



NIPPON KAIJI KYOKAI

COPY

TYPE APPROVAL CERTIFICATE FOR AUTOMATIC DEVICES AND EQUIPMENT

Certificate No. TA23359M

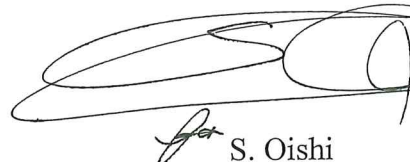
This is to certify that the undernoted product(s) has/have been approved in accordance with the requirements specified in Chapter 1, Part 7 of "Guidance for the Approval and Type Approval of Materials and Equipment for Marine Use" and the relevant Society's Rules.


This certificate is issued to

Applicant:	Temposonics GmbH & Co. KG
Manufacturer 1:	Temposonics GmbH & Co. KG
Place of Manufacturing 1:	Auf dem Schueffel 9, 58513 Luedenscheid Germany
Manufacturer 2:	Temposonics, LLC
Place of Manufacturing 2:	3001 Sheldon Drive, Cary, NC 27513, USA
Product description:	Magnetostrictive Linear Position Sensors Temposonics
Model:	T-Series TH-Sensor
Approval No.:	19A037
Valid until:	25 September 2024

The details are described in the attached sheet(s).

Issued at Tokyo on 17 August 2023.


S. Oishi
General Manager
Machinery Department



Note: The manufacturer, if desired, is requested to apply to the Society for renewal prior to the expiration date.

Attached sheet -1/2 to the Certificate No. TA23359M

Specification & documents:

1. Particulars: Power supply: DC 24V

2. Components and reference drawings:

Type	Drawing
T-Series TH-Sensor	280700, 280702, 280715, 255192-X, 253132, 235177

3. Documentation and Test Reports:

Data Sheet TH Analog: 551385

Operation Manual TH Analog: 551513

Test report on Electromagnetic Compatibility: 9/341

Test report on Electromagnetic Compatibility: 9/468

Environmental Tests on TH-Sensors: P19-PRCS005063

Test report of the witness tests of the T-Series according to ClassNK Part 7:605458

Test report on Electromagnetic Compatibility: 9/532 dated March 14th, 2023

Environmental simulation tests on T-Series ClassNK sensors: P23-PRCS008908_Rev.01_eng

- To be continued -

Attached sheet -2/2 to the Certificate No. TA23359M

Test items & approval conditions:

1. Test items:

(Applied testing items are marked with X.)

ENVIRONMENTAL TESTS (IACS UR E10 Rev.8 basis)		Mark
External examination		X
Operation test and performance test		X
Electric power supply failure test		X
Power supply fluctuation test	Electric	X
	Pneumatic and Hydraulic	--
Insulation resistance test		X
High voltage test		X
Pressure test (Pneumatic and Hydraulic)		--
Dry heat test (Temperature 70°C × 16 hours)		X
Damp heat test		X
Vibration test (Acceleration ±4.0 g × 1.5 hours)		X
Inclination test		--
Cold test (Temperature -25°C × 16 hours)		X
Salt mist test		--
Electrostatic discharge immunity test		X
Radiated radio frequency immunity test		X
Conducted low frequency immunity test		X
Conducted high frequency immunity test		X
Burst / Fast transient immunity test		X
Surge immunity test		X
Radiated emission test		X
Conducted emission test		X
Flame retardant test		--

2. Approved condition:

The product is not allowed to be installed on the bridge or on open deck.