



Certificate of Compliance

Certificate: 80053040

Master Contract: 225996

Project: 80226189

Date Issued: December 13, 2024

Issued To: Endress+Hauser Optical Analysis 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:

James Jarman (XP)

Ian Hulse (IS)

PRODUCTS

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

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

CLASS 2258-02

J22 TDLAS Gas Analyzer

Ex db ia [ia Ga] op is IIC T4 Gb

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

-20°C ≤ Ta ≤ +60°C

Type 4X / IP66

Dual Seal Without Annunciation

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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I/O3: Terminal 22 and 23, $U_n = 30\text{Vdc}$, $U_m = 250\text{Vac}$ or $U_n = 30\text{Vdc}$, $I_n = 100\text{mAdc}/500\text{mAac}$, $U_m = 250\text{Vac}$
Flow Switch: J6 (Optical Head Enclosure), $U_o/V_o = 5.88\text{V}$, $I_o/I_{sc} = 4.53\text{mA}$, $P_o = 6.66\text{mW}$, $C_o/C_a = 43\mu\text{F}$,
 $L_o/L_a = 1.74\text{H}$ (U_o/V_o may be + or - 5.88V with respect to Pin 2 of J6)
Maximum Working Pressure Range: 800-1200 mbara, or 800-1700 mbara (model dependant)
Process Temperature Range: $-20^\circ\text{C} \leq T_{\text{process}} \leq +60^\circ\text{C}$

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

$-20^\circ\text{C} \leq T_a \leq +60^\circ\text{C}$

Type 4X / IP66

Dual Seal Without Annunciation

Rated: 100 - 240Vac, 50/60 Hz $\pm 10\%$, $U_m = 250\text{V}$ or 19.2 – 28.8 Vdc, max., $U_m = 250\text{V}$, 10 W.

I/O1: Terminal 26 and 27, $U_n = 30\text{Vdc}$, $U_m = 250\text{Vac}$

I/O2: Terminal 24 and 25, $U_n = 30\text{Vdc}$, $U_m = 250\text{Vac}$ or $U_n = 30\text{Vdc}$, $I_n = 100\text{mAdc}/500\text{mAac}$, $U_m = 250\text{Vac}$

I/O3: Terminal 22 and 23, $U_n = 30\text{Vdc}$, $U_m = 250\text{Vac}$ or $U_n = 30\text{Vdc}$, $I_n = 100\text{mAdc}/500\text{mAac}$, $U_m = 250\text{Vac}$

Maximum Working Pressure Range: 800-1200 mbara, or 800-1700 mbara (model dependant)

Process Temperature Range: $-20^\circ\text{C} \leq T_{\text{process}} \leq +60^\circ\text{C}$

J22 TDLAS Gas Analyzer Encl. SCS Heated

Ex db ia op is IIC T3 Gb

Class I, Division 1, Groups B, C, D T3

$-20^\circ\text{C} \leq T_a \leq +60^\circ\text{C}$

Type 4X / IP66

Dual Seal Without Annunciation

Rated: 100 - 240Vac, 50/60 Hz $\pm 10\%$, $U_m = 250\text{V}$ or 19.2 – 28.8 Vdc, max., $U_m = 250\text{V}$, 10 W.

Heater: 100 - 240 Vac, 50/60 Hz $\pm 10\%$, 80 W.

I/O1: Terminal 26 and 27, $U_n = 30\text{Vdc}$, $U_m = 250\text{Vac}$

I/O2: Terminal 24 and 25, $U_n = 30\text{Vdc}$, $U_m = 250\text{Vac}$ or $U_n = 30\text{Vdc}$, $I_n = 100\text{mAdc}/500\text{mAac}$, $U_m = 250\text{Vac}$

I/O3: Terminal 22 and 23, $U_n = 30\text{Vdc}$, $U_m = 250\text{Vac}$ or $U_n = 30\text{Vdc}$, $I_n = 100\text{mAdc}/500\text{mAac}$, $U_m = 250\text{Vac}$

Maximum Working Pressure Range: 800-1200 mbara, or 800-1700 mbara (model dependant)

Process Temperature Range: $-20^\circ\text{C} \leq T_{\text{process}} \leq +60^\circ\text{C}$

CLASS 2258 82

J22 TDLAS Gas Analyzer

Class I, Zone 1, AEx db ia [ia Ga] op is IIC T4 Gb

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

$-20^\circ\text{C} \leq T_a \leq +60^\circ\text{C}$



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Dual Seal Without Annunciation

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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

Flow Switch: J6 (Optical Head Enclosure), Uo/Voc = 5.88V, Io/Isc = 4.53mA, Po = 6.66mW, Co/Ca = 43 μ F, Lo/La = 1.74H (Uo/Voc may be + or – 5.88V with respect to Pin 2 of J6)

Maximum Working Pressure Range: 800-1200 mbara, or 800-1700 mbara (model dependant)

Process Temperature Range: -20°C $\leq$ Tprocess $\leq$ +60°C

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

Class I, Zone 1, AEx db ia op is IIC T4 Gb

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

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Type 4X / IP66

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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 Range: 800-1200 mbara, or 800-1700 mbara (model dependant)

Process Temperature Range: -20°C $\leq$ Tprocess $\leq$ +60°C

J22 TDLAS Gas Analyzer Encl. SCS Heated

Class I, Zone 1, AEx db ia op is IIC T3 Gb

Class I, Division 1, Groups B, C, D T3

-20°C $\leq$ Ta $\leq$ +60°C

Type 4X / IP66

Dual Seal Without Annunciation

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

Heater: 100 - 240 Vac, 50/60 Hz $\pm$ 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 Range: 800-1200 mbara, or 800-1700 mbara (model dependant)

Process Temperature Range: -20°C $\leq$ Tprocess $\leq$ +60°C



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Model Code Structure

J22 – ABCDEFGHIJKLMNOPQRSTUVWXYZ. The manufacturer's internal reference code is shown adjacent to each model code placeholder in brackets ().

A (10) – Approval

CB - CSA C/US Class 1 Division I

B (20) – Analyte

C (30) – Measurement Range

D (40) – Measurement Range 2

E (50) – Stream Composition

F (60) – Venting to

G (70) – Process Wetted Materials

J – 316 Stainless Steel; FFKM Seals (Analyzer Only)

K - 316 Stainless Steel; FFKM Seals (Analyzer with SCS)

V - 316 Stainless Steel; FKM Seals

H (80) – Supply Parameters

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

D – 24 VDC $\pm$ 20%

I (90) – Output; Input 1

J (100) – Output; Input 2

K (110) – Output; Input 3

L (120) – Electronics Housing

1 - Coated Copper-Free Aluminum; no WLAN

2 – 316 Stainless Steel; no WLAN

3 - Coated Copper-Free Aluminum + WLAN

4 – 316 Stainless Steel + WLAN M (130) – Controller Mounting

N (140) – Sample Conditioning System (SCS)

A - On Panel, Aluminum

B - Enclosed, 304 Stainless Steel

C – Enclosed, 316 Stainless Steel

N – None

O (150) – Filtration

P (160) – Sample System Gas Connections

A – Imperial

B – Metric

Q (170) – Pressure Regulation

R (180) – Flow Meter

G - Armored, factory default

P - Armored, Krohne with flow switch

F - Glass Tube, factory default

K - Glass Tube, Krohne

N - None

S (190) – Heating Options

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

8 – None



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T (200) – Purge
U (500) – Operating Language Display
V (580) – Test/Certificate/Declaration
W (895) – 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.

Sub-options not shown within the model code, such as those indicated with a “Y”, “9”, “YY” or “99”, are used by the manufacturer to identify non-standard product configurations within the sample conditioning system; in this case, only the J22 TDLAS Gas Analyzer is endorsed by CSA.

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 explosionproof seal within 2” of the enclosure entry of the Transmitter for Class I Zone 1 installations. An additional explosionproof seal beyond the Transmitter is not required for Class I Division 1 installations. On models of the J22 TDLAS Gas Analyzer with enclosed SCS featuring an optional heater, a suitable equipment certified explosionproof 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.
9. This equipment is intended to operate at a constant pressure and has not been assessed for the effects of persistent fluctuations of pressure within the operating pressure range. Therefore, the user shall ensure that the pressure fluctuation within the Sample Cell Tube of the equipment does not routinely exceed 5 lbf/in² (psi).
10. The maximum working pressure (MWP) of the equipment is listed as 800-1200 mbara, or 800-1700 mbara (model dependant). This is the pressure range at which the manufacturer has determined the equipment can operate. However, the equipment was assessed to withstand a pressure of 100 lbf/in² (psi) against CSA C22.2 No 60079-40:20 and UL 122701 (2021).



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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. 94.2-15	- Enclosures for Electrical Equipment, Environmental Considerations
CSA C22.2 No 60079-40:20	- Explosive Atmospheres – Part 40: Requirements for process sealing between flammable process fluids and electrical systems
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
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
UL 122701 (2021)	- Requirements for Process Sealing Between Electrical Systems and Flammable or Combustible Process Fluids



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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 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 the Certificate of Compliance.
- Manufacturers name “Endress+Hauser Optical Analysis 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 and process 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 (Class I Zone 1) - The warning words: - “SEAL REQUIRED WITHIN 2 INCHES” and “SCELLEMENT REQUIS A MOINS DE 2” ” or equivalent;
- Transmitter (Class I Division 1) - The words “Factory Sealed for Class I Division 1” or “Seal not Required for Class I Division 1” or equivalent.
- Heater Circuit (if present) - The warning words: - “SEAL REQUIRED WITHIN 2 INCHES” and “SCELLEMENT REQUIS A MOINS DE 2” or equivalent;
- The words “Dual Seal Without Annunciation”
- The symbol 6 of Table 1 of 61010-1 protective earth symbol adjacent to the earthing terminal.
- The symbol 14 of Table 1 of Table 1 of 61010-1 indicating “Caution”.
- Terminal identification marking (adjacent to terminal block).
- “Use Copper Conductors only” (adjacent to terminal block).



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- The Control Drawing number “EX3100000051”.
- The instructions manual document number “XA02708C”

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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Products certified under Class 2258-04 and 2258-84 have been certified under CSA’s ISO/IEC 17065 accreditation with the Standards Council of Canada (SCC). www.scc.ca

