Certificate of Compliance

Certificate: 70044220 **Master Contract:** 264933

Project: 80107015 **Date Issued:** 2022-03-16

Issued To: **Emerson Process Management Limited**
2 Hunt Hill Cumbernauld
Glasgow, Lanarkshire, G68 9LF
United Kingdom

Attention: Vicente Ramirez

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: *Lucas Nieuwenhout*
Lucas Nieuwenhout

C US

PRODUCTS

CLASS 2258-02 – PROCESS CONTROL EQUIPMENT – For Hazardous Locations
CLASS 2258-82 – PROCESS CONTROL EQUIPMENT – For Hazardous Locations to USA Standards

Class I, Division 2, Groups A, B, C, D; T3. Tamb -20°C to +55°C

Model CT5100 gas analyser and monitoring system, rated 100-120/250Vac, 60 Hz, 600W with Z type purge.

CONDITIONS OF ACCEPTABILITY:

i. The purge controller keypad mounted on the front of the equipment shall not be exposed to direct UV light sources or direct sunlight. Example methods of protection include, but are not limited to, indoor applications away from UV sources and outdoor locations under shading. As part of regular inspections, if damage to or deterioration of the membrane keypad is detected the unit is to be taken out of service for repair or replacement.

ii. The purge controller bypass function shall only be enabled during setup or maintenance and only when the area is known to be non-hazardous.
iii. The cable glands used in the equipment are only suitable for use in areas with a low risk of mechanical damage and must be suitably protected.
iv. The purge controller provided with this equipment provides alarm signals at various contacts as described in the equipment instructions. The alarms relate to low-flow and loss of purged air supply, and must be connected to the end-users remote, monitored, alarm system.
v. For correct operation the on-site pressurising air supply must be capable of providing at least 25 l/min for leakage compensation.
vi. This assessment does not cover reliable function, performance, or other properties of the equipment not related to safety.
vii. The equipment is to be installed using wire no larger than the protective earth wire.
viii. Equipment is only to be installed by manufacturer trained personnel.
ix. If at any time there is a conflict between the system safety provisions and any relevant local (national or regional) requirements, the local requirements always take precedence.
x. Equipment is not to be used with flammable liquids.
xi. The relief valve sealing cap must be fitted to maintain IP66 when the unit is in a non-operational state.
xii. Equipment is subject to acceptance of the local inspection authorities having jurisdiction.
xiii. The equipment is intended for use only with air of instrument quality; all piping up to and including the shut-off valve adjacent to the equipment must be protected against mechanical damage.
xiv. The protective gas supply to the equipment must be marked with the warning as detailed in NFPA 496 Clause 4.12.5.
xv. When installing conduit for power and data connections the end-user must select suitably certified conduit

APPLICABLE REQUIREMENTS

NFPA 496 (2017)	Standard for Purged and Pressurized Enclosures for Electrical Equipment
FM 3600 (2011)	Electrical Equipment for Use in Hazardous (Classified) Locations General Requirements
FM 3620 (2014)	Approval Standard for Purged and Pressurized Electrical Equipment for Hazardous (Classified) Locations
CAN/CSA-C22.2 No. 61010-1-12	Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use, Part 1: General Requirements
UL Std. No. 61010-1 (3rd Edition)	Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use - Part 1: General Requirements

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 CT5100 gas analyzer and monitoring system is marked with an aluminum nameplate fixed to the side using four fasteners.

1. Submitter's identification (company name and/or file number and/or registered tradename);
2. Model designation;
3. Electrical rating;
4. Hazardous location,
5. Temperature code,
6. Pressurization type: Type Z,
7. Parameters for protective gas used for pressurization:
    a. Purge flow rate: 280 l/min
    b. Purging time: 2 minutes 30 seconds
    c. Minimum overpressure: 0.5 mbar
    d. Maximum overpressure: 10 mbar
    e. Pressure relief valve setting: 10 mbar
    f. Purging gas: Instrument air or inert gas
8. Date of manufacture: Month and year of manufacture or date code. If a serial number is used instead of date of manufacture, a record of serial numbers shall be kept traceable to date of manufacture. (Not related to date of sale).
9. The products listed are eligible to bear the CSA Mark shown with adjacent indicators 'C' and 'US' for Canada and US: c SP us
10. Replacement fuse markings; Fuse type(s) and rating(s) (in volts and amperes), adjacent to the fuse holder(s).
11. Protective earthing TERMINAL is identified by the IEC 60417 No 5019 symbol ⏚, adjacent to the TERMINAL;
12. Units provided with Laser shall comply with the marking and other requirements of IEC 60825 and of Canadian and U.S. federal regulations;
13. PROTECTIVE BONDING TERMINAL is identified by the IEC 60417 No 5019 symbol ⏚, adjacent to the TERMINAL.

14. Wiring Diagram: Marking on the unit that indicates the options that the unit has been built with.
15. WARNING – Pressurized enclosure
16. AVERTISSEMENT – ENVELOPPE À SURPRESSION INTERNE
17. WARNING – Do not open when an explosive atmosphere is present.
18. AVERTISSEMENT – NE PAS OUVRIR SI UNE ATMOSPHÈRE EXPLOSIVE EST PRÉSENTE
19. WARNING – Power shall not be restored after an enclosure has been opened until enclosure has been purged for 2 minutes and 30 seconds at a flow rate of 280l/min.
20. AVERTISSEMENT – À LA SUITE D'UNE OUVERTURE, LA MISE SOUS TENSION NE DOIT PAS ÊTRE EFFECTUÉE AVANT QUE L'ENVELOPPE N'AIT ÉTÉ BALAYÉE PENDANT 2 ½ MINUTES SOUS UN DÉBIT DE 280l/min.
21. WARNING – This enclosure contains inert gas and may be an asphyxiation hazard.
22. AVERTISSEMENT – CETTE ENVELOPPE CONTIENT UN GAZ INERTE ET PEUT CONSTITUER UN DANGER D'ASPHYXIE.
23. WARNING – Batteries are located inside this enclosure. Do not open when an explosive atmosphere is present.
24. AVERTISSEMENT – PRÉSENCE DE BATTERIES À L'INTÉRIEUR DE CETTE ENVELOPPE. NE PAS OUVRIR SI UNE ATMOSPHÈRE EXPLOSIVE EST PRÉSENTE
25. WARNING – This pressurized enclosure contains a battery which remains connected after the external power has been isolated. Consideration should be given to the removal of the battery if the enclosure is to remain unprotected by Ex p for a significant time.
26. AVERTISSEMENT – CETTE ENVELOPPE À SURPRESSION INTERNE CONTIENT UNE BATTERIE QUI RESTE CONNECTÉE APRÈS QUE L'ALIMENTATION EXTERNE A ÉTÉ ISOLÉE. IL CONVIENT DE RETIRER LA BATTERIE S'IL FAUT QUE L'ENVELOPPE RESTE ANS PROTECTION EX P PENDANT UNE DURÉE PROLONGÉE

Note: Warnings may be modified by equivalent text.

Notes:

Products certified under Class C225802, C225882 have been certified under CSA's ISO/IEC 17065 accreditation with the Standards Council of Canada (SCC). www.scc.ca

Supplement to Certificate of Compliance

Certificate: 70044220 **Master Contract:** 264933

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
80107015	2022-03-16	Update to report 70044220 to update certificate with new company name and address, and update label drawings to reflect changes. There are no changes to the product or ratings.
70204982	2019-03-21	Update to report 70044220 to assess the following modifications: An alternative cell assembly arrangement is permitted to allow laser path lengths of 0.2 and 2 metres. Removal of intermediate terminal wiring to the purge controller is permitted.The introduction of alternative electrical components in the purged enclosure is permitted. The introduction of an alternative marking label which removes markings outside the scope of this certification and the recognition of minor drawing modifications that do not affect the aspects of the equipment that are relevant to explosion safety.
70133345	2017-08-18	Update to report 70044220 to assess the following modifications: an alternative cell assembly arrangement is permitted to allow a laser path length of 15 metres; a change of sealing material on the gas line bulkhead assembly is permitted; addition of Velcro flaps to the cell insulation jacket is permitted and changes to nameplate drawing to consolidate markings for ATEX, IECEx and North America is permitted.
70044220	2017-03-09	Original Certification of .Model CT5100 for Class I Division 2 Groups A ,B,C,D; T3. Tamb -20°C to +55°C; rated 100-120/250Vac, 60 Hz, 600W with Z type purge)