



# Certificate of Compliance

**Certificate:** 80187162

**Master Contract:** 225996

**Project:** 80187162

**Date Issued:** 2024-03-07

**Issued to:** Endress+Hauser Optical Analysis Inc.  
11027 Arrow Route  
Rancho Cucamonga, California 91730  
UNITED STATES  
**Attention:** Mr 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 (Ex d & Env)

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**

### JT33 TDLAS Spectrometer

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

[Ex ia] Class I, Division 1, Groups A, B, C, D T4

-20°C ≤ Ta ≤ +60°C

Type 4X / IP66

Dual Seal Without Annunciation



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JT33 TDLAS Spectrometer: 100-240 VAC 50/60Hz  $\pm$  10%, Um = 250V; or 24VDC  $\pm$  20%, 10 W, Um = 250V.  
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  
J6 Optical Head Enclosure (Flow Switch): Uo/Voc = 5.88V, Io/Isc = 4.53mA, Po = 6.66mW, Co/Ca = 43 $\mu$ 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:  $-20^{\circ}\text{C} \leq T_{\text{process}} \leq +50^{\circ}\text{C}$

### **JT33 TDLAS Gas Analyzer (No Sample System)**

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

**[Ex ia] Class I, Division 1, Groups B, C, D T4**

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

**Type 4X / IP66**

**Dual Seal Without Annunciation**

JT33 TDLAS Spectrometer: 100-240 VAC 50/60Hz  $\pm$  10%, Um = 250V; or 24VDC  $\pm$  20%, 10 W, Um = 250V.  
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  
J6 Optical Head Enclosure (Flow Switch): Uo/Voc = 5.88V, Io/Isc = 4.53mA, Po = 6.66mW, Co/Ca = 43 $\mu$ 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:  $-20^{\circ}\text{C} \leq T_{\text{process}} \leq +50^{\circ}\text{C}$

Measurement Accessory Controller (MAC): 100-240 VAC, 50/60 Hz, 275 W; or 24 VDC, 67 W.

J6 SOVS, J11 HEAT SCS, J12 AC IN: Um = 250V

J5 SCS THRM – Pin 1 w.r.t. Pin 2 (Thermistor): Ui = 0, Ci = 0, Li = 0, Uo = +5.88V, -1V, Io = 1.18mA  
(resistively limited), Po = 1.78mW, Co = 40 $\mu$ F, Lo = >1H

### **JT33 TDLAS Gas Analyzer System**

**Ex db ia [ia Ga] op is IIC T3 Gb**

**[Ex ia] Class I, Division 1, Groups B, C, D T3**

**$-20^{\circ}\text{C} \leq T_a \leq +50^{\circ}\text{C}$**

**Type 4X / IP66**

**Dual Seal Without Annunciation**

JT33 TDLAS Spectrometer: 100-240 VAC 50/60Hz  $\pm$  10%, Um = 250V; or 24VDC  $\pm$  20%, 10 W, Um = 250V.  
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



**Certificate:** 80187162

**Master Contract:** 225996

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**Date Issued:** 2024-03-07

J6 Optical Head Enclosure (Flow Switch):  $U_o/V_{oc} = 5.88V$ ,  $I_o/I_{sc} = 4.53mA$ ,  $P_o = 6.66mW$ ,  $C_o/C_a = 43\mu F$ ,  
 $L_o/L_a = 1.74H$  ( $U_o/V_{oc}$  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:  $-20^{\circ}C \leq T_{process} \leq +50^{\circ}C$

Measurement Accessory Controller (MAC): 100-240 VAC, 50/60 Hz, 275 W; or 24 VDC, 67 W.

J6 SOVS, J11 HEAT SCS, J12 AC IN:  $U_m = 250V$

J5 SCS THRM – Pin 1 w.r.t. Pin 2 (Thermistor):  $U_i = 0$ ,  $C_i = 0$ ,  $L_i = 0$ ,  $U_o = +5.88V$ ,  $-1V$ ,  $I_o = 1.18mA$   
(resistively limited),  $P_o = 1.78mW$ ,  $C_o = 40\mu F$ ,  $L_o = >1H$

## **CLASS 2258-82**

### **JT33 TDLAS Spectrometer**

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

**[Ex ia] Class I, Division 1, Groups A, B, C, D T4**

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

**Type 4X / IP66**

**Dual Seal Without Annunciation**

JT33 TDLAS Spectrometer: 100-240 VAC 50/60Hz  $\pm 10\%$ ,  $U_m = 250V$ ; or 24VDC  $\pm 20\%$ , 10 W,  $U_m = 250V$ .

I/01: Terminal 26 and 27,  $U_n = 30V_{dc}$ ,  $U_m = 250V_{ac}$

I/02: Terminal 24 and 25,  $U_n = 30V_{dc}$ ,  $U_m = 250V_{ac}$  or  $U_n = 30V_{dc}$ ,  $I_n = 100mA_{dc}/500mA_{ac}$ ,  $U_m = 250V_{ac}$

I/03: Terminal 22 and 23,  $U_n = 30V_{dc}$ ,  $U_m = 250V_{ac}$  or  $U_n = 30V_{dc}$ ,  $I_n = 100mA_{dc}/500mA_{ac}$ ,  $U_m = 250V_{ac}$

J6 Optical Head Enclosure (Flow Switch):  $U_o/V_{oc} = 5.88V$ ,  $I_o/I_{sc} = 4.53mA$ ,  $P_o = 6.66mW$ ,  $C_o/C_a = 43\mu F$ ,

$L_o/L_a = 1.74H$  ( $U_o/V_{oc}$  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:  $-20^{\circ}C \leq T_{process} \leq +50^{\circ}C$

### **JT33 TDLAS Gas Analyzer No Sample System**

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

**[Ex ia] Class I, Division 1, Groups B, C, D T4**

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

**Type 4X / IP66**

**Dual Seal Without Annunciation**

JT33 TDLAS Spectrometer: 100-240 VAC 50/60Hz  $\pm 10\%$ ,  $U_m = 250V$ ; or 24VDC  $\pm 20\%$ , 10 W,  $U_m = 250V$ .

I/01: Terminal 26 and 27,  $U_n = 30V_{dc}$ ,  $U_m = 250V_{ac}$

I/02: Terminal 24 and 25,  $U_n = 30V_{dc}$ ,  $U_m = 250V_{ac}$  or  $U_n = 30V_{dc}$ ,  $I_n = 100mA_{dc}/500mA_{ac}$ ,  $U_m = 250V_{ac}$

I/03: Terminal 22 and 23,  $U_n = 30V_{dc}$ ,  $U_m = 250V_{ac}$  or  $U_n = 30V_{dc}$ ,  $I_n = 100mA_{dc}/500mA_{ac}$ ,  $U_m = 250V_{ac}$

J6 Optical Head Enclosure (Flow Switch):  $U_o/V_{oc} = 5.88V$ ,  $I_o/I_{sc} = 4.53mA$ ,  $P_o = 6.66mW$ ,  $C_o/C_a = 43\mu F$ ,

$L_o/L_a = 1.74H$  ( $U_o/V_{oc}$  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)



**Certificate:** 80187162  
**Project:** 80187162

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Process Temperature Range:  $-20^{\circ}\text{C} \leq T_{\text{process}} \leq +50^{\circ}\text{C}$

Measurement Accessory Controller (MAC): 100-240 VAC, 50/60 Hz, 275 W; or 24 VDC, 67 W.

J6 SOVS, J11 HEAT SCS, J12 AC IN:  $U_m = 250\text{V}$

J5 SCS THRM – Pin 1 w.r.t. Pin 2 (Thermistor):  $U_i = 0$ ,  $C_i = 0$ ,  $L_i = 0$ ,  $U_o = +5.88\text{V}$ ,  $-1\text{V}$ ,  $I_o = 1.18\text{mA}$  (resistively limited),  $P_o = 1.78\text{mW}$ ,  $C_o = 40\mu\text{F}$ ,  $L_o = >1\text{H}$

### **JT33 TDLAS Gas Analyzer System**

**Class 1, Zone 1, AEx db ia [ia Ga] ib op is IIC T3 Gb**  
**[Ex ia] Class I, Division 1, Groups B, C, D T3**  
 **$-20^{\circ}\text{C} \leq T_a \leq +50^{\circ}\text{C}$**

**Type 4X / IP66**

**Dual Seal Without Annunciation**

JT33 TDLAS Spectrometer: 100-240 VAC 50/60Hz  $\pm 10\%$ ,  $U_m = 250\text{V}$ ; or 24VDC  $\pm 20\%$ , 10 W,  $U_m = 250\text{V}$ .

I/01: Terminal 26 and 27,  $U_n = 30\text{Vdc}$ ,  $U_m = 250\text{Vac}$

I/02: 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/03: Terminal 22 and 23,  $U_n = 30\text{Vdc}$ ,  $U_m = 250\text{Vac}$  or  $U_n = 30\text{Vdc}$ ,  $I_n = 100\text{mAdc}/500\text{mAac}$ ,  $U_m = 250\text{Vac}$

J6 Optical Head Enclosure (Flow Switch):  $U_o/\text{Voc} = 5.88\text{V}$ ,  $I_o/\text{Isc} = 4.53\text{mA}$ ,  $P_o = 6.66\text{mW}$ ,  $C_o/\text{Ca} = 43\mu\text{F}$ ,  $L_o/\text{La} = 1.74\text{H}$  ( $U_o/\text{Voc}$  may be + or  $- 5.88\text{V}$  with respect to Pin 2 of J6)

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

Process Temperature Range:  $-20^{\circ}\text{C} \leq T_{\text{process}} \leq +50^{\circ}\text{C}$

Measurement Accessory Controller (MAC): 100-240 VAC, 50/60 Hz, 275 W; or 24 VDC, 67 W.

J6 SOVS, J11 HEAT SCS, J12 AC IN:  $U_m = 250\text{V}$

J5 SCS THRM – Pin 1 w.r.t. Pin 2 (Thermistor):  $U_i = 0$ ,  $C_i = 0$ ,  $L_i = 0$ ,  $U_o = +5.88\text{V}$ ,  $-1\text{V}$ ,  $I_o = 1.18\text{mA}$  (resistively limited),  $P_o = 1.78\text{mW}$ ,  $C_o = 40\mu\text{F}$ ,  $L_o = >1\text{H}$

### **Model Code Structure**

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. For order codes listed as ‘special’ from the manufacturer, only the JT33 TDLAS Spectrometer is a CSA certified part.

JT33 –

10 – Approval

CB: cCSAus

20 – Analyte

30 – H2S Measurement Range

40 – H2O Measurement Range

50 – Additional Measurement Range

60 – O2 Measurement Range

70 – Stream Composition



**Certificate:** 80187162  
**Project:** 80187162

**Master Contract:** 225996  
**Date Issued:** 2024-03-07

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- 80 – Venting to
  - A: Atmosphere
  - F: Flare
- 90 – Special Application
- 100 – Measurement Wetted Materials
  - 1: 316 Stainless Steel; FKM Seals
- 110 – Power Controller
  - A: 100 – 240 VAC  $\pm$  10%
  - D: 24 VDC  $\pm$  20%
- 120 – Output:Input 1
- 130 – Output:Input 2
- 140 – Output:Input 3
- 145 – Ambient Temperature
  - 1: -20 to +50°C
  - 2: -10 to +60°C (Not for JT33 TDLAS Gas Analyzer System)
- 150 – Controller Housing Material
  - 1: Coated Copper-Free Alu
  - 2: 316 Stainless Steel
- 160 – Controller Mounting
  - 1: Fixed controller mount with integral HMI
  - 2: Panel mount spectrometer; use for feature 170, option N only
- 170 – Sample Conditioning System and Enclosure
  - D: 304 Stainless Steel
  - E: 316 Stainless Steel
  - N: None
- 180 – Validation Options
  - 1: Manual validation
  - 2: Auto validation, 1-point
  - 4: Air operated auto-validation, 1-point
  - 5: Air operated auto-validation, 2-point
  - N: None
- 190 – Filtration
- 200 – Sample System Gas Connection
  - A: Imperial
  - B: Metric
- 210 – Pressure Regulation
  - B: Pressure Regulator plus Pressure Relief Valve
  - D: Pressure Regulator, Premium, plus Pressure Relief Valve
  - N: None
- 220 – Flow Meter
  - F: Glass Tube, Factory Default
  - K: Glass Tube, Premium (KROHNE)
  - L: Armored Flowmeter, Factory Default (King)
  - M: Armored Flowmeter premium (KROHNE)
  - N: None
- 230 – Heated Sample Conditioning System (SCS)



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**Project:** 80187162

**Date Issued:** 2024-03-07

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- 1: Heated, no Heat-Trace Boot, 100 VAC
- 2: Heated and Heat-Trace Boot, 100 VAC
- 3: Heated, no Heat-Trace Boot, 120 VAC
- 4: Heated and Heat-Trace Boot, 120 VAC
- 5: Heated, no Heat-Trace Boot, 230 VAC
- 6: Heated and Heat-Trace Boot, 230 VAC
- 7: Heated, no Heat-Trace Boot, 240 VAC
- 8: Heated and Heat-Trace Boot, 240 VAC
- 9/10/11: No heating for system integrators
- 12: No heating "Spectrometer Only" version

240 – Application Specific

500 – Operating Language Display

530 – Validation Gas

580 – Test, Certificate, Declaration

590 – Additional Approval

895 – Marking

Z1: Tag



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### **APPLICABLE REQUIREMENTS**

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 (2022)	- Electrical Equipment for Use in Hazardous (Classified) Locations – General Requirements
FM 3615 (2022)	- 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 (2022) – 4 <sup>th</sup> Edition	- Requirements for Process Sealing Between Electrical Systems and Flammable or Combustible Process Fluids

### **Conditions of Acceptability:**

1. The flameproof joints of this equipment are other than the minimums specified in CSA/UL 60079-1 and shall not be repaired by the user.
2. The temperature of the Equipment’s transmitter 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.
3. 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.
4. When supplied, the Measurement Accessory Controller (MAC) shall be used with field wiring and cable entry devices suitable for a temperature of at least 75°C.





**Certificate:** 80187162

**Master Contract:** 225996

**Project:** 80187162

**Date Issued:** 2024-03-07

5. When supplied, the user shall ensure a suitable equipment certified explosionproof seal is installed within 5" of the enclosure wall at each utilised cable/conduit entry point of the Measurement Accessory Controller (MAC). **WARNING-SEAL ENTRIES WITHIN 5" OF ENCLOSURE. ATTENTION-SCELLER LES ENTRÉES À MOINS DE 5" DE L'ENCEINTE.**
6. The equipment shall not be installed in atmospheres containing esters or ketones.
7. When cable entry devices are provided by the end user for the MAC, these shall meet the requirements of IP66 following the tests of enclosures as defined in CSA/UL 60079-0.
8. When J5 of the MAC is considered as a field wiring connection, the installer shall use cable whose inner cores have a minimum radial insulation thickness of  $\geq 0.5$  mm.
9. The JT33 TDLAS Spectrometer and JT33 TDLAS Gas Analyzer (No Sample System) shall be installed in an enclosure that is suitable for the environment of use and that provides protection against mechanical impact. The user shall ensure that the surrounding temperature of the optical head does not exceed 60°C and that the surrounding temperature of the MAC does not exceed 70°C.
10. To ensure the degree of protection is maintained, the user shall ensure that the cover seal of the G3xx enclosure (transmitter) is flat with no bends in the seal surface before securing the cover. Seals that are not flat are to be replaced.
11. The adhesive labels and powder coating of the equipment 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. **WARNING —POTENTIAL STATIC HAZARD. CLEAN ONLY WITH A WATER WETTED CLOTH** and **“ATTENTION : RISQUE D'ÉLECTRICITÉ STATIQUE POTENTIEL. NETTOYER SEULEMENT AVEC UN LINGE IMBIBÉ D'EAU.**
12. An optional stainless-steel label tag which may be present on the transmitters of this equipment is not bonded to earth. The maximum average capacitance of the tag determined by measurement is max. 30 pF. This shall be considered by the user to determine suitability of the equipment in a specific application.
13. 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/in<sup>2</sup> (psi).
14. 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 75 lbf/in<sup>2</sup> (psi) against CSA C22.2 No 60079-40:20 and UL 122701 (2021).
15. The equipment shall be supplied from an Overvoltage Cat II source only.
16. The JT33 TDLAS Spectrometer is not capable of passing a 500V r.m.s. dielectric strength test between the intrinsically safe Flow Switch connection circuits and enclosure according to Clause 6.3.13 of CSA C22.2 No. 60079-11:14 / ANSI/UL 60079-11 (2013). This shall be taken into account during equipment installation.
17. The Measurement Accuracy Controller (MAC) is not capable of passing a 500V r.m.s. dielectric strength test between the intrinsically Thermistor connection circuits and enclosure according to Clause 6.3.13 of CSA C22.2 No. 60079-11:14 / ANSI/UL 60079-11 (2013). This shall be taken into account during equipment installation.





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18. The installation of the JT33 TDLAS Gas Analyzer (No Sample System) shall incorporate an electrical bonding conductor connected between the JT33 TDLAS Spectrometer Optical Head enclosure and the panel on which the Measurement Accuracy Controller (MAC) is installed.
19. Any connection to the JT33 TDLAS Spectrometer intrinsically safe Flow Switch connector shall be made via a certified M12 x 1.5 Ex be IIC IP66 rated certified cable gland suitable for a temperature range of -20°C to +60°C, that shall be fitted in an Optical Head enclosure entry. The connection is made to a printed circuit board mounted four Pin black connector J6 via a mating free Molex connector part number 502351-0401 fitted with MOLEX crimp contacts part number 5600850101. Access to the connection is gained by removal of the Optical Head enclosure which shall be refitted using a fastener torque of 2Nm.
20. Any connection to the Measurement Accuracy Controller (MAC) intrinsically safe Thermistor printed circuit board mounted connector J5 SCS THRM shall be made via a mating free TE CONNECTIVITY AMP receptacle part number 6-179228-2 fitted with TE CONNECTIVITY AMP crimp contacts part number 179227-4.

## 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 (UL MH10170) 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.



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- For Canadian Zone marked products, the Certificate Number Reference “24CA80187162X” 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.
- When a Measurement Accessory Controller (MAC) is supplied: “SEAL REQUIRED WITHIN 5 INCHES of the MAC” and “SCELLEMENT REQUIS A MOINS DE 5" DE LA MAC” ” 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.
- The words “Dual Seal Without Annunciation”
- Electrical ratings; Symbol #2 for AC input “ ” or Symbol #1 for DC input “ = = = ”
- The symbol 14 of Table 1 of Table 1 of 61010-1 indicating “Caution”.
- Symbol #14 “,”
- Symbol “” next to PE terminals.
- The Control Drawing number EX3100000056
- The instructions manual document number XA03137CEN

**Nameplate adhesive label material approval information:**

As per CSA 1593474 (LR 82598-10), ELTEX TOP-SCRIPT 101720 is not suitable for use in atmospheres containing esters (tested using vinyl acetate) when adhered to IGP Durapol 6802, as reflected in the Conditions of Acceptability. Although this limitation is not applicable to stainless steel substrates (G307 enclosure) the limitation is applied to all versions of the equipment due to the presence of the Measurement Accessory Controller (MAC).

As per FM report 3035955, ELTEX TOP-SCRIPT 101720 is not suitable for use in atmospheres containing ketones (tested using acetone) when adhered to IGP Durapol 6802, as reflected in the Conditions of Acceptability. Although this limitation is not applicable to stainless steel substrates (G307 enclosure) the limitation is applied to all versions of the equipment due to the presence of the Measurement Accessory Controller (MAC).