

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.

Manufacturer	Ploeger Sensor GmbH
Address	Fesslerstr. 3, Hamburg, 22083, Germany
Place of Production	Ploeger Sensor GmbH Fesslerstr. 3, Hamburg, 22083, Germany
Type	Transmitters/Transducers
Description	Resistance Thermometers Pt100, Pt1000 Type 14/140: Resistance thermometers with temperature range up to 80 °C Type 21: Resistance thermometer developed for medium mechanical stress Type 29: Resistance thermometer developed for low mechanical stress Type 38, 130, 147, 179: Resistance thermometers for stern tube bearing Type 165, 167: Screw - in resistance thermometers Type 166: Resistance thermometer for adjustable clamping fitting Type 211: Resistance thermometer with temperature range up to 200 °C For detailed description, pls. refer to Appendix.
Trade Name	Type 14, 21, 29, 38, 130, 140, 147, 165, 166, 167, 179, 211
Application	Marine, offshore and industrial applications for use in environmental categories ENV1, ENV2, ENV3 and ENV4 as defined in LR's Type Approval System, Test Specification Number 1 – 1996.

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Specified Standard	Manufacturer's specification
Ratings	<p>Resistance thermometers Pt100, Pt1000with single resistance (P) or double resistance (2P)</p> <p>Measuring tolerance: IEC 60751 class AA: Types 14, 140 IEC 60751 class B: Types 14, 21, 29, 38, 130, 140, 147, 165, 166, 167, 179, 211</p> <p>Connecting cable: 2-wire technique 3-wire technique 4-wire technique</p> <p>Maximum temperature range: -50 °C up to 80 °C: Types 14, 140 -50 °C up to 200 °C: Types 21, 29, 38, 130, 147, 165, 166, 167, 179, 211</p> <p>Maximum temperature of connection part: 80 °C</p> <p>Maximum insertion length: 80 mm: Type 140 100 mm: Type 14 150 mm: Type 211 250 mm: Types 21, 29, 165, 166, 167 25 m: Types 130, 147, 179 80 m: Type 38</p> <p>Material of protection tube: Steel 1.4541: Types 21, 29, 130, 140, 165, 166, 167, 179 Steel 1.4571: Types 21, 29, 38, 130, 140, 165, 166, 167, 179, 211 Teflon (PTFE): Type 147</p>

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Brass: 14

Additional Tests

Dry heat test (80 °C / 16 h)
Enclosure Test IPX7
Vibration test with acceleration of 8 g

This certificate is not valid for equipment, the design, ratings or operating parameters of which have been varied from the specimen tested. The manufacturer should notify Lloyd's Register EMEA of any modification or changes to the equipment in order to obtain a valid Certificate.

The Design Appraisal Document No. HTS/ETS 40306-20/MK/JB and its supplementary Type Approval Terms and Conditions form part of this Certificate.

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Appendix

DESCRIPTION

Resistance Thermometers Pt100, Pt1000

- Type 14: Resistance thermometer with temperature range up to 80 °C
TKh 14 wall-mounted
- Type 21: Resistance thermometer developed for medium mechanical stress
TS 21 protection tube
TK 21 measuring insert
- Type 29: Resistance thermometer developed for low mechanical stress
TS 29 protection tube
TKm 29 measuring insert
- Type 38: Resistance thermometer for stern tube bearing
TG 38 protection tube
- Type 130: Resistance thermometer for stern tube bearing
TG 130 with adjustable bayonet fittings
- Type 140: Resistance thermometer with temperature range up to 80 °C
TKb 140 wall-mounted
- Type 147: Resistance thermometer for stern tube bearing
TG 147 protection tube Teflon (PTFE)
- Type 165: Screw - in resistance thermometer developed for middle mechanical load,
with replaceable measuring insert
TK 165 protection tube
TF 7 measuring insert
- Type 166: Resistance thermometer for adjustable clamping fitting
TK 166
- Type 167: Screw - in resistance thermometer developed for middle mechanical load,
with replaceable measuring insert
TK 167 protection tube
TF 7 measuring insert
- Type 179: Resistance thermometer for stern tube bearing
TG 179 with compression fittings
- Type 211: Resistance thermometer with temperature range up to 200 °C
TW 211 with connection plug