BiT – Barksdale Intelligent Transmitter Series H455E, 455E, 452E

Features

- Intrinsic safety certification with ATEX, IECEx, CSA, and DNV approvals
- Lightweight, compact and all-welded rugged stainless steel construction
- High performance sensors
- Optional HART® communication protocol with diagnostics & field calibration, reducing maintenance time and cost; 10:1 turndown ratio for re-ranging, maintaining high accuracy and allowing one part number for multiple pressure ranges
- High accuracy: ±0.1% and 0.25% FSO, (L,H,R)
- Additional CSA certification for ordinary locations
- Factory sealed IP66 & IP67 and NEMA 4X enclosure
- CE, NACE compliant and superior EMC/EMI protection
- RoHS / REACH Compliant



Applications

- Drilling rig control & monitoring instrumentation
- Drilling and frac offshore equipment skids
- Production control systems
- Chemical injection systems
- Oil & gas pipelines
- Petrochemical plants
- Refineries
- Gas and oil fired power plants
- Hydraulic power units
- Gas transfers for fuel systems
- O&G process pumps
- Gas compressors
- Generators and turbines

General Specifications*

Accuracy including Linearity, Hysteresis and Repeatability: at 75°F, Typical	±0.1% of Calibrated FSO (Option [–A1]) ±0.25% of Calibrated FSO (Standard) ±0.5% of Calibrated FSO (Vacuum only [-23])
Temperature Shift:	Zero & Span: 0.0125% Per °F over the compensated temperature range
Long Term Stability:	±0.2% FSO /year of calibration curve
Typical Life Cycle:	100 million cycles
Proof Pressure:	2X range for up to 7500 psi models 1.5X range for 7500 - 30000 psi models
Input:	Excitation voltage: 9 to 30 VDC
Supply Current:	20mA max.
Output: H455E: 455E:	 Output: 4–20 mA with HART® Protocol Full Scale Output: 20 mA ±1% Zero output: 4 mA ±1% Output: 4–20 mA Full Scale Output: 20 mA ±1% Zero output: 4 mA ± 1%
Dynamic Response Time:	<70 milliseconds
Enclosure:	All welded 300 series stainless steel. IP66 & IP67 and NEMA 4X rated. 316 Stainless Steel (optional)

Wetted Parts: Sensor: Fitting:	 17-4 PH Stainless steel (more than 10k psi) 316L Stainless steel (up to 10k psi) 17-4 PH Stainless steel for -UL option (10k psi) 17-4 PH Stainless steel (all ranges) 316L Stainless steel (optional: up to 10k psi)
Media General: Corrosive and Acidic: (up to 10,000 psi)	 Gas, vapor, liquid and viscous fluids [-Z17] 316L stainless Steel fitting, NACE [-SS]
Pressure Connection:	13 available options. Refer to product configurator for available connections and ranges.
Electrical Connection:	10 available electrical connections such as M12, Bendix, DIN, conduit, gland and etc. Option for free leads from conduit or gland electrical connection includes two signal leads plus ground lead consisting of 18AWG halogen free type, 80" (2m) long or optional jacketed cable exiting 1/2 NPT or M20 conduit or gland connections.
Temperature Ranges: Operating (Ambient): Compensated: Media: Storage:	 -40 to +176 °F (-40 to +80 °C) 0 to +165 °F (-18 to +74 °C) -40 to +176 °F (-40 to +80 °C) -40 to +185 °F (-40 to +85 °C)
Vibration:	10 g's, 10-500 Hz, MIL-STD 202, Method 204, Cond. A
Shock:	50 g's, 11 mS, MIL-STD 202 Method 213, Cond. G.

* See product configurator for additional options.

3211 Fruitland Avenue • Los Angeles, CA 90058 • 800-835-1060 • Fax: 323-589-3463 • www.barksdale.com

See Barksdale's Standard Conditions of Sale • Specifications are subject to modification at any time • Bulletin #S0050-D • 6/26 • ©2026• Printed in the U.S.A.

General Specifications* cont.

Approvals: CSA	 cCSAus Ordinary Locations cCSAus Intrinsic Safety for Hazardous Locations Class I, Div. 1, Groups A, B, C & D Class II, Div. 1, Groups E, F & G Ex ia IIC T4 Ga Ex ia IIIC T135°C Da Class 1 Zone 0, AEx ia IIC T4 Ga Zone 20 AEx ia IIIC T135°C Da Factory sealed IP66 & IP67 and NEMA 4X enclosure
ATEX/IECEx:	CE 0081 II 1 G D Ex ia IIC T4 Ga a IIIC T135°C Da, IP66 & IP67 °C ≤ Tamb ≤ +80 °C CML 19 ATEX 2240X IECEx CML 19.0066X
UL:	Intrinsic Safety & Non-incendive Class I, Div 1, 2, Groups A, B, C and D Class II, Div 1, 2, Groups E,F and G Factory sealed NEMA 4X
DNV	Type Approval
HART® Protocol:	HART® 7.6
Turndown Ratio:	10:1 (Full scale output rangeability)
Analog Output Calibration:	Adjustable zero and span of 4-20mA. Full scale range must be ≥ (calibrated span / 10)
Sensor Trim:	Sensor zero and full scale trim
Diagnostics:	Transmitter failure indicated by off-scale analog signals to alarm the user See HART Installation and Operation Manual 272438 for detailed information

Compliances:	CE, NACE (316L SS)
Electromagnetic Compatibility (EMC)	
IEC/EN 55011:	Emission & radiated emission for class A limits
IEC/EN 61000-4-2:	Electrostatic discharge (ESD) test - contact discharge +/-4 kV, Air discharge +/-8 kV
IEC/EN 61000-4-3:	Radiated RF, EM field immunity 80mhz-1ghz, 3v/M
IEC/EN 61000-4-4:	EFT (Burst) Test, +/-2 kV
IEC/EN 61000-4-5:	Surge Test, +/-1kV between line and earth ground
IEC/EN 61000-4-6:	RF Immunity, 150 kHz – 80 MHz, 3V
Weight:	16 Ounces (453 grams)
Warranty:	1 year warranty

* See product configurator for additional options.

Installation: Intrinsic Safety Installation for Hazardous Locations: Install per Barksdale Control Drawing 272471							
	Type	Model	SUPPLY/SIGNAL BARRIER		PressureTransmitter		
			Vmax (Ui)	Imax	Ci	Li	Pi max
I.S. Entity Parameters	Hart 4-20 mA	H455E	30 VDC	100 mA	2.2 nF	30 µH	750 mW
	Current Output	455E	30 VDC	100 mA	27.384 nF	0 µH	750 mW
	Voltage Output	452E	30 VDC	100mA	54.984 nF	0 µH	750 mW
	Ratiometric Output	454E	20VDC	100mA	46.320 nF	0 µH	750 mW

Wiring Code

TABLE 1. FREE LEAD WIRES AND CONNECTOR PIN CONNECTIONS

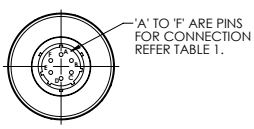
MODEL NO.	RED/A/1	BLACK/B/2	GREEN/D/4	WHITE WIRE/C/3
H455E	+ EXCITATION	- EXCITATION	EARTH GROUND	NOT INCLUDED
455E	+ EXCITATION	- EXCITATION	EARTH GROUND	NOT INCLUDED
425E	+ EXCITATION	- EXCITATION	EARTH GROUND	VOLTAGE OUTPUT
454E	+ EXCITATION	- EXCITATION	EARTH GROUND	RATIOMETRIC OUTPUT

TABLE 2. JACKETED CABLE WIRE CONNECTIONS (-J Option)

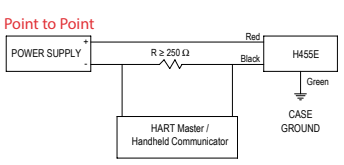
MODEL NO.	WHITE	BROWN	GREEN	YELLOW
H455E	+ EXCITATION	- EXCITATION	EARTH GROUND	NOT INCLUDED
455E	+ EXCITATION	- EXCITATION	EARTH GROUND	NOT INCLUDED
452E	+ EXCITATION	- EXCITATION	EARTH GROUND	VOLTAGE OUTPUT
454E	+EXCITATION	- EXCITATION	EARTH GROUND	RATIOMETRIC OUTPUT

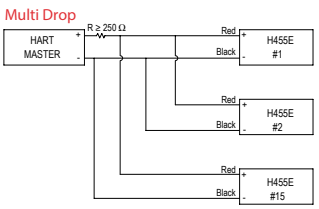
TABLE 3. DEUTSCH CONNECTOR PIN CONNECTIONS (-D3 & -D4 Option)

MODEL	CONNECTOR	PIN A/1	PIN B/2	PIN C/3	PIN D/4
ALL	D3	+ EXCITATION	- EXCITATION	EARTH GROUND	N/A
ALL	D4	- EXCITATION	+ EXCITATION	EARTH GROUND	VTG O/P



CONFIGURATION WITH HART®





Subject to technical changes.

3211 Fruitland Avenue • Los Angeles, CA 90058 • 800-835-1060 • Fax: 323-589-3463 • www.barksdale.com

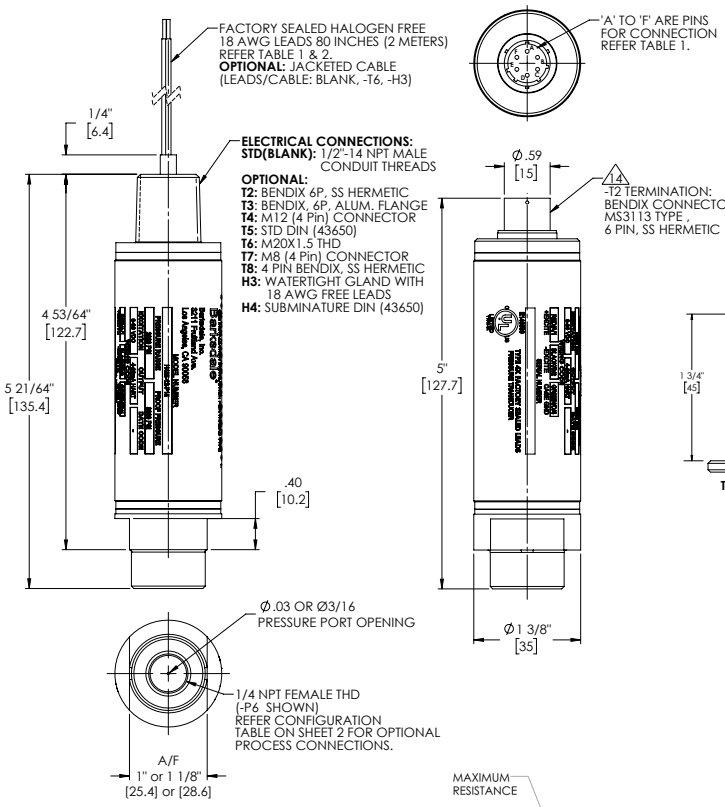
See Barksdale's Standard Conditions of Sale • Specifications are subject to modification at any time • Bulletin #S0050-D • 6/26 • ©2026•Printed in the U.S.A.

www.mod-tronic.com | sales@mod-tronic.com | 1-800-794-5883

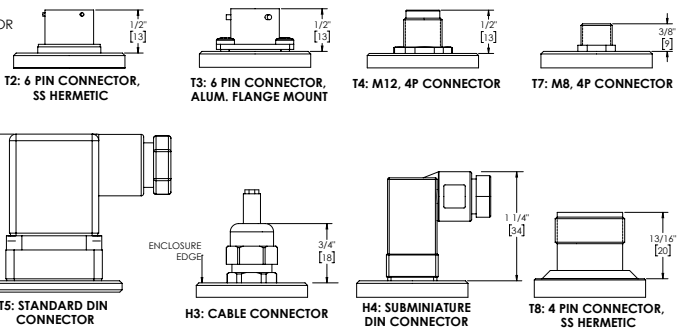
BiT – Barksdale Intelligent Transmitter Series H455E, 455E, 452E

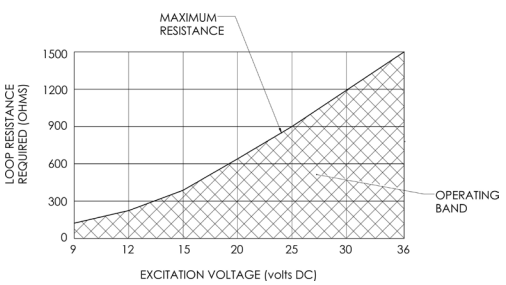
Technical Drawings

DIMENSIONS IN BRACKET ARE IN MM



Standard and Optional Electrical Connections







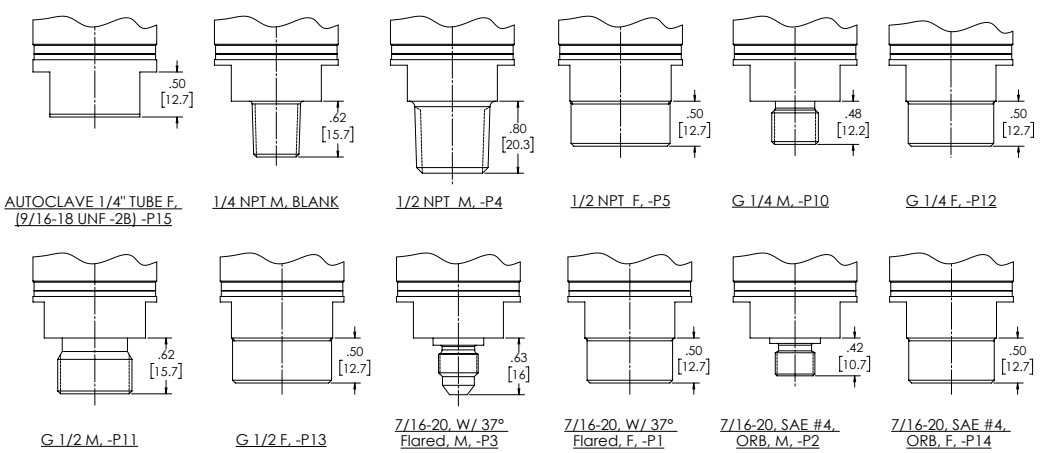
-D3 CONNECTOR OPTION



-D4 CONNECTOR OPTION WITH WATERTIGHT GLAND (H3)



Process Connections



3211 Fruitland Avenue • Los Angeles, CA 90058 • 800-835-1060 • Fax: 323-589-3463 • www.barksdale.com

See Barksdale's Standard Conditions of Sale • Specifications are subject to modification at any time • Bulletin #S0050-D • 6/26 • ©2026• Printed in the U.S.A.

www.mod-tronic.com | sales@mod-tronic.com | 1-800-794-5883

BiT – Barksdale Intelligent Transmitter Series H455E, 455E, 452E

Product Configurator

Example:	H455E	T6	-29	BA	-P15	-M	-Z17-A1-Z123

Base Model

H455E	4 - 20 mA Output with HART® Comm. Protocol
455E	4 - 20 mA Output
452E	1-5 Voltage Output
454E	0.5-4.5 Voltage; Ratiometric Output

* Highlighted options represent those most frequently used. Select these common options for improved availability. (5/21)

Electrical Connection

Blank	1/2"-14 NPT Male conduit
T2	6 pin connector, SS Hermetic, PTIH-10-6P
T3	6 pin connector, Alum. Flange Mount, PT02E-10-6P
T4	M12 (4 Pin) connector
T5	Standard DIN (EN 175301-803, Type A)
T6	M20 x 1.5 Male conduit
T7	M8 (4 Pin) connector
T8	4 pin connector, SS Hermetic, PTIH-14S-2P
H3	Watertight Gland with 18AWG Free Leads
H4	Mini DIN (EN 175301-803, Type C)

Pressure Unit & Type

Blank	PSI - Gauge pressure (standard)
A	PSI - Absolute pressure (Not applicable with "-23" range)
B	Bar - Gauge Pressure
BA	Bar - Absolute Pressure (ranges start from -1 Bar) (Not applicable with "-23" range)

Pressure Range

-23*	0-29.9" of Hg	0 to -1 Bar
-01	0-15 psi	0-1 Bar
-21	0-30 psi	0-2 Bar
-03	0-50 psi	0-3 Bar
-22	0-60 psi	0-4 Bar
-04	0-100 psi	0-7 Bar
-05	0-150 psi	0-10 Bar
-06	0-200 psi	0-15 Bar
-07	0-300 psi	0-20 Bar
-08	0-500 psi	0-40 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
-13	0-3,000 psi	0-200 Bar
-14	0-4,000 psi	0-300 Bar
-15	0-5,000 psi	0-350 Bar
-16	0-6,000 psi	0-400 Bar
-17	0-7,500 psi	0-500 Bar
-18[1]	0-10,000 psi	0-700 Bar
-29[3]	0-15,000 psi	0-1,000 Bar
-30[3]	0-20,000 psi	0-1,400 Bar
-31[3]	0-22,000 psi	0-1,500 Bar
-32[3]	0-25,000 psi	0-1,700 Bar
-33[3]	0-30,000 psi	0-2,000 Bar

* Vacuum

Process Connection

Blank[4]	1/4-18 NPT male (standard)
-P6[4]	1/4" NPT female
-P4[4]	1/2" NPT male
-P5[4]	1/2" NPT female
-P10[4]	G 1/4, washer seal, male
-P12[4]	G 1/4, washer seal, female
-P11[4]	G 1/2, washer seal, male
-P13[4]	G 1/2, washer seal, female
-P3[4]	7/16-20, with 37° flared, male
-P1[4]	7/16-20, with 37° flared, female
-P2[4]	7/16-20, SAE #4, ORB, male
-P14[4]	7/16-20, SAE #4, ORB, female
-P15	HF4 Autoclave, 1/4" tube, female (9/16-18 UNF-2B THD)

Options

-ZVxx	Custom voltage output (Available on 452E only). Up to 10VDC. Consult Factory.
-Z17[2]	For high pressure models with larger orifice; without pressure surge protector
-SS[4,5]	316L stainless steel wetted material (NACE)
-A1	Accuracy BFSL 0.1% FSO (LHR) at 75°F (Consult factory on vacuum [-23] models)
-ZXXY	Special pressure ranges XX - significant digits Y - number of trailing zeros Example: 130 psi calibration: add -Z131
-JXXX	Jacketed cable (available on conduit and gland electrical connections) (in inches)
-WXXX	Custom Length of free leads (Available on Conduit and gland electrical connections) (In Inches)
-D3[6]	3 Pin deutsch connector DT04-3P
-D4[6]	4 Pin deutsch connector DT04-4P
-K	DNV Approval

Process Connection

Blank	Standard sensor construction
M	Seal-free construction (from 40 bar)

Notes
1. -UL option only available for 10,000 psi range. No cCSAus approval for 10,000 psi range without -UL suffix option. cCSAus approval standard for all other ranges
2. All pressure ranges have built-in pressure surge protector. Add "-Z17" suffix for high pressure models with no snubber; for use with high viscosity media. Refer to Sales drawing for orifice sizes.
3. Ranges with more than 10k psi are only available with -P15 Process Connection
4. Available up to 10,000 psi
5. -SS option is included in -SC option. -SC does not include material of electrical connection. -UL option and ranges that are more than 10k psi are only available with 17-4PH SS wetted material.
6. Connected to factory sealed halogen free, 18 AWG free leads 12" (.3m). Also available with -WXXX and -JXXX options.

Additional Documents & Accessories

Title	Reference Number
Installation and Maintenance Instructions, Control Drawing	272441, 272471
HART Installation and Operation Manual	272438
Cable & Connectors	Cable & Connectors. Bulletin #S0115-C
Certificate of Compliance (Found on back of packing slip)	Use Document Title in purchase order. Only available at the time of order.
Certificate of Compliance (Signed document)	
Test Report	
Calibration Test Sheet (Included in product package)	
Material Certification	
Paper Tag	
Metal Tag	

3211 Fruitland Avenue • Los Angeles, CA 90058 • 800-835-1060 • Fax: 323-589-3463 • www.barksdale.com

See Barksdale's Standard Conditions of Sale • Specifications are subject to modification at any time • Bulletin #S0050-D • 6/26 • ©2026• Printed in the U.S.A.