



DET NORSKE VERITAS

TYPE APPROVAL CERTIFICATE

CERTIFICATE NO. **A-13691**

This is to certify that the
Temperature Switch

with type designation(s)
471 and 472 - Navistat

Issued to
Trafag AG
Bubikon, Switzerland

is found to comply with
Det Norske Veritas' Rules for Classification of Ships and High Speed and Light Craft
Det Norske Veritas' Offshore Standards

Application
The length of the capillary tube is not to exceed 3 metres.

Location classes:

Temperature	A
Humidity	B
Vibration	B
EMC	Not relevant
Enclosure	B

This Certificate is valid until **2017-12-31**.

Issued at **Høvik** on **2014-02-24**

DNV local station: **Essen CMC Southern Germany**

Approval Engineer: **Ståle Sneen**



for **Det Norske Veritas AS**
Digitally Signed By: Nesvåg, Odd Magne

Location: DNV Høvik, Norway

Signing Date: 2014-02-28

Odd Magne Nesvåg
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.

If any person suffers loss or damage which is proved to have been caused by any negligent act or omission of Det Norske Veritas, then Det Norske Veritas shall pay compensation to such person for his proved direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question, provided that the maximum compensation shall never exceed USD 2 million. In this provision "Det Norske Veritas" shall mean the Foundation Det Norske Veritas as well as all its subsidiaries, directors, officers, employees, agents and any other acting on behalf of Det Norske Veritas.

Product description

Type 471 and 472 – NAVISTAT, including the following options:

	Type	Range	Sensor	Mounting	
				Execution B (27)	Execution K (14)
Ordering No.	471.23	23	322, 122	8316	1416
	471.26	31	332, 132	8317	1417
	472.12	53	342, 142	8319	1419

Type Approval conditions

If protective tubing is used, this is to be fixed at both ends to prevent unforeseen stresses on the capillary tube.

The support plate of execution type B is to have a minimum thickness of 2 mm.

Application/Limitation

The length of the capillary tube is not to exceed 3 metres.

Temperature switch with manual reset, type 473.12, is only for application where DNV accepts manual reset.

Type Approval documentation

Data sheet: H72111h

Drawings: R93159 Rev. b, R93160 Rev. c

Test reports: dated 90.10.02, 94.01.21, 94.09.29, 96.01.08, 96.01.11

A-11749 periodical assessment report, DNV Essen 2014-02-07.

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 least every second year and at renewal of this certificate.

END OF CERTIFICATE