



# IECEx Certificate of Conformity

## INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit [www.iecex.com](http://www.iecex.com)

Certificate No.:	<b>IECEx DEK 15.0039X</b>	Page 1 of 4	<u>Certificate history:</u>
Status:	<b>Current</b>	Issue No: 4	Issue 3 (2020-01-07)
Date of Issue:	2021-04-20		Issue 2 (2016-01-26)
Applicant:	<b>PR electronics A/S</b> Lerbakken 10 8410 Rønne Denmark		Issue 1 (2015-09-29)
Equipment:	<b>Field mounted HART Temperature Transmitter, Type 7501A.....2. and Type 7501B.....2.</b>		
Optional accessory:			
Type of Protection:	<b>Ex db, tb, ia, ic, ec</b>		
Marking:	Ex db IIC T6...T4 Gb Ex tb IIIC T85 °C...T100 °C Db Ex ec IIC T6...T4 Gc Ex ia IIC T6...T4 Ga Ex ia IIIC T60 °C...T100 °C Db Ex ia I Ma (7501B.....2. only) Ex ic IIC T6...T4 Gc Ex ic IIIC T85 °C...T100 °C Dc		

Approved for issue on behalf of the IECEx  
Certification Body:

**R. Schuller**

Position:

**Certification Manager**

Signature:  
(for printed version)

Date:

2021-04-20

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**DEKRA Certification B.V.**  
Meander 1051  
6825 MJ Arnhem  
Netherlands





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Manufacturer: **PR electronics A/S**  
Lerbakken 10  
8410 Rønde  
Denmark

Additional  
manufacturing  
locations:

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended

## STANDARDS :

The equipment and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards

**IEC 60079-0:2017** Explosive atmospheres - Part 0: Equipment - General requirements  
Edition:7.0

**IEC 60079-1:2014-06** Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"  
Edition:7.0

**IEC 60079-11:2011** Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"  
Edition:6.0

**IEC 60079-31:2013** Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"  
Edition:2

**IEC 60079-7:2017** Explosive atmospheres - Part 7: Equipment protection by increased safety "e"  
Edition:5.1

This Certificate **does not** indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.

## TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Report:

[NL/DEK/ExTR15.0050/06](#)

Quality Assessment Report:

[NL/DEK/QAR13.0017/04](#)



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## **EQUIPMENT:**

Equipment and systems covered by this Certificate are as follows:

The Field mounted HART Temperature Transmitter, Type 7501A.....2. and Type 7501B.....2., convert a temperature measurement signal into a 4 to 20 mA current signal, with digital communication (HART).

The transmitter, Type Type 7501A.....2., consists of an aluminium enclosure and Type 7501B.....2. consists out of a stainless steel enclosure, both with an internal temperature transmitter.

When delivered as a connection kit, the installer can build in his own transmitter, that is predefined by PR Electronics A/S.

The transmitter is optionally supplied with an associated blanking element, Type 8550-... (M20) or Type 8551-... (1/2 NPT).

Optionally the transmitter has a glass window, a display and optical buttons to enable local interfacing.

The transmitter is intended, either to be connected via a cable, or to be mounted directly onto a temperature sensing probe that is suitable for the application and correctly installed.

For type of protection flameproof 'd', and dust ignition protection by enclosure 'tb', only IECEx equipment certified sensors, suitable for the application and correctly installed, may be mounted directly onto the Transmitter without additional certification of the combination.

If the transmitter is physically connected to a possible source of heating or cooling, e.g. by mounting to a process pipe or a temperature sensor, the temperature at the point of connection shall be within the ambient temperature range as given in this certificate.

For nomenclature, thermal and electrical data, see the Annex 1 to NL/DEK/ExTR15.0050/06.

## **SPECIFIC CONDITIONS OF USE: YES as shown below:**

For installation of Transmitter, Type 7501A.....2., as EPL Ga equipment, the transmitter must be installed such, that even in the event of rare incidents, ignition sources due to impact and friction, sparks are excluded.

For Ex ec use in a pollution degree 2 environment, the module must be installed with a minimum protection degree of IP54.

For Ex ec use in an uncontrolled environment:

- the module must be installed with a minimum protection of IP68,
- installation of the equipment shall take place under dry and clean conditions and
- the equipment may not be opened for maintenance in an uncontrolled environment.

Flame proof joints are not intended to be repaired.



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**DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)**

Assessed per IEC 60079-0 Ed. 7, IEC 60079-1 Ed. 7, IEC 60079-7 Ed. 5.1

**Annex:**

[225175900-Annex1\\_1.pdf](#)

**Thermal and Electrical data**Type of protection Ex db:

U<sub>max</sub> = 35 V.

Ambient temperature range:

-40 °C to +70 °C for temperature class T6;

-40 °C to +80 °C for temperature class T4 and T5 for Type 7501 B;

-40 °C to +85 °C for temperature class T4 and T5 for Type 7501 A.

Type of protection Ex tb:

U<sub>max</sub> = 35 V.

Ambient temperature range for Silicone rubber sealing-rings:

-40 °C to +70 °C for maximum surface temperature T85 °C;

-40 °C to +80 °C for maximum surface temperature T100 °C for Type 7501 B;

-40 °C to +85 °C for maximum surface temperature T100 °C for Type 7501 A.

Ambient temperature range for FKM rubber sealing-rings:

-20 °C to +70 °C for maximum surface temperature T85 °C;

-20 °C to +80 °C for maximum surface temperature T100 °C for Type 7501 B;

-20 °C to +85 °C for maximum surface temperature T100 °C for Type 7501 A.

Type of protection Ex ia and Ex ic:

Supply and output circuit (terminals 1, 2):

in type of protection intrinsic safety Ex ia I, Ex ia IIC, Ex ia IIIC, or Ex ic IIC, only for connection to a certified intrinsically safe circuit, with the following maximum values:

U<sub>i</sub> = 30 V; I<sub>i</sub> = 120 mA; P<sub>i</sub> = 0.84 W; C<sub>i</sub> = 2 nF; L<sub>i</sub> = 0 μH.

Sensor circuit (terminals 3...6):

in type of protection intrinsic safety Ex ia I, Ex ia IIC, Ex ia IIIC, or Ex ic IIC, with following maximum values:

U<sub>o</sub> = 9.6 V; I<sub>o</sub> = 28 mA; P<sub>o</sub> = 67.2 mW; C<sub>o</sub> = 3.5 μF; L<sub>o</sub> = 35 mH.

Although the sensor circuit is not infallibly galvanic isolated from the supply / output circuit, the galvanic isolation between the circuits is capable of withstanding a test voltage of 500 Vac during 1 minute.

Ambient temperature range for Ex ia:

-40 °C to +45 °C for temperature class T6 or maximum surface temperature T60 °C;

-40 °C to +60 °C for temperature class T5 or maximum surface temperature T75 °C;

-40 °C to +80 °C for temperature class T4, maximum surface temperature T100 °C and Group I, for Type 7501 B;

-40 °C to +85 °C for temperature class T4, maximum surface temperature T100 °C and Group I, for Type 7501 A.

Ambient temperature range for Ex ic:

-40 °C to +60 °C for temperature class T6 or maximum surface temperature T85 °C;

-40 °C to +80 °C for temperature class T4 and maximum surface temperature T100 °C, for Type 7501 B;

-40 °C to +85 °C for temperature class T4 and maximum surface temperature T100 °C, for Type 7501 A.

Type of protection Ex ec:

U<sub>max</sub> = 35 V (24 V).

Ambient temperature range for Silicone rubber sealing-rings:

-40 °C to +43 °C (+55 °C) for temperature class T6;

-40 °C to +80 °C for temperature class T4 for Type 7501 B;

-40 °C to +85 °C for temperature class T4 for Type 7501 A.

Ambient temperature range for FKM rubber sealing-rings:

-20 °C to +43 °C (+55 °C) for temperature class T6;

-20 °C to +80 °C for temperature class T4 for Type 7501 B;

-20 °C to +85 °C for temperature class T4 for Type 7501 A.

**Nomenclature**

7501	-	-	-	-	-	-	-	-
Type								
<b>Housing</b> A: Low copper Aluminium B: Stainless Steel								
<b>Keypad Display</b> 1: no      no (window) 2: no      yes 3: yes     yes								
<b>Sealing</b> A: -40°C-+85°C silicone rubber B: -20°C-+85°C FKM rubber								
<b>Conduit Threads</b> 1: M20x1.5 6H 2: ½NPT mod								
<b>Paint</b> A: Epoxy B: Epoxy+Polyurethane N: None								
<b>Transmitter</b> 1: Yes 2:None (comes with a connection kit )								
<b>Approvals</b> 1: General purpose 2: Hazardous area								
<b>Xtra</b> None: standard X: Special edition The color of the front is normally Signal-Red but may be changed to any other color								

**Thermal and Electrical data**Type of protection Ex db:

U<sub>max</sub> = 35 V.

Ambient temperature range:

-40 °C to +70 °C for temperature class T6;

-40 °C to +80 °C for temperature class T4 and T5 for Type 7501 B;

-40 °C to +85 °C for temperature class T4 and T5 for Type 7501 A.

Type of protection Ex tb:

U<sub>max</sub> = 35 V.

Ambient temperature range for Silicone rubber sealing-rings:

-40 °C to +70 °C for maximum surface temperature T85 °C;

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Although the sensor circuit is not infallibly galvanic isolated from the supply / output circuit, the galvanic isolation between the circuits is capable of withstanding a test voltage of 500 Vac during 1 minute.

Ambient temperature range for Ex ia:

-40 °C to +45 °C for temperature class T6 or maximum surface temperature T60 °C;

-40 °C to +60 °C for temperature class T5 or maximum surface temperature T75 °C;

-40 °C to +80 °C for temperature class T4, maximum surface temperature T100 °C and Group I, for Type 7501 B;

-40 °C to +85 °C for temperature class T4, maximum surface temperature T100 °C and Group I, for Type 7501 A.

Ambient temperature range for Ex ic:

-40 °C to +60 °C for temperature class T6 or maximum surface temperature T85 °C;

-40 °C to +80 °C for temperature class T4 and maximum surface temperature T100 °C, for Type 7501 B;

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