CERTIFICATE

(1) EC-Type Examination

(2) **Equipment and protective systems intended for use in potentially explosive atmospheres - Directive 94/9/EC**

(3) EC-Type Examination Certificate Number: **DEKRA 15ATEX0058 X** Issue Number: **1**

(4) Equipment: **Field mounted HART Temperature Transmitter, Type 7501.....2.**

(5) Manufacturer: **PR electronics A/S**

(6) Address: **Lerbakken 10, 8410 Rønde, Denmark**

(7) This equipment and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

(8) DEKRA Certification B.V., notified body number 0344 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres given in Annex II to the directive.

The examination and test results are recorded in confidential assessment report number NL/DEK/ExTR15.0050/00.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 60079-0 : 2012 + A11	**EN 60079-1 : 2007**	**EN 60079-11 : 2012**
EN 60079-15 : 2010	**EN 60079-26 : 2007**	**EN 60079-31 : 2014**

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

(11) This EC-Type Examination Certificate relates only to the design, examination and tests of the specified equipment according to the Directive 94/9/EC. Further requirements of the directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.

(12) The marking of the equipment shall include the following:

II 2 G Ex d IIC T6...T4 Gb or
II 2 D Ex tb IIIC T85 °C…T100 °C Db or
II 3 G Ex nA IIC T6...T4 Gc or
II 1 G Ex ia IIC T6…T4 Ga or
II 1 D Ex ia IIIC T60 °C…T100 °C Da or
II 3 G Ex ic IIC T6…T4 Gc or
II 3 D Ex ic IIIC T85 °C…T100 °C Dc

This certificate is issued on 30 July 2015 and, as far as applicable, shall be revised before the date of cessation of presumption of conformity of (one of) the standards mentioned above as communicated in the Official Journal of the European Union.

DEKRA Certification B.V.

R. Schuller
Certification Manager

PRODUCTS RvA C 001

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(13) # SCHEDULE

(14) **to EC-Type Examination Certificate DEKRA 15ATEX0058 X** Issue No. **1**

(15) **Description**

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

The transmitter consists out of an aluminium enclosure and 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.
Optionally the transmitter has a glass window, a display and optical buttons to enable local interfacing.

The enclosure provides a degree of protection of IP54/IP68 according EN 60079-0.

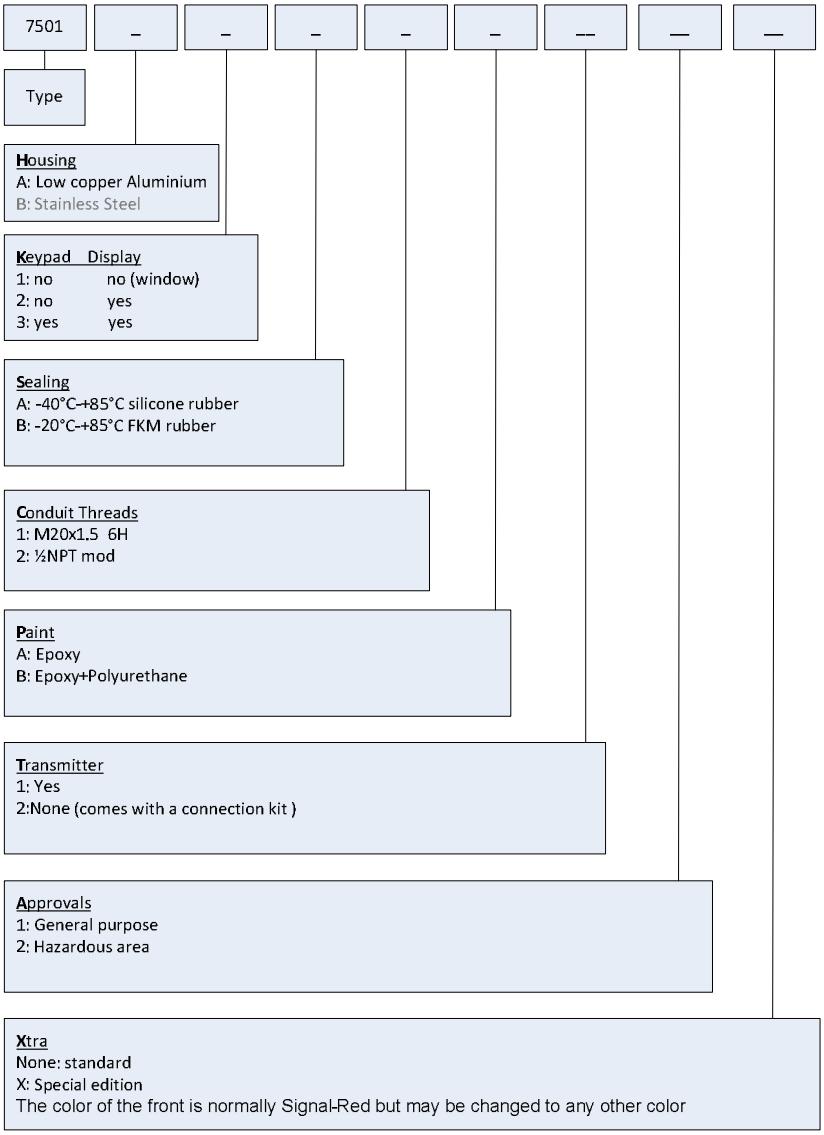
The transmitter is intended, either to be connected via a cable, or to be mounted directly onto a temperature sensing probe that is suitable for the application and correctly installed.

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.

(13) **SCHEDULE**

(14) **to EC-Type Examination Certificate DEKRA 15ATEX0058 X** Issue No. **1**

Nomenclature



(13) # SCHEDULE

(14) **to EC-Type Examination Certificate DEKRA 15ATEX0058 X** Issue No. **1**

Thermal and Electrical data

Type of protection Ex d:

Umax = 35 V.
Ambient temperature range: -40 °C to +70 °C for temperature class T6;
-40 °C to +85 °C for temperature class T4 and T5.

Type of protection Ex tb:

Umax = 35 V.
Ambient temperature range
For Silicone rubber sealing-rings: -40 °C to +70 °C for maximum surface temperature T85 °C;
-40 °C to +85 °C for maximum surface temperature T100 °C.
For FKM rubber sealing-rings: -20 °C to +70 °C for maximum surface temperature T85 °C;
-20 °C to +85 °C for maximum surface temperature T100 °C.

Type of protection Ex ia and Ex ic:

Supply and output circuit (terminals 1, 2):
in type of protection intrinsic safety Ex ia IIC or Ex ia IIIC, only for connection to a certified intrinsically safe circuit, with the following maximum values:
U_i = 30 V; I_i = 120 mA; P_i = 0,84 W; C_i = 2 nF; L_i = 0 µH.

Sensor circuit (terminals 3...6):
in type of protection intrinsic safety Ex ia IIC or Ex ia IIIC, with following maximum values:
U_o = 9,6 V; I_o = 28 mA; P_o = 67 mW; C_o = 3,5 µF; L_o = 35 mH.

Although the sensor circuit is not infallibly galvanic isolated from the supply / ouput 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 +85 °C for temperature class T4 or maximum surface temperature T100 °C.

Ambient temperature range for Ex ic:
-40 °C to +60 °C for temperature class T6 or maximum surface temperature T85 °C;
-40 °C to +85 °C for temperature class T4 or maximum surface temperature T100 °C.

Type of protection Ex nA:

Umax = 35 V.
Ambient temperature range: -40 °C to +60 °C for temperature class T6
-40 °C to +85 °C for temperature class T4.

Installation instructions

The instructions provided with the equipment shall be followed in detail to assure safe operation.

(13) # SCHEDULE

(14) **to EC-Type Examination Certificate DEKRA 15ATEX0058 X** Issue No. **1**

(16) **Assessment Report**

No. NL/DEK/ExTR15.0050/00.

(17) **Specific Conditions of use**

For group III (dust), electrostatic charging of the paint layer shall be avoided.

If the transmitter is installed in an explosive atmosphere requiring the use of equipment protection level Ga, it must be installed such, that ignition sources due to impact and friction sparks are excluded.

(18) **Essential Health and Safety Requirements**

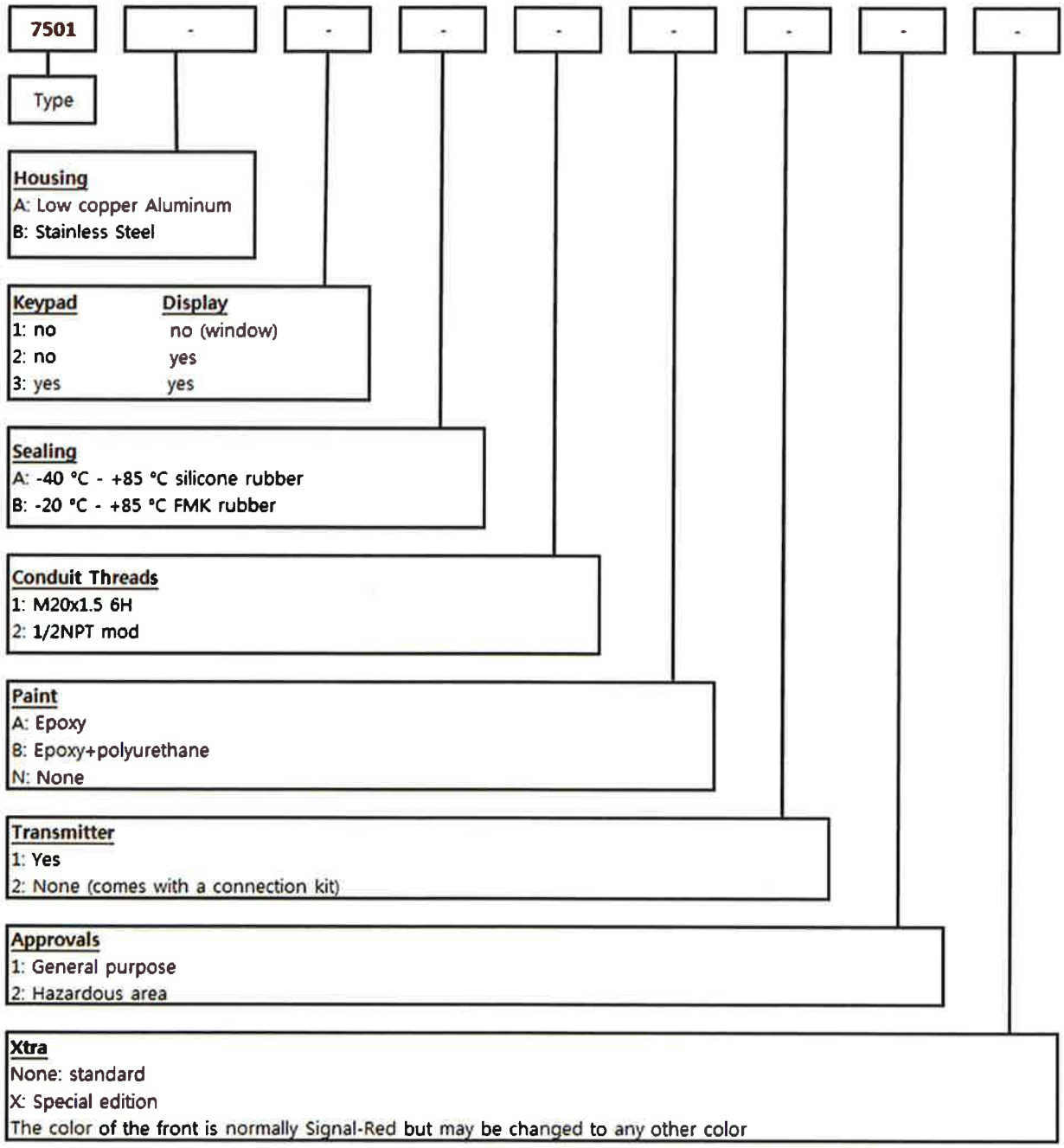
Covered by the standards listed at (9).

(19) **Test documentation**

As listed in assessment Report No. NL/DEK/ExTR15.0050/00.

Annex 1 to IECEx test report NL/DEK/ExTR15.0050/01
Annex 1 to Certificate of Conformity IECEx DEK 15.0039X, issue 1
Annex 1 to EC Type Examination Certificate DEKRA 15ATEX0058 X, issue 2

Nomenclature



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Annex 1 to IECEx test report NL/DEK/ExTR15.0050/01
Annex 1 to Certificate of Conformity IECEx DEK 15.0039X, issue 1
Annex 1 to EC Type Examination Certificate DEKRA 15ATEX0058 X, issue 2

Thermal and Electrical data

Type of protection Ex d:

Umax = 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:

Umax = 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.
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_i = 30 V; I_i = 120 mA; P_i = 0.84 W; C_i = 2 nF; L_i = 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_o = 9.6 V; I_o = 28 mA; P_o = 67.2 mW; C_o = 3.5 µF; L_o = 35 mH.

Although the sensor circuit is not infallibly galvanic isolated from the supply / ouput 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.

Annex 1 to IECEx test report NL/DEK/ExTR15.0050/01
Annex 1 to Certificate of Conformity IECEx DEK 15.0039X, issue 1
Annex 1 to EC Type Examination Certificate DEKRA 15ATEX0058 X, issue 2

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

Type of protection Ex nA:
Umax = 35 V.
Ambient temperature range:
For Silicone rubber sealing-rings:
-40 °C to +60 °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.

For FKM rubber sealing-rings:
-20 °C to +60 °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.