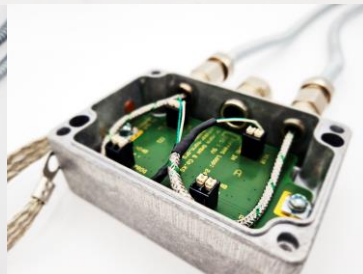


Cylinder Liner Temperature Sensor

TGL 00942

GHG 02731



Application fields

- Cylinder temperature monitoring on 2-stroke diesel engines
- Large gear units
- Bearing monitoring
- Heavy duty applications

Benefits

- Precise temperature measurement due to miniature probes
- Spring force supported sensor tip ensures contact to medium
- Analog and I²C communication
- Harsh environment capability

Working principle

Cylinder Liner Temperature Sensors continuously observe the temperature level of each liner in a marine engine aggregate. The aim is to detect defects at an early stage and to **protect the cylinder** liner from irreparable damage.

Each liner will be equipped with a pair of sensors, both installed in opposite direction. This supports to determine the worst case temperature level no matter installation tolerances and air gaps inside the liner.

The sensors show a **highly robust design**: Sensor tip can withstand and detect temperatures up to 800°C whereas materials in use are of stainless steel. Inside the sensors there is a spring mechanism which allows the sensor tip to move – and therefore to guarantee the constant mechanical contact between sensing element and cylinder liner. This will provide excellent thermal response and **short reaction times** in case of overheating.

CLTS sensors are equipped with an evaluation board, assembled in housing GHG02731. Outgoing **communication will be provided as current loop 4...20mA or I²C**. This makes the CLTS system a flexible solution also for monitoring temperatures in large gear units as well as plain and ball bearings of heavy duty drives.



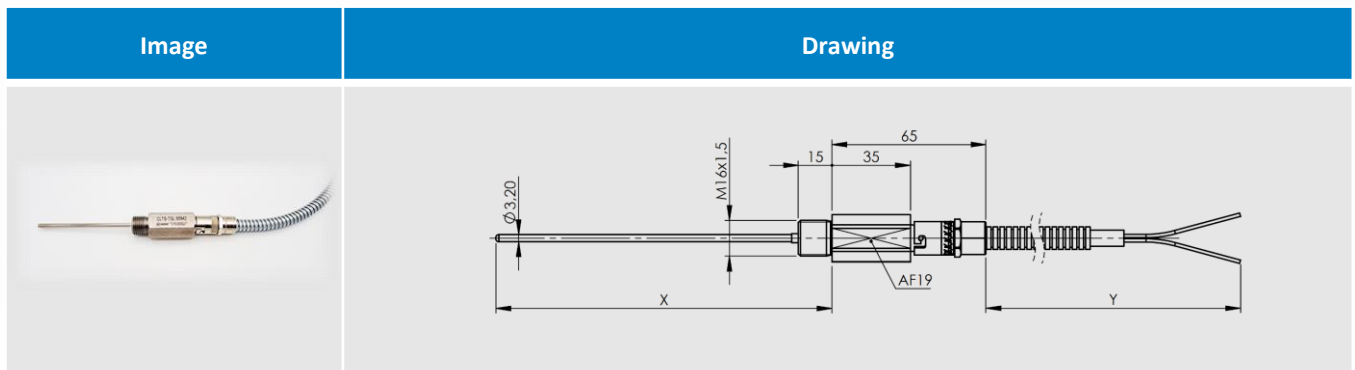
Technical data sensor TGL00942

Version	TGL00942 – x – y
Element type	NiCr-NiAl
Operating temperature	-50°C...250°C
Max. temperature sensor tip	800°C
Accuracy of temp. measurement	±2.5°C or 0.0075 · t (t = measuring value)
Protection degree	IP65
Length of sensor probe (tip)	min. 50mm / max. 180mm
Cable length	max. 12m

Typical assembly in cylinder liner

Internal spring force pushes the sensor tip to the surface of the bearing to be controlled:

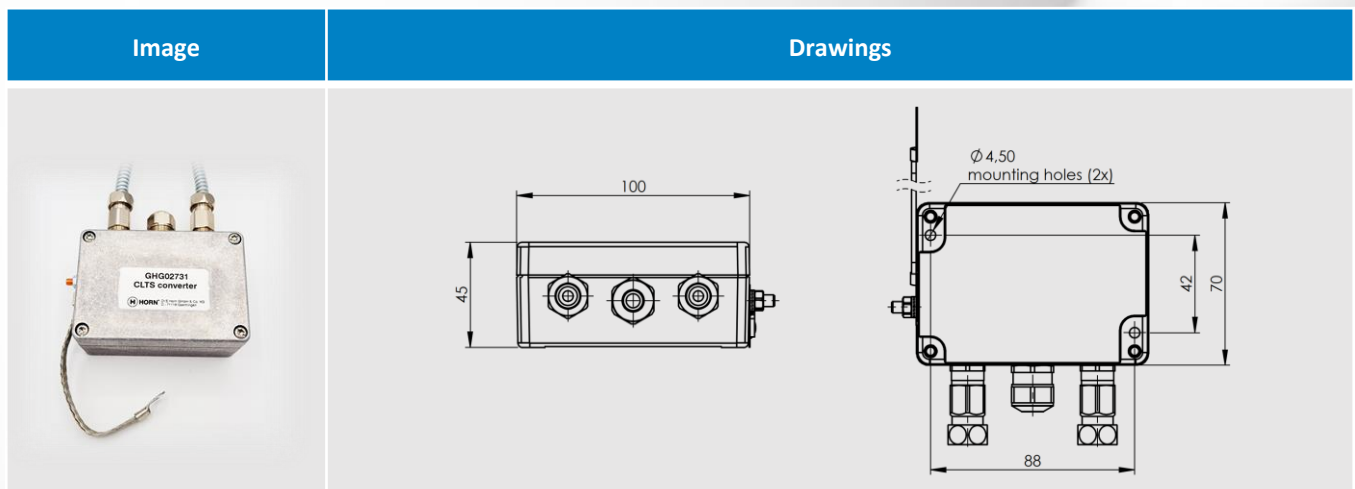




Technical data GHG02731

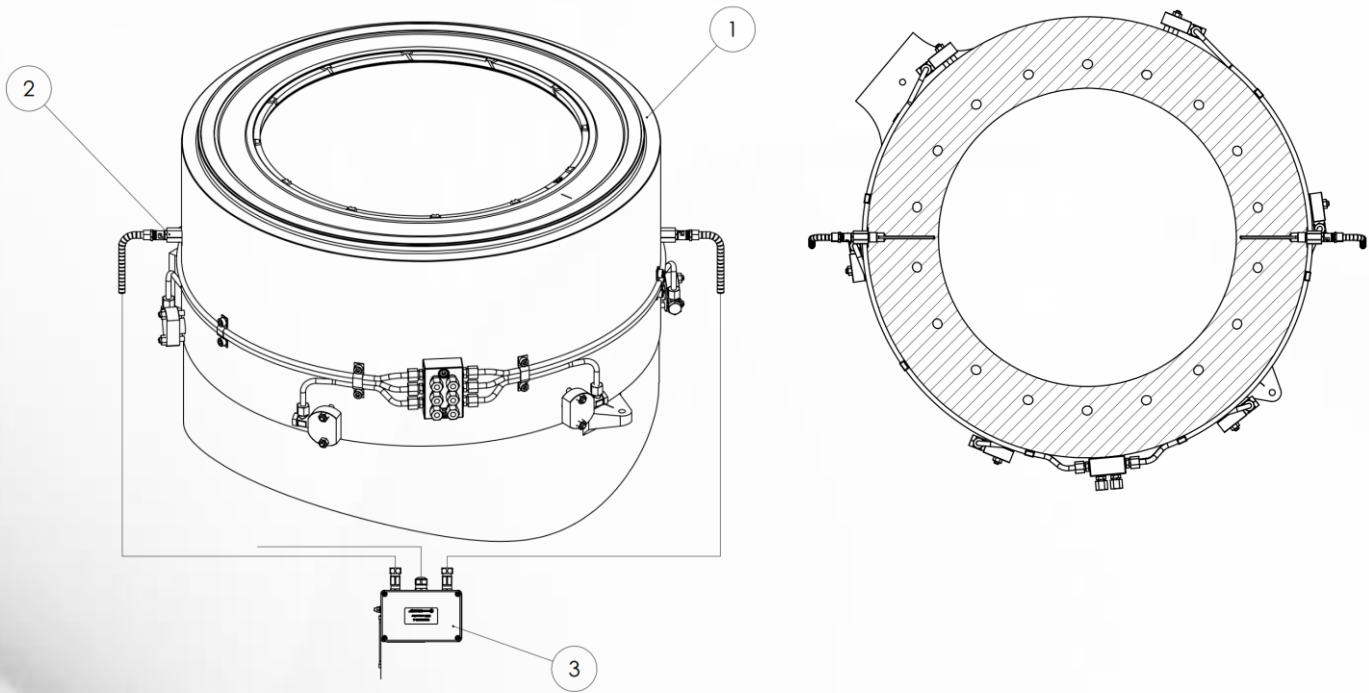
Version	GHG02731 – A Analog (current loop)	GHG02731 – I I ² C interface
Power supply	18...32 VDC, max. permissible ripple ≤ 5 %	
Operating / storage temperature	-25...+85 °C	
Relative humidity	< 90 %, non-condensing	
Weight	approx. 500 g	
Protection degree	IP 65	
EMC-standard	DIN EN 55016 and DIN EN 55022, safety rules acc. EN 61000-4, -6 rules for type approval test accord. DNV (on request)	
Connection to PE	Copper mesh band	
Cable glands	M12 (2x) for sensors M16 for peripheric cable connection	
Output	current output details configurable: 4-20 mA (others on request)	I ² C interface (use with HORN-Bearing Monitoring System BMS3)
Cable connection	4pole (2x current loop)	4pole (U _B , GND, SCL, SDA)
Current output load	max. 1200 Ω	

GHG02731 drawings



Further details on request.

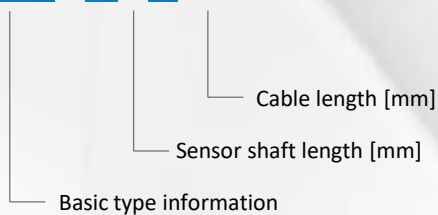
Principle adjustment of sensor system



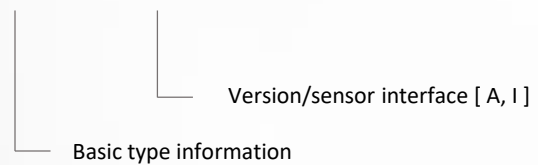
1. Cylinder liner
2. CLTS-TGL00942 Sensor
3. Signal converter box. Boxes are not mounted directly at the cylinder liners. Mounting position is to choose according cable length and situation at site.

Ordering structures

TGL00942 - X - Y



GHG02731 - X



Options and related products

Display touch function EV 314xx

Analog indicator EA/EAD 96x96 (temp. range adjustable)



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