

CVG-HT Datasheet

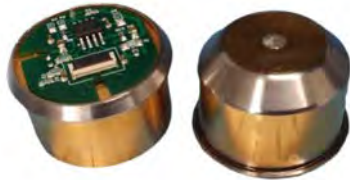
Miniature, Robust & High-Reliable Gyroscope



General Description

The CVG-HT is a high-performance, miniature, robust, and high-reliability Coriolis Gyroscope. Designed to provide inertial angular rate measurement rotations (about 1 reference axis), CVG-HT is a market-leading inertial sensor for down-hole applications, including North-Seeking Gyroscopic Systems.

Due to its 185°C operating temperature range and its very low Angular Random parameter, the CVG-HT is unmatched by any other product available on the market.



Principles of Operation

The core technology used in CVG-HT is InnaLabs® patented and proven Coriolis Vibratory Gyroscopes Technology (CVG) which is inherently stable, impervious to ageing effects, naturally immune to vibrations, shocks and while also maintaining low power consumption. It exhibits an unprecedented size to Angular Random Walk ratio, which is long-awaited by customers operating in the down-hole industry.

CVG-HT is composed of an electromechanical sensing element (pictured above), and a set of control electronics which layouts and interface are customized to customer requirements.

Key Features

- 1-Axis rate angular measurement
- Switch-on response time ≤ 1 s
- Warm-up time ≤ 5 min
- Customized Data Interface (RS422, analogue)
- Customized Power Interface (+15 VDC nominal)
- Reliability (sensing element) $\geq 500,000$ hr (MTBF)

Applications

- Finding North in mining, oil, & gas exploration
- Pipeline inspection systems
- Guidance of borehole survey instrument



Drilling heads require pressure and sometimes high temperature sustainability gyroscopes. InnaLabs® CVG-HT is an essential part of many of these systems.

How to Order

The CVG-HT has the option of a silicon damper, customized control and power electronics. The product is available under the following part number:

GI-CVG-104-19XX

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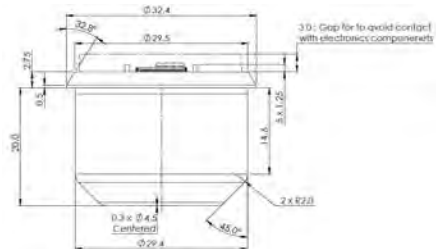
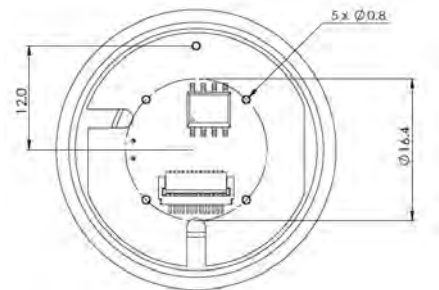
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Specification

Variant	Unit	GI-CVG-104-19XX
Number of Axes		1 axis angular measurement
Fine Mode Measurement Range	°/s	≤ ± 20 (typical)
Coarse Mode Measurement Range	°/s	≤ ± 80 (typical)
Bias In-Run		At 185 °C over 3 min: ≤ 0.2 °C/hr (1 σ) At 125 °C over 3 min: ≤ 0.1 °C/hr (1 σ)
Angular Random Walk	°/√hr	0.005
Electrical		
Bandwidth	Hz	≥ 15 Hz (-3db)
Start-up Time	sec	≤ 1 sec
Customized Power Interface	Watt	(+VDC nominal)
Customized Data Interface		RS-422 or Analogue
Environment		
Operating Temperature	degC	-40°C to +185°C
Random Vibration	g rms	3.63 g rms [5Hz-2kHz]
Sine Vibrations	g, ms	100g pk, ½sine, 11ms
MTBF	hrs	≥ 500,000
Physical		
Volume	mm	≤ 34 mm (Diameter) x 26 mm (Height)
Weight	gr	≤ 61
Power Consumption	Watt	≤ 3

Dimensions



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