



# Certificate of Compliance

**Certificate:** 2462384

**Master Contract:** 247407

**Project:** 80130455

**Date Issued:** February 08, 2023

**Issued To:** Thermo Electric Instrumentation B.V  
71-73 Coenecop  
Waddinxveen,  
South Holland, 2741 PH  
Netherlands

**Attention:** Bas Linse

*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:**

Gordon Neuroth

## PRODUCTS

**CLASS 2258 02** – PROCESS CONTROL EQUIPMENT – For Hazardous Locations

**CLASS 2258 82** – PROCESS CONTROL EQUIPMENT – For Hazardous Locations – certified to U.S. standards

**Class I, Zone 1, AEx d IIC T6...T1**  
**Ex d IIC T6...T1**

Temperature Sensor Assembly Thermo Electric Type XPS3.

Ratings are as follows:

Thermocouple circuit and RTD circuit, per temperature sensing element: 5 Vdc, 10 mA

Transmitter data: max. 45 Vdc, max 50 mA, max 2.25 W

**Class I, Zone 1, AEx e IIC T6...T1**  
**Ex e IIC T6...T1**

Temperature Sensor Assembly Thermo Electric Type XPS1.

Ratings are as follows: Thermocouple circuit and RTD circuit, per temperature sensing element: 5 Vdc, 10 mA



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**Class I, Zone 2, AEx nA II T6...T1**  
**Ex nA II T6...T1**

Temperature Sensor Assembly Thermo Electric Type XPS4.

Ratings are as follows:

Thermocouple circuit and RTD circuit, per temperature sensing element: 5 Vdc, 10 mA

Transmitter data: max. 45 Vdc, max 50 mA, max 2.25 W

**CLASS 2258 04** – PROCESS CONTROL EQUIPMENT – Intrinsically safe entity-For Hazardous Locations

**CLASS 2258 84** – PROCESS CONTROL EQUIPMENT – Intrinsically safe entity For Hazardous Locations – certified to U.S

**Class I, Zone 1, AEx ia IIC T6...T1**

**Class I, Zone 1, AEx ib IIC T6...T1**

**Ex ia IIC T6...T1**

**Ex ib IIC T6...T1**

Intrinsically safe Temperature Sensor Assembly Thermo Electric Type XPS2.

Ratings are as follows: Vmax (Ui) = 30 V; Pmax (Pi) = any; Imax (Ii) = 500 mA; Ci = 0 nF; Li = 0 mH.

- Insert data:

Output circuits in type of protection intrinsic safety Ex ia IIC, only to be connected to a certified intrinsically safe circuit, with the following maximum values for each insert:

Vmax (Ui) = 14 V , Imax (Ii) = 10 mA, Pmax (Pi) = 140 mW, Ci = 60 nF, Li = 0 mH

- Transmitter data: Vmax (Ui) = 45 Vdc max., Imax (Ii) = 50 mA max., Pmax (Pi)= 2.25 W max.

In type of protection intrinsic safety Ex ia IIC or Ex ib IIC, only to be connected to a certified intrinsically safe circuit, with the maximum values according to the data listed in the certificate of the transmitter.

The sensor input parameters of the transmitter shall comply with the parameters of the inserts.

**Thermal data**

For Types XPS1 and XPS3 the maximum ambient temperature (Tamax) is +80 °C.

For Type XPS2 the ambient temperature range is -40 °C to +75 °C.

For Type XPS4 the maximum ambient temperature (Tamax) is +75 °C.

For Types XPS1, XPS3 and XPS4 the ambient temperature range of the assembly, the service temperature range of the connection head and connection box, the transition parts and the cables, depend on the material of the cable insulation as listed in the table below

Cable insulation	Ambient temperature range and service temperature range of the connection head and the connection box	Service temperature range of the transition part	Service temperature range of the cables
Silicon	-25 °C to Tamax	-25 °C to 80 °C	-25 °C to 160 °C
Teflon	-40 °C to Tamax	-40 °C to 80 °C	-40 °C to 180 °C



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For Types XPS2 and XPS4, the ambient temperature range may also depend on the transmitter specifications.

- The highest minimum ambient temperature as mentioned above and as mentioned on the transmitter, is decisive.
- The maximum ambient temperature of the assembly is +75 °C or the maximum ambient temperature as mentioned on the transmitter - 10 K, whichever is the smaller.

The maximum surface temperature due to process conditions ( $T_p$ ) is the maximum surface temperature of any part of the assembly in contact with the explosive atmosphere.

The temperature class and the maximum surface temperature of the Types XPS1 and XPS3 depend on  $T_p$  as listed in the table below

$T_p$ [°C]	Temperature class of the assembly	Max. surface temperature of the assembly [°C]
80	T6	85
95	T5	100
130	T4	135
195	T3	200
295	T2	300
445	T1	450
> 445	-	$T_p + 5$

The temperature class and the maximum surface temperature of Types XPS2 and XPS4 depend on  $T_p$  and the temperature class of the transmitters used, as listed in the table below

$T_p$ [°C]	Temperature class of the transmitter	Temperature class of the assembly	Max. surface temperature of the assembly [°C]
$\leq 75$	T6	T6	85
$\leq 90$	T6 or T5	T5	100
$\leq 125$	T6 to T4	T4	135
$\leq 190$	T6 to T3	T3	200
$\leq 290$	T6 to T2	T2	300
$\leq 440$	T6 to T1	T1	450
> 440	T6 to T1	-	$T_p + 10$



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### **APPLICABLE REQUIREMENTS**

CAN/CSA-C22.2 No. 157-92 (R2012)	Intrinsically Safe and Non-Incendive Equipment for Use in Hazardous Locations
CSA Std C22.2 No. 213-M1987 (R2008)	Non-Incendive Electrical Equipment for Use in Class I, Division 2 Hazardous Locations
ANSI/UL Standard 913 (2006)	Intrinsically Safe Apparatus and Associated Apparatus for Use in Class I, II, and III, Division 1, Hazardous (Classified) Locations
CAN/CSA-C22.2 No. 60079-0-07	Electrical Apparatus for Explosive Gas Atmospheres - Part 0: General Requirements
ANSI/ISA-60079-0 (2009)	Electrical Apparatus for Explosive Gas Atmospheres - Part 0: General Requirements
CAN/CSA-C22.2 NO. 60079-1-07	Electrical Apparatus for Explosive Gas Atmospheres - Part 1: Flameproof Enclosures "d"
ANSI/ISA-60079-1 (2009)	Explosive Atmospheres - Part 1: Equipment Protection by Flameproof Enclosures "d"
CAN/CSA-E60079-7-03 (R2008)	Electrical Apparatus for Explosive Gas Atmospheres - Part 7: Increased Safety "e"
ANSI/ISA-60079-7 (R2008)	Electrical Apparatus for Explosive Gas Atmospheres - Part 7: Increased Safety "e"
CAN/CSA-E60079-11-02 (R2006)	Electrical Apparatus for Explosive Gas Atmospheres - Part 11: Intrinsic Safety "i"
ANSI/ISA-60079-11 (2011)	Electrical Apparatus for Explosive Gas Atmospheres - Part 11: Intrinsic Safety "i"
CAN/CSA E60079-15-02 (R2006)	Electrical Apparatus for explosive gas atmospheres - Part 15: Type of protection "n"
ANSI/ISA-60079-15 (2009)	Electrical Apparatus for explosive gas atmospheres - Part 15: Type of protection "n"
UL Standard 61010-1 2 <sup>nd</sup> Edition	Safety Requirements for Electrical Equipment for Measurement, Control and Laboratory Use – Part 1: General Requirements
CSA C22.2 No. 61010-1-04	Safety Requirements for Electrical Equipment for Measurement, Control and Laboratory Use – Part 1: General Requirements



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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 etched on metallic nameplates riveted in place.

1. Submitter's identification (company name and/or file number and/or registered tradename);
2. Model designation;
3. Date of manufacture (or traceable serial number);
4. The cCSA<sub>US</sub> Monogram
5. Hazardous area;
6. Ambient temperature range;
7. Electrical ratings;
8. CSA Certificate number CSA.11.2462384

## **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](http://www.scc.ca)

