

# CRH01

## High Performance Single Axis MEMS Gyroscope



### Key features

- Proven and Robust silicon MEMS VSG3 vibrating ring structure
- Four rate ranges available:  $\pm 25^\circ/\text{s}$ ,  $\pm 100^\circ/\text{s}$ ,  $\pm 200^\circ/\text{s}$  and  $\pm 400^\circ/\text{s}$
- FOG - like performance
- Low Bias Instability -  $0.4^\circ/\text{hr}$  ( $100^\circ/\text{s}$ )
- Excellent Angle Random Walk -  $0.04^\circ/\sqrt{\text{hr}}$
- Low noise -  $0.15^\circ/\text{s rms}$
- Precision analogue output
- High shock and vibration rejection
- Wide range from  $-40^\circ\text{C}$  to  $+85^\circ\text{C}$
- Temperature sensor output for precision thermal compensation
- MEMS frequency output for precision thermal compensation
- RoHS Compliant

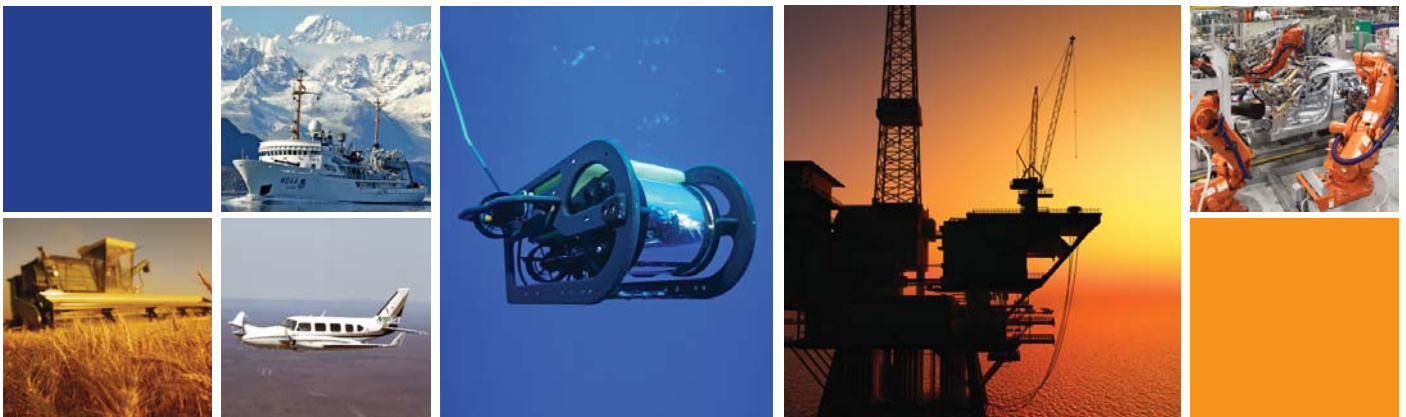
CRH01 provides the optimum solution for applications where bias instability, angle random walk and low noise are of critical importance.

The inductive VSG3 MEMS gyro sensor element is combined with precision discrete electronics to achieve high stability and low noise, making the CRH01 a viable alternative to fibre-optic and dynamically tuned gyros.

An on board temperature sensor and the resonant frequency of the MEMS enables additional external conditioning to be applied to the CRH01 by the host, enhancing the performance even further.

### Typical applications

- Aerospace Applications
- Platform Stabilization
- Precision Surveying
- Maritime Guidance and Control
- Gyro-compassing and Heading Control
- Autonomous Vehicles and ROVs
- Rail Track monitoring
- Robotics
- Drilling Equipment and Guidance
- Inertial Measurement Units



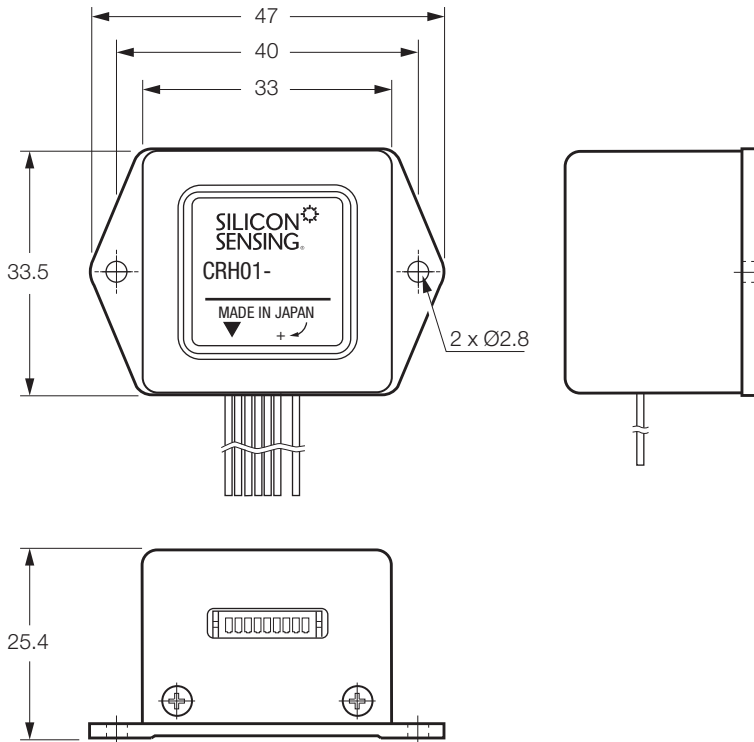
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For full technical datasheets please go to our website where the documents can be downloaded



All dimensions in millimetres



Part Number	Rate Range
CRH01-025	±25°/s
CRH01-100	±100°/s
CRH01-200	±200°/s
CRH01-400	±400°/s

### Pin Connections

1	VCC
2	GND
3	Rate Output
4	Ref
5	REFL
6	Temperature Output
7	DNC
8	FRQ
9	DNC

### Typical Data

Parameter	-025	-100	-200	-400
Output	Analogue			
Dynamic range	±25°/s	±100°/s	±200°/s	±400°/s
Nominal scale factor	80mV/°/s	20mV/°/s	10mV/°/s	5mV/°/s
Bias instability	< 0.2°/h	< 0.4°/h	< 0.5°/h	< 0.8°/h
Angular Random Walk	< 0.035°/√hr	< 0.04°/√hr	< 0.04°/√hr	< 0.04°/√hr
Bias over temperature	±0.1°/s	±0.1°/s	±0.15°/s	±0.15°/s
Bandwidth	100Hz			
Supply voltage	+4.85 to 5.25 Volts			
Current consumption	< 60mA			
Operating temperature range	-40°C to +85°C			
Storage temperature range	-40°C to +100°C			
Start-up time	500ms (max)			
Quiescent noise	0.15°/s rms			
Mass	45 gram			
Operational shock	95g x 6ms			
Non operational shock	1,000g x 1ms			
<b>RoHS Compliant</b>	Yes			

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