



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

In accordance with Article 10.1 of EU Regulation 391/2009

Certificate No:  
**MRA0000032**  
Revision No:  
**2**

This Certificate is issued to

**Trafag AG**  
**Bubikon, ZH, Switzerland**

for

**Temperature Switches**

with type designation(s)

**Navistat ISN/ISNT 471/472**

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.**

<b>Temperature</b>	<b>-25 and +70</b>
<b>[°C]:</b>	
<b>Vibration:</b>	<b>±1 mm / 0.7 g (Protection tube length &gt; 150 mm)</b> <b>±1.6 mm / 4 g (No protection tube or protection tube length ≤ 150 mm)</b>
<b>EMC:</b>	<b>All locations including bridge and deck zone</b>
<b>IP Code:</b>	<b>IP65</b>

## 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 **2026-03-01**.

Issued at **Hamburg** on **2022-09-06**

DNV local station: **Augsburg**

for **DNV**

Approval Engineer: **Dariusz Lesniewski**

.....  
**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

www.dnv.com

Page 1 of 4

# Thermostat for shipbuilding

## Main features:

Measuring range: -10°C ... +80°C to +40°C ... +300°C

Output signal: floating change-over contact

Switching differential: not adjustable

Repeatability ± 0.5 % FS typ.

Degree of protection: IP65

## Model overview:

Type code:		XXX.XX	XX	XXX	XX	XXXX	XXX	XX	XXXX
Custom build code	Controller, increased vibration resistance	471.23							
	Controller, high vibration resistance	471.26							
	Temperature switch with locking, high vibration resistance	472.12							
Range [°C]	-10 ... 80		95						
	+20 ... 110		23						
	+20 ... 150		31						
	+20 ... 230		24						
	+40 ... 300		53						
Sensor	See data sheet H72111n, table "Ordering-no. for sensors"			xxx					
Fixing	Version B (remote sensing version)				27				
	Version K (direct mounting version)				14				
	Grub screw locked with spacer				18				
Protection tube	Length G, see data sheet H72163					xxxx			
Protection tube length	See data sheet H72163 (max. 150mm)						xxx		
Accessories	Switch point fixed and sealed upon customer's request								88
	Switch point preset upon customer's request								83
	Screwed cable gland M20x1.5								07
	Screwed cable gland M24x1.5								27
	Screwed cable gland M18x1.5								40
	Capillary tube protection: Flexible metal tube, brass nickel plated								90
Capillary tube length	Up to L=5000mm, L=xxxx								xxxx

## Manufactured by

Trafag AG  
 Industriestrasse 11  
 CH 8608 Bubikon  
 Switzerland

## Application/Limitation

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

Name	Number	Date
Test report	V-20042	2020-08-19
Test report	V-19029	2019-08-19
Test report	UB14211	2019-06-26
Drawing	C33174(b)	2022-07-29
Data sheet	H72111n	08/2020
Data sheet	H72163g	05/2019

EU RO MR Type Approval PQA Scheme Periodical Assessment Checklist issued at Bubikon on 2019-12-18.

## Marking of product

- manufacturer name
- serial number
- type designation
- range
- power supply ratings

## Other Conditions

### Environmental test parameters

Temperature:	-25°C to +70°C
Vibration:	±1 mm / 0.7 g ±1.6 mm / 4 g
Humidity:	95%RH @ 55°C, damp heat cyclic
EMC:	Power distribution zone
Enclosure:	IP56

### DNV GL location classes

D  
 A<sup>1)</sup>  
 B<sup>2)</sup>  
 B  
 A  
 B

<sup>1)</sup> Protection tube length > 150 mm

<sup>2)</sup> No protection tube or protection tube length ≤ 150 mm

## 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 will be performed annually and at renewal of the 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)).