

**TYPE APPROVAL CERTIFICATE****This is to certify:****That the Temperature Switch**with type designation(s)  
**RH41-M**

Issued to

**NORIS Automation GmbH**  
**Nürnberg, Bayern, Germany**

is found to comply with

**DNV GL rules for classification – Ships, offshore units, and high speed and light craft****Application :****Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.**

<b>Temperature</b>	<b>D</b>
<b>Humidity</b>	<b>B</b>
<b>Vibration</b>	<b>B</b>
<b>EMC</b>	<b>B</b>
<b>Enclosure</b>	<b>Required protection acc. to DNV GL Rules shall be provided upon installation on board</b>

Issued at **Hamburg** on **2017-05-08**This Certificate is valid until **2022-05-07**.DNV GL local station: **Augsburg**Approval Engineer: **Jens Dietrich**Digitally Signed By: Rinkel, Marco  
for **DNV GL**  
Signing Date: 2017-05-19  
Location: Hamburg - On behalf of**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.



## Product description

Temperature switching device for rail mounting  
Input for 2-wire NTC resistor;  
Potential free output contact (NO);  
Terminals for external circuit monitoring resistor;  
Output contact rating: 30VDC @ 1A;  
Temperature setpoint range 40..120°C;  
Hysteresis: approx. 3% of set point;  
Max. accuracy (FS): 1.5%;  
Degree of protection: IP20 (housing), IP00 (contacts);  
Power supply: 18..36VDC.

## Application/Limitation

The Type Approval covers hardware listed under Product description. When the hardware is used in applications to be classed by DNV, documentation for the actual application is to be submitted for approval by the manufacturer of the application system in each case. Reference is made to DNV GL Rules for Ships Pt.4 Ch.9 Control and Monitoring Systems.

### Product certificate

If specified in the Rules, ref. Pt.4 Ch.9 Sec.1, the control and monitoring system in which the above listed hardware is used shall be delivered with a product certificate. For each such delivery the certification test is to be performed at the manufacturer of the application system before the system is shipped to the yard. The test shall be done according to an approved test program.

### Type Approval documentation

Test report : LGA E4.213; LGA 271144FiP1, Noris TTBmp 07-002, dated 2007-04-16.  
Documents: Data sheet dwg. 64.411.21, dated 2007-10-08;  
Circuit diagram SA453-1, rev. a, dated 2007-05-25.

## Tests carried out

Applicable tests according to class guideline DNV GL CG-0339, edition Nov. 2016

## Marking of product

Manufacturer, type designation, serial number, power supply.

## 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