

# Hydrogen Pressure Transducer

## BHyT -BoT Series



### Features

- ▶ Zero Leakage due to seal-free technology
- ▶ Advanced sensor signal conditioning ASIC ensures high accuracy  $\pm 0,25\%$  and  $\pm 1\%$  zero offset error.
- ▶ Offers wide operating temperatures  $-40\text{ }^{\circ}\text{C}$  to  $+100\text{ }^{\circ}\text{C}$  and water tight IP67 protection and compatibility with demanding media such as H<sub>2</sub> and O<sub>2</sub>.
- ▶ Superior EMI-EMC protection as per IEC standards & thermally compensated sensors ensure high accuracy over wide temperature ranges to mitigate thermal errors on sensitive components.
- ▶ Has the ability to measure pressure ranges from 0-700 bar (0-10,000 psi)

### 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	$-40\text{ }^{\circ}\text{C}$ to $100\text{ }^{\circ}\text{C}$ ( $-40\text{ }^{\circ}\text{F}$ to $212\text{ }^{\circ}\text{F}$ )
Compensated Temperature Range	$-10\text{ }^{\circ}\text{C}$ to $70\text{ }^{\circ}\text{C}$ ( $14\text{ }^{\circ}\text{F}$ to $158\text{ }^{\circ}\text{F}$ )
Accuracy (BFSL@25°C)	$\pm 0,25\%$ FSO (W), $\pm 0,50\%$ FSO (M)
Proof Pressure	2X Typical (Consult factory for specific pressure ranges)
Zero Offset	$\pm 1\%$ FSO
Span Offset	$\pm 1\%$ FSO
Lifecycle	10M cycles
Long-Term Stability	$\pm 0,2\%$ 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	$-40\text{ }^{\circ}\text{C}$ ... $+100\text{ }^{\circ}\text{C}$ ( $-40\text{ }^{\circ}\text{F}$ ... $+212\text{ }^{\circ}\text{F}$ )
Media Temperature	$-40\text{ }^{\circ}\text{C}$ ... $+120\text{ }^{\circ}\text{C}$ ( $-40\text{ }^{\circ}\text{F}$ ... $+248\text{ }^{\circ}\text{F}$ )
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
Compliance	REACH, RoHS, CE
Weight	ca.120 gr (4.23 oz)
EMI-EMC 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: CISPR11 Class A for radiated and conducted emission
Media Compatibility	All common industrial gases and fluids. Compatible with hydrogen media

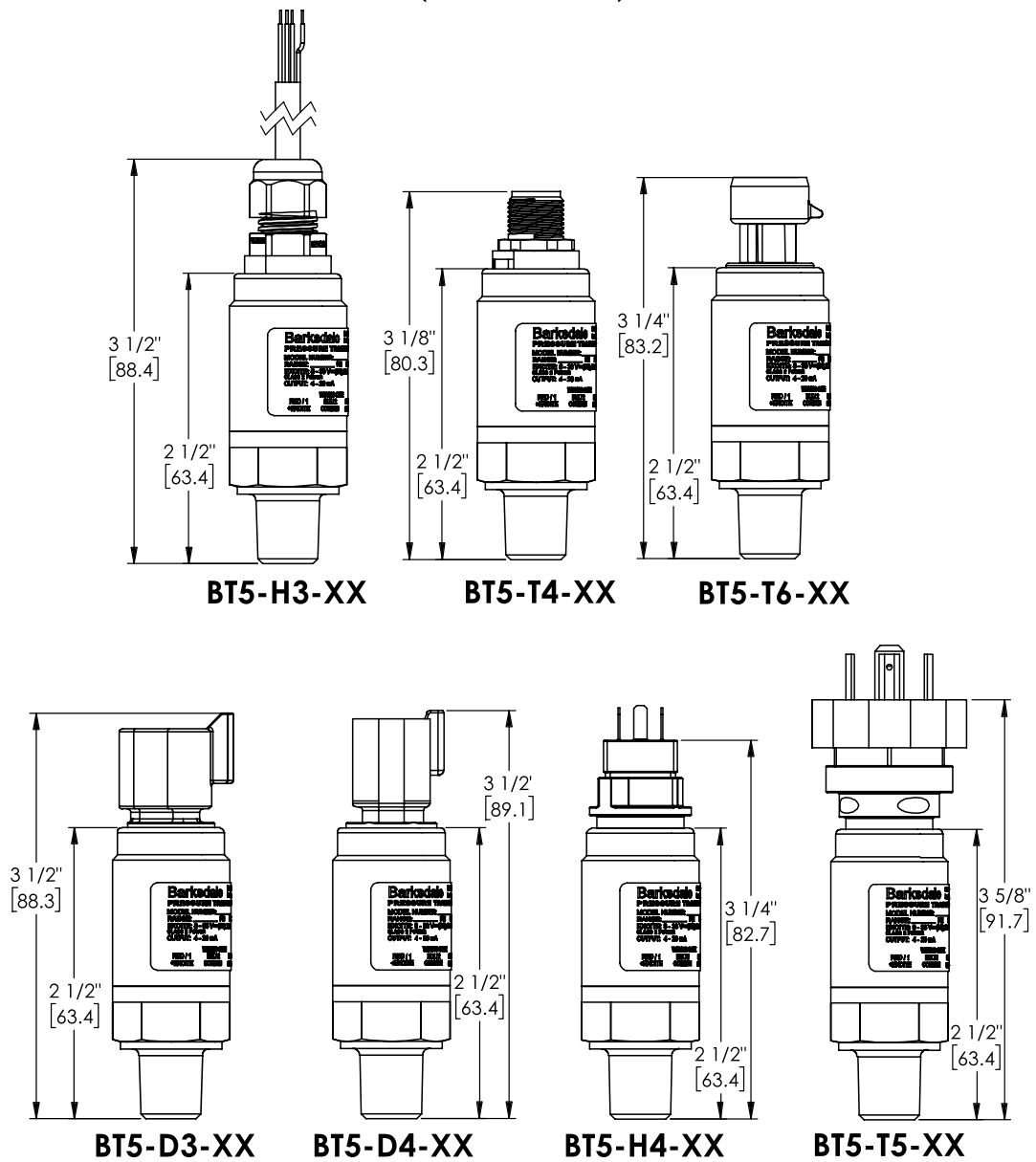
# Hydrogen Refuel Transducer

## BHyT - BoT Series

### 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/Drain/ 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 <sup>1</sup>	Mini-DIN 43650 Type "C"
-T4 <sup>1</sup>	M12 circular connector
-T5 <sup>1</sup>	Standard DIN 43650 Type "A"
-T6 <sup>1</sup>	Aptiv/Delphi Metripack 150 Series
-T9 <sup>1</sup>	T4 with European pinning
-D3 <sup>1</sup>	3-Pin Deutsch Connector - DT04-3P
-D4 <sup>1</sup>	4-Pin Deutsch Connector - DT04-4P

Pressure Range	psi	bar	Pressure Range	psi	bar
-23 <sup>4</sup>	0-29.9" of Hg	0-1	-08 <sup>4</sup>	0-500	0-35
-27 <sup>4</sup>	0-1	0-0.1	-44	0-580	0-40
-25 <sup>4</sup>	0-5	0-0.3	-45	0-725	0-50
-38 <sup>4</sup>	0-7	0-0.05	-46	0-870	0-60
-01 <sup>4</sup>	0-15	0-1	-10	0-1000	0-70
-39 <sup>4</sup>	0-25	0-1.6	-11	0-1500	0-100
-21 <sup>4</sup>	0-30	0-2	-12	0-2000	0-150
-40 <sup>4</sup>	0-36	0-2.5	-47	0-2300	0-160
-03 <sup>4</sup>	0-50	0-3	-13	0-3000	0-200
-22 <sup>4</sup>	0-69	0-4	-48	0-3600	0-250
-41 <sup>4</sup>	0-87	0-6	-14	0-4000	0-300
-04 <sup>4</sup>	0-100	0-7	-15	0-5000	0-350
-05 <sup>4</sup>	0-150	0-10	-16	0-6000	0-400
-06 <sup>4</sup>	0-200	0-15	-17	0-7500	0-520
-42 <sup>4</sup>	0-230	0-16	-36	0-9000	0-600
-07 <sup>4</sup>	0-300	0-20	-18	0-10000	0-700
-43 <sup>4</sup>	0-360	0-25			

### Pressure Unit and Type

G	PSI - Sealed gauge pressure (standard)
A <sup>4,5</sup>	PSI - Absolute pressure
BG	Bar - Sealed gage pressure
BA <sup>4,5</sup>	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 <sup>6</sup>	9/16 - 8 (SAE#6, O-Ring)
-P11 <sup>6</sup>	G1/2 male (gasket seal)
-P14 <sup>6</sup>	7/16-20 UNF female (JIC 37°)
-P18 <sup>6</sup>	M12x1,5
-P19 <sup>6</sup>	G1/4 EN837
-P20 <sup>6</sup>	G1/2 EN837

### Accuracy

-M	±0.5% FSO
-W <sup>2</sup>	±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	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 <sup>3</sup>	Special pressure ranges Consult Factory
-Q1...Q999	Custom and proprietary options; consult factory
-U <sup>7</sup>	UL approved
-GD	Gold plated sensor, only available with -W option

### Example

BT5 -T5 -11 BG -P9 M

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

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

<sup>4</sup>) With -W option only <sup>5</sup>) Absolute models available up to 360 psi only

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