

CERTIFICATE OF CONFORMITY



1. **HAZARDOUS (CLASSIFIED) LOCATION ELECTRICAL EQUIPMENT PER US REQUIREMENTS**
2. **Certificate No:** FM22US0014X
3. **Equipment:** Model 4510 Display/Programming Front and Model 4511 Modbus Communication Enabler
(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:

3049132 dated 10th June 2013
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/UL 121201:2019, ANSI/ISA 61010-1:2012, ANSI/UL 60079-0:2020, ANSI/UL 60079-7:2021
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. Marquardt

J.E. Marquardt
VP, Manager - Electrical Systems

19 April 2022

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: FM22US0014X

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

11. The marking of the equipment shall include:

See Annex

12. **Description of Equipment:**

General – The 4511 is a detachable front programming display, adding Modbus RTU RS-485 serial communication to all available PR System 4000/9000 units. The 4511 converts a wide array of sensor and analog device signals such as uni- and bipolar mA and Voltage signals, Potentiometer, Lin R, RTD and TC, to a Modbus communication line signal.

The 4511 allows configuration of operating parameters for the PR System 4000/9000 units using Modbus communication or by use of the front display menu. The display offers signal readout for performing output signal simulation including internal unit or external input signal errors.

The Model 4510 is identical to the Model 4511 with the Modbus communication interface removed and where the display can only be used to monitor and program the 4000 and 9000 modules on the locally attached display

Operation Temperature Ranges:

The ambient operating temperature range of the Model 4510 and 4511 Modbus Communication Enabler is -20°C to 60°C.

Electrical data:

The Model 4510 Display/Programming Front and Model 4511 Modbus Communication Enabler have the following electrical ratings;

$$V_{\max} \leq 10\text{-}20\text{Vdc}; I_{\max} = 7.5\text{mA}; P_{\max} \leq 150\text{mW}$$

13. **Specific Conditions of Use:**

See Annex

14. **Test and Assessment Procedure and Conditions:**

This Certificate has been issued in accordance with FM Approvals US Certification Requirements.

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

SCHEDULE



US Certificate Of Conformity No: FM22US0014X

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
10 th June 2013	Original Issue.
19 th April 2022	<u>Supplement 1:</u> Report Reference: – PR462164 dated 19 th April 2022. Description of the Change: <ol style="list-style-type: none">1) Addition of Model 45102) FM3600 updated to latest edition (2022)3) FM3611 and FM3810 updated to latest edition (2021)4) ANSI/ISA 60079-0:2009 updated to ANSI/UL 60079-0:20205) ANSI/ISA 60079-15:2010 removed from standards list6) ANSI/UL 60079-7:2021 added to standards list7) ANSI/UL 121201:2019 added to standards list8) ANSI/ISA 61010-1:2012 added to standards list9) Certificate updated to new format

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: FM22US0014X

ANNEX

Model 4510 Display/Programming Front

Equipment ratings

Nonincendive for use in Class I, Division 2 Groups A, B, C, and D hazardous (classified) indoor locations, T5, Ta = -20°C to +60°C

Increased safety protection for Class I, Zone 2, AEx ec IIC T5 Gc; Ta = -20°C to +60°C

Equipment markings

Class I, Division 2, Groups A, B, C and D; T5; Ta = -20°C to +60°C

Class I, Zone 2, AEx ec IIC T5 Gc; Ta = -20°C to +60°C

Electrical Ratings

The Model 4511 Modbus Communication Enabler have the following electrical ratings;

$V_{max} \leq 10\text{-}20\text{Vdc}$; $I_{max} = 7.5\text{mA}$; $P_{max} < 150\text{mW}$

Specific Conditions of Use:

For Class I, Division 2

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).

For Class I, Zone 2

1. The equipment shall be installed within an enclosure that provides a minimum ingress protection of IP54 in accordance with ANSI/UL 60079-0.
2. The equipment shall only be used in an area of at least pollution degree 2, as defined in IEC 60664-1
3. Transient protection shall be provided that is set at a level not exceeding 140% of the peak rated voltage value at the supply terminals to the equipment

Model 4511 Modbus Communication Enabler

Equipment ratings

Nonincendive for use in Class I, Division 2 Groups A, B, C, and D hazardous (classified) indoor locations, T5, Ta = -20°C to +60°C

Increased safety protection for Class I, Zone 2, AEx ec IIC T5 Gc; Ta = -20°C to +60°C

Equipment markings

Class I, Division 2, Groups A, B, C and D; T5; Ta = -20°C to +60°C

Class I, Zone 2, AEx ec IIC T5 Gc; Ta = -20°C to +60°C

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: FM22US0014X

Electrical Ratings

The Model 4511 Modbus Communication Enabler have the following electrical ratings;

$V_{\max} \leq 10\text{-}20\text{Vdc}$; $I_{\max} = 7.5\text{mA}$; $P_{\max} < 150\text{mW}$

Specific Conditions of Use:

For Class I, Division 2

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).

For Class I, Zone 2

1. The equipment shall be installed within an enclosure that provides a minimum ingress protection of IP54 in accordance with ANSI/UL 60079-0.
2. The equipment shall only be used in an area of at least pollution degree 2, as defined in IEC 60664-1
3. Transient protection shall be provided that is set at a level not exceeding 140% of the peak rated voltage value at the supply terminals to the equipment

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