

# CERTIFICATE OF CONFORMITY



1. **HAZARDOUS LOCATION ELECTRICAL EQUIPMENT PER CANADIAN REQUIREMENTS**
2. **Certificate No:** FM21CA0052
3. **Equipment:** Model Stratos® Multi E401X  
**(Type Reference and Name)** Modular Measuring System
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:  
PR460294 dated 1<sup>st</sup> November 2021
7. FM Approvals LLC, certifies that the equipment described has been found to comply with the following Approval standards and other documents:  
CSA-C22.2 No. 94.1:2015, CSA-C22.2 No. 213:2017, CAN/CSA-C22.2 No. 60529:2016,  
CAN/CSA-C22.2 No. 60079-0:2019, CAN/CSA-C22.2 No. 60079-7:2016,  
CAN/CSA-C22.2 No. 60079-11:2014, CAN/CSA-C22.2 No. 60079-15:2018,  
CAN/CSA-C22.2 No. 61010-1-12:R2017
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.

**Certificate issued by:**

J.E. Marquedant  
VP, Manager - Electrical Systems

1 November 2021

Date

To verify the availability of the Approved product, please refer to [www.approvalguide.com](http://www.approvalguide.com)

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

FM Approvals LLC. 1151 Boston-Providence Turnpike, Norwood, MA 02062 USA  
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# SCHEDULE



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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:

Nonincendive for Class I, Division 2, Groups A, B, C, D; Associated Intrinsically Safe for Class I, II, III, Division 1, Groups A, B, C, D, E, F and G; Increased safety 'ec' protection for Class I, Zone 2, Group IIC with intrinsically safe [ia] connections to Class I, Zone 0, Group IIC hazardous locations.

11. The marking of the equipment shall include:

Class I, Division 2, Groups A, B, C, D; T4, Ta = -20°C to +55°C, Type 4X, IP66/67

IS Associated Apparatus Class I, II, III, Division 1, Groups A thru G; T4, Ta = -20°C to +55°C, Type 4X, IP66/67

Class I, Zone 2, Ex ec [ia Ga] IIC T4 Gc Ta = -20°C to +55°C, Type 4X, IP66/67

12. **Description of Equipment:**

**General** - Stratos® Multi Type E401X is used to measure and process electrochemical quantities in liquids in explosive atmospheres. The main unit includes an electronic circuit E401X with the connection terminals, a slot for the measurement module MK-..., a backlit LCD and a keypad, all in a single enclosure.

An optional memory card Type ZU1080-S-X-... can be used for data recording and firmware update and repair. The MCARD is an accessory to Stratos Multi E401X and not an independent intrinsically safe / non-incendive apparatus, therefore not marked as an intrinsically safe apparatus. The MCARD is built into a housing which might not be opened while energized. If the MCARD is plugged into the Stratos Multi E401 MCARD connector, then the MCARD circuit is part of the Stratos Multi E401X intrinsically safe "ic" circuit and the MCARD's micro USB connector is not accessible. The MCARD is powered from a limited energy supply by the Stratos Multi E401 Digi Module internally. If the MCARD is outside the transmitter, the micro USB connector is accessible and restricted to use in a non-hazardous area.

Stratos® Multi Type E401X is provided with various isolated and non-isolated inputs, relay contacts and outputs. The internal relays are assessed as "nC" / non-incendive. All signal outputs are available as display and as an analogue output value (4 to 20 mA current signal with or without HART).

**Construction** - The Stratos® Multi Type E401X enclosure is made of UV-resistant molded plastic and can be mounted on walls, pipes or panels. The enclosure is rated Type 4X, IP66/IP67.

## **Ratings**

### Operation Temperature Ranges:

The ambient operating temperature range of the Stratos® Multi Type E401X is -20°C to +55°C.

### Electrical data:

Stratos® Multi Type E401X has the following electrical ratings;

Power Connections Um = 253 V:

80-230 Vac or 24-60Vdc (10W) Power AC/DC: Terminals KL17, KL18

Um=60V SELV/PELV, Max = 30V AC/DC

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4 to 22mA

Entity Parameters - Digital Sensor Interface RS 485 Terminals KL1, KL2, KL3, KL4, KL5 in accordance with control drawing 212.502-100:

Uo (Voc) = 5.1 V; Io (Isc) = 130 mA; Po = 166 mW

Ci = 15  $\mu$ F; Co (Ca) = 73  $\mu$ F

Li = 95  $\mu$ H; Lo (La) = 1.9 mH

Entity Parameters – MK Module Interface: See Control Drawing below:

Type	Measurement Loop	Terminals	Control drawing
MK-PH 015X	pH	A, B, C, K	212.002-110
	Temperature	H, I	
	pH / Temperature	A, B, C, H, I, K	
	ISM	F, G	
	pH / ISM / Temperature	A, B, C, F, G, H, I, K	
	pH / Supply / Temperature	A, B, C, D, E, H, I, K	
MK-OXY 045X	pH / Supply / ISM / Temperature	A, B, C, D, E, F, G, H, I, K	212.002-120
	OXY	A, B, C, D, I	
	Temperature	G, H	
	OXY / Temperature	A, B, C, D, G, H, I	
	ISM	E, F	
MK-COND 025X	OXY / ISM / Temperature	A, B, C, D, E, F, G, H, I	212.002-130
	Conductivity	A, B, C, D, H	
	Temperature	E, F, G	
	Conductivity / Temperature	A, B, C, D, E, F, G, H	
MK-CONDI 035X	Conductivity	A, B, C, D, H	212.002-140
	Temperature	E, F, G	
	Conductivity / Temperature	A, B, C, D, E, F, G, H	
MK-MS 095X	Memosens-Interface	A, B, C, D, E	212.002-150

13. **Specific Conditions of Use:**

None

14. **Test and Assessment Procedure and Conditions:**

This Certificate has been issued in accordance with FM Approvals Canadian Certification Scheme.

15. **Schedule Drawings**

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

16. **Certificate History**

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Canadian Certificate Of Conformity No: FM21CA0052

Details of the supplements to this certificate are described below:

Date	Description
1st November 2021	Original Issue.

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