



Certificate of Compliance

Certificate: 70098755

Master Contract: 267256 (267256)

Project: 70175994

Date Issued: 2018-03-14

Issued to: **Blackline Safety**
Suite 101, 1215-13th Street SE
Calgary, Alberta T2G 3J4
CANADA
Attention: Jon Samuelson

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.



Issued by: *Madhumathi Kulothungan*
Madhumathi Kulothungan

PRODUCTS

4828 02 - SIGNAL APPLIANCES-Toxic Gas Detection Instruments - For Hazardous Locations
4828 82 - SIGNAL APPLIANCES-Toxic Gas Detection Instruments-For Hazardous Locations. Certified to U.S. Standards

Class I, Division 1, Groups A, B, C, D; T4
Ex ia IIC T4 Ga
Class I, Zone 0, AEx ia IIC T4 Ga

Model G7c / G7x Portable Toxic Gas Detectors combining a Base Unit with a Gas Cartridge

Base unit – P/N “G7*-#” (Where * = c or x; # = NA, EU or AZ)

Gas Cartridge – Where # = Electro chemical sensor identifier or “X” indicating no sensor

No Gas Module P/N “Z”

Single Gas Module P/N “S-#”

Multi-gas Module P/N “Q-#####”

Battery powered (3.8V nominal Lithium); Temperature Code T4, Ambient temperature range of $-20^{\circ}\text{C} \leq T_a \leq +55^{\circ}\text{C}$.

Note: The equipment shall only be charged when in the non-hazardous area using a charger specifically supplied for use with the unit (for example part number SAW06D-050-1000xx, manufactured by Shenzhen Shi Ying Yuan Electronics Co., Ltd.), approved as SELV or Class 2 equipment against IEC 60950, IEC 61010-1 or an equivalent IEC standard. The maximum voltage and current from the charger shall not exceed 5.625Vdc and 2A respectively.



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4828 01 - SIGNAL APPLIANCES - - Combustible Gas Detection Instruments-For Hazardous Locations
4828 81 - SIGNAL APPLIANCES-Combustible Gas Detection Instruments - For Hazardous Location-
Certified to U.S. Standards

Class I, Division 1, Groups A, B, C, D; T4

Ex ia IIC T4 Ga

Ex da ia IIC T4 Ga (for unit with Pellistor Sensor Installed)

Class I, Zone 0, AEx ia IIC T4 Ga

Class I, Zone 0, AEx da ia IIC T4 Ga (for units with Pellistor Sensor Installed)

G7c Portable Toxic Gas Detectors combining a Base Unit with a Gas Cartridge

Base unit – P/N “G7c-#” (Where # = NA, EU or AZ)

Gas Cartridge – Where # = Electro chemical sensor identifier or “X” indicating no sensor

No Gas Module P/N “Z”

Single Gas Module P/N “S-#”

Multi Gas Module P/N “Q-#####”

Battery powered (3.8V nominal Lithium); Temperature Code T4, Ambient Temperature Range $-20^{\circ}\text{C} \leq T_a \leq +45^{\circ}\text{C}$. 0-100% LEL.

Notes:

- a) Only performance testing conducted for sensor model NDIR; Sensor part number number: MIPEX-02-1-II-3.1A
- b) The equipment shall only be charged when in the non-hazardous area using a charger specifically supplied for use with the unit (for example part number SAW06D-050-1000xx, manufactured by Shenzhen Shi Ying Yuan Electronics Co., Ltd.), approved as SELV or Class 2 equipment against IEC 60950, IEC 61010-1 or an equivalent IEC standard. The maximum voltage and current from the charger shall not exceed 5.625Vdc and 1A respectively.

APPLICABLE REQUIREMENTS

CSA C22.2 No 60079-0:15	- Electrical apparatus for explosive gas atmospheres. - PART 0: General requirements.
CSA C22.2 No 60079-11:14	- Electrical apparatus for explosive gas atmospheres. - PART 11: Intrinsic safety "i".
C22.2 No. 152 - M1984 (R2011)	- Combustible Gas Detection Instruments.
UL 913, Eighth Edition	- Intrinsically Safe Apparatus and Associated Apparatus for use in Class I, II, III, Division 1, Hazardous (Classified) Locations.
UL 60079-0 Sixth Edition	- Electrical apparatus for explosive gas atmospheres. - PART 0: General requirements.
UL 60079-11 Sixth Edition	- Electrical apparatus for explosive gas atmospheres. - PART 11: Intrinsic safety "i".
ANSI / ISA 12.13.01: 2000	- Performance Requirements for Combustible Gas Detectors

Reference standard - only Clause 4.2 for ‘da’ requirement



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CSA C22.2 No 60079-1:16

- Electrical apparatus for explosive gas atmospheres. - PART 1: Flameproof enclosures "d".

UL 60079-1 Seventh Edition

- UL Standard for Safety Explosive Atmospheres – Part 1: Equipment protection by Flameproof enclosures "d".

MARKINGS

Refer to CSA report 70098755 for marking details.



Supplement to Certificate of Compliance

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Master Contract: 267256 (267256)

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
70175994	2018-03-14	Update to Report 70098755 to include the following modifications, 1. Addition of new capacitors and resistors in the G7c multi-gas cartridge module, 2. Descriptive documents update, 3. Addition of LEL gas performance testing conducted under CSA TIS projects.
70165244	2018-01-30	Update to CSA Report to include the following modifications, 1. Revision to Quint-gas Cartridge Module to add new components. 2. Revision to Single-Gas PID Cartridge Module to add new components, modify and remove components 3. Editorial changes
70151731	2017-10-14	Updated CSA report 70098755 to add new G7 quint gas and single gas module
70131427	2017-06-08	Updated CSA report 70098755 to add new model G7x rated for Class I Div 1 Groups ABCD Class I Zone 0 IIC and Minor updates to G7c model. All the changes are listed below and they have been reviewed and found to compliance with applicable standards.
70116986	2017-05-02	Update to CSA report 70098755 to include LEL gas performance testing for Model G7c + NDIR and new Quad Gas Pellister Board and Quad Gas Digital Board.
70098755	2017-02-10	Model G7c Portable Toxic Gas Detector. Battery powered (3.8V nominal) for use in CI, D1, Gr ABCD; Ex ia IIC T4 Ga; CI I, Z0, AEx ia IIC T4 Ga; -20 to +55°C