Certificate of Compliance

Certificate: 1111348 (LR 952_0_00) **Master Contract:** 157123

Project: 70189620 **Date Issued:** 2018-11-30

Issued to: Precision Digital Corporation
233 South Street
Hopkinton, Massachusetts 01748
USA

Attention: Scott Ewen

The products listed below 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 US Standards) or with adjacent indicator 'US' for US only or without either indicator for Canada only

C US

Issued by: *Albert Jansen*
Albert Jansen

PRODUCTS

Class I, Div. 1, Groups A, B, C and D; Class II, Div. 1, Groups E, F and G; Class III, Div. 1; Type 4X:
Model PD686 Loop Powered Indicator, rated 30V dc, 30mA; intrinsically safe when connected per installation Dwg No 1155; Vmax = 30V, Imax = 175mA, Pi = 1.3 W, Ci = 0, Li = 0; Temperature Code T4.

Ex ia IIC T4 Ga; Ex ia IIIC T135°C Da;
Class I, Div. 1, Groups A, B, C, and D, T4; Class II Div. 1, Groups E, F, G, T135°C; Class III; Type 4X; IP67
-40°C ≤ Ta ≤ 75°C
Model PD685 Loop Powered Indicator
Intrinsically safe when connected per installation drawing: DW2443

Entity Parameters: V_{MAX}/U_i = 30Vdc I_{MAX}/I_i = 175mA P_i = 1W C_i = 0pF L_i = 0µH

Conditions of Acceptability:

- 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. In addition, the equipment shall only be cleaned with a damp cloth.

- Cable glands shall be compatible with the degree of protection, explosion protection, and environmental rating of the PD685.

CLASS 2258 84 - PROCESS CONTROL EQUIPMENT - Intrinsically Safe Entity - For Hazardous Locations - Certified to US Standards

Class I, Zone 0, AEx ia IIC T4 Ga; Zone 20, AEx ia IIIC T135°C Da;
Class I, Div. 1, Groups A, B, C, and D, T4; Class II Div. 1, Groups E, F, G, T135°C; Class III; Type 4X; IP67
-40°C ≤ Ta ≤ 75°C
Model PD685 Loop Powered Indicator
Intrinsically safe when connected per installation drawing: DW2443

Entity Parameters: V_{MAX}/U_i = 30Vdc I_{MAX}/I_i = 175mA P_i = 1W C_i = 0pF L_i = 0µH

Conditions of Acceptability:

- 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. In addition, the equipment shall only be cleaned with a damp cloth.
- Cable glands shall be compatible with the degree of protection, explosion protection, and environmental rating of the PD685.

CLASS 2258 02 - PROCESS CONTROL EQUIPMENT - For Hazardous Locations

Class I, Div. 2, Groups A, B, C and D; Class II, Div. 2, Groups F and G; Class III, Div. 2; Type 4X:
Model PD686 Loop Powered Indicators, rated 30Vdc, 30mA.

Class I, Div. 2, Groups A, B, C, and D T6; Class II, Div. 2, Groups F and G, T85°C; Class III; Type 4X; IP67
Model PD685 Loop Powered Indicator, rated $30V_{DC}$, 30mA
-40°C ≤ Ta ≤ 75°C

Condition of Acceptability:

- The equipment must be connected to a certified class 2 power supply
- 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. In addition, the equipment shall only be cleaned with a damp cloth.
- 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.

CLASS 2258 82 - PROCESS CONTROL EQUIPMENT - For Hazardous Locations - Certified to US Standards

Class I, Div. 2, Groups A, B, C, and D T6; Class II, Div. 2, Groups F and G, T85°C; Class III; Type 4X; IP67
Model PD685 Loop Powered Indicator, rated 30Vdc, 30mA
-40°C ≤ Ta ≤ 75°C

Condition of Acceptability:

- The equipment must be connected to a certified class 2 power supply
- 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. In addition, the equipment shall only be cleaned with a damp cloth.
- 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.

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.

Markings appear on CSA Accepted labels manufactured Nameplate Division of the F.B. Johnston Group (Dataplate 668) and Flexcon (2 mil white polyester with 1 mil acrylic adhesive #V23).

Markings for the PD685 appear on one of the following CSA accepted labels:

- Industrial Labeling Systems ILS-320
- Industrial Labeling Systems ILS-324
- Royal Label T/C-329
- Nameplate Division of the F.B. Johnston Group Model 668

The following marking details appear:

- CSA Monogram
  - C US for the PD685
  - for the PD686
- Manufacturer's name;
- Model designation;
- Serial number;
- Electrical Rating;
- Hazardous locations designation;
- Maximum Ambient Temp;
- The words INTRINSICALLY SAFE/SECURITE INTRINSEQUE;
- The Symbol Ex ia, where applicable;
- Reference to identified installation instructions;
- Temperature code rating;
- Caution re. Substitution of Components… (appears on separate label)
- Caution re. Do not Disconnect Circuits… (appears on separate label)

The following warning shall be present on the PD685 in both English and French:

- Install per Control Drawing (DW2443);

- 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;
- THE EQUIPMENT MUST BE CONNECTED TO A CERTIFIED CLASS 2 POWER SUPPLY;

APPLICABLE REQUIREMENTS

Standard	Title
CAN/CSA-C22.2 No. 0-10	General Requirements – Canadian Electrical Code, Part II
CAN/CSA C22.2 No. 25-1966	Enclosures for Use in Class II, Groups E, F and G Hazardous Locations
CAN/CSA-C22.2 No. 94-M91	Special Purpose Enclosures
CAN/CSA C22.2 No. 142-M1987	Process Control Equipment
CAN/CSA C22.2 No. 157-92	Intrinsically Safe and Non-Incendive Equipment for Use in Hazardous Locations
CAN/CSA C22.2 No. 213-M1987	Non-Incendive Electrical Equipment for Use in Class I, Division 2 Hazardous Locations
CAN/CSA C22.2 No. 213-17	Nonincendive electrical equipment for use in Class I and II, Division 2 and Class III, Divisions 1 and 2 hazardous (classified) locations
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. 60079-0:15	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”
UL 913	Intrinsically Safe Apparatus and Associated Apparatus for Use in Class I, II, and III, Division 1, Hazardous (Classified) Locations
UL 121201	Nonincendive Electrical Equipment for Use in Class I and II, Division 2 and Class III, Divisions 1 and 2 Hazardous (Classified) Locations
UL 61010-1	Electrical Equipment For Measurement, Control, and Laboratory Use; Part 1: General Requirements
UL 60079-0	Explosive atmospheres – Part 0: Equipment – General requirements
UL 60079-11	Explosive Atmospheres – Part 11: Equipment Protection by Intrinsic Safety ″i″

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Supplement to Certificate of Compliance

Certificate: 1111348 (LR 952_0_00) **Master Contract:** 157123

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

Product Certification History

Project	Date	Description
70189620	2018-11-30	Update Report 1111348 to add new model PD685. CAN/CSA C22.2 No. 213-17; CSA C22.2 No. 61010-1-12; CAN/CSA-C22.2 No. 60079-0:15; CAN/CSA-C22.2 No. 60079-11:14; UL 913; UL 121201; UL 61010-1; UL 60079-0; UL 60079-11.
2392114	2011-04-26	Update of report 1111348 to cover drawings revision.
1923927	2007-06-15	Update of report 1111348 to cover minor drawing revision for Loop Powered Indicator
1834142	2006-09-26	Update to cover change in model number from PD686-CSA to PD686; and nameplate drawing change.
1760757	2006-02-10	Update to include alternative PCB Assembly for model PD686-CSA.
1520282	2004-02-23	Update of Report 1111348 to Cover Drawing and Construction Changes