



Type Approval Certificate

This is to certify that the undernoted product(s) has/have been tested with satisfactory results in accordance with the relevant requirements of the Lloyd's Register Type Approval System.

This certificate is issued to:

PRODUCER NORIS Automation GmbH
Muggenhofer Str. 95
90429 Nuremberg
Germany

DESCRIPTION Resistance thermometers

TYPES MF20-①-③
MF20-①H②-③
①TH8②-④
①TH8②-1-④
①TP81-④
①TP81-1-④
①TPT81-④

① = number of sensor elements: max. 3
② = measuring range (1 = 0 - 120°C, 2 = 0 - 70°C)
③ = design (insertion length: min. 30mm, max. 180mm)
④ = body length: max. 150mm


Types TH8., TP8., TPT8. with protection tube:
MX24-⑤-⑥
MX25-⑤-⑥
MX28-⑤-⑥
MX32-⑤-⑥
⑤ = thread
⑥ = body length: max. 150mm

Certificate No. 03/20063 (E3)

Issue Date 03 September 2018

Expiry Date 11 August 2023

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Thorsten Wolff
Hamburg Technical Support Office

Lloyd's Register EMEA
LR031.1.2013.12



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APPLICATION

Marine, offshore and industrial applications for use in environmental categories ENV1, ENV2, ENV3 and ENV4 as defined in Lloyd's Register Type Approval System, Test Specification Number 1 – 2002.

RATINGS

Type	Sensor type	Range	Tolerance
MF20	Pt100	-25°C - 120°C	EN 60751 class B
MF20-xH1	NTC resistor	0°C - 120°C	±0.2K from 0°C to +70°C
MF20-xH2	NTC resistor	0°C - 70°C	±0.2K from 0°C to +50°C
TH81	NTC resistor	0°C - 120°C	±0.2K from 0°C to +70°C
TH82	NTC resistor	0°C - 70°C	±0.2K from 0°C to +50°C
TP81	Pt100	-25°C - 120°C	EN 60751 class B
TPT81	Pt1000	-25°C - 120°C	EN 60751 class B

The Type Approval does not eliminate the need for normal inspection and survey procedures required by the Rules and Regulations.

If the specified standards are amended during the validity of this certificate, the product is to be re-approved prior to it being supplied to vessels to which the amended standards apply.

The Design Appraisal Document No. HTS/ETS 37307-18 and its supplementary Type Approval Terms and Conditions form part of this Certificate.

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Part 3

Resistance Thermometers

Producer/Licence No.	Item Description	Technical Details	Category/Additional Tests	Remarks	Cert. No.
<p>NORIS Automation GmbH, Muggenhofer Str. 95, 90429 Nuremberg Germany</p>	<p>Resistance thermometers Pt 100, Pt 1000 and NTC</p> <p>Types MF20-①-③</p> <p>MF20-①H1-③</p> <p>MF20-①H2-③</p> <p>①TH81-④ / ①TH81-1-④</p> <p>①TH82-④ / ①TH82-1-④</p> <p>①TP81-④ / ①TP81-1-④</p> <p>① TPT81-④</p> <p>① = number of sensor elements: max.3 ③ = design (insertion length: min. 30mm, max. 180 mm) ④ = body length: max. 150mm</p> <p>Types TH8., TP8., TPT8. with protection tube: MX24-⑤-⑥ MX25-⑤-⑥ MX28-⑤-⑥ MX32-⑤-⑥ ⑤ = thread ⑥ = body length: max. 150mm</p>	<p>Sensor type: Pt100 Range: -25°C - 120°C Tolerance: EN 60751 class B</p> <p>Sensor type: NTC resistor Range: 0 - 120°C Tolerance: ±0.2K from 0°C to +70°C</p> <p>Sensor type: NTC resistor Range: 0 - 70°C Tolerance: ±0.2K from 0°C to +50°C</p> <p>Sensor type: NTC resistor Range: 0 - 120°C Tolerance: ±0.2K from 0°C to +70°C</p> <p>Sensor type: NTC resistor Range: 0 - 70°C Tolerance: ±0.2K from 0°C to +50°C</p> <p>Sensor type: Pt100 Range: -25°C - 120°C Tolerance: EN 60751 class B</p> <p>Sensor type: Pt1000 Range: -25°C - 120°C Tolerance: EN 60751 class B</p>	<p>ENV1, ENV2, ENV3, ENV4 (2002)</p>	<p>Expires: 11 August 2023</p>	<p>03/20063 (E3)</p>