CERTIFICATE OF CONFORMITY



1. HAZARDOUS LOCATION ELECTRICAL EQUIPMENT PER CANADIAN REQUIREMENTS

- 2. Certificate No:
- 3. Equipment: (Type Reference and Name)
- 4. Name of Listing Company:
- 5. Address of Listing Company:

FM19CA0127X

Protos Type 3400X and Protos II Type 4400X Modular Measuring System

Knick Elektronische Messgeräte GmbH & Co. KG

Beuckestrasse 22 Berlin D-14163 Germany

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

PR455159 (supplement to 3023762) dated 1st December 2020

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. 0:2011, CSA-C22.2 No. 213:2017, CSA C22.2 No. 142-M1987:2014, CAN/CSA 60079-0:2019, CAN/CSA 60079-7:2016, CAN/CSA 60079-11:2014, CAN/CSA 60079-18:2016, CSA C22.2 No. 94-M91: 2011, CAN/CSA C22.2 No. 60529-05:2010

- 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:

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

Certificate issued by:

Margueralio

J Æ. Marquedant VP, Manager - Electrical Systems 16 November 2021 Date

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

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Modular Measuring System.

Class I, Zone 1, Ex eb ib mb [ia Ga] IIC T4 Gb Nonincendive, Class I, Division 2, Groups ABCD, T4 Ta = 50°C; Nonincendive, Class II, III, Division 2, Groups EFG, T70°C Ta = 50°C; Nonincendive, Class I, Division 2, Groups ABCD, T4 Ta = 50°C; nonincendive field wiring; Nonincendive, Class II, III, Division 2, Groups EFG, T70°C Ta = 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 T4 Ta = 50°C; Nonincendive, Class II, III, Division 2, Groups EFG, T70°C Ta = 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, Division 2, Groups ABCD, T4 Ta = 50°C; nonincendive field wiring; Nonincendive, Class II, III, Division 2, Groups EFG, T70°C Ta = 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.

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

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

Nonincendive, Class I, Division 2, Groups ABCD, T4 Ta = 50°C; Nonincendive, Class II, III, Division 2, Groups EFG, T70°C Ta = 50°C;

Nonincendive, Class I, Division 2, Groups ABCD, T4 Ta = 50°C; nonincendive field wiring; Nonincendive, Class II, III, Division 2, Groups EFG, T70°C Ta = 50°C; nonincendive field wiring;

or with ZU1042

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

Nonincendive, Class I, Division 2, Groups ABCD, T4 Ta = 50°C; Nonincendive, Class II, III, Division 2, Groups EFG, T70°C Ta = 50°C;

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

a = Enclosure finish C or S.

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

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Canadian Certificate Of Conformity No: FM19CA0127X

Nonincendive, Class I, Division 2, Groups ABCD, T4 Ta = 50°C; nonincendive field wiring; Nonincendive, Class II, III, Division 2, Groups EFG / T70°C Ta = 50°C; nonincendive field wiring;

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-140-2. Digital 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.

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, Division 2, Groups ABCD, T4 Ta = 50°C; Nonincendive field wiring; Nonincendive, Class II, III, Division 2, Groups EFG, T70°C Ta = 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, Division 2, Groups ABCD, T4 Ta = 50°C; Nonincendive field wiring; Nonincendive, Class II, III, Division 2, Groups EFG, T70°C Ta = 50°C; Nonincendive field wiring;

11. The marking of the equipment shall include:

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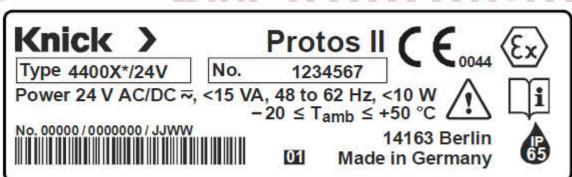






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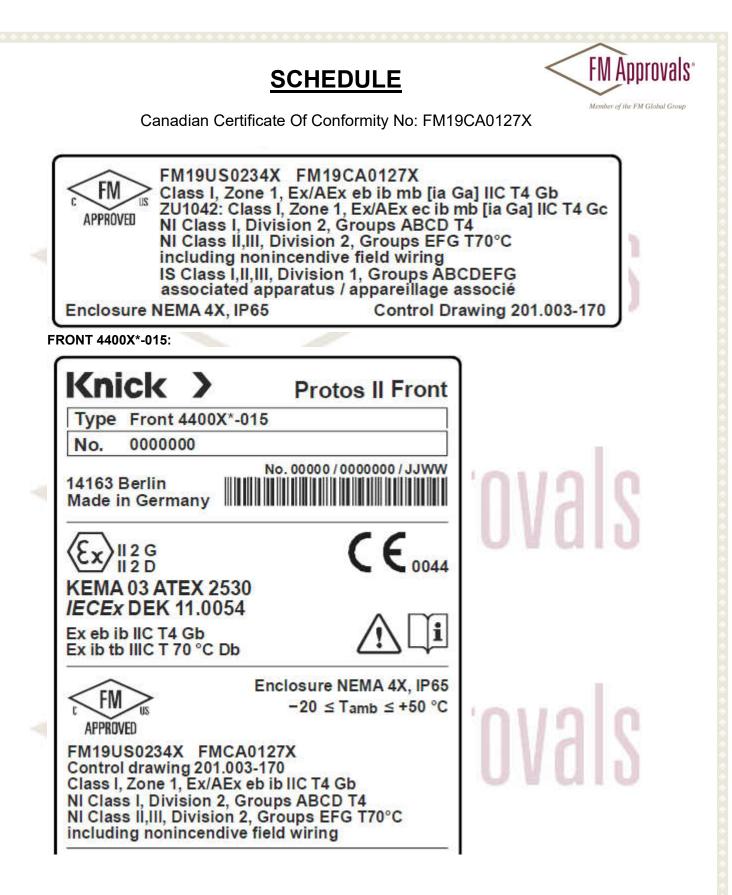




FM Approvals LLC. 1151 Boston-Providence Turnpike, Norwood, MA 02062 USA T: +1 (1) 781 762 4300 F: +1 (1) 781 762 9375 E-mail: information@fmapprovals.com www.fmapprovals.com

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APPROVED









SCHEDULE



Canadian Certificate Of Conformity No: FM19CA0127X

MS3400X-160: Protos[®] Module || 2 (1) G || 2 (1) D Knick > -MS Type MS3400X-160 Tamb: -20 to +50 °C Memosens No. 14163 Berlin Made in Germany FM19US0234X FM19CA0127X Control Drawing 201.003-170 **KEMA 03 ATEX 2530** IECEx DEK 11.0054 Š. Class I, Zone 1, Ex/AEx ib [ia Ga] IIC T4 Gb IS Class I,II,III, Division 1, Groups ABCDEFG Ex ib [ia Ga] IIC T4 Gb i Ex ib [ia Da] IIIC T 70 °C Db associated apparatus / appareillage associé NI Class I, Division 2, Groups ABCD T4 NI Class II,III, Division 2, Groups EFG T70°C 2 🖽 Cert. No. GYJ20.1054 nonincendive field wiring MS4400X-160: Knick > Protos II Module C € 0044 || 2 (1) G || 2 (1) D wij/00000000/00000 MS Type MS 4400X-160 -20 ≤ T_{amb} ≤ +50 °C Memosens No. 0000000 14163 Berlin Made in Germany **KEMA 03 ATEX 2530** FM19US0234X FM19CA0127X Control Drawing 201.003-170 Ňo. **IECEx DEK 11.0054** Class I, Zone 1, AEx/Ex ib [ia Ga] IIC T4 Gb □ Ex ib [ia Ga] IIC T4 Gb □ Ex ib [ia Da] IIIC T 70 °C Db IS Class I, II, III, Division 1, Groups ABCDEFG associated apparatus / appareillage associé NI Class I, Division 2, Groups ABCD T4 NI Class II, III, Division 2, Groups EFG T70°C X Cert. No. GYJ20.1054 nonincendive field wiring **Communication Modules:** Protos PID3400X-121: Protos[®] Module II 2 G Knick > MM/r/0000000/ (£x 11 2 D Type PID3400X-121 PID -20 ≤ T_{amb} ≤ +50 °C No. Controller 14163 Berlin Made in Germany 66591 FM 55 FM19US0234X FM19CA0127X APPR0vE Control Drawing 201.003-170 **KEMA 03 ATEX 2530** *IECEx* DEK 11.0054 APPROVED ģ Class I, Zone 1, Ex/AEx ib IIC T4 Gb Ex ib IIC T4 Gb NI Class I, Division 2, Groups ABCD T4 ìi Ex ib IIIC T 70 °C Db NI Class II,III, Division 2, Groups EFG T70°C nonincendive field wiring 2 NEPSI Cert. No. GYJ20.1054

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Protos OUT3400X-071:

Knick > Pro	otos [®] Module OUT analog / digital	<pre></pre>		
KEMA 03 ATEX 2530 <i>IECEx</i> DEK 11.0054 Ex ib IIC T4 Gb Ex ib IIIC T 70 °C Db Cert. No. GYJ20.1054	FM19US0234X FM19CA0127X TAFFORE Control Drawing 201.003-170 Class I, Zone 1, Ex/AEx ib IIC T4 Gb NI Class I, Division 2, Groups ABCD T4 NI Class II,III, Division 2, Groups EFG T7 nonincendive field wiring	ro∘c <u>∧</u> □i	02 No. 66590	R

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 equipment operates from a supply voltage of 100 to 230 V ac and dissipates 15 VA. 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 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.

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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. **ADDLOADS**

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.

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	ber 2021 Supplement 1: Report Reference: RR229264 dated 16 th November 2021. Description of the Change: Add MS 4400X-160 module.	

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