

EUROPEAN UNION RECOGNISED ORGANISATION (EU RO) MUTUAL RECOGNITION TYPE APPROVAL CERTIFICATE

Certificate No:
MRA0000009
Revision No:
1

In accordance with Article 10.1 of EU Regulation 391/2009

This Certificate is issued to

PR electronics A/S
Rønde, Midtjylland, Denmark

for

Temperature Gauges/Sensors/Transmitters

with type designation(s)

Field mounted HART temperature transmitter, type 7501

The product is found to comply with

EU RO Mutual Recognition Technical Requirements for Temperature Gauges and Transmitters

Intended service

Transmitters intended for a wide range of process and electrical connections.

Temperature [°C]: -25 ~ +70

Vibration: ±1.6mm/4.0g

EMC: All locations including bridge and open deck

IP Code: IP68 (according to IEC 60529)

This is to certify:

that the Product referred to herein has been inspected for the Manufacturer, pursuant to the relevant requirements of the European Union Recognised Organisation Mutual Recognition procedure, required by Article 10.1 of EU Regulation 391/2009, and has been found in accordance with those requirements.

This Certificate is valid until **2025-09-10**.

Issued at **Høvik** on **2020-11-19**

DNV GL local station: **Denmark CMC**

Approval Engineer: **Nils Jarem**

for **DNV GL**

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Marta Alonso Pontes
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV GL AS, its parent companies and subsidiaries as well as their officers, directors and employees ("DNV GL") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.



Job Id: **262.4-000027-2**
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Product description

Field mounted HART temperature transmitter, type 7501. The transmitter is loop powered and converts the temperature measurement signal of a TC or RTD sensor into a 4–20 mA current signal with HART digital data communication, display and user interface by means of 3 optical buttons.

Order code: **7501abcdefghi**

7501: Type

a: Housing

- A = Low copper aluminium
- B = Stainless Steel

b: Local operator interface

- 1 = No optical buttons, no display
- 2 = No optical buttons, display
- 3 = Optical buttons, display

c: O-ring

- A = -40 to +85°C silicone rubber
- B = -20 to +85°C FKM rubber

d: Conduit thread

- 1 = M20x1.5 6H
- 2 = ½ NPT mod

e: Paint type

- A = Epoxy
- B = Epoxy + Polyurethane
- N = None (stainless steel)

f: Transmitter

- 1 = Yes
- 2 = None (comes with a connection kit)

g: Approvals

- 1 = General purpose
- 2 = Hazardous area

h: Xtra

- None = Standard
- x = Special edition

The color of the front is normally Signal Red, but may be changed to any other color

i: Marine

- None = Standard
- M = Type approval for EU RO

Order example 7501A3B1A12

Supply voltage, DC:

Ex ia, intrinsically safe: 10...30 VDC
(12...30 VDC with backlight)

Other: 10...35 VDC
(12...35 VDC with backlight)

Manufactured by

PR electronics A/S
Rønne, Denmark

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Application/Limitation

The Type Approval covers hardware listed under type designation.

Applicable for a ship as defined in Mutual Recognition provisions Article 10 Regulation on Common Rules and standards For Ship Inspection and Survey Organizations.

Ex-certification is not covered by this certificate. Application in hazardous area to be approved in each case according to class requirements and Ex-Certification/ Special Condition for Safe Use listed in valid Ex-certificate issued by a notified/recognized Certification Body

Type Approval documentation

Design/user documentation:

- 7501 general description, doc. No 7501QK01 V10R1, dated 2015-11-03
- Product Manual 7501 Field mounted HART temperature transmitter, doc. no. 7501V111-UK

Test reports:

- 5300FD Acceptance Test Report V1R0 dated 2015-06-26
- 5300FD Marine Test Witness Report V1R0 dated 2015-08-21
- Delta Test Report DANAK-19/15187 dated 2015-04-24
- Delta Test Report DANAK-19/15628 dated 2015-09-10
- IECEx test report CZ/FTZU/ExTR12.0017/00
- FORCE test project 120-30781-1 dated 2020-10-19
- PR Electronics Dry heat test (witnessed) dated 2020-11-02

Certificates:

- EU-Type Examination Certificate DEKRA 15ATEX0058 X issue number 4, dated 2020-02-12
- CSA Group Certificate of Compliance 70024231 dated 2019-03-07
- FM Approvals Certificate of Conformity:
 - FM16US0009X dated 2016-04-11;
 - FM16CA0010X dated 2016-09-11
- IECEx Certificate of Conformity IECEx DEK 15.0039X Issue 3 dated 2020-01-07

EU RO MR PQA Scheme Periodical Assessment Checklist for MRA0000009, Rønde 2020-01-28

Marking of product

PR electronics

Model: 7501abcdefghi (see order code under Product description)

Serial: Unique

Other Conditions

The sensors have been verified for compliance with EU Mutual Recognition Technical Requirements for TEMPERATURE GAUGES AND TRANSMITTERS version 0.1.

Environmental test parameters

Temperature: -25°C ~ +70°C
Vibration: ±1.6mm/4.0g
Humidity: 95%RH @ 55°C
EMC: All locations including bridge and open deck
Enclosure: IP68 (according to IEC 60529)

DNV GL location classes

D
B
B
B
B

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Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the type are complied with, and that no alterations are made to the product design or choice of systems, software versions, components and/or materials.

The main elements of the assessment are:

- Ensure that type approved documentation is available
- Inspection of factory samples, selected at random from the production line (where practicable)
- Review of production and inspection routines, including test records from product sample tests and control routines
- Ensuring that systems, software versions, components and/or materials used comply with type approved documents and/or referenced system, software, component and material specifications
- Review of possible changes in design of systems, software versions, components, materials and/or performance, and make sure that such changes do not affect the type approval given
- Ensuring traceability between manufacturer's product type marking and the type approval certificate

Periodical assessment is to be performed annually and at renewal of this certificate.

END OF CERTIFICATE

Generic Statement for EU RO MR Type Approval Certificate

When a product is presented with this EU RO MR Type Approval Certificate for given application, its acceptability with regards to the limitations stated in the certificate conditions defined in 1b, 1c and 1d of the applied Technical Requirement will be evaluated by the EU RO in charge of classing the ship or being in charge of the unit/system certification.

In accordance with Article 10 of Regulation (EC) No 391/2009 of the European Parliament and of the Council of 23 April 2009 "on common rules and standards for ship inspection and survey organizations", the following organizations, recognized by the EU on this date, have agreed on the technical and procedural conditions under which they will mutually recognize this certificate:

- American Bureau of Shipping (ABS);
- Bureau Veritas (BV);
- China Classification Society (CCS);
- Croatian Register of Shipping (CRS);
- DNV GL;
- Indian Register of Shipping (IRS);
- Korean Register (KR);
- Lloyd's Register Group Ltd. (LR);
- Nippon Kaiji Kyokai General Incorporated Foundation (ClassNK);
- Polish Register of Shipping (PRS);
- RINA Services S.p.A. (RINA);
- Russian Maritime Register of Shipping (RS).

The scheme for the mutual recognition of class certificates for materials, equipment and components laid down by Article 10(1) of Regulation (EC) No 391/2009 is only enforceable within the Union in respect of ships flying the flag of a Member State. As far as foreign vessels are concerned, the acceptance of relevant certificates remains at the discretion of relevant non-EU flag States in the exercise of their exclusive jurisdiction, notably under the United Nations Convention on the Law of the Sea (UNCLOS). (In accordance with COMMISSION IMPLEMENTING REGULATION (EU) No 1355/2014 amending Regulation (EC) No 391/2009 - recital (25)).