PD685 CSA, ATEX, AND IECEx CERTIFIED LOOP-POWERED METER

Intrinsic Safety Control Drawing

SECTION	AGENCY	DESCRIPTION
1.0		Safety Information
2.0	ATEX, and IECEx	Special Conditions for Safe Use
3.0	CSA	Special Conditions for Safe Use
4.0	CSA, ATEX and IECEx	Hazardous Area Approvals
5.0	CSA, ATEX and IECEx	Wiring Diagrams
6.0	CSA, ATEX and IECEx	Conduit Installation Instructions

NOTE:

1. THIS DOCUMENT CONTAINS AGENCY-CONTROLLED CONTENT AND THEREFORE NO CHANGES SHOULD BE MADE WITHOUT PRIOR APPROVAL. AESTHETIC AND FORMATTING CHANGES ARE ACCEPTABLE, AS LONG AS THEY DO NOT ALTER THE CONTROLLED-CONTENT IN ANY WAY.

1.0 SAFETY INFORMATION

1.1 Read complete instructions prior to installation and operation of the meter.

1.2 Installation and service should be performed only by trained service personnel.

1.3 Substitution of components may impair hazardous location safety.

1.4 Service requiring replacement of internal components must be performed at the factory.

1.5 Equipment contains non-metallic materials and therefore special care and consideration should be made to the performance of these materials with respect to chemicals which may be present in a hazardous environment.

1.6 PD685 indicator does not add capacitance or inductance to the loop under normal or fault conditions.

1.7 Hazardous location installation instructions for associated apparatus (barrier) must be followed when installing this equipment.

1.8 For safe installation of an ATEX, IECEx, and/or CSA certified transmitter in series with the PD685 loop indicator, the hazardous location installation instructions for the transmitter, PD685 loop indicator, and associated apparatus (barrier) must be compatible.

2.0 ATEX AND IECEx SPECIAL CONDITIONS FOR SAFE USE

2.1 **For European Community:** The PD685 must be installed in accordance with the Essential Health & Safety Requirements of Directive 2014/34/EU, the product certificates CML 17ATEX2113X and IECEx CML 17.0052X, and the product manual.

2.2 Under certain extreme circumstances, the non-metallic parts incorporated in the enclosure of this equipment may generate an ignition-capable level of electrostatic charge. Therefore, the equipment shall not be installed in a location where the external conditions are conducive to the build-up of electrostatic charge on such surfaces. This is particularly important if the equipment is installed in a zone 0 location. In addition, the equipment shall only be cleaned with a damp cloth.

2.3 The cable entry into the enclosure shall be by means of conduit or cable gland and shall provide a minimum degree of protection of IP5X.

3.0 CSA SPECIAL CONDITIONS FOR SAFE USE

3.1 **For North American Community:** Installation and service of this device and or associated apparatus (barrier) should be performed only by trained service personnel, and must be in accordance with the manufacturer's control drawing, Article 504 of the National Electric Code (ANSI/NFPA 70) for installation in the United States, or Section 18 of the Canadian Electrical Code for installations in Canada.

3.2 Under certain extreme circumstances, the non-metallic parts incorporated in the enclosure of this equipment may generate an ignition-capable level of electrostatic charge. Therefore, the equipment shall not be installed in a location where the external conditions are conducive to the build-up of electrostatic charge on such surfaces. This is particularly important if the equipment is installed in a zone 0 location. In addition, the equipment shall only be cleaned with a damp cloth.

3.3 Control equipment must not use or generate more than 250 V rms or dc with respect to earth.

3.4 Conduit hubs and cable glands shall maintain the degree of protection, explosion protection, and environmental rating of the PD685, and installed in accordance with the appropriate wiring method for Class I Division 2 and Class II Division 2 locations. Wire shall be used that is rated for a minimum temperature of 80°C.

3.5 PD685 must be installed with a certified barrier for Class II, Division 1 locations.

4.0 HAZARDOUS AREA APPROVALS

4.1 **Application Notes:**

Entity parameters must meet the following requirements for both CSA and ATEX/IECEx applications (except in areas where barriers are not required, as noted below):

Ui = 30 V, Ii = 175 mA, Pi = 1 W, Ci = 0, Li = 0

For Division 2 Applications (North America only): Division 2 installations do NOT require the use of an intrinsically-safe barrier or intrinsically-safe entity parameters.

4.2 **Markings:**

The PD685 will carry the following **ATEX** and **IECEx** markings:

Ex II 1GD

Ex ia IIC T4 Ga
Ex ia IIIC T135°C Da
-40°C ≤ Ta ≤ +75°C; IP67

The PD685 will carry the following **CSA** markings:

-40°C ≤ Ta ≤ +75°C
Ex ia IIC T4 Ga;
Ex ia IIIC T135°C Da;
Class I, Zone 0, AEx ia IIC T4 Ga;
Class I, Zone 20, AEx ia IIIC T135°C Da;
Class I, Division 1, Groups A, B, C and D, T4;
Class II, Division 1, Groups E, F and G, T135°C; Class III;
Class I, Division 2, Groups A, B, C and D, T6;
Class II, Division 2, Groups F and G, T85°C; Class III;
Type 4X; IP67

4.3 **Warnings:**

The following warnings apply to Division 2 installations only!

WARNING:
EXPLOSION HAZARD – DO NOT DISCONNECT EQUIPMENT OR REMOVE THE COVER UNLESS POWER HAS BEEN SWITCHED OFF OR THE AREA IS KNOWN TO BE NON-HAZARDOUS; FRANCAIS: "EXPLOSION DANGEREUSE - NE PAS DÉBRANCHER L'ÉQUIPEMENT NI DÉPOSER LE COUVERCLE SAUF SI L'ALIMENTATION A ÉTÉ COUPÉE OU SI LA ZONE N'EST PAS DANGEREUSE."

WARNING (FOR DIV. 2 ONLY):
THE EQUIPMENT MUST BE CONNECTED TO A CERTIFIED CLASS 2 POWER SUPPLY; Francais: "L'équipement doit être raccordé à une alimentation de classe 2 CERTIFIÉE"

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Intrinsic Safety Control Drawing

5.0 WIRING DIAGRAMS

5.1 With Backlight

HAZARDOUS AREA

-40°C ≤ Ta ≤ +75°C
Ex ia IIC T4 Ga;
Ex ia IIIC T135°C Da;
Class I, Zone 0, AEx ia IIC T4 Ga;
Class I, Zone 20, AEx ia IIIC T135°C Da;
Class I, Division 1, Groups A, B, C and D, T4;
Class II, Division 1, Groups E, F and G, T135°C; Class III;
Class I, Division 2, Groups A, B, C and D, T6;
Class II, Division 2, Groups F and G, T85°C; Class III;
Type 4X; IP67

NON-HAZARDOUS AREA

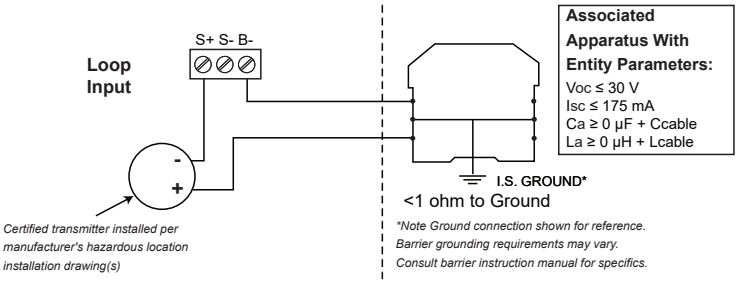
CSA Entity Certified positive polarity single or dual-channel intrinsic safety barrier(s) used in an approved configuration.

North American Community: Refer to **CSA Special Conditions for Safe Use** section for installation requirements pertaining to this device.

II 1GD
Ex ia IIC T4 Ga
Ex ia IIIC T135°C Da
-40°C ≤ Ta ≤ +75°C; IP67

ATEX/IECEx Entity Certified positive polarity single or dual-channel intrinsic safety barrier(s) used in an approved configuration.

European Community: Refer to **ATEX and IECEx Special Conditions for Safe Use** section for installation requirements pertaining to this device.



Certified transmitter installed per manufacturer's hazardous location installation drawing(s)

**Note Ground connection shown for reference. Barrier grounding requirements may vary. Consult barrier instruction manual for specifics.*

5.2 Without Backlight

HAZARDOUS AREA

-40°C ≤ Ta ≤ +75°C
Ex ia IIC T4 Ga;
Ex ia IIIC T135°C Da;
Class I, Zone 0, AEx ia IIC T4 Ga;
Class I, Zone 20, AEx ia IIIC T135°C Da;
Class I, Division 1, Groups A, B, C and D, T4;
Class II, Division 1, Groups E, F and G, T135°C; Class III;
Class I, Division 2, Groups A, B, C and D, T6;
Class II, Division 2, Groups F and G, T85°C; Class III;
Type 4X; IP67

NON-HAZARDOUS AREA

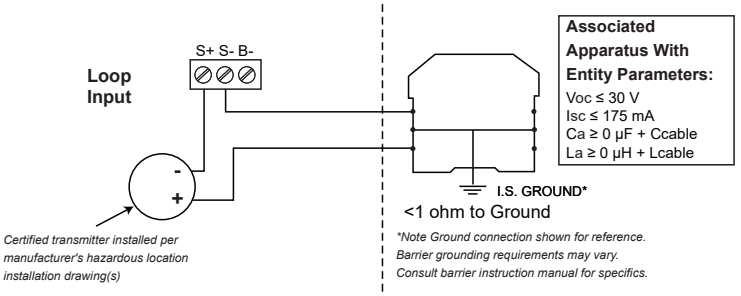
CSA Entity Certified positive polarity single or dual-channel intrinsic safety barrier(s) used in an approved configuration.

North American Community: Refer to **CSA Special Conditions for Safe Use** section for installation requirements pertaining to this device.

II 1GD
Ex ia IIC T4 Ga
Ex ia IIIC T135°C Da
-40°C ≤ Ta ≤ +75°C; IP67

ATEX/IECEx Entity Certified positive polarity single or dual-channel intrinsic safety barrier(s) used in an approved configuration.

European Community: Refer to **ATEX and IECEx Special Conditions for Safe Use** section for installation requirements pertaining to this device.



Certified transmitter installed per manufacturer's hazardous location installation drawing(s)

**Note Ground connection shown for reference. Barrier grounding requirements may vary. Consult barrier instruction manual for specifics.*

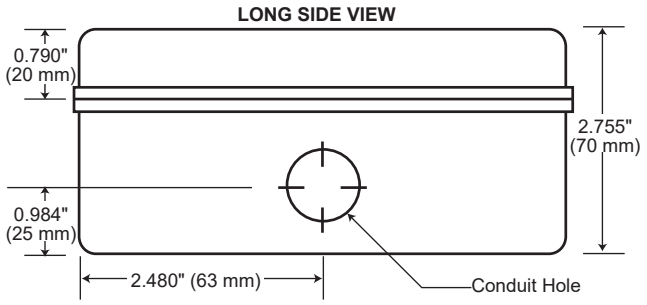
6.0 CONDUIT INSTALLATION INSTRUCTIONS

6.1 Remove the printed circuit board from the enclosure.

6.2 Connect appropriate size conduit fittings to the hole provided. For enclosures without a pre-drilled hole, the installer must make a hole in accordance with the instructions for the particular conduit fitting being installed.

6.3 Connect conduit (with attached hubs*) to the enclosure.
*Conduit hubs must be connected to the conduit prior to being connected to the enclosure. Use only conduit hubs that are designed to maintain NEMA 4X or IP67 ratings.

Note: See Figure below for typical hole location and dimension.



TYPICAL HOLE LOCATION

DW2443_A
LIM685-2_B 12/18

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