Certificate No: LR25271189TA
Issue Date: 24/09/2025
Expiry Date: 13/06/2030

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.

Jörn Brügmann

Electrical & Control Technical Manager -
North Europe to Lloyd's Register EMEA
A member of the Lloyd's Register group

71 Fenchurch Street, London, EC3M 4BS, United Kingdom

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Specified Standard Manufacturer's specification

Ratings

Resistance thermometers Pt100, Pt1000 with single resistance (P) or double resistance (2P)

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

Connecting cable:
2-wire technique
3-wire technique
4-wire technique

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

Maximum temperature of connection part: 80 °C

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

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
Brass: 14

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Additional Tests	Dry heat test (80 °C / 16 h) Enclosure Test IPX7 Vibration test with acceleration of 8 g
Other Conditions	Type Approval does not eliminate the need (as required by LR Rules) the requirements for further review or for the product to be further inspected and/ or surveyed to be installed in ships classed or intended to be classed with LR. If the specified standards are amended during the validity of this certificate, the product is to be reapproved prior to it being supplied to vessels to which the amended standards apply.

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.

Previous Version: LR2010811TA

The Design Appraisal Document TSO/25-035562-02/SP/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

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