

CERTIFICATE OF CONFORMITY



Member of the FM Global Group

1. HAZARDOUS (CLASSIFIED) LOCATION ELECTRICAL EQUIPMENT PER US REQUIREMENTS

2. Certificate No: **FM23US0105X**
3. Equipment:
(Type Reference and Name) **Memosens SE5**X/*-MS*-B1 (pH/ORP sensors)**
4. Name of Listing Company: **Knick Elektronische Messgeräte GmbH & Co KG**
5. Address of Listing Company: **Beuckestraße 22 , 14163 Berlin, Germany**

6. The examination and test results are recorded in confidential report number:

PR467458 dated 16 April 2024

7. FM Approvals LLC, certifies that the equipment described has been found to comply with the following Approval standards and other documents:

FM 3600:2022, FM 3610:2021, FM 3611:2021, FM 3810:2021, ANSI/UL 60079-0:2020,
ANSI/UL 60079-11:2018, ANSI/UL 121201:2017

8. If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to specific conditions of use specified in the schedule to this certificate.

9. This certificate relates to the design, examination and testing of the products specified herein. The FM Approvals surveillance audit program has further determined that the manufacturing processes and quality control procedures in place are satisfactory to manufacture the product as examined, tested and Approved.

10. Equipment Ratings:

Intrinsically safe for Class I, II, III, Division 1, Groups A, B, C, D, E, F and G, T6...T3; Ta*;
Nonincendive with nonincendive field wiring, for Class I, Division 2, Groups A, B, C and D, T6...T3; Ta*; Class II and III, Division 2, Groups FG, T135°C; $-20^{\circ}\text{C} \leq \text{Ta} \leq +70^{\circ}\text{C}$;
AEx ia for Zone 0, Group IIC, Ta*; Ga;
AEx ia for Zone 20, Group IIIC, T135°C, Da; $-20^{\circ}\text{C} \leq \text{Ta} \leq +70^{\circ}\text{C}$.

*Ta: For the ambient temperature ranges, refer to the control drawing 213.215.066 page 2b.

Certificate issued by:

J.E. Marquedant
VP, Manager - Electrical Systems

16 April 2024

Date

To verify the availability of the Approved product, please refer to www.approvalguide.com

THIS CERTIFICATE MAY ONLY BE REPRODUCED IN ITS ENTIRETY AND WITHOUT CHANGE

FM Approvals LLC. One Technology Way, Norwood, MA 02062 USA

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SCHEDULE

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11. The marking of the equipment shall include:

Class I,II,III, Division 1, Groups ABCDEFG, T6...T3
Intrinsically safe

Class I, Division 2, Groups ABCD, T6...T3
Class II,III, Division 2, Groups FG, T₂₀₀135°C
Nonincendive field wiring

Zone 0 AEx/Ex ia IIC T6...T3 Ga
Zone 20 AEx/Ex ia IIIC T₂₀₀135°C Da

Control drawing 213.215-066
Ambient temperature: See control drawing.

12. Description of Equipment:

General – The Memosens sensors are used to measure electro-chemical properties and the temperature of liquids. The sensors are used for continuous measurement of pH, ORP or both with an integrated temperature sensor for automatic temperature compensation.

Ratings – Pi = 180 mW maximum.

Memosens pH/ORP Sensor SE5aaX/b-cMSd-B1
aa, b, c, d: Not related to safety, any alphanumeric character.

13. Specific Conditions of Use:

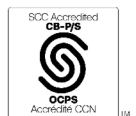
1. The maximum operating temperature of the sensor head ($T_a \leq 100^\circ\text{C}$) must not be exceeded.
2. Ambient (T_a) and process (T_p) temperature must be within the limits specified under thermal parameters in the control drawing 213.215-066.
3. For immersion fittings or insulated installations close to the process, the ambient temperature must be assumed to be the same as the process temperature.
4. The sensor shall be connected to an FM-approved (FM17US0208X, FM17CA0105X) intrinsically safe Memosens cable type CA/MS-***X** or CA/MS-***X**-L with inductive coupling, or a suitable NRTL-approved intrinsically safe Memosens cable/supply with inductive coupling and $P_o \leq 180$ mW.
5. Potential electrostatic charging hazard - Precautions shall be taken to minimize the risk from electrostatic discharge of nonmetallic parts. When the equipment is used in hazardous locations, avoid any actions which generate electrostatic charges. Cleaning shall only be performed with a damp cloth.

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14. Test and Assessment Procedure and Conditions:

This Certificate has been issued in accordance with FM Approvals US Certification Requirements.

15. Schedule Drawings

A copy of the technical documentation has been kept by FM Approvals.

16. Certificate History

Details of the supplements to this certificate are described below:

Date	Description
16 April 2024	Original Issue.

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