



# TYPE APPROVAL CERTIFICATE

Certificate No:  
**TAA000016C**  
Revision No:  
**1**

## This is to certify:

**That the Measurement Converter**

with type designation(s)

**RH5, RP5, RPT5, RI5, RG5, RTK5, RFW50, RW5, VP5, VPT5, VTK5, VF5, VFS5, VFG5, VFW5**

Issued to

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

is found to comply with

**DNV 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.**

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

Issued at **Hamburg** on **2022-04-19**

for **DNV**

This Certificate is valid until **2027-04-18**.

DNV local station: **Augsburg**

Approval Engineer: **Jens Dietrich**

.....  
**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: TA 251

Revision: 2021-03

www.dnv.com

Page 1 of 3

## Product description

### Limit values switches:

RH51, RH51-A: 40-120°C  
RH52, RH52-A: 5-70°C NTC (Ohm)  
RP51, RP51-A: 0-120°C  
RP52, RP52-A: 0-150°C Pt100 (Ohm)  
RPT51, RPT51-A: 0-120°C  
RPT52, RPT52-A: 0-120°C Pt1000 (Ohm)  
RI51, RI51-A: 0-20mA  
RI52, RI52-A: 0-4-20mA I (mA)  
RG51, RG51-A: 0-10V DC  
RG52, RG52-A: 0-2-10V DC U (V)  
RFW500-R1/R2: 5Hz-100Hz  
RFW501R1/R2: 20Hz-1KHz F (Hz)  
RFW500-A1/A2: 5Hz-100Hz  
RFW501A1/A2: 20Hz-1KHz F (Hz)  
RTK58, RTK58-A: 0-600°C  
RTK59, RTK59-A: 0-800°C NiCr-Ni  
RW53, RW53-A: 0-20V AC  
RW54, RW54-A: 0-60V AC U (V)  
RW55, RW55-A: 0-90V AC U (V)  
RG51-S: 0-10V DC  
RW53-S: 0-20V AC U (V)  
RW54-S: 0-60V AC  
RW55-S: 0-90V AC U (V)

### Signal transducer:

VP51-I1 Pt100 0-120°C / 0-20 mA  
VTK58-I1 NiCrNi 0-600°C / 0-20mA  
VP51-I2 Pt100 0-120°C / 4-20mA  
VTK58-I2 NiCrNi 0-600°C / 4-20mA  
VP51-G1 Pt100 0-120°C / 0-10V  
VTK58-G1 NiCrNi 0-600°C / 0-10V  
VP51-G2 Pt100 0-120°C / 2-10V  
VTK58-G2 NiCrNi 0-600°C / 2-10V  
VP52-I1 Pt100 0-150°C / 0-20 mA  
VTK59-I1 NiCrNi 0-800°C / 0-20mA  
VP52-I2 Pt100 0-150°C / 4-20mA  
VTK59-I2 NiCrNi 0-800°C / 4-20mA  
VP52-G1 Pt100 0-150°C / 0-10V  
VTK59-G1 NiCrNi 0-800°C / 0-10V  
VP52-G2 Pt100 0-150°C / 2-10V  
VTK59-G2 NiCrNi 0-800°C / 2-10V  
VP511-I1 Pt100 -30-120°C / 0-20 mA  
VF5xx-I1 \*1 \*3 / 0-20mA  
VP511-I2 Pt100 -30-120°C / 4-20mA  
VF5xx-I2 \*1 \*3 / 0-4-20mA  
VP511-G1 Pt100 -30-120°C / 0-10V  
VF5xx-G1 \*1 \*3 / 0-10V  
VP511-G2 Pt100 -30-120°C / 2-10V  
VF5xx-G2 \*1 \*3 / 2-10V  
VPT51-I1 Pt1000 0-120°C / 0-20 mA  
VFS5xx-I1 1-10V AC \*3 / 0-20mA  
VPT51-I2 Pt1000 0-120°C / 4-20mA  
VFS5xx-I2 1-10V AC \*3 / 4-20mA  
VPT51-G1 Pt1000 0 - 120°C / 0-10V  
VFS5xx-G1 1-10V AC \*3 / 0-10V  
VPT51-G2 Pt1000 0-150°C / 2-10V  
VFS5xx-G2 1-10V AC \*3 / 2-10V  
VPT52-I1 Pt1000 0-150°C / 0-20mA  
VFG5xx-I1 6-60V AC \*3 / 0-20mA  
VPT52-I2 Pt1000 0-150°C / 4-20mA  
VFG5xx-I2 6-60V AC \*3 / 4-20mA

VPT52-G1 Pt1000 0-150°C / 0-10V  
VFG5xx-G1 6-60V AC \*3 / 0-10V  
VPT52-G2 Pt1000 0-150°C / 2-10V  
VFG5xx-G2 6-60V AC \*3 / 2-10V  
VPT511-I1 Pt1000 -30-120°C / 0-20mA  
VFW5xx-I1 \*2 \*3 / 0-20mA  
VPT511-I2 Pt1000 -30-120°C / 4-20mA  
VFW5xx-I2 \*2 \*3 / 4-20mA  
VFW5xx-G1 \*2 \*3 / 0-10V  
VFW5xx-G2 \*2 \*3 / 2-10V

\*1 = NORIS speed sensor series FT../FA  
\*2 = for connection at terminal "W" of dynamo  
\*3 = xx=00= 5Hz-100Hz, xx =01= 20Hz-1KHz, xx=02= 50Hz-10KHz.

Power supply for all types: 24V DC  
Rated current for relay outputs: 1A/30V DC; 0,5A/60V DC; 0,2A/220V AC.

## 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 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 reports: NORIS P444; EMCC-840080VB; LGA 471 1173.  
Documents, Info: 535, SL972-1; 536, SL979-1; 537, SL983-1; 538, SL983-1; 539, SL983-1; 542, SL992-1; 545, SL1040-1; 544, SL1017-1; 543, SL1017-1; 540, SL993-1567, SL 1039-1; 541, SL996-1; SA596-1.  
Additional test report BV 2022-0009-EMC-TR-22-0020-V01, dated 2022-01-31.  
TA assessment report, issued by DNV Augsburg dated 2022-01-24.

## Tests carried out

Applicable tests according to Class Guideline DNV CG-0339, edition August 2021.

## Marking of product

Maker, type designation, serial number

## 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 after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.

END OF CERTIFICATE