



# Certificate of Compliance

**Certificate:** 80004185

**Master Contract:** 162037

**Project:** 80004185

**Date Issued:** November 15, 2019

**Issued to:** Barksdale Inc., 3211 Fruitland Ave.  
Los Angeles, California 90058  
United States  
Attention: Taher Torabi

*The products listed below are eligible to bear the CSA Mark shown with adjacent indicators 'C' and 'US' for Canada and US or with adjacent indicator 'US' for US only or without either indicator for Canada only.*



Aaron Gupta, E.I.T.

Issued  
by:

## PRODUCTS

2258 04 – PROCESS CONTROL EQUIPMENT – Intrinsically Safe, Entity – For Hazardous Locations  
2258 84 – PROCESS CONTROL EQUIPMENT – Intrinsically Safe, Entity – For Hazardous Locations –  
Certified to US standards

**Class I, Division 1 Groups A, B, C, and D T4**  
**Class II, Division 1, Groups E, F, and G T135°C**  
**Ex ia IIC T4 Ga**  
**Ex ia IIIC T135°C Da**  
**Class I, Zone 0, AEx ia IIC T4 Ga**  
**Zone 20, AEx ia IIIC T135°C Da**

Pressure Transducer 450 Series. All models of H455E and 455E platform per below nomenclature. Excitation: 9 to 30 VDC (Powered by Class 2 supply). Current Consumption: 20 mA. Analog Output: 4 – 20 mA and HART Communication Protocol.  $-40^{\circ}\text{C} \leq T_{\text{amb}} \leq +80^{\circ}\text{C}$ . Enclosure Rating: IP66 and IP67. Intrinsically Safe when connected per drawing 272471  
Pressure ratings: -14.5 psi to 30,000 psi (depending on sensor, see table below).

Model nomenclature: **H455Eaabbccdddeeee**

Where:

BASE MODEL (Intrinsically Safe)

H455E | 4 - 20 mA Current Output with HART Communication Protocol



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455E | 4 - 20 mA Digital Amplifier

aa = ELECTRICAL CONNECTION

BLANK	1/2"-14 NPT Male conduit
T2	6 Pin Connector, SS Hermetic
T6	M20 x 1.5 Male conduit
T8	4 Pin Connector, SS Hermetic
T3	6 Pin Connector, Alum. Flange Mount
T4	M12 (4 Pin) connector
T5	Standard DIN connector (DIN EN 175301-803, TYPE A)
T7	M8 (4 Pin) connector
H3	Watertight Gland
H4	Subminiature DIN connector (DIN EN 175301-803, TYPE C)

bb = PRESSURE RATING

<u>Pressure Range</u>	<u>PSI</u>	<u>BAR</u>
-23	0-29.9" of Hg (Vac.)	0 to -1 Bar (Vac.)
-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	0-10,000 PSI	0-700 Bar
-29	0-15,000 PSI	0-1,000 Bar
-30	0-20,000 PSI	0-1,400 Bar
-31	0-22,000 PSI	0-1,500 Bar
-32	0-25,000 PSI	0-1,700 Bar
-33	0-30,000 PSI	0-2,000 Bar

cc = PRESSURE UNIT & TYPE

BLANK	PSI - Sealed Gage Pressure
A	PSI - Absolute Pressure (Not applicable with "-23" range)
B	Bar - Sealed Gage Pressure
BA	Bar - Absolute Pressure (ranges start from -1 Bar)



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(Not applicable with "-23" range)

ddd = PROCESS CONNECTIONS

- BLANK 1/4" NPT, Male
- P6 1/4" NPT, Female
- P4 1/2" NPT, Male
- P5 1/2" NPT, Female
- P10 G 1/4, washer seal, Male
- P12 G 1/4, Washer seal, Female
- P11 G 1/2, Washer seal, Male
- P13 G 1/2, Washer seal, Female
- P3 7/16-20, with 37° Flared, Male
- P1 7/16-20, with 37° Flared, Female
- P2 7/16-20, SAE #4, ORB, Male
- P14 7/16-20, SAE #4, ORB, Female
- P15 HF4 Autoclave, 1/4" Tube, Female (9/16-18 UNF-2B THD)

eeee = OPTIONS

-Z17	Without pressure surge protector
-SC	316 Stainless Steel enclosure (excluding connector material)
-SS	316L Stainless Steel wetted material (NACE)
-NC	Inconel wetted material (NACE) (Consult factory)
-UL	cCSAus approval. Only on -18 range code.
-A1	Accuracy BFSL 0.1% FSO (LHR) at 75°F (Consult factory on vacuum [-23] models)
-ZXXY	Special pressure ranges
-Wxxx	Custom length of Free Leads (in inches) (Available on Conduit and gland electrical connections)
-Jxxx	Jacketed Cable with 18 AWG Leads (in inches) (Available on Conduit and gland electrical connections)
-D3	3 Pin Deutsch Connector DT04-3P
-D4	4 Pin Deutsch Connector DT04-4P
-Qxxx	Non-safety related modifications and/or for special customer and/or shorter part number. "xxx" number assigned by engineering

**Intrinsically Safe Entity Ratings:**

- Ui = 30Vdc
- Ii = 100mA
- Pi = 750mW
- Ci = 2.2nF
- Li = 30μH

**Conditions of Acceptability:**

The following relate to the safe installation and use of the equipment:



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1. The equipment is not capable of withstanding the 500V insulation test required by Clause 6.3.13 of CAN/CSA-C22.2 No. 60079-11:14 and ANSI/UL 60079-11-2014. This shall be taken into account when installing the equipment.
2. The above model is cord/permanently connected, Equipment Class III, Pollution Degree 2, Overvoltage Category II.
3. Mode of operation: Continuous
4. Environmental Conditions: Extended: 80°C

### **APPLICABLE REQUIREMENTS**

CAN/CSA-C22.2 No. 0-10 (R2015)	General requirements — Canadian Electrical Code, Part II
CAN/CSA-C22.2 No. 60529:16	Degrees of protection provided by enclosures (IP Code)
CAN/CSA-C22.2 No. 61010-1-12	Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use — Part 1: General Requirements
CAN/CSA-C22.2 No. 60079-0:19	Explosive atmospheres – Part 0: Equipment – General requirements
CAN/CSA-C22.2 No. 60079-11:14	Explosive atmospheres – Part 11: Equipment protection by intrinsic safety “i”
ANSI/IEC 60529:2004 (R2011)	Degrees of protection provided by enclosures (IP Code)
ANSI/UL 61010-1-2018	Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use — Part 1: General Requirements
ANSI/UL 60079-0-2019	Explosive atmospheres – Part 0: Equipment – General requirements
ANSI/UL 60079-11-2014	Explosive Atmospheres – Part 11: Equipment Protection by Intrinsic Safety “i”

### **MARKINGS**

The manufacturer is required to apply the following markings:

- Products shall be marked with the markings specified by the particular product standard.
- Products certified for Canada shall have all Caution and Warning markings in both English and French.

Additional bilingual markings not covered by the product standard(s) may be required by the Authorities Having Jurisdiction. It is the responsibility of the manufacturer to provide and apply these additional markings, where applicable, in accordance with the requirements of those authorities.

The products listed are eligible to bear the CSA Mark shown with adjacent indicators 'C' and 'US' for Canada and US (indicating that products have been manufactured to the requirements of both Canadian and U.S. Standards) or with adjacent indicator 'US' for US only or without either indicator for Canada only.

The following markings shall be laser etched on the equipment enclosure:

- Manufacturer’s name: "Barksdale Inc.", or CSA Master Contract Number “162037”, adjacent to the CSA Mark in lieu of manufacturer’s name.
- Model designation: As specified in the PRODUCTS section, above.



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- Electrical ratings: As specified in the PRODUCTS section, above.
- Ambient temperature rating: As specified in the PRODUCTS section, above.
- Manufacturing date in MMY format, or serial number, traceable to year and month of manufacture.
- Enclosure ratings: As specified in the PRODUCTS section, above.
- The CSA Mark, with or without the “C” and “US” indicators, as shown on the Certificate of Conformity.
- Canadian Identification of Certificate: CSA19CA80004185
- Hazardous Location designation: “Class I, Division 1 Groups A, B, C, and D”; and “Class II, Division 1, Groups E, F, and G”. The word “Class” may be abbreviated “CL”, the word “Division” may be abbreviated “DIV”, and the word “Groups” may be abbreviated “GRP” or “GP”.
- Method of Protection markings (Ex -- markings): “Ex ia IIC T4 Ga”; “Ex ia IIIC T135°C Da”; “Class I, Zone 0, AEx ia IIC T4 Ga”; and “Zone 20, AEx ia IIIC T135°C Da”. Rated maximum working pressure, as specified in the PRODUCTS section, above.
- The following Warnings:
  - WARNING: DISCONNECT BEFORE SERVICING
  - AVERTISSEMENT: DÉBRANCHEZ AVANT L’ENTRETIEN
  - SEE INSTALLATION INSTRUCTIONS FOR THREAD TYPE.
  - VOIR LES INSTRUCTIONS D’INSTALLATION POUR LE TYPE DE FILETAGE



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### *Supplement to Certificate of Compliance*

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*The products listed, including the latest revision described below,  
are eligible to be marked in accordance with the referenced Certificate.*

### **Product Certification History**

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<b>Project</b>	<b>Date</b>	<b>Description</b>
80004185	Nov 15, 2019	North American certification of Pressure Transducer Model H455E and 455E series for Intrinsically Safe: Class I, Div. 1, Groups A, B, C & D. Class II, Groups E, F & G.