



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

In accordance with Article 10.1 of EU Regulation 391/2009

Certificate No:
MRA000002F
Revision No:
2

This Certificate is issued to

SIKA Dr. Siebert & Kühn GmbH & Co. KG
Kaufungen, Hessen, Germany

for

Temperature Gauges/Sensors/Transmitters

with type designation(s)

SolarTemp850, , SolarTemp851

The product is found to comply with

EU RO Mutual Recognition Technical Requirements for Temperature Gauges and Transmitters

Intended service

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

Type:	Temperature [°C]:	Vibration:	EMC:	IP Code:
SolarTemp850	5°C ~ 70°C	± 1.6mm/± 4.0g at 2-25Hz/25-100Hz (See also Other Conditions)	Not for bridge or open deck	See product description
SolarTemp851	5°C ~ 55°C	± 1.6mm/± 4.0g at 2-25Hz/25-100Hz (See also Other Conditions)	Not for bridge or open deck	See product description

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 **2024-12-19**.

Issued at **Hamburg** on **2022-09-20**

DNV local station: **Essen**

for **DNV**

Approval Engineer: **Didier Girardin**

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Joannis Papanuskas
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 AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") 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.



Form code: MRTA 201

Revision: 2021-03

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Product description

The electronic digital thermometer SolarTemp850 is a local temperature measuring instrument designed for measuring and local displaying temperatures by provides a 4-20 mA output analogue signal to ensures a constant monitoring of the process.

SolarTemp850		
Local temperature measurements and gauging in combination with a transmitter signal output		
Drawing ED- 0363, Rev. d) Drawing ED- 0364, Rev. e)		
Type: 850	P/N 85065P53360 & P/N 85065P53330 (with transmitter signal output)	
Type: 850	P/N 85065P54 (without transmitter signal output)	
Software	2K62.5X	2F62.5X
For PT1000 ¹⁾	4-20 mA /0 ... + 600°C	4-20 mA /0 ... + 300°C
Sensor connection ²⁾	1: (-)/3: (+)	Sensor line shielded

¹⁾ Note: not part of present certificate

²⁾ Note: suitability according Operation manual (© SIKA • Ba_SolarTemp850_851 • 04/2022)

SolarTemp851		
Local temperature measurements and gauging in combination with a transmitter signal output		
Drawing ED- 0762, Rev. 0)		
Type: 851	P/N 85165P53360 & P/N 85165P53330 (with transmitter output, loop supply)	
Software	2K62.5X	2F62.5X
For PT1000 ³⁾	4-20 mA /0 ... + 600°C	4-20 mA /0 ... + 300°C
Sensor connection ⁴⁾	1: (-)/3: (+)	Sensor line shielded

³⁾ Note: not part of present certificate

⁴⁾ Note: suitability according Operation manual (© SIKA • Ba_SolarTemp850_851 • 04/2022)

Manufactured by

SIKA Dr. Siebert & Kühn GmbH & Co. KG

Application/Limitation

The Type Approval covers hardware listed under type designation.

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

Each delivery to be provided with installation manual

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

Type Approval documentation

See annex

Marking of product

The products to be marked with:

- manufacturer name
- model name: **SIKA-Art.Nr.**
- unique serial number

Other Conditions

SolarTemp850 local temperature measurements and gauging with transmitter has been verified for compliance with EU Mutual Recognition Technical Requirements for Temperature gauges and transmitters version 0.1, dated 2016-04-01

Environmental test parameters:

SolarTemp850

Temperature	IEC 60068-2-1/ -2-2	5°C ~ +70°C	DNV GL location classes. B
Vibration	IEC 60068-2-6 Test Fc,	± 1,6mm/± 4.0g at 5-25Hz/25-100Hz	B
Humidity	IEC 60068-2-30 test D b	93% to 98%RH, +55°C, 48 h	B
EMC:	IACS UR E10 - Rev. 7		A
Enclosure	IEC 60529	IP65	B

Environmental test parameters:

SolarTemp851

Temperature	IEC 60068-2-1/ -2-2	5°C ~ +55°C	DNV GL location classes. A
Vibration	IEC 60068-2-6 Test Fc,	± 1,6mm/± 4.0g at 5-25Hz/25-100Hz	B
Humidity	IEC 60068-2-30 test D b	93% to 98%RH, +55°C, 48 h	B
EMC:	IACS UR E10 – as amended		A
Enclosure	IEC 60529	IP65	B

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;
- 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)).

ANNEX

Type Approval documentation

EU RO Type Approval - Type Testing Plan for SolarTemp850 / 851
 Operation Manual © SIKA • Ba_SolarTemp850_851 • 04/2022
 ED0364 SolarTemp850 with Transmitter
 ED0363 SolarTemp850 without Transmitter
 ED0762 SolarTemp851 without Transmitter
 Schematic Diagram 400-516-02

Rev. 0	10.01.2022
-	04/2022
Rev. e	11.11. 2020
Rev. d	11.11. 2020
Rev. 0	16.03. 2021
Rev. 0	18.08. 2021

Test Reports

Doc Ref.

19-11911A
 19-11911B
 19-11911C
 072361 140 19
 19-12629
 "Additional Performance Test EURO MR"

Rev. 0	30.10.2019
Rev. 0	30.10.2019
Rev. 0	30.10.2019
Rev. 1.0	29.08.2019
Rev. 0	12.12.2019
Rev. 0	28.02.2019

Doc Ref.

22DE-00007A
 22DE-00007B
 073126.016.22
 EMV 22 06 4574

Rev. 1	14.06.2022
Rev. 0	18.03.2022
Rev. 1	24.02.2022
Rev. 0	22.06.2022