



CERTIFICATE NUMBER
EFFECTIVE DATE
EXPIRY DATE
ABS TECHNICAL OFFICE

25-0175656-PDA
30-Apr-2025
29-Apr-2030
Hamburg Engineering Department

CERTIFICATE OF Product Design Assessment

This is to certify that a representative of this Bureau did, at the request of

ENDRESS + HAUSER WETZER GMBH + CO. KG

located at

OBERE WANK 1, , NESSELWANG, Germany, D-87484

assess design plans and data for the below listed product. This assessment is a representation by the Bureau as to the degree of compliance the design exhibits with applicable sections of the Rules. This assessment does not waive unit certification or classification procedures required by ABS Rules for products to be installed in ABS classed vessels or facilities. This certificate, by itself, does not reflect that the product is Type Approved. The scope and limitations of this assessment are detailed on the pages attached to this certificate.

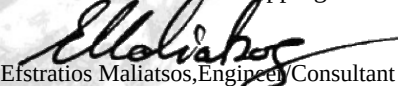
Product: Temperature Sensor
Model: iTHERM Moduline TM111, TM131, TM151, TM611
Endorsements:
Tier: 2 - PDA Issued

This Product Design Assessment (PDA) Certificate remains valid until 29/Apr/2030 or until the Rules and/or Standards used in the assessment are revised or until there is a design modification warranting design reassessment (whichever occurs first).

Acceptance of product is limited to the "Intended Service" details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or previous to the effective date of the ABS Rules and standards applied at the time of PDA issuance. Use of the Product for non-ABS units is subject to agreement between the manufacturer and intended client.

American Bureau Of Shipping


Efstratios Maliatsos, Engineer/Consultant

NOTE: This certificate evidences compliance with one or more of the Rules, Guides, standards or other criteria of ABS or a statutory, industrial or manufacturer's standards. It is issued solely for the use of ABS, its committees, its clients or other authorized entities. Any significant changes to the aforementioned product without approval from ABS will result in this certificate becoming null and void. This certificate is governed by ABS Rules 1-1-A3/5.9 Terms and Conditions of the Request for Product Type Approval and Agreement (2010)

ENDRESS + HAUSER WETZER GMBH + CO. KG

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Germany D-87484

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Tier: 2 - PDA Issued

Product: Temperature Sensor

Model: iTHERM Moduline TM111, TM131, TM151, TM611

Endorsements:

Intended Service:

Temperature sensors for the vessels, offshore units and industrial applications.

Description:

Compact Temperature Sensors with 1 or 2 Resistance thermometer (Pt100), or 1 Resistance thermometer (Pt100) StrongSens, or 1 Thermocouple (TC).

Immersion Length: Without fixation 200mm; longer, fixation over 200mm

iTHERM ModuLine TM111

Process Connection: Thread (>1/2", > M20), Thermowell (of external supply)

Neck length: 38mm (Lagging Length T)

iTHERM ModuLine TM131, TM151

Process Connection: Thread (>1/2", > M20), Flange (>DN15), Thermowell (of external supply)

Neck length: <80mm (Lagging Length T + Removable Neck Length E) with d>11mm

<100mm (Lagging Length T + Removable Neck Length E) with d>12mm

<47mm Nippel+T=50 or <35mm Nippel+T=70mm for TA30H Ex d/XP; Aluminum

<38mm for TA30H Ex d/XP; 316L

iTHERM ModuLine TM611 - Surface thermometer

Process Connection: Pipe Assembly

Neck Length: <43mm (angle <90°)

<55mm (angle = 90°)

TA30A comfort flip cover; Aluminum

TA30R small, screwed cover; 316L blasted

Rating:

Ambient Temperature: -40°C < Ta < 70°C

Housing:

TA30A comfort flip cover; Aluminum, IP66/68, Not for use in open deck

TA30H Ex d/XP; Aluminum, IP 66/67, Not for use in open deck

TA30R small, screwed cover; 316L, IP 66/68; IP69K

TA30H Ex d/XP; 316L, IP 66/67

Service Restriction:

1. Unit Certification is not required for this product. If the manufacturer or purchaser request an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined.

2. Only sensor variants with Resistance thermometer (Pt100) StrongSens can be used for 4g vibration applications.

Comments:

1. The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.

2. Ex certification is not covered by this certificate. Installation in hazardous areas is to be in accordance with any special conditions for safe use detailed in the applicable Ex certificate issued by a notified body.

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3. Temperature sensors are to be used as input to the field Temperature Transmitter type iTEMP TMT82 (23-2448734-PDA) or maybe connected to terminal blocks or flying leads.

4. Each particular application and installation are to be specifically approved in conjunction with the relevant system, locations and environmental conditions. The devices are to be installed such that they may be removed without emptying tanks or without impairing the integrity of pressurized systems.

5. iTHERM ModuLine TM611 - Surface thermometer is assembly of any of the TM111 temperature sensors with Resistance thermometer (Pt100) or Thermocouple (TC) with TA30R small, screwed cover; 316L housing or TA30A comfort flip cover; Aluminum housing mounted on a pipe.

6. All housings without display.

Notes/Drawing/Documentation:

Drawing No. TM1x1_assembly_Ex i_10000010129, Revision: A

Drawing No. TM151_assembly_Ex i10000013455, Revision: A

Drawing No. TM611_assembly_10000014209, Revision: A

Drawing No. DRW308142-XXXXX_without, TM111, Revision: A

Drawing No. Table of Content of submitted documents, Revision:01

Product Descriptions

Drawing No. TM111 - Product description - rev00 - ABS, Revision: 00

Drawing No. TM131 - Product description - rev00 - ABS, Revision: 00

Drawing No. TM151 - Product description - rev00 - ABS, Revision: 00

Drawing No. TM611 - Product description - rev00, Revision: 00

Technical Informations

Drawing No. TI01445TEN_0423-00, TM111, Revision: 04.23

Drawing No. TI01373TEN_0523-00, TM131, Revision: 05.23

Drawing No. TI01707TEN_0223-00, TM151, Revision: 02.23

Drawing No. TI01801T_TM611, TM611, Revision: DRAFT

Drawing No. KA01716TEN_0124-00, Operating Instructions for TM611, Revision: 01.24

Drawing No. BA01915TEN_0118, Operating Instructions Modular thermometers, Revision: 01.18

Safety Instructions

Drawing No. XA01799TEN_0324-00, TM111 and TM131, Revision: 03.24

Drawing No. XA03117TEN_0123-00, TM1x1, Revision: 01.23

Drawing No. XA01976TEN_04.23, TM1x1, Revision: 04.23

Drawing No. XA00044REN_2023-00, TM1x1, Revision: 20.23

Drawing No. XA01817TEN_0423-00, TM1x1, Revision: 04.23

Drawing No. XA01961TEN_03.22, TM111 and TM131, Revision: 03.22

Test Reports

Drawing No. Final testplan - rev00, Final testplan - rev00

Drawing No. 23DE-01351-BE, 23DE-01351-BE-TM 131 and TM 111, PAConsult, 15.01.24

Drawing No. 23DE-01353A-BE-Salt Mist Test, Salt Mist Test, PAConsult, 02.04.24

Drawing No. 23DE-00822-BE-TM and TMT, Vibration and Climate test for TM1x1, PAConsult, 03.11.23, Rev.: 1

Drawing No. 24DE-00537-BE-TM611, Vibration test for TM611, PAConsult, 06.08.24

Drawing No. 970004213, Dust Exclusion Test Procedure, Endress+Hauser, 25.02.14

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Drawing No. 970004214, IP X7 / IP X8 Test Procedure, Endress+Hauser, 25.02.14

Drawing No. 970004215, Dust Exclusion Test Procedure, Endress+Hauser, 25.02.14

Drawing No. 970004216, IP X7 / IP X8 Test Procedure, Endress+Hauser, 25.02.14

Ex Certificates (for reference)

Drawing No. IECEx KEM 08.0042U_04, Connection heads, 27.07.22, Revision: 04

Drawing No. IECEx EPS 18.0074X_05, Thermometer iTHERM type TM1xx, 03.11.23, Revision: 05

Drawing No. IECEx DEK 18.0056X_02, Temperature assemblies, Type TM111 and Type TM131, 07.03.24, Revision: 02

Drawing No. DEKRA 18ATEX0103 X_Iss.2, Temperature assemblies, Type TM111 and Type TM131, DEKRA, 07.03.24, Revision: 02

Drawing No. CSA1733312_80132854_Ed.11, CSA certificate of compliance TM111 and TM131, CSA Group, 19.12.22, Revision: 11

Drawing No. EPS 18 ATEX 1 152 X_Iss.6, EU - Type Examination Certificate, ATEX, 03.11.23, Revision: 06

Drawing No. CSA2692515_80187255_Ed.5, CSA certificate of compliance TM1x1, CSA Group, 21.11.23, Rev: 05

Drawing No. CML21UKEX21238XIss0, UK Ex Approval TM1x1, Eurofins, 11.03.21, Revision: 0

Statements

Statement on Asbestos_V1.24, Asbestos, Revision: 1.24

Statement on Biocidal Products (BCPs)_V2.23, Biocidal Products (BCPs), Revision: 2.23

Statement on China RoHS_V1.24, China RoHS, Revision: 1.24

Statement on PFAS V1.24, PFAS, Revision: 1.24

Statement on Polychlorinatedbiphenyl (PCB)_V1.24, Polychlorinatedbiphenyl (PCB), Revision: 1.24

Statement on REACH Directive_V2.24, REACH Directive, Revision: 2.24

Statement on RoHS Directive_V1.24, RoHS Directive, Revision: 1.24

Statement on TSCA (PBT)_V1.24, TSCA (PBT), Revision: 1.24

Statement on WEEE Directive_V1.24, WEEE Directive, Revision: 1.24

Declaration of Conformities

Drawing No.UK_00425_01.21, iTHERM thermometer TM111, TM131, Revision: 01.21

Drawing No.UK_00426_01.21, iTHERM insert TS111, TS211, Revision: 01.21

Drawing No.UK_00427_01.21, Insert TPR100, TPC100, TS111, TS211, Revision: 01.21

Drawing No.UK_00428_01.21, Thermometer TR10-...-TEC420, Revision: 01.21

Drawing No.UK_00473_01.21, iTHERM insert TS111, TS211, TPR100, TPC100, TPC200, Revision: 01.21

Drawing No. EC_00136_04.24, Thermometer Txx-...-TST434B, Revision: 04.24

Drawing No. EC_00169_04.23, Thermometer TR10-...- TSC310, Revision: 04.23

Drawing No. EC_00735_02.23, iTHERM Thermometer TM111, TM112, TM131, TM151, TM152, Revision: 02.23

Drawing No. EC_00740_02.19, iTHERM thermometer TM111, TM131, Revision: 04.24

Drawing No. Drawing_UUT01, TM131, Revision: A.1

Drawing No. Drawing_UUT02, TM131, Revision: A.1

Drawing No. Drawing_UUT03, TM131, Revision: A.1

Drawing No. Drawing_UUT04, TM131, Revision: A.1

Drawing No. Drawing_UUT05, TM111, Revision: A.1

Drawing No. Drawing_UUT06, TM131, Revision: A.1

Drawing No. Drawing_UUT07, TM151, Revision: A.1

Drawing No. Drawing_UUT08, TM131, Revision: A.1

Drawing No. Drawing_UUT09, TM111, Revision: A.1

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STANDARDS

ABS Rules:

2025 Marine Vessels Rules 1-1-4/7.7; 1-1-A3 & A4, 4-6-2/9.11.1, 4-6-2/9.11.3, 4-8-3/1.7, 4-8-3/1.11, 4-8-3/1.17.1, 4-9-9/7, 4-9-9/13, 4-9-9/15.7 Table1 (as applicable)

2025 Mobile Offshore Units Rules 1-1-4/9.7, 1-1-A2 and A3, 4-2-1/11.27.1, 4-3-1/ 11, 4-3-4/15, 4-3-4/17

National:

NA

International:

IACS UR E10 Rev.9

Government:

NA

EUMED:

NA

OTHERS:

NA