

Hydrogen Fuel Cell Transducer

BHyT Series

Data Sheet

Features

- Advanced sensor signal conditioning ASIC ensures high accuracy $\pm 0.25\%$ and low offset error at zero pressure.
- 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_2 and O_2 .
- 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 Vacuum to 10,000 psi (0-700 BAR)

NEW



Exactly What OEMs Want...Without the Wait

Applications

- Hydrogen Fuel Cell
- Electrolyzers

General Specifications

Supply (Class II power source)	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 (-W Class) 0 to 700 BAR (-M Class)
Operating Temperature	-40 to $212\text{ }^{\circ}\text{F}$ (-40 to $100\text{ }^{\circ}\text{C}$)
Compensated Temperature Range	14 to $158\text{ }^{\circ}\text{F}$ (-10 to $70\text{ }^{\circ}\text{C}$)
Accuracy (BFSL@ $25\text{ }^{\circ}\text{C}$)	$\pm 0.25\%$ FSO (W), $\pm 0.50\%$ FSO (M)
Proof Pressure	2X Typical (Consult factory for specific pressure ranges)
Zero Offset	$\pm 1\%$ FSO (W), $\pm 2\%$ FSO (M)
Span Offset	$\pm 1\%$ FSO
Lifecycle	10M cycles minimum
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 to $212\text{ }^{\circ}\text{F}$ (-40 to $100\text{ }^{\circ}\text{C}$)
Media Temperature	-40 to $248\text{ }^{\circ}\text{F}$ (-40 to $120\text{ }^{\circ}\text{C}$)
Wetted Materials	316 L welded construction
Ingress Protection	IP67
Reverse Polarity	Yes
Enclosure	NEMA 4X
Approvals	UL 508, UL 61010-1 with class II power source
Compliance	REACH, RoHS, CE
Weight	4.23 oz (120gm) Approximately (Consult factory for exact weights)
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 Restricted	All common industrial and gases and fluids. Refer to wetted materials section or consult factory for special media compatibility

Industrial Transducer

BHyT 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

BT5	-H3	-05	A	-P2	-M	-Z17-S131
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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 Shielded & jacketed #24 AWG Cable (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 Range⁵

-23 ⁴	0-29.9" of Hg	0 to -1 BAR
-27 ⁴	0-1 psi	0-0.1 BAR
-25 ⁴	0-5 psi	0-0.35 BAR
-38 ⁴	0-7 psi	0-0.5 BAR
-01 ⁴	0-15 psi	0-1 BAR
-39 ⁴	0-25 psi	0-1.6 BAR
-21 ⁴	0-30 psi	0-2 BAR
-40 ⁴	0-36 psi	0-2.5 BAR
-03 ⁴	0-50 psi	0-3 BAR
-22 ⁴	0-60 psi	0-4 BAR
-41 ⁴	0-87 psi	0-6 BAR
-04 ⁴	0-100 psi	0-7 BAR
-05 ⁴	0-150 psi	0-10 BAR
-06 ⁴	0-200 psi	0-15 BAR
-42 ⁴	0-230 psi	0-16 BAR
-07 ⁴	0-300 psi	0-20 BAR
-43 ⁴	0-360 psi	0-25 BAR
-08	0-500 psi	0-35 BAR
-44	0-580 psi	0-40 BAR
-45	0-725 psi	0-50 BAR
-46	0-870 psi	0-60 BAR
-10	0-1,000 psi	0-70 BAR
-11	0-1,500 psi	0-100 BAR
-12	0-2,000 psi	0-150 BAR
-47	0-2300 psi	0-160 BAR
-13	0-3,000 psi	0-200 BAR
-48	0-3600 psi	0-250 BAR
-14	0-4000 psi	0-300 BAR
-15	0-5,000 psi	0-350 BAR
-16	0-6,000 psi	0-400 BAR
-17	0-7500 psi	0-520 BAR
-36	0-9000 psi	0-600 BAR
-18	0-10,000 psi	0-700 BAR

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)
V	PSI - Compound pressure range
BV	Bar - Compound pressure range

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	M12 X 1.5
- P19 ⁶	G1/4 EN 837
- P20 ⁶	G1/2 EN 837

Accuracy

-M	±0.50% 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	Larger pressure port orifice
-A	+6 ft cable
-B	+10 ft cable
-C	+15 ft 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 approved

1. Mating connector not included, consult factory for accessories
2. Limited to 580 PSI (40 BAR.)
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