

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Temperature Sensor

with type designation(s)
Compact thermometer Pt100 Easytemp® TMR31, TMR35

Issued to

Endress+Hauser Wetzler GmbH & Co. KG
Nesselwang, Germany

is found to comply with
DNV GL rules for classification – Ships

Application :

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.

Location classes:

Temperature	B
Humidity	B
Vibration	B
EMC	B
Enclosure	B (IP67/IP69K, NEMA 6P)

This Certificate is valid until **2020-12-20**.

Issued at **Hamburg** on **2016-10-18**

for **DNV GL**

DNV GL local station: **Augsburg**

Approval Engineer: **Klaus-Peter Schröder**

Duy Nam Le
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.

Job Id: **262.1-021493-1**
Certificate No: **TAA00000H5**

Product description

Compact thermometer, optionally with integrated 4 to 20mA transmitter, programmable via PC

Measuring sensor	1x Pt100, accuracy class A (IEC 60751)
Measuring range	-50 ... +150°C (without neck) -50 ... +200°C (with neck)
Power supply	rated 24V DC (10 ... 35V DC)
Output signal	Pt100, 4-wire (Standard) 4 ... 20mA (Optional)
Housing material	stainless steel
Max. length of thermo well	300mm
Process connection	G 1/2", G1/4", 1/2 NPT, 1/4 NPT, M14x1.5, M18x1.5, BSPT R1/2, JIS 0203 or without process connection
Electrical connection	M12 plug-in connector
Response time (water) to IEC 60751	z0.5: <1.0s, z0.9: <2.0s

Configurable via PC-Software ReadWin® 2000

Firmware version: 1.xx.xx

Application/Limitation

The Type Approval covers hardware listed under Product description.

When the hardware is used in applications to be classed by DNV GL, documentation for the actual application is to be submitted for approval by the manufacturer of the application system in each case.

Reference is made to DNV GL RU SHIP Pt.4 Ch.9 Sec. 1.

Accuracy of measurement to EN 61326-2-3:2006

Type Approval documentation

Tests carried out

Applicable tests according to Class Guideline DNVGL-CG-0339, Edition November 2015.

Marking of product

The products to be marked with:

- device name
- manufacturer name

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- serial number.

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 at renewal and at least once in the period of the validity of this certificate.

END OF CERTIFICATE