EU RO MR Production Quality Assurance Certificate
No. **EMR416822CS/002**

This is to certify that RINAdid undertake the examination of the equipment identified below with the criteria for the Production Quality Assurance set-up in the “Rules for Testing and Certification of Marine Materials and Equipment” and the "EU RO Framework Document for the Mutual Recognition of Type Approval"

Description	**Sensors**
Product	**RTD PT100-1/2DIN:** **W05TE05-2022** **W05TE06-2011** **W05TE07-2022** **W05TE09-2022** **W05TE10-2022** **W05TE11-2022** **W05TE12-2022**
Manufacturer	**THERMO ENGINEERING SRL**
Address	**VIA GIUSEPPINA N. 19** **26030 Malagnino (CR)** **ITALY**
Reference standards	**EU RO MR TR - Temperature Gauges and Transmitters**

Issued in **Genoa** on **July 18, 2023**. *This Certificate is valid until* **July 17, 2028**

RINA Services S.p.A.
Luigi Benedetti

This certificate consists of this page and 1 enclosure

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ATTACHMENT TO
No. EMR416822CS/002

Product:
RTD PT100-1/2DIN:; W05TE05-2022; W05TE06-2011; W05TE07-2022; W05TE09-2022; W05TE10-2022; W05TE11-2022; W05TE12-2022

Manufacturer
THERMO ENGINEERING SRL

Place of Manufacturer
Via Giuseppina n.19, Malagnino (CR)
ITALY

Technical documentation

Intended Service	It is intended for a direct or indirect measurement of temperature (of fluid or solid as applicable) in piping system. See product description listed in Manufacturer documentation, cargo holds, enclosed or open spaces, or machinery components
Ratings	As per Technical Data characteristics Doc. No. ed. 1 - rev.a - 6/98
Restrictions	When used for fluid temperature for measurement of fluid temperature in piping system or pressure vessels , thermometers, temperature transmitters or other temperture sensing devices shall be installed within termowell so that devices can be removed without impairing the integrity of pressurized equipment

Notes	The TEMPERATURE GAUGES and TRANSMITTERS have been verified for compliance with EU Mutual RecognitionTechnical Requirements for TEMPERATURE GAUGES/TRANSMITTERS version 0.2

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DESIGN
EVALUATION
Product Information
Product
Temperature Sensors - Thermocouple K (Ni - Cr-CrNi)

Model	Description	Process connection	Connection Head
W05TE05-2011 (Thermocouple type "K" or RTD PT100/1000)	Temperature probe with protection sheath. Mineral oxide insulation or teflon. Complete with 90° version electric connector model DIN 43650.	Threaded from 1/8" to 1" (METRIC, CYLINDRICAL, CONICAL NPT)	No head connection
W05TE06-2011 (*)	Temperature probe. Stem AISI 304/316/321, ALLOY. Mineral oxide insulation or teflon. Complete with aluminum connection head and ceramic terminal block or temperature transmitter.	Threaded from 1/8" to 1" (METRIC, CYLINDRICAL, CONICAL NPT)	Material: AISI 304 / Aluminum Cover: with screws Electrical connection: PG 16 / G1/2 or other Degree of protection: IP65 in accordance with UNI EN 60529
W05TE07-2011 (*)	Temperature sensor for room temperature detection. Stem in AISI 304/316/321, ALLOY Complete with aluminum connection head and ceramic terminal block or temperature transmitter	N/A	Material: Aluminum Cover: with screws Electric connection: M20X1.5 or other Degree of protection: IP65 in accordance with UNI EN 60529

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W05TE09-2011 (*)	Temperature probe with protection sheath. Stem AISI 304/316/321, ALLOY. Complete with connection head in AISI 316 and extension cable. Compression fitting process connection	Threaded from 1/8" to 1" (METRIC, CYLINDRICAL, CONICAL, NPT)	Material: AISI 316 Cover: threaded Electric connection: M20x1.5 Degree of protection: IP65 in accordance with UNI EN 60529 Certification: IECEx
W05TE10-2011 (*)	Temperature probe with protection sheath. Stem AISI 303/304/316, ALLOY Mineral oxide insulation. Complete with connection box in AISI 304 or Aluminium and terminal block or temp. transmitter	Threaded from ½" to 1" (METRIC, CYLINDRICAL, CONICAL, NPT)	No head connection
W05TE11-2011 (*)		Electrical connection: flat contacts. Degree of protection: IP65 in accordance with UNI EN 60529.	
W05TE12-2011 (*)	Temperature probe with protection sheat cable. Metal sheath with mineral oxide insulation, armored cable. With protection by means of a flexible steel tube	Threaded from 1/8" to 1" (METRIC, CYLINDRICAL, CONICAL, NPT)	No head connection

(*)Thermocouple type “K” or RTD PT100/1000

Test reports with identification number and date
TESLAB - Report reference n° 232045F, 232046F, 232047F, 232048F (2023-05-10)
ISO 9001 -2015 - Certificato No. 39001302010 (expiring date 2024-07-21)

Thermoengineering - Declaration of conformity (2023-06-23)NEMKO - Report reference n° 257774-1TRFENV
(Issued 2014-05-02)

Calibration Test Report
Document n° ASINTTEST-GR2-001, ASINTTEST-GR2-002, ASINTTEST-GR4-001, ASINTTEST-GR3-003, ASINTTEST-GR3-004, ASINTTEST-GR4-002, ASINTTEST-GR3-001 (05/01/2023)
Certificate of Calibration LAT 238 0916CT-22 (18/11/2022), LAT 096 T0006 2023 (08-02-2023); LAT 096 T0007 2023 (08-02-2023)

Data Sheets:
Model W05TE05-2011 - Document n°EN.W05TE02-2011/ENG/LUG2022
Model W05TE06-2011 - Document n°EN.W05TE03-2011/ENG/LUG2022
Model W05TE06-2011 - Document n°EN.W05TE03-2011/ENG/LUG2022
Model W05TE07-2011 - Document n°EN.W05TE04-2011/ENG/LUG2022
Model W05TE09-2022 - Document n°EN.W05TE08-2022/ENG/LUG2022
Model W05TE10-2011 - Document n°EN.W05TE03-2011/ENG/LUG2022
Model W05TE11-2011 - Document n°EN.W05TE04-2011/ENG/LUG2022
Model W05TE12-2022 - Document n°EN.W05TE08-2022/ENG/LUG2022

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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;*
- *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)*

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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)).

Notes:

1) Refer to the agreed MR Technical Requirements for additional MR TAC information that may be specifically applicable to certain products - https://www.euromr.org/technical-requirements ;
2) List of MR TACs issued by the EU ROs can be found by https://www.euromr.org/links-to-mrcertificates .
3) As per clause 9 of the Terms & Conditions for Mutual Recognition of Type Approval, the manufacturer will be required to agree that it will fulfil the obligations arising out of its quality assurance scheme as approved during production. The manufacturer certifies it has kept the accredited certification body and the EU RO that issued the MR TAC duly informed of any intended design changes or updating of the production quality assurance scheme for its consideration with regard to the validity of the MR TAC. The manufacturer will apply annually for periodical assessment by the EU RO to show that the production under the MR TAC and the quality assurance scheme are being satisfactory maintained;
4) The manufacturer should notify the RO issued the EU RO MR Certificate of any modification or changes to the equipment/ Firmware/ Operational System Software Version in order to obtain a valid Certificate.
5) MR TACs are valid for a maximum of 5 years as per clause 10 of the Terms & Conditions for Mutual Recognition of Type Approval;
6) For more information on the factors affecting the validity of MR TACs, see clause 11, 12 and 13 of the Terms & Conditions of Mutual Recognition of Type Approval.
7) For implementation of the amendments to Appendix I of Version 10.0 of the Framework Document by the EU ROs into their internal procedures and MR TAC templates, an application period of 6 months as from 1 July 2019 applies.

Genoa July 18, 2023

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