

CERTIFICATE OF CONFORMITY



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

2. **Certificate No:** FM17US0004X

3. **Equipment:** 3000 System Isolators and Converters
(Type Reference and Name)

4. **Name of Listing Company:** PR electronics A/S

5. **Address of Listing Company:** Lerbakken 10
Roende DK-8410
Denmark

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

3041043 dated 18th January 2011

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

FM Class 3600:2022, FM Class 3611:2021, FM Class 3810:2021,
ANSI/ISA 60079-0:2009, ANSI/ISA 60079-15:2009, ANSI/UL 121201:2019, ANSI/UL 61010-1:2018

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:**

See Annex for Equipment Ratings

Certificate issued by:

J.E. Marquedant
VP, Manager - Electrical Systems

23 January 2023

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
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SCHEDULE



US Certificate Of Conformity No: FM17US0004X

11. The marking of the equipment shall include:

See Annex for Equipment Markings

12. **Description of Equipment:**

General - The 3000 system Isolators and Converters are for the conversion and galvanic isolation of analog signals. The manufacturer specifies that power be supplied by a Class 2 limited energy circuit. The equipment operates over a voltage range of 16.8 to 31.2 Vdc with an input and output current rating of 28mA. The operating ambient temperature range is -25°C to +70°C.

Construction - The equipment is intended to be mounted in a vent-free enclosure, meeting the equipment enclosure requirements in accordance to ANSI/UL 61010-1, where the Approved equipment will be installed. All unused openings should be closed off. Installation shall be in accordance with the manufacturer's installation and operation manual.

13. **Specific Conditions of Use:**

1. In Class I, Division 2 installations, the subject equipment shall be mounted within a tool-secured enclosure which is capable of accepting one or more of the Class I, Division 2 wiring methods specified in the National Electrical Code (ANSI/NFPA 70).
2. In Class I, Zone 2 installations, the subject equipment shall be mounted within a tool-secured enclosure which is capable of accepting one or more of the Class I, Zone 2 wiring methods specified in the National Electrical Code (ANSI/NFPA 70). The equipment shall be installed in an enclosure with a minimum ingress protection rating of IP54 unless the apparatus is intended to be afforded an equivalent degree of protection by location.

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.

16. **Certificate History**

Details of the supplements to this certificate are described below:

Date	Description
18 th January 2011	Original Issue.
15 th January 2017	<u>Supplement 5:</u> Report Reference: – RR207674 dated 15 th January 2017. Description of the Change: Addition of models 3186B1 and 3186B2.
27 th March 2017	<u>Supplement 6:</u> Report Reference: – RR207674 dated 27 th March 2017.

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	Description of the Change: Correction of typing error. Model 3013 corrected to 3103.
8 th November 2019	<u>Supplement 7:</u> Report Reference: – RR220925 dated 8 th November 2019. Description of the Change: Addition of models 3103-N, 3104-N, 3108-N, 3109-N, 3111-N, 3112-N, 3113-N, 3114-N, 3117-N and 3118-N. Updated FM3600 from 2011.
23 rd January 2023	<u>Supplement 8:</u> Report Reference: – PR464313 dated 23 rd January 2023. Description of the Change: <ol style="list-style-type: none">1) Addition of models 3202A1, 3202A1-N, 3202A2 and 3202A2-N2) FM3600 updated to latest edition (2022)3) FM3611 and FM3810 updated to latest edition (2021)4) ANSI/ISA 61010-1:2004 updated to ANSI/UL 61010-1:20185) ANSI/UL 121201:2019 added to standards list

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ANNEX

3000 System Isolators and Converters

Equipment Ratings

Nonincendive for Class I, Division 2, Groups A, B, C and D
Non-sparking for Class I, Zone 2, AEx nA IIC T4.

Markings

Class I, Division 2, Groups A, B, C, D; T4 Ta = -25°C to +70°C
Class I, Zone 2, AEx nA IIC; T4 Gc Ta = -25°C to +70°C

Description of Equipment

Model	Description
3101	Temperature Converter/non-Isolated TC SUP
3102	Temperature Converter/non-Isolated Pt100 SUP
3103, 3103-N	Isolated Repeater
3104, 3104-N	Isolated Converter
3108, 3108-N	Isolated Repeater/Splitter
3109, 3109-N	Isolated Converter/Splitter
3111, 3111-N	Temperature Converter/Isolated TC SUP
3112, 3112-N	Temperature Converter/Isolated Pt100 SUP
3113, 3113-N	Temperature Converter/Isolated HART-SUP
3114, 3114-N	Isolated Universal/Converter
3117, 3117-N	Isolated Converter
3118, 3118-N	Isolated Converter/Splitter
3185Aa	Loop Powered Isolator

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3186Aa	2-Wire Transmitter Isolator
3186Ba	2-Wire Current Isolator
3202A1	Pulse isolator with namur input and NPN output
3202A1-N	Pulse isolator with namur input and NPN output, with DIN rail connector for power and alarm signal
3331	Temperature Converter/Isolated TEMP-LOOP
3333	Temp. Converter/non-Isolated Pt100 LOOP
3337	Temperature Converter/Isolated HART-LOOP
3405	Power Connector Unit

a = 1 (1 Channel) or 2 (2 Channel)

3000 System Isolators and Converters

Equipment Ratings

Nonincendive for Class I, Division 2, Groups A, B, C and D

Non-sparking utilizing a sealed relay for Class I, Zone 2, AEx nA nC IIC T4.

Markings

Class I, Division 2, Groups A, B, C, D; T4 Ta = -25°C to +70°C

Class I, Zone 2, AEx nA nC IIC; T4 Gc Ta = -25°C to +70°C

Description of Equipment

Model	Description
3202A2	Pulse isolator with namur input and Relay output
3202A2-N	Pulse isolator with namur input and Relay output, with DIN rail connector for power and alarm signal

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CERTIFICATE OF CONFORMITY



1. **HAZARDOUS LOCATION ELECTRICAL EQUIPMENT PER CANADIAN REQUIREMENTS**

2. **Certificate No:** FM17CA0003X

3. **Equipment:** 3000 System Isolators and Converters
(Type Reference and Name)

4. **Name of Listing Company:** PR electronics A/S

5. **Address of Listing Company:** Lerbakken 10
Roende DK-8410
Denmark

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

3041043 dated 18th January 2011

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. 213:2017, CSA-C22.2 No. 60079-0:2011,
CAN/CSA-C22.2 No. 60079-15:2012, CAN/CSA-C22.2 No. 61010-1:2016

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:

See Annex for Equipment Ratings

Certificate issued by:

J.E. Marquedant
VP, Manager - Electrical Systems

23 January 2023

Date

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

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Canadian Certificate Of Conformity No: FM17CA0003X



11. The marking of the equipment shall include:

See Annex for Equipment markings

12. **Description of Equipment:**

General - The 3000 system Isolators and Converters are for the conversion and galvanic isolation of analog signals. The manufacturer specifies that power be supplied by a Class 2 limited energy circuit. The equipment operates over a voltage range of 16.8 to 31.2 Vdc with an input and output current rating of 28mA. The operating ambient temperature range is -25°C to +70°C.

Construction - The equipment is intended to be mounted in a vent-free enclosure, meeting the equipment enclosure requirements in accordance to ANSI/ISA 61010-1 (82.02.01), where the Approved equipment will be installed. All unused openings should be closed off. Installation shall be in accordance with the manufacturer's installation and operation manual.

13. **Specific Conditions of Use:**

1. In Class I, Division 2 installations, the subject equipment shall be mounted within a tool-secured enclosure which is capable of accepting one or more of the Class I, Division 2 wiring methods specified in the Canadian Electrical Code (CSA C22.2).
2. In Class I, Zone 2 installations, the subject equipment shall be mounted within a tool-secured enclosure which is capable of accepting one or more of the Class I, Zone 2 wiring methods specified in the Canadian Electrical Code (CSA C22.2). The equipment shall be installed in an enclosure with a minimum ingress protection rating of IP54 unless the apparatus is intended to be afforded an equivalent degree of protection by location.

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
18 th January 2011	Original Issue.
15 th January 2017	<u>Supplement 5:</u> Report Reference: – RR207674 dated 15 th January 2017. Description of the Change: Addition of models 3186B1 and 3186B2.

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27 th March 2017	<u>Supplement 6:</u> Report Reference: – RR207674 dated 27 th March 2017. Description of the Change: Correction of typing error. Model 3013 corrected to 3103.
8 th November 2019	<u>Supplement 7:</u> Report Reference: – RR220925 dated 8 th November 2019. Description of the Change: Addition of models 3103-N, 3104-N, 3108-N, 3109-N, 3111-N, 3112-N, 3113-N, 3114-N, 3117-N and 3118-N.
23 rd January 2023	<u>Supplement 8:</u> Report Reference: – PR464313 dated 23 rd January 2023. Description of the Change: <ol style="list-style-type: none">1) Addition of models 3202A1, 3202A1-N, 3202A2 and 3202A2-N2) CAN/CSA C22.2 No. 61010-1:2004 updated to latest edition (2016)

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ANNEX

3000 System Isolators and Converters

Equipment Ratings

Nonincendive for Class I, Division 2, Groups A, B, C and D

Non-sparking for Class I, Zone 2, Ex nA IIC T4.

Markings

Class I, Division 2, Groups A, B, C, D; T4 Ta = -25°C to +70°C

Class I, Zone 2, Ex nA IIC; T4 Gc Ta = -25°C to +70°C

Description of Equipment

Model	Description
3101	Temperature Converter/non-Isolated TC SUP
3102	Temperature Converter/non-Isolated Pt100 SUP
3103, 3103-N	Isolated Repeater
3104, 3104-N	Isolated Converter
3108, 3108-N	Isolated Repeater/Splitter
3109, 3109-N	Isolated Converter/Splitter
3111, 3111-N	Temperature Converter/Isolated TC SUP
3112, 3112-N	Temperature Converter/Isolated Pt100 SUP
3113, 3113-N	Temperature Converter/Isolated HART-SUP
3114, 3114-N	Isolated Universal/Converter
3117, 3117-N	Isolated Converter
3118, 3118-N	Isolated Converter/Splitter
3185Aa	Loop Powered Isolator
3186Aa	2-Wire Transmitter Isolator

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3186Ba	2-Wire Current Isolator
3202A1	Pulse isolator with namur input and NPN output
3202A1-N	Pulse isolator with namur input and NPN output, with DIN rail connector for power and alarm signal
3331	Temperature Converter/Isolated TEMP-LOOP
3333	Temp. Converter/non-Isolated Pt100 LOOP
3337	Temperature Converter/Isolated HART-LOOP
3405	Power Connector Unit

a = 1 (1 Channel) or 2 (2 Channel)

3000 System Isolators and Converters

Equipment Ratings

Nonincendive for Class I, Division 2, Groups A, B, C and D
Non-sparking utilizing a sealed relay for Class I, Zone 2, Ex nA nC IIC T4.

Markings

Class I, Division 2, Groups A, B, C, D; T4 Ta = -25°C to +70°C
Class I, Zone 2, Ex nA nC IIC; T4 Gc Ta = -25°C to +70°C

Description of Equipment

Model	Description
3202A2	Pulse isolator with namur input and Relay output
3202A2-N	Pulse isolator with namur input and Relay output, with DIN rail connector for power and alarm signal

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