



Certificate of Compliance

Certificate: 80053040

Master Contract: 225996

Project: 80053040

Date Issued: March 17, 2021

Issued to: SpectraSensors, Inc
11027 Arrow Route
Rancho Cucamonga
California
91730
UNITED STATES

Attention: Paulo Silva

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:

Ian Hulse

PRODUCTS

CLASS 2258-02 – Process Control Equipment - For Hazardous Locations

J22 TDLAS Gas Analyzer & J22 TDLAS Gas Analyzer SCS on Panel & J22 TDLAS Gas Analyzer Encl. SCS

Ex db ia op is IIC T4 Gb
Class I, Division 1, Groups A, B, C, D T4
-20°C ≤ Ta ≤ +60°C

Type 4X / IP66

Rated: 100 - 240Vac, 50/60 Hz ± 10%, Um = 250V or 19.2 – 28.8 Vdc, max., Um 250V, 10 W.

I/01: Terminal 26 and 27, Un = 30Vdc, Um = 250Vac

I/02: Terminal 24 and 25, Un = 30Vdc, Um = 250Vac or Un = 30Vdc, In = 100mAdc/500mAac, Um = 250Vac

I/03: Terminal 22 and 23, Un = 30Vdc, Um = 250Vac or Un = 30Vdc, In = 100mAdc/500mAac, Um = 250Vac

Maximum Working Pressure 689 kPa (100 lbf/in²).



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J22 TDLAS Gas Analyzer Encl. SCS Heated

Ex db ia op is IIC T3 Gb
Class I, Division 1, Groups B, C, D T3
-20°C ≤ Ta ≤ +60°C

Type 4X / IP66

Rated: 100 - 240Vac, 50/60 Hz ± 10%, Um = 250V or 19.2 – 28.8 Vdc, max., Um = 250V, 10 W.
Heater: 100 - 240 Vac, 50/60 Hz ± 10%, 80 W.
I/01: Terminal 26 and 27, Un = 30Vdc, Um = 250Vac
I/02: Terminal 24 and 25, Un = 30Vdc, Um = 250Vac or Un = 30Vdc, In = 100mAdc/500mAac, Um = 250Vac
I/03: Terminal 22 and 23, Un = 30Vdc, Um = 250Vac or Un = 30Vdc, In = 100mAdc/500mAac, Um = 250Vac
Maximum Working Pressure 689 kPa (100 lbf/in²).

CLASS 2258 82 – Process Control Equipment - For Hazardous Locations – Certified to US Standards

Class I, Zone 1, AEx db ia op is IIC T4 Gb
Class I, Division 1, Groups A, B, C, D T4
-20°C ≤ Ta ≤ +60°C

Type 4X / IP66

Rated: 100 - 240Vac, 50/60 Hz ± 10%, Um = 250V or 19.2 – 28.8 Vdc, max. Um = 250V, 10 W.
I/01: Terminal 26 and 27, Un = 30Vdc, Um = 250Vac
I/02: Terminal 24 and 25, Un = 30Vdc, Um = 250Vac or Un = 30Vdc, In = 100mAdc/500mAac, Um = 250Vac
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Maximum Working Pressure 689 kPa (100 lbf/in²).

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Model Code Structure

J22 – ABCDEFGHIJKLMNOPQRSTUVWXYZ

A – Approval

CB - CSA C/US Class 1 Division I

B – Analyte

C – Measurement Range

D – Measurement Range 2

E – Stream Composition

F – Venting to

G – Process Wetted Materials

V - 316 Stainless Steel; FKM Seals

H – Supply Parameters

A - 100-240 VAC (50/60 Hz) \pm 10%

D – 24 VDC \pm 20%

I – Output; Input 1

J – Output; Input 2

K – Output; Input 3

L – Electronics Housing

1 - Coated Copper-Free Aluminum

M – Controller Mounting

N – Sample Conditioning System (SCS)

A - On Panel, Aluminum

B - Enclosed, 304 Stainless Steel

N – None

O – Filtration

P – Sample System Gas Connections

A – Imperial

B – Metric

Q – Pressure Regulation

R – Flow Meter

A - Armored, factory default

B - Armored, Krohne

F - Glass Tube, factory default

K - Glass Tube, Krohne

N - None

S – Heating Options

1 - Heated + Heat-Trace Boot, 100 - 240 VAC \pm 10%

8 – None

T – Purge

U – Operating Language Display

V – Test/Certificate/Declaration

W – Marking

Headings without sub-options are not considered critical to the design of the equipment. Where sub options are shown, these are the only options endorsed by CSA.



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The core model of the J22 TDLAS Gas Analyzer consists of a flameproof electronics compartment, intrinsically safe optical head and a measurement cell.

The J22 TDLAS Gas Analyzer with Sample Conditioning System, henceforth referred to as the 'SCS', on a panel combines the J22 TDLAS Gas Analyzer with the non-electrical SCS to precondition the analyte before examination within the cell.

J22 TDLAS Gas Analyzer with SCS in an enclosure can be configured with or without a pre-certified terminal box, heater and thermostat. This allows more precise control of the gas temperature.

Conditions of Acceptability:

1. The temperature of the J22 TDLAS Gas Analyzer can reach 67°C in a 60°C ambient at the cable entry and the branching point. This must be considered by the user when selecting field wiring and cable entry devices.
2. The user shall install a suitable equipment certified seal within 18" of the enclosure entry of the Transmitter. On models of the J22 TDLAS Gas Analyzer with enclosed SCS featuring an optional heater, a suitable equipment certified seal shall be installed within 2" of the outer enclosure wall of the heating circuit.
3. The temperature of the process medium shall be within the ambient temperature rating of the equipment.
4. The flameproof joints of this equipment shall not be repaired by the user.
5. Adhesive labels and the powder coating of models of the equipment with an aluminium enclosure are non-conducting materials and may generate an ignition-capable level of electrostatic discharge under certain extreme conditions. The user should ensure that the Equipment is not installed in a location where it may be subjected to external conditions (such as high-pressure steam) which might cause a build-up of electrostatic charges on these non-conducting surfaces. Additionally, cleaning of the equipment should be done only with a damp cloth.
6. Models of this equipment featuring a powder coated aluminium transmitter shall not be installed in atmospheres containing esters or ketones. This limitation does not apply to models of the equipment with a stainless steel transmitter.
7. The main electronic assembly shall be protected by a building installation overcurrent protection rated for 10 A or less.
8. Residual risk: in case of Single Fault, some capacitors may remain charged with high voltage. In case of repair, warning in documentation is necessary.



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APPLICABLE REQUIREMENTS

CSA C22.2 No. 0-10 (R2015)	- General Requirements – Canadian Electrical Code, Part II
CSA-C22.2 No. 61010-1-12, UPD1:2015, UPD2:2016, AMD1:2018	- Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use — Part 1: General Requirements
CSA C22.2 No. 60079-0:19	- Explosive atmospheres — Part 0: Equipment — General requirements
CSA C22.2 No. 60079-1:16	- Explosive atmospheres — Part 1: Equipment protection by flameproof enclosures “d”
CSA C22.2 No. 60079-11:14	- Explosive atmospheres — Part 11: Equipment protection by intrinsic safety “i”
CSA C22.2 No. 60079-28:16	- Explosive atmospheres — Part 28: Protection of equipment and transmission systems using optical radiation
CSA C22.2 No. 30-M1986 (R2016)	- Explosion-Proof Enclosures for Use in Class I Hazardous Locations
CSA C22.2 No. 60529:16	- Degrees of protection provided by enclosures (IP Code)
CSA C22.2 No. 94.2-15	- Enclosures for Electrical Equipment, Environmental Considerations
UL Std. No. 61010-1 (3rd Edition), AMD1:2018	- Electrical Equipment For Measurement, Control, and Laboratory Use; Part 1: General Requirements - Third Edition
ANSI/UL-60079-0 (2019)	- Explosive Atmospheres – Part 0: Equipment – General Requirements
ANSI/UL 60079-1 (2015)	- Explosive Atmospheres – Part 1: Equipment Protection by Flameproof Enclosures “d”
ANSI/UL 60079-11 (2013)	- Explosive Atmospheres – Part 11: Equipment protection by intrinsic safety “i”
ANSI/UL 60079-28 (2017)	- Explosive Atmospheres – Part 28: Protection of Equipment and Transmission Systems Using Optical Radiation
FM 3600 (2018)	- Electrical Equipment for Use in Hazardous (Classified) Locations – General Requirements
FM 3615 (2018)	- Explosionproof Electrical Equipment General Requirements
ANSI/IEC 60529:04 (R2011)	- Degrees of protection provided by enclosures (IP Code)
UL 50E (2015)	- Enclosures for Electrical Equipment, Environmental Considerations
UL 913 (2013)	- Intrinsically Safe Apparatus and Associated Apparatus for use in Class I, II, and III, Division 1, Hazardous (Classified) Locations

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.



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Markings are laser etched on to adhesive label ELTEX TOP-SCRIPT 101720 as described below:

- CSA Monogram with c us Indicator (The products listed 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), as shown on this Certificate of Compliance.
- Manufacturers name “SpectraSensors Inc.”, or CSA Master Contract number “225996” adjacent the CSA Mark, in lieu of manufacturers name.
- Model designation, as specified in the PRODUCTS section, above.
- Complete electrical rating, as specified in the PRODUCTS section, above.
- Maximum ambient temperature rating, as specified in the PRODUCTS section, above.
- Date code / Serial number traceable to month and year of manufacture.
- Special purpose enclosure designation “Type 4X” as specified in the PRODUCTS section, above.
- Ingress Rating “IP66” as specified in the PRODUCTS section, above.
- Hazardous locations designation as specified in the PRODUCTS section, above.
- Cable entry option.
- Maximum working pressure as specified in the PRODUCTS section, above.
- For Canadian Zone marked products, the Certificate Number Reference “21CA80053040” next to the CSA logo or preceded by “CSA” agency name.
- The warning words: - “DO NOT OPEN IN AN EXPLOSIVE ATMOSPHERE” and “NE PAS OUVRIR EN ATMOSPHERE EXPLOSIVE” or equivalent;
- Transmitter - The warning words: - “SEAL REQUIRED WITHIN 18 INCHES” and “SCHELLEMENT REQUIS A MOINS DE 18” or equivalent;
- Heater Circuit (if present) - The warning words: - “SEAL REQUIRED WITHIN 2 INCHES” and “SCHELLEMENT REQUIS A MOINS DE 2” or equivalent;
- The symbol 6 of Table 1 of 61010-1 protective earth symbol adjacent to the earthing terminal.
- The symbol 14 of Table 1 of 61010-1 indicating “Caution”.
- Terminal identification marking (adjacent to terminal block).
- “Use Copper Conductors only” (adjacent to terminal block).

Nameplate adhesive label material approval information:

Approval markings laser etched on to adhesive label as detailed below.

ELTEX TOP-SCRIPT 101720	CSA 1593474 (LR 82598-10) FM Report 3035955
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