

CERTIFICATE OF CONFORMITY



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

- 2. **Certificate No:** FM21US0078
- 3. **Equipment:
(Type Reference and Name)** Model Stratos® Multi E401X
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 November 2021

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

FM Class 3600:2018, FM Class 3610:2021, FM Class 3611:2021, FM Class 3810:2021,
ANSI/UL 60079-0:2020, ANSI/UL 60079-7:2017, ANSI/UL 60079-11:2014, ANSI/UL 60079-15:2020,
ANSI/UL 61010-1:2012, ANSI/UL 121201:2017, ANSI/UL 50:2015, ANSI/IEC 60529:2020

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

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. 1151 Boston-Providence Turnpike, Norwood, MA 02062 USA
T: +1 (1) 781 762 4300 F: +1 (1) 781 762 9375 E-mail: information@fmapprovals.com www.fmapprovals.com



SCHEDULE



US Certificate Of Conformity No: FM21US0078

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 (classified) 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, AEx 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;

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

SCHEDULE



US Certificate Of Conformity No: FM21US0078

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
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 µF; Co (Ca) = 73 µF
Li = 95 µH; 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	
MK-COND 025X	ISM	E, F	212.002-130
	OXY / ISM / Temperature	A, B, C, D, E, F, G, H, I	
	Conductivity	A, B, C, D, H	
MK-CONDI 035X	Temperature	E, F, G	212.002-140
	Conductivity	A, B, C, D, H	
	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 US Certification Requirements.

15. Schedule Drawings

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

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

SCHEDULE



US Certificate Of Conformity No: FM21US0078

16. Certificate History

Details of the supplements to this certificate are described below:

Date	Description
Issue Date of original	Original Issue.

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

FM Approvals LLC. 1151 Boston-Providence Turnpike, Norwood, MA 02062 USA
T: +1 (1) 781 762 4300 F: +1 (1) 781 762 9375 E-mail: information@fmapprovals.com www.fmapprovals.com