



## 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.

<b>Manufacturer</b>	<b>Kongsberg Maritime AS</b>
<b>Address</b>	Skonnertvegen 1, Ranheim, 7053, Norway
<b>Type</b>	Transmitters/Transducers
<b>Description</b>	<p>SENTRY GB-300 Wireless temperature monitoring Temperature monitoring of crank pin/crosshead bearings in diesel engines and other rotating machinery.</p> <p>SENTRY SPU GBP300 Signal Processing Unit SENTRY GBS100/... Stationary Antenna SENTRY GBS150/... Stationary Antenna (Ex version, defined as simple apparatus) SENTRY GBW1xx/... Wireless Temperature Sensor SENTRY GBW3xx/... Wireless Temperature Sensor (Ex version, defined as simple apparatus)</p> <p>For detailed product description, pls. refer to appendix</p>
<b>Trade Name</b>	SENTRY GB-300
<b>Application</b>	Marine, offshore and industrial applications for use in environmental categories ENV1, ENV2, ENV3 and ENV4 as defined in Lloyd's Register's Type Approval System, Test Specification Number 1 – 2024.

**Ashwinikumar Mhamal**

Electrical & Control Technical Manager -  
Africa, Middle East & India to Lloyd's Register  
Marine and Offshore India LLP

Units 1702-1704, 17th Floor (Level-13), Building Q2, Aurum Q Parc; Gen 4/1 TTC, Thane-Belapur Road, Ghansoli, Navi Mumbai, 400710, India

Lloyd's Register Group Limited, its affiliates and subsidiaries and their respective officers, employees or agents are, individually and collectively, referred to in this clause as 'Lloyd's Register'. Lloyd's Register assumes no responsibility and shall not be liable to any person for any loss, damage or expense caused by reliance on the information or advice in this document or howsoever provided, unless that person has signed a contract with the relevant Lloyd's Register entity for the provision of this information or advice and in that case any responsibility or liability is exclusively on the terms and conditions set out in that contract.



## Type Approval Certificate

<b>Specified Standard</b>	Manufacturer's specification
<b>Ratings</b>	<p><b>Overall system specifications:</b> Measuring range: 0 °C to 160 °C Ambient operating temperature: -25 °C to 85 °C Enclosure protection: IP66 (SPU) / IP67 (sensor &amp; antenna)</p>
	<p><b>Signal processing unit:</b> Nominated power supply: 24 VDC Communication output: CANBUS, RS485 Modbus, 4 to 20 mA No. of output channels: 16 No. of input channels: 10 and 16 Alarm output: 3, max. 150 mA/24 VDC, (high, high high, fault) Marking: Ex db [ia Ga] IIC T6 Gb -20°C ≤ Ta ≤ +60°C Marking: Ex nA [iaGa] IIC T5 Gc -25°C ≤ Ta ≤ +85°C Maximum safe voltage Um: 250 VAC</p>
	<p>Software versions (installed on SPU): Bootloader software: P1GB300-BOOT, Version 1.2.x Main software: P1GB300, Version 1.2.x</p>
	<p><b>Configuration software tool:</b> KM-CT Sensor Version 5.2.0.x (x = minor changes, not affecting LR Rules requirements)</p>
<b>Additional Tests</b>	<p>Hot immersion test: 80 °C / 48 h (Antenna) Dry Heat Test: +85 °C / 16 h (SPU) +90 °C / 16 h (Antenna &amp; Sensor) Low Temperature Test: -25 °C / 16 h (SPU) 0 °C / 16 h (Antenna &amp; Sensor)</p>

Units 1702-1704, 17th Floor (Level-13), Building Q2, Aurum Q Parc; Gen 4/1 TTC, Thane-Belapur Road, Ghansoli, Navi Mumbai, 400710, India

Lloyd's Register Group Limited, its affiliates and subsidiaries and their respective officers, employees or agents are, individually and collectively, referred to in this clause as 'Lloyd's Register'. Lloyd's Register assumes no responsibility and shall not be liable to any person for any loss, damage or expense caused by reliance on the information or advice in this document or howsoever provided, unless that person has signed a contract with the relevant Lloyd's Register entity for the provision of this information or advice and in that case any responsibility or liability is exclusively on the terms and conditions set out in that contract.



## Type Approval Certificate

### Other Conditions

Special conditions for Safe Use as stated in applicable Ex-certificates and the conditions of the LR Rules and Regulations of Classification of Ships Part 6, Chapter 2 shall be observed when installed in hazardous areas. The Ex-certification does not form part of this certificate.

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 Marine and Offshore India LLP of any modification or changes to the equipment in order to obtain a valid Certificate.

**Previous Version:** LR2008206TA

The Design Appraisal Document TSO-25-046631-E-01 and its supplementary Type Approval Terms and Conditions form part of this Certificate.

Units 1702-1704, 17th Floor (Level-13), Building Q2, Aurum Q Parc; Gen 4/1 TTC, Thane-Belapur Road, Ghansoli, Navi Mumbai, 400710, India

Lloyd's Register Group Limited, its affiliates and subsidiaries and their respective officers, employees or agents are, individually and collectively, referred to in this clause as 'Lloyd's Register'. Lloyd's Register assumes no responsibility and shall not be liable to any person for any loss, damage or expense caused by reliance on the information or advice in this document or howsoever provided, unless that person has signed a contract with the relevant Lloyd's Register entity for the provision of this information or advice and in that case any responsibility or liability is exclusively on the terms and conditions set out in that contract.

## Appendix

### **DESCRIPTION**

SENTRY GB-300 Wireless temperature monitoring consisting of:

- Signal Processing Unit:  
SENTRY SPU GBP300
- Stationary Antenna (non-Ex version):  
SENTRY GBS100/...
- Stationary Antenna (Ex version, defined as simple apparatus):  
SENTRY GBS150/...
- Wireless Temperature Sensor (non-Ex-version):  
SENTRY GBW100/....  
SENTRY GBW104/...  
SENTRY GBW105/...  
SENTRY GBW106/...  
SENTRY GBW107/...  
SENTRY GBW110/...  
SENTRY GBW112/...  
SENTRY GBW116/...  
SENTRY GBW122/...  
SENTRY GBW138/...  
SENTRY GBW150/...  
SENTRY GBW180/...
- Wireless Temperature Sensor (Ex version, defined as simple apparatus):  
SENTRY GBW300/...  
SENTRY GBW305/...  
SENTRY GBW315/...  
SENTRY GBW317/...  
SENTRY GBW324/...  
SENTRY GBW325/...  
SENTRY GBW327/...  
SENTRY GBW328/...  
SENTRY GBW338/...  
SENTRY GBW342/...  
SENTRY GBW345/...  
SENTRY GBW346/...  
SENTRY GBW347/...  
SENTRY GBW348/...  
SENTRY GBW350/...  
SENTRY GBW351/...  
SENTRY GBW352/...  
SENTRY GBW353/...  
SENTRY GBW354/...  
SENTRY GBW355/...

---

SENTRY GBW360/...

All type designation may be followed by suffix such as length of coaxial cable or size of housing.