



FM Approvals
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Member of the FM Global Group

CERTIFICATE OF COMPLIANCE

HAZARDOUS (CLASSIFIED) LOCATION ELECTRICAL EQUIPMENT

This certificate is issued for the following equipment:

3400X. Protos Modular Measuring System.

NI / I / 2 / ABCD / T4 Ta = 50°C - 201.003-170; NIFW;

AIS / I, II, III / 1 / ABCDEFG - 201.003-170; Entity;

I / 2 / AEx nA IIC / T4 Ta = 50°C - 201.003-170; NIFW;

I / 1 / AEx me ib [ja] IIC / T4 Ta = 50°C - 201.003-170; Entity; Type 4X

Refer to control drawing 201.003-170 for entity parameters

The 3400X Protos Modular Measuring System consists of the following modules:

BASE 3400Xa/b. Power Supply.

NI / I / 2 / ABCD / T4 Ta = 50°C - 201.003-170; NIFW;

AIS / I, II, III / 1 / ABCDEFG - 201.003-170; Entity;

I / 2 / AEx nA IIC / T4 Ta = 50°C - 201.003-170; NIFW;

I / 1 / AEx me ib [ja] IIC / T4 Ta = 50°C - 201.003-170; Entity

Refer to control drawing 201.003-170 for entity parameters

a = Enclosure material C or S.

b = Power supply option 24V or VPW.

FRONT 3400Xa-015. Door.

NI / I / 2 / ABCD / T4 Ta = 50°C - 201.003-170

I / 2 / AEx nA IIC / T4 Ta = 50°C - 201.003-170

I / 1 / AEx ib IIC / T4 Ta = 50°C - 201.003-170

a = Enclosure material C or S.

PH 3400X-03a. PH Module.

NI / I / 2 / ABCD / T4 Ta = 50°C - 201.003-170; NIFW;

IS / I / 1 / ABCD / T4 Ta = 50° - 201.003-170; Entity;

I / 2 / AEx nA IIC / T4 Ta = 50°C - 201.003-170; NIFW;

I / 1 / AEx ib [ja] IIC / T4 Ta = 50°C - 201.003-170; Entity

Refer to control drawing 201.003-170 for entity parameters

a = PH measurement option 2, 3, 5 or 6.

CO2 3400X-130. Carbon Dioxide Module.

NI / I / 2 / ABCD / T4 Ta = 50°C - 201.003-170; NIFW;
IS / I / 1 / ABCD / T4 Ta = 50° - 201.003-170; Entity;
I / 2 / AEx nA IIC / T4 Ta = 50°C - 201.003-170; NIFW;
I / 1 / AEx ib [ia] IIC / T4 Ta = 50°C - 201.003-170; Entity
Refer to control drawing 201.003-170 for entity parameters

COND 3400X-041. Conductivity Module.

NI / I / 2 / ABCD / T4 Ta = 50°C - 201.003-170; NIFW;
IS / I / 1 / ABCD / T4 Ta = 50° - 201.003-170; Entity;
I / 2 / AEx nA IIC / T4 Ta = 50°C - 201.003-170; NIFW;
I / 1 / AEx ib [ia] IIC / T4 Ta = 50°C - 201.003-170; Entity
Refer to control drawing 201.003-170 for entity parameters

OXY 3400X-06a. Oxygen Module.

NI / I / 2 / ABCD / T4 Ta = 50°C - 201.003-170; NIFW;
IS / I / 1 / ABCD / T4 Ta = 50° - 201.003-170; Entity;
I / 2 / AEx nA IIC / T4 Ta = 50°C - 201.003-170; NIFW;
I / 1 / AEx ib [ia] IIC / T4 Ta = 50°C - 201.003-170; Entity
Refer to control drawing 201.003-170 for entity parameters
a = Application option 2, 3, 5, 6 or 7.

FIU 3400X-140. Digital Module.

NI / I / 2 / ABCD / T4 Ta = 50°C - 201.003-170; NIFW;
IS / I / 1 / ABCD / T4 Ta = 50° - 201.003-170; Entity;
I / 2 / AEx nA IIC / T4 Ta = 50°C - 201.003-170; NIFW;
I / 1 / AEx ib [ia] IIC / T4 Ta = 50°C - 201.003-170; Entity
Refer to control drawing 201.003-170 for entity parameters

FIU 3400X-140-2. Digital Module.

NI / I / 2 / ABCD / T4 Ta = 50°C - 201.003-170; NIFW;
IS / I / 1 / ABCD / T4 Ta = 50° - 201.003-170; Entity;
I / 2 / AEx nA IIC / T4 Ta = 50°C - 201.003-170; NIFW;
I / 1 / AEx ib [ia] IIC / T4 Ta = 50°C - 201.003-170; Entity
Refer to control drawing 201.003-170 for entity parameters

PHU 3400X-110. PH Module.

NI / I / 2 / ABCD / T4 Ta = 50°C - 201.003-170; NIFW;
IS / I / 1 / ABCD / T4 Ta = 50° - 201.003-170; Entity;
I / 2 / AEx nA IIC / T4 Ta = 50°C - 201.003-170; NIFW;
I / 1 / AEx ib [ia] IIC / T4 Ta = 50°C - 201.003-170; Entity
Refer to control drawing 201.003-170 for entity parameters

CONDI 3400X-051. Inductive Conductivity Module.

NI / I / 2 / ABCD / T4 Ta = 50°C - 201.003-170; NIFW;
IS / I / 1 / ABCD / T4 Ta = 50° - 201.003-170; Entity;
I / 2 / AEx nA IIC / T4 Ta = 50°C - 201.003-170; NIFW;
I / 1 / AEx ib [ia] IIC / T4 Ta = 50°C - 201.003-170; Entity
Refer to control drawing 201.003-170 for entity parameters

OUT 3400X-071. Output Module.

NI / I / 2 / ABCD / T4 Ta = 50°C - 201.003-170; NIFW;
IS / I / 1 / ABCD / T4 Ta = 50° - 201.003-170; Entity;
I / 2 / AEx nA IIC / T4 Ta = 50°C - 201.003-170; NIFW;
I / 1 / AEx ib [ia] IIC / T4 Ta = 50°C - 201.003-170; Entity
Refer to control drawing 201.003-170 for entity parameters

PID 3400X-121. PID Controller Module.

NI / I / 2 / ABCD / T4 Ta = 50°C - 201.003-170; NIFW;
IS / I / 1 / ABCD / T4 Ta = 50° - 201.003-170; Entity;
I / 2 / AEx nA IIC / T4 Ta = 50°C - 201.003-170; NIFW;
I / 1 / AEx ib [ia] IIC / T4 Ta = 50°C - 201.003-170; Entity
Refer to control drawing 201.003-170 for entity parameters

COMPA 3400X-081. Interface Module.

NI / I / 2 / ABCD / T4 Ta = 50°C - 201.003-170; NIFW;
IS / I / 1 / ABCD / T4 Ta = 50° - 201.003-170; Entity;
I / 2 / AEx nA IIC / T4 Ta = 50°C - 201.003-170; NIFW;
I / 1 / AEx ib [ia] IIC / T4 Ta = 50°C - 201.003-170; Entity
Refer to control drawing 201.003-170 for entity parameters

COMFF 3400X-085. Interface Module.

NI / I / 2 / ABCD / T4 Ta = 50°C - 201.003-170; NIFW;
IS / I / 1 / ABCD / T4 Ta = 50° - 201.003-170; Entity;
I / 2 / AEx nA IIC / T4 Ta = 50°C - 201.003-170; NIFW;
I / 1 / AEx ib [ia] IIC / T4 Ta = 50°C - 201.003-170; Entity
Refer to control drawing 201.003-170 for entity parameters

Special Condition of Use:

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

Equipment Ratings:

Nonincendive for use in Class I, Division 2, Groups A, B, C and D and Class I, Zone 2, Group IIC;
Associated Intrinsically Safe Apparatus for connection to Class I, II and III, Division 1, Groups A, B, C, D, E, F and G and Class I, Zone 0, Group IIC in accordance with Entity requirements and control drawing 201.003-170; Suitable for use in Class I, Zone 1, Group IIC Indoor and Outdoor (Type 4X) Hazardous (Classified) Locations

FM Approved for:

Knick Elektronische Messgeräte GmbH & Co. KG
Beuckestrasse 22
D-14163 Berlin
Germany

This certifies that the equipment described has been found to comply with the following Approval Standards and other documents:

Class 3600	1998
Class 3610	1999
Class 3611	2004
Class 3810	2005
ANSI/ISA-12.00.01	2002
ANSI/ISA-12.12.02	2002
ANSI/ISA-12.16.01	2002
ANSI/ISA-12.23.01	2002
ANSI/NEMA 250	1991

Original Project ID: 3023762

Approval Granted: March 2, 2006

Subsequent Revision Reports / Date Approval Amended

Report Number	Date	Report Number	Date
3026396	July 7, 2006		
080423	June 19, 2009		
100802	December 23, 2010		

FM Approvals LLC


 J. E. Marquardt
 Group Manager, Electrical

23 December 2010
 Date