Certificate of Compliance

Certificate:	80180487	**Master Contract:**	273000
Project:	80180487	**Date Issued:**	August 31, 2023

Issued To: **Knick Elektronische Messgeräte GmbH & Co. KG**
22 Beuckestraße
Berlin, 14163
Germany

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:

Maria Gomes
Maria Gomes

PRODUCTS

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 US Standards

Class I Div 1 Groups A, B, C, D
Ex ia IIC T6…T3 Ga
Class I Zone 0 AEx ia IIC T6...T3 Ga

- ISFET pH sensors Memosens type SE547X/*-NMSN-A2. Maximum input power: Pi = 180mW, connection via inductive coupling.

Class I Div 1 Groups A, B, C, D
Ex ia op is IIC T6 Ga
Class I Zone 0 AEx ia op is IIC T6 Ga
Class II Division 1 Groups E, F, G
Ex ia op is IIIC T90ºC Da
Zone 20 AEx ia op is IIIC T90ºC Da

- Oxygen sensors Memosens type SE745X/*-NMSN-A2. Maximum input power: P_i = 180mW, connection via inductive coupling. Inherently safe optical radiation:
P_{opt} < 15 mW. Temperature class is T6 for a maximum T_{amb} and $T_{process}$ of +60 °C.

Conditions of Acceptability:

1. SE745X/*-NMSN-A2: The sensor may not be operated in electrostatically critical processing conditions. Intense vapour or dust flows directly impacting on the connection system must be avoided.
   The metallic parts of the sensor have to be mounted at the mounting location electrostatically conductive (< 1 MΩ).
2. For SE745X/*-NMSN-A2: If sensor parts consist of light metal e.g. Titan, then these parts have to protected against impacts.
3. Do no operate SE745X/*-NMSN-A2 in an atmosphere temperature above +60 °C unless the atmosphere is not considered explosive.
4. The plastic housing may only be cleaned with a damp cloth.
5. The maximum ambient and process temperatures for the temperature classes T3, T4 or T6 are limited according to the tables of this certificate (see “Environmental data 1 and 2” tables for all the sensors).
   The temperature table is only valid if the installation conditions specified in the manufacturer's operating instructions are observed. The manufacturer's operating instructions include the control drawings.
   If these installation conditions cannot be met, the maximum process temperature range shall not exceed the maximum ambient temperature range.
6. The sensor shall be connected by inductive coupling to a certified Memosens compatible supply with $P_o \leq 180$ mW.
7. For ISFET pH Sensor SE547X/*-NMSN-A2: The sensors may not be operated in processing conditions, in which an electrostatic loading of the sensor and the connecting system is to be expected. Operation in product application intended fluid media providing conductivity of at least 10 nS/cm can be assumed as electrostatic uncritical.

Environmental data 1:

Sensor type	T class	T_p (process)		T_a (ambient)	
		min.	max.	min.	max.
SE547X/*-NMSN-A2	T3	−15 °C	135 °C	−15 °C	70 °C
	T4	−15 °C	115 °C	−15 °C	75 °C
			110 °C	−15 °C	80 °C
			100 °C	−15 °C	85 °C
			90 °C	−15 °C	90 °C
	T6	−15 °C	65 °C	−15 °C	65 °C

Environmental data 2:

Sensor type	T class	T_p (process)		T_a (ambient)	
		Min.	Max.	Min.	Max.
SE745X/*-NMSN-A2	T6 rep. T90 °C	−15 °C	60 °C	-25 °C	60 °C

APPLICABLE REQUIREMENTS

CAN/CSA-C22.2 No. 60079-0:19	Explosive Atmospheres - Part 0: Equipment - General requirements
CAN/CSA-C22.2 No. 60079-11:14	Explosive Atmospheres – Part 11: Equipment protection by intrinsic safety "i"
CAN/CSA-C22.2 No. 60079-28:2016	Explosive atmospheres - Part 28: Protection of equipment and transmission systems using optical radiation
CAN/CSA-C22.2 No. 213-17 (R2022)	Nonincendive electrical equipment for use in Class I and II, Division 2 and Class III, Division 1 and 2 Hazardous (Classified) Locations
ANSI/UL 60079-0:19	Electrical Apparatus for Explosive Gas Atmospheres - Part 0: General Requirements
ANSI/UL 60079-11:13	Electrical apparatus for Explosive Gas Atmospheres - Part 11: Intrinsic Safety “i”
ANSI/UL 60079-28:2017	Explosive Atmospheres - Part 28: Equipment – Protection of Equipment and transmission systems using optical radiation
ANSI/UL 121201:2021	Nonincendive electrical equipment for use in Class I and II, Division 2 and Class III, Division 1 and 2 Hazardous (Classified) Locations
CAN/CSA C22.2 No. 61010-1-12 *(May 2012)*	Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use —Part 1: General Requirements
ANSI/UL 61010-1-2018 (3rd Edition)	Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use - Part 1: General Requirements

MARKINGS

Each unit shall bear all the required markings identified in the applicable certification report(s).
Note: The Listee's name and/or CSA file number shall replace the submittor's equivalent information (where applicable).