

New

# CRH02

## High Performance Single Axis MEMS Gyroscope



### Key features

- Proven and Robust silicon MEMS VSG3Q<sup>MAX</sup> vibrating ring sensor
- 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 -  $0.12^\circ/\text{hr}$  ( $100^\circ/\text{s}$ )
- Excellent Angle Random Walk -  $0.17^\circ/\sqrt{\text{hr}}$
- Low noise -  $0.15^\circ/\text{s rms}$
- Precision analogue output
- High shock and vibration rejection
- $-40^\circ\text{C}$  to  $+85^\circ\text{C}$  operating temperature range
- Temperature sensor output for precision thermal compensation
- MEMS frequency output for precision thermal compensation
- RoHS Compliant

SILICON  
SENSING®

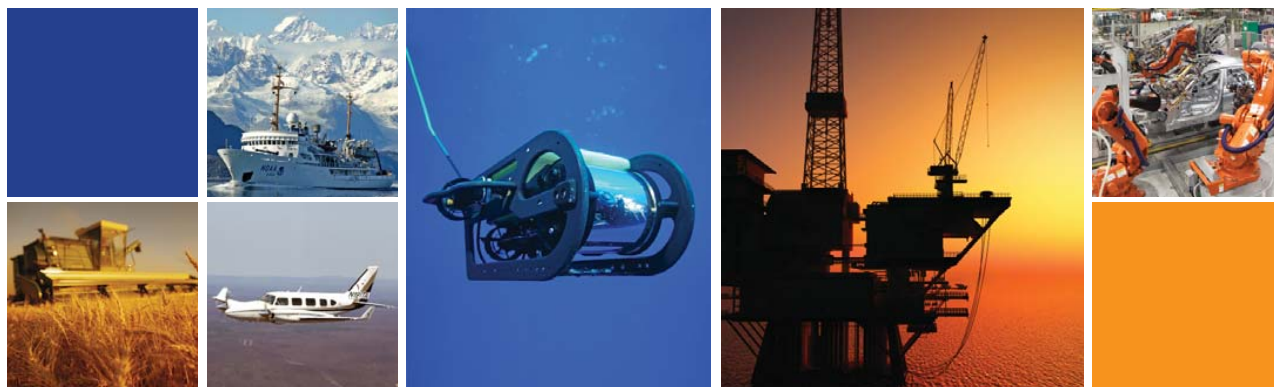
CRH02 provides the optimum solution for applications where bias instability, angle random walk and low noise are of critical importance.

At the heart of the CRH02 is Silicon Sensing's VSG3Q<sup>MAX</sup> vibrating ring MEMS sensor which is at the pinnacle of 15 years of design evolution and the latest off a line which has produced over 30 million high integrity MEMS inertial sensors. The VSG3Q<sup>MAX</sup> gyro sensor is combined with precision discrete electronics to achieve high stability and low noise, making the CRH02 a viable alternative to Fibre-Optic Gyro (FOG) and Dynamically Tuned Gyro (DTG).

An on board temperature sensor and the resonant frequency of the MEMS enables additional external conditioning to be applied to the CRH02 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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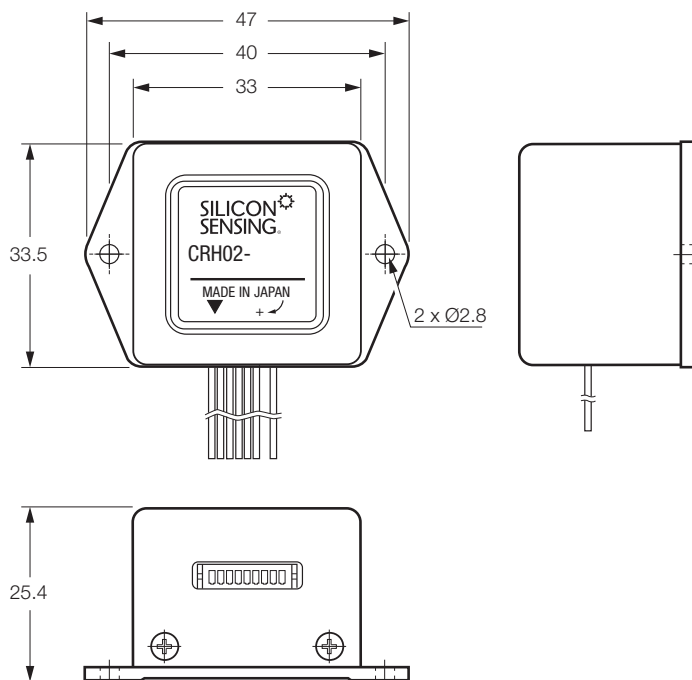
# CRH02

## High Performance Single Axis MEMS Gyroscope



For full technical datasheet please visit our website:  
www.siliconsensing.com

All dimensions in millimetres



### Part Number      Rate Range

<b>CRH02-025</b>	±25°/s
<b>CRH02-100</b>	±100°/s
<b>CRH02-200</b>	±200°/s
<b>CRH02-400</b>	±400°/s

### Pin Connections

<b>1</b>	VCC
<b>2</b>	GND
<b>3</b>	Rate Output
<b>4</b>	Ref
<b>5</b>	REFL
<b>6</b>	Temperature Output
<b>7</b>	DNC
<b>8</b>	FRQ
<b>9</b>	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	< 0.12°/h			
Angular Random Walk	< 0.017°/√hr			
Bias over temperature	±0.1°/s	±0.1°/s	±0.15°/s	±0.15°/s
Bandwidth	50Hz	100Hz	100Hz	50Hz
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 +85°C			
Start-up time	750ms (max)			
Quiescent noise	0.15°/s rms	0.20°/s rms	0.20°/s rms	0.15°/s rms
Mass	45 gram			
Operational shock	95g x 6ms			
Shock (powered survival)	1,000g x 1ms			
<b>RoHS Compliant</b>	Yes			

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