

CERTIFICATE OF CONFORMITY



- HAZARDOUS LOCATION ELECTRICAL EQUIPMENT PER CANADIAN REQUIREMENTS**
- Certificate No:** FM19CA0127X
- Equipment:** Protos Type 3400X and Protos II Type 4400X
(Type Reference and Name) Modular Measuring System
- Name of Listing Company:** Knick Elektronische Messgeräte GmbH & Co. KG
- Address of Listing Company:** Beuckestrasse 22
14163 Berlin
Germany
- The examination and test results are recorded in confidential report number:

PR455159 (supplement to 3023762) dated 1st December 2020
- FM Approvals LLC, certifies that the equipment described has been found to comply with the following Approval standards and other documents:

CAN/CSA 60079-0:2019, CAN/CSA 60079-7:2016, CAN/CSA 60079-11:2014, CAN/CSA 60079-18:2016,
CSA-C22.2 No. 213:2017, CSA C22.2 No. 94-M91: 2011, CAN/CSA C22.2 No. 60529-05:2010,
CAN/CSA C22.2 No. 61010-1:2012
- 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.
- 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.

Certificate issued by:

J.E. Marquedant
VP, Manager - Electrical Systems

26 January 2023

Date

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

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FM Approvals LLC. 1151 Boston-Providence Turnpike, Norwood, MA 02062 USA
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10. Equipment Ratings:

Protos Type 3400X and Protos II Type 4400X:

Ta = -20°C to 50°C; Enclosure Type 4X, IP65

Refer to control drawing 201.003-170 for entity / nonincendive field wiring parameters

Modular Measuring System.

Class I, Zone 1, Ex eb ib mb [ia Ga] IIC T4 Gb

Nonincendive, Class I, II, III, Division 2, Groups ABCDFG, T4 Ta = -20°C to +50°C;

Nonincendive, Class I, II, III, Division 2, Groups ABCDFG, T4 Ta = -20°C to +50°C; nonincendive field wiring;

or with ZU1042

Class I, Zone 2, Ex ec ib mb [ia Ga] IIC T4 Gc

Nonincendive, Class I, Division 2, Groups ABCDFG T4 Ta = -20°C to +50°C;

Module Outputs

Class I, Zone 1, Ex ib [ia Ga] IIC T4 Gb

or

Class I, Zone 1, Ex ib IIC T4 Gb

Intrinsically safe connections for Class I, II, III, Division 1, Groups ABCDEFG;

or

Nonincendive, Class I, II, III, Division 2, Groups ABCDFG, T4 Ta = -20°C to +50°C; nonincendive field wiring;

The Protos Type 3400X and Protos II Type 4400X Modular Measuring System consists of the following modules:

BASE 3400Xa/b or BASE 4400Xa/b. Power Supply.

Class I, Zone 1, Ex eb ib mb IIC T4 Gb

Nonincendive, Class I, II, III, Division 2, Groups ABCDFG, T4 Ta = -20°C to +50°C;

Nonincendive, Class I, II, III, Division 2, Groups ABCDFG, T4 Ta = -20°C to +50°C; nonincendive field wiring;

or with ZU1042

Class I, Zone 2, Ex ec ib mb IIC T4 Gc

Nonincendive, Class I, II, III, Division 2, Groups ABCDFG, T4 Ta = -20°C to +50°C;

FRONT 3400Xa-015 or FRONT 4400Xa-015. Door.

Class I, Zone 1, Ex eb ib IIC T4 Gb

Nonincendive, Class I, II, III, Division 2, Groups ABCDFG, T4 Ta = -20°C to +50°C; nonincendive field wiring;

Measuring Modules:

pH 3400X-03a. pH Module.

CO2 3400X-130. Carbon Dioxide Module.

COND 3400X-041. Conductivity Module.

OXY 3400X-06a. Oxygen Module.

FIU 3400X-140-2. Digital Module.

PHU 3400X-110. pH Module.

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CONDI 3400X-051. Inductive Conductivity Module.
COMPA 3400X-081. Interface Module.
COMFF 3400X-085. Interface Module.
MS 3400X-160. Digital Module.
MS 4400X-160. Digital Module.
MSU 4400X-18*. Digital Module

Class I, Zone 1, Ex ib [ia Ga] IIC T4 Gb
Intrinsically safe connections for Class I, II, III, Division 1, Groups ABCDEFG;
Nonincendive, Class I, II, III, Division 2, Groups ABCDFG, T4 Ta = -20°C to +50°C; nonincendive field wiring;

Communication Modules:

OUT 3400X-071. Output Module.
PID 3400X-121. PID Controller Module.

Class I, Zone I, Ex ib IIC T4 Gb
Nonincendive, Class I, II, III, Division 2, Groups ABCDFG, T4 Ta = -20°C to +50°C; nonincendive field wiring;

11. The marking of the equipment shall include:

Protos Type 3400X and Protos II Type 4400X:

Modular Measuring System.

Class I, Zone 1, Ex eb ib mb [ia Ga] IIC T4 Gb
Class I, II, III, Division 2, Groups ABCDFG, T4 Ta = -20°C to +50°C;
Class I, II, III, Division 2, Groups ABCDFG, T4 Ta = -20°C to +50°C; nonincendive field wiring;

or with ZU1042

Class I, Zone 2, Ex ec ib mb [ia Ga] IIC T4 Gc
Class I, II, III, Division 2, Groups ABCDFG, T4 Ta = -20°C to +50°C;

Module Outputs

Class I, Zone 1, Ex ib [ia Ga] IIC T4 Gb
or
Class I, Zone 1, Ex ib IIC T4 Gb

Intrinsically safe connections for Class I, II, III, Division 1, Groups ABCDEFG;
or
Nonincendive, Class I, II, III, Division 2, Groups ABCDFG, T4 Ta = -20°C to +50°C; nonincendive field wiring;

The Protos Type 3400X and Protos II Type 4400X Modular Measuring System consists of the following modules:

BASE 3400Xa/b or BASE 4400Xa/b. Power Supply.

Class I, Zone 1, Ex eb ib mb IIC T4 Gb
Class I, II, III, Division 2, Groups ABCDFG, T4 Ta = -20°C to +50°C;
Class I, II, III, Division 2, Groups ABCDFG, T4 Ta = -20°C to +50°C; nonincendive field wiring;

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or with ZU1042

Class I, Zone 2, Ex ec ib mb IIC T4 Gc
Class I, II, III, Division 2, Groups ABCDFG, T4 Ta = -20°C to +50°C;

FRONT 3400Xa-015 or FRONT 4400Xa-015. Door.

Class I, Zone 1, Ex eb ib IIC T4 Gb
Class I, II, III, Division 2, Groups ABCDFG, T4 Ta = -20°C to +50°C; nonincendive field wiring;

Measuring Modules:

- pH 3400X-03a. pH Module.
- CO2 3400X-130. Carbon Dioxide Module.
- COND 3400X-041. Conductivity Module.
- OXY 3400X-06a. Oxygen Module.
- FIU 3400X-140-2. Digital Module.
- PHU 3400X-110. pH Module.
- CONDI 3400X-051. Inductive Conductivity Module.
- COMPA 3400X-081. Interface Module.
- COMFF 3400X-085. Interface Module.
- MS 3400X-160. Digital Module.
- MS 4400X-160. Digital Module.
- MSU 4400X-18*. Digital Module

Class I, Zone 1, AEx ib [ia Ga] IIC T4 Gb
Intrinsically safe connections for Class I, II, III, Division 1, Groups ABCDEFG;
Class I, II, III, Division 2, Groups ABCDFG, T4 Ta = -20°C to +50°C; nonincendive field wiring;

Communication Modules:

- OUT 3400X-071. Output Module.
- PID 3400X-121. PID Controller Module.

Class I, Zone I, Ex ib IIC T4 Gb
Class I, II, III, Division 2, Groups ABCDFG, T4 Ta = -20°C to +50°C; nonincendive field wiring;

12. Description of Equipment:

General – The Protos Type 3400X and Protos II Type 4400X modular process analysis system is intended to measure and process electrochemical quantities in liquids. It has a modular design and consists of the BASE power supply unit, the FRONT door and different measuring and communication modules.

Construction – Enclosures are of stainless steel with a rating of Type 4X and IP65.

Ratings - The manufacturer specifies an ambient temperature range of -20 °C to 50 °C.

Model types – The specific model types addressed by this certificate are as follows:

Protos Type 3400X and Protos II Type 4400X Modular Measuring System, available with ZU1042.

The Protos Type 3400X and Protos II Type 4400X Modular Measuring System consists of the following

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modules:

BASE 3400Xa/b or BASE 4400Xa/b. Power Supply.

a = Enclosure material C or S;
b = Power supply option 24V or VPW

FRONT 3400Xa-015 or FRONT 4400Xa-015. Door.

a = Enclosure finish C or S.

Measuring Modules:

pH 3400X-03a. pH Module.

a = pH measurement option 2, 3, 5 or 6

CO2 3400X-130. Carbon Dioxide Module.

COND 3400X-041. Conductivity Module.

OXY 3400X-06a. Oxygen Module.

a = Application option 2, 3, 5, 6 or 7

FIU 3400X-140-2. Digital Module.

PHU 3400X-110. pH Module.

CONDI 3400X-051. Inductive Conductivity Module.

COMPA 3400X-081. Interface Module.

COMFF 3400X-085. Interface Module.

MS 3400X-160. Digital Module.

MS 4400X-160. Digital Module.

MSU 4400X-18*. Digital Module

Communication Modules:

OUT 3400X-071. Output Module.

PID 3400X-121. PID Controller Module.

13. Specific Conditions of Use:

1. The Protos Type 3400X and Protos II Type 4400X system may only be configured with the modules identified above.
2. Only the modules identified above shall be used with the Protos Type 3400X and Protos II Type 4400X system.
3. The OXY 3400X Oxygen Module shall not be used in oxygen enriched environments with oxygen concentrations greater than 21% by volume.

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.

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16. Certificate History

Details of the supplements to this certificate are described below:

Date	Description
1 st December 2020	Original Issue.
16 th November 2021	<u>Supplement 1:</u> Report Reference: RR229264 dated 16 th November 2021. Description of the Change: Add MS 4400X-160 module.
26 th January 2023	<u>Supplement 2:</u> Report Reference: PR463749 dated 26 th January 2023. Description of the Change: <ol style="list-style-type: none">1) Addition of MSU4400X-18* Digital Measuring Module2) CSA-C22.2 No. 0:2011 removed from Standards List3) CSA C22.2 No. 142-M1987:2014 removed from Standards List4) CAN/CSA C22.2 No. 61010-1:2012 added to Standards List5) Equipment Ratings (Section 10) and Equipment markings (Section 11) have been updated

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