



FM Approvals
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CERTIFICATE OF COMPLIANCE

HAZARDOUS LOCATION ELECTRICAL EQUIPMENT PER CANADIAN REQUIREMENTS

This certificate is issued for the following equipment:

Pulsar dl-aa-bbb-c-ddd-e-0-H-N-f Series of Protected by Encapsulation Ultrasonic Transducers
IPA / I,II,III / 1 / ABCDEFG / T4 Tamb = -40°C to +64°C; Drawing # D-804-1035-A, Type 4X

dl = dBi series HART transducers

aa = Measurement range in meters: 03, 06, 10 or 15;

bbb = cable length in meters: 005, 010, 020, 030, 040, 050, 060, 070, 080, 090 or 100;

c = Configuration options:

0 = standard

1 = submersible shield

2 = flange standard

3 = flange sanitary

4 = mach3 horn and shield

5 = front nose thread (options indicated by ddd)

6 = drip shield

ddd = Flange or nose thread:

000 = no flange or front thread

002 = 2" ANSI

003 = 3" ANSI

004 = 4" ANSI

006 = 6" ANSI

008 = 8" ANSI

100 = 100 DIN

150 = 150 DIN

200 = 200 DIN

015 = 1.5" front nose thread (dbi3 or dBi6 only)

020 = 2" front nose thread (dBi10 only)

e = Option for material fitted to the face of the transducer:

0 = standard

1 = foam

2 = PTFE (0.25 mm thick)

4 = PVDF

5 = Thick PTFE (0.5 mm thick)

To verify the availability of the Approved product, please refer to www.approvalguide.com

f = Name of seller on the label

P = Pulsar

Special Conditions of Use:

- 1 *The enclosure of the transducer is considered to constitute an electrostatic discharge hazard.
Clean only with a damp cloth.*
- 2 *The transducer shall be connected to a source incorporating a 100 mA fuse which provides a minimum interrupt capacity of at least 1500A.*
- 3 *The transducer is not suitable for use in the presence of Ketones, Aliphatic Hydrocarbons, Alcohols, Esters, and Acids.*

Pulsar dl-aa-bbb-c-ddd-e-1-H-N-f Series of Intrinsically Safe Ultrasonic Transducers

IS / I,II,III / 1 / ABCDEFG / T4 Tamb = -40°C to +80°C; Drawing #D-804-1035-A, Type 4X
Ui = 28V, Ii = 162 mA, Pi = 1.03W, Ci = 0, Li = 0

dl = dBi series HART transducers

aa = Measurement range in meters: 03, 06, 10 or 15;

bbb = cable length in meters: 005, 010, 020, 030, 040, 050, 060, 070, 080, 090 or 100;

c = Configuration options:

- 0 = standard
- 1 = submersible shield
- 2 = flange standard
- 3 = flange sanitary
- 4 = mach3 horn and shield
- 5 = front nose thread (options indicated by ddd)
- 6 = drip shield

ddd = Flange or nose thread:

- 000 = no flange or front thread
- 002 = 2" ANSI
- 003 = 3" ANSI
- 004 = 4" ANSI
- 006 = 6" ANSI
- 008 = 8" ANSI
- 100 = 100 DIN
- 150 = 150 DIN
- 200 = 200 DIN
- 015 = 1.5" front nose thread (dbi3 or dBi6 only)
- 020 = 2" front nose thread (dbi10 only)

e = Option for material fitted to the face of the transducer:

- 0 = standard
- 1 = foam
- 2 = PTFE (0.25 mm thick)
- 4 = PVDF
- 5 = Thick PTFE (0.5 mm thick)

f = Name of seller on the label

P = Pulsar

Special Conditions of Use:

- 1 *The enclosure of the transducer is considered to constitute an electrostatic discharge hazard.
Clean only with a damp cloth.*
- 2 *The transducer is not suitable for use in the presence of Aliphatic Hydrocarbons and Alcohols.*



Member of the FM Global Group

Equipment Ratings:

Intrinsically Safe (Entity) for use in Class I, II, and III, Division 1, Groups A, B, C, D, E, F, and G indoor and outdoor Hazardous Locations in accordance with Control Drawing # D-804-1035-A, Temperature Class T4 for an ambient temperature range of -40°C to +80°C;
FM Approved for use in Class I, II, and III, Division 1, Groups A, B, C, D, E, F, and G indoor and outdoor Hazardous Locations in accordance with Control Drawing #D-804-1035-A, Temperature Class T4 for an ambient temperature range of -40°C to +64°C;
Type 4X.

FM Approved for:

Pulsar Process Management Ltd
Malvern, Worcestershire, UK

To verify the availability of the Approved product, please refer to www.approvalguide.com



This certifies that the equipment described has been found to comply with the following Approval Standards and other documents:

CSA C22.2 No. 1010.1	2004
CSA C22.2 No. 157	1992 (R 2012)
CSA C22.2 No. 25	1966 (R 2000)
CSA C22.2 No. 94	1994 (R 2011)
CSA C22.2 60079-0	2011
CSA C22.2 60079-11	2011

Original Project ID: 3047911

Approval Granted: April 7, 2014

Subsequent Revision Reports / Date Approval Amended

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FM Approvals LLC

J.E. Marquedant
Group Manager, Electrical

7 April 2014
Date