3	-	Pin 3	-	Pin 4	-	Pin 2	-
Case Ground/Draine/ Earth	Drain	Drain	-	Pin 3	Pin 4	Pin 4	Pin 3	Pin 3	Pin 4	Pin 4

SENSOR TYPE - MONOLITHIC
(SHOWN BT5 TYPE)



Order Code

Base Model						
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 ¹	Mini-DIN 43650 Type "C"				
	-T4 ¹	M12 circular connector				
	-T5 ¹	Standard DIN 43650 Type "A"				
	-T6 ¹	Aptiv/Delphi Metripack 150 Series				
	-T9 ¹	T4 with European pinning				
	-D3 ¹	3-Pin Deutsch Connector - DT04-3P				
	-D4 ¹	4-Pin Deutsch Connector - DT04-4P				
	Pressure Range	psi	bar	Pressure Range	psi	bar
	-23 ⁴	0-29.9" of Hg	0-1	-08 ⁴	0-500	0-35
	-27 ⁴	0-1	0-0.1	-44	0-580	0-40
	-25 ⁴	0-5	0-0.3	-45	0-725	0-50
	-38 ⁴	0-7	0-0.05	-46	0-870	0-60
	-01 ⁴	0-15	0-1	-10	0-1000	0-70
	-39 ⁴	0-25	0-1.6	-11	0-1500	0-100
	-21 ⁴	0-30	0-2	-12	0-2000	0-150
	-40 ⁴	0-36	0-2.5	-47	0-2300	0-160
	-03 ⁴	0-50	0-3	-13	0-3000	0-200
	-22 ⁴	0-69	0-4	-48	0-3600	0-250
	-41 ⁴	0-87	0-6	-14	0-4000	0-300
	-04 ⁴	0-100	0-7	-15	0-5000	0-350
	-05 ⁴	0-150	0-10	-16	0-6000	0-400
	-06 ⁴	0-200	0-15	-17	0-7500	0-520
	-42 ⁴	0-230	0-16	-36	0-9000	0-600
	-07 ⁴	0-300	0-20	-18	0-10000	0-700
-43 ⁴	0-360	0-25				
Pressure Unit and Type	G	PSI - Sealed gauge pressure (standard)				
	A ^{4,5}	PSI - Absolute pressure				
	BG	Bar - Sealed gage pressure				
	BA ^{4,5}	Bar - Absolute Pressure (ranges start from 1 Bar)				
	Process Connection					
	Blank	1/4" NPT male				
	-P2	7/16-20 SAE #4 ORB				
	-P3	7/16-20 UNF male (JIC 37°)				
	-P4	1/2" NPT, male				
	-P7	1/8" NPT male				
	-P9	G1/4 male (gasket seal)				
	-P17 ⁶	9/16 - 8 (SAE#6, O-Ring)				
	-P11 ⁶	G1/2 male (gasket seal)				
	-P14 ⁶	7/16-20 UNF female (JIC 37°)				
	-P18 ⁶	M12x1,5				
	-P19 ⁶	G1/4 EN837				
	-P20 ⁶	G1/2 EN837				
	-P22 ⁶	3/4-16 UNF-2A				
	Accuracy					
	-M	±0.5% FSO				
	-W ²	±0.25% FSO				
	Options					
	Blank	Standard				
	-0(x)	Custom Voltage Output / Up to 11VDC. Consult Factory				
		-01 :1 -6 VDC Output				
	-02 : 0,5-4,5 VDC Non-ratiometric					
-Z17 ⁸	Larger pressure port orifice					
-A	+1,8 m cable					
-B	+3,0 m cable					
-C	+4,5 m cable					
-D	Consult Factory for Custom length of free leads					
-SXXY ³	Special pressure ranges Consult Factory					
-Q1...Q999	Custom and proprietary options; consult factory					
-U ⁷	UL approval					
-GD	Gold plated sensor, only available with -W option					
-K	DNV approval					
Example						
BT5	-T5	-11	BG	-P9	-M	

¹⁾ Mating connector not included, consult factory for accessories. ²⁾ Limited to 580 PSI (40 bar); available with gold plated sensor.

³⁾ Add suffix SXXY for special pressure range calibration. XX= significant digits. Y= number of trailing zeros. Example: 130 psi calibration: add -S131.

⁴⁾ With -W option only ⁵⁾ Absolute models available up to 360 psi only

⁶⁾ Consult factory for availability ⁷⁾ cULuS approval with 30 VDC excitation and 55°C max. ambient temperature

⁸⁾ for pressure ranges > 1450 PSI (100 bar)