

CERTIFICATE OF CONFORMITY



1. **HAZARDOUS (CLASSIFIED) LOCATION ELECTRICAL EQUIPMENT PER US REQUIREMENTS**
2. **Certificate No:** FM16US0009X
3. **Equipment:** 7501 Field Mounted HART Temperature Transmitters
(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:

3055380 dated 9 August 2015
7. FM Approvals LLC, certifies that the equipment described has been found to comply with the following Approval standards and other documents:

FM Class 3600:2011, FM Class 3610:2010, FM Class 3611:2004, FM Class 3615:2006,
FM Class 3810:2005, ANSI/ISA 60079-0:2005, ANSI/ISA 60079-1:2005, ANSI/ISA 60079-11:2014,
ANSI/ISA 60079-15:2013, ANSI/NEMA 250:1991, ANSI/IEC 60529:2004, ANSI/ISA 61010-1:2004
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.

Certificate issued by:

J. E. Marquedant
Manager, Electrical Systems

11 April 2016

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: FM16US0009X

10. Equipment Ratings:

Explosionproof for use in Class I, Division 1, Groups A, B, C & D; Dust-Ignitionproof for use in Class II, Division 1, Groups E, F & G, Class III; Equipment protection by Flameproof Enclosure AEx d for use in Class I, Zone 1, Group IIC; Intrinsically Safe (Entity) for Class I, Division 1, Groups A, B, C, D, E, F & G; Intrinsically Safe (Entity) for use in Class I, Zone 0, AEx ia IIC; Intrinsically Safe (Entity) for use in Zone 20, AEx ia IIIC; Non-Incendive for use in Class I, Division 2, Groups A, B, C & D and Class I, Zone 2, IIC; Suitable for use in Class II, Division 2, Groups F & G and Class II, Division 2; in accordance with Control Drawing No. 7501QF01; Type 4X and IP66/IP68.

11. The marking of the equipment shall include:

IS Class I, II, III, Division 1, Groups A, B, C, D, E, F, G; T* - 7501QF01 Entity; Type 4X, IP66/68

Class I, Zone 0, AEx ia IIC; T* - 7501QF01 Entity; Type 4X, IP66/68

Zone 20, AEx ia IIIC; T* - 7501QF01 Entity; Type 4X, IP66/68

Class I, II, III, Division 2, Groups A, B, C, D, F, G; Type 4X, IP66/68

Class I, Zone 2, Group IIC, T*; Type 4X, IP66/68

Class I Division 1, Groups A, B, C, D; T*; Type 4X, IP66/68

Class II, Division 1, Groups E, F, G, Class III, Division 1; T*; Type 4X, IP66/68

Class I, Zone 1, AEx d IIC T* Gb; Type 4X, IP66/67

* Temperature Ratings					
Intrinsic Safety		Non-Incendive		XP / AEx d / DIP	
T4	-40°C ≤ Ta ≤ 85°C	T4	-20°C/-40°C ≤ Ta ≤ 85°C**	T4	-20°C/-40°C ≤ Ta ≤ 85°C**
T5	-40°C ≤ Ta ≤ 60°C	T5	-20°C/-40°C ≤ Ta ≤ 60°C**	T5	-20°C/-40°C ≤ Ta ≤ 85°C**
T6	-40°C ≤ Ta ≤ 40°C			T6	-20°C/-40°C ≤ Ta ≤ 70°C**

** Minimum permissible ambient temperature is -40°C for o-ring option A and -20°C for o-ring option B.

12. Description of Equipment:

General - The 7501 HART Temperature Transmitters are used for measuring and communicating process temperatures. The transmitters are available for field mounting on a wall or pipe vessel. The transmitters take the output from an existing suitably-rated Thermocouple (TC) or Resistance Temperature Detector (RTD) sensor and convert the output into a 4-20mA HART signal that is then transmitted in order to remotely monitor a process. The transmitters are available for field mounting on a wall or pipe vessel.

Construction - The 7501 HART Temperature Transmitters consist of a single compartment electronics housing with thread-on window cover. The product features 4-20mA HART output and is also available with an optional display/configuration panel. A TC or RTD temperature sensor, in a thermowell suitably rated for the installation, is connected to the 7501 HART Temperature Transmitter either remotely, or threaded directly into one of the entries provided on the enclosure as long as it does not increase the free internal volume. The enclosure is provided with three (3) M20x1.5 metric or 1/2-14 inch NPT openings.

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SCHEDULE



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US Certificate Of Conformity No: FM16US0009X

Ratings – The 7501 HART Temperature Transmitters have 6 terminals for electrical connections and are rated for different power levels, depending on the type of protection. For protection types other than Intrinsically Safe, Terminals 1 and 2 are rated for power supply connection of 9.5-35 VDC and 0-23 mA. Terminals 3, 4, 5 and 6 are provided for connection to a suitable TC or RTD sensor.

For Intrinsically Safe type of protection, the following entity parameters apply:

Entity Parameters Terminals 1, 2:

$U_i = 30V$, $I_i = 120mA$, $P_i = 0.84W$, $C_i = 2nF$, $L_i = 0$

Entity Parameters Terminals 3, 4, 5, 6:

$U_o = 9.6V$, $I_o = 28mA$, $P_o = 67mW$, $C_o = 3.5\mu F$, $L_o = 35mH$

Refer to Part 11 of this certificate for rated ambient temperature ranges as well as temperature classes for the 7501 HART Temperature Transmitters.

7501abcdefgh. Field Mounted HART Temperature Transmitter

a = Housing: A – Low Copper Aluminum, B – Stainless Steel

b = Keypad/Display: 1 – None, 2 – Display, 3 – Keypad and Display

c = O-Ring: A – Silicone Rubber, B – FKM Rubber

d = Conduit Thread: 1 – M20x1.5 6H, 2 – ½ NPT mod

e = Paint Type: A – Epoxy, B – Epoxy + Polyurethane, None – Stainless Steel

f = Transmitter: 1 – Installed, 2 – Not Installed

g = Approvals: 2 – FM Approved

h = Xtra: None, XX***

*** Extra characters may be added for different colors of enclosure. Default is “None” for Red.

13. **Specific Conditions of Use:**

1. Only Blind Plugs type 8550-xxx and 8551-xxx supplied with the 7501 or NRTL certified Blind Plugs suitable for the application and correctly installed may be used.
2. For Group III (dust), electrostatic charging of the paint layer shall be avoided.
3. For housing model code A (Aluminium), if the transmitter is installed in an explosive atmosphere requiring the use of Equipment Protection Levels (EPL) Ga or Da (for Zone 0 and 20 respectively), it must be installed so that ignition sources due to impact and friction sparks are excluded.

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.

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16. Certificate History

Details of the supplements to this certificate are described below:

Date	Description
9 August 2015	Original Issue.
11 April 2016	<u>Supplement 4:</u> Report Reference: RR204472 dated 11 April 2016 Description of the Change: Updates to listing, documentation, and drawing changes in order to include a new FM Approved Stainless Steel enclosure component option.

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CERTIFICATE OF CONFORMITY



1. **HAZARDOUS LOCATION ELECTRICAL EQUIPMENT PER CANADIAN REQUIREMENTS**
2. **Certificate No:** FM16CA0010X
3. **Equipment:** 7501 Field Mounted HART Temperature Transmitters
(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:

3055380 dated 9th August 2015
7. FM Approvals LLC, certifies that the equipment described has been found to comply with the following Approval standards and other documents:

CAN/CSA C22.2 No. 157-92:2006, CAN/CSA C22.2 No. 213-M1987:2004,
CAN/CSA C22.2 No. 1010.1:2004, CAN/CSA C22.2 No. 25-1966:2004,
CAN/CSA C22.2 No. 30-M1986:2003, CAN/CSA C22.2 No. 94-M91:2001, CAN/CSA E60079-0:2007,
CAN/CSA E60079-1:2002, CAN/CSA 60079-11:2014, CAN/CSA 60079-15:2012, IEC 60529:2001
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.
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11. The marking of the equipment shall include:

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Ex ia IIC Ga; T* - 7501QF01 Entity; Type 4X, IP66/68

Ex ia IIIC Da; T* - 7501QF01 Entity; Type 4X, IP66/68

Class I, II, III, Division 2, Groups A, B, C, D, F, G; Type 4X, IP66/68

Class I, Zone 2, Group IIC, T*; Type 4X, IP66/68

Class I Division 1, Groups A, B, C, D; T*; Type 4X, IP66/68

Class II, Division 1, Groups E, F, G, Class III, Division 1; T*; Type 4X, IP66/68

Ex d IIC T* Gb; Type 4X, IP66/67

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d = Conduit Thread: 1 – M20x1.5 6H***, 2 – ½ NPT mod

e = Paint Type: A – Epoxy, B – Epoxy + Polyurethane, None – Stainless Steel

f = Transmitter: 1 – Installed, 2 – Not Installed

g = Approvals: 2 – FM Approved

h = Xtra: None, XX***

***Conduit Thread option 1 not permitted for Class I Division 1 hazardous locations

**** Extra characters may be added for different colors of enclosure. Default is "None" for Red.

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11 th April 2016	Supplement 4: Report Reference: RR204472 dated 11 April 2016 Description of the Change: Updates to listing, documentation, and drawing changes in order to include a new FM Approved Stainless Steel enclosure component option.
11 th September 2016	Supplement 5: Report Reference: RR206269 dated 11 th September 2016 Description of the Change: Corrected typographical error in temperature chart. Should be Ex not AEx reference for Canadian certificate.

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