

New

CRH02

High Performance Single Axis MEMS Gyroscope

**SILICON
SENSING** 

Key features

- Proven and Robust silicon MEMS VSG3Q^{MAX} 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°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

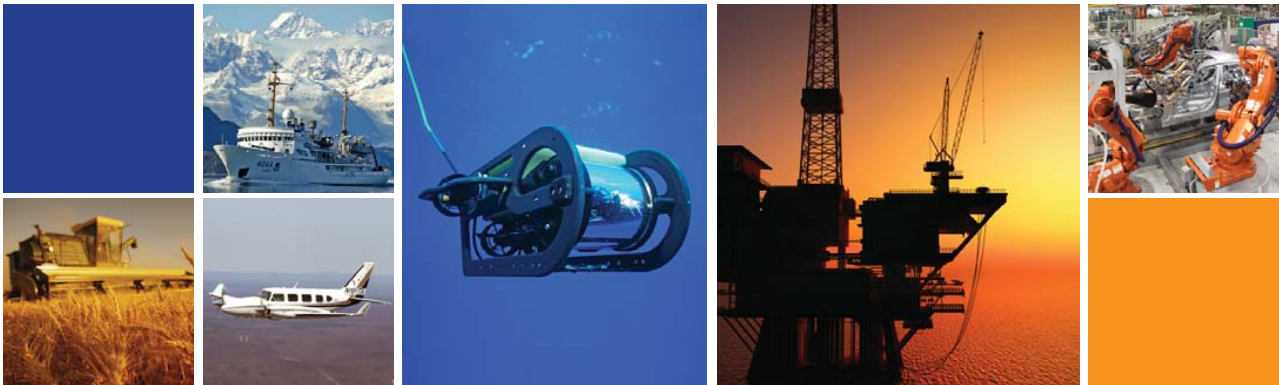
CRH02 provides the optimum solution for applications where bias instability, angle random walk and low noise are of critical importance.

At the heart of the CRH02 is Silicon Sensing's VSG3Q^{MAX} 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^{MAX} 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



© Silicon Sensing is an Atlantic Inertial Systems, Sumitomo Precision Products joint venture company

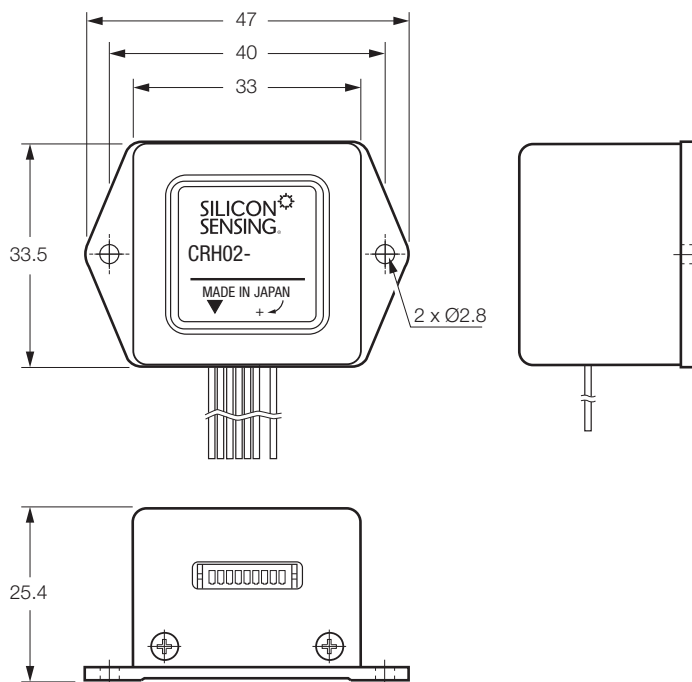
CRH02

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
CRH02-025	±25°/s
CRH02-100	±100°/s
CRH02-200	±200°/s
CRH02-400	±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	< 0.12°/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			
RoHS Compliant	Yes			

Silicon Sensing Systems Limited
Cliffatford Road, Southway,
Plymouth, Devon
PL6 6DE United Kingdom

T +44 (0)1752 723330
F +44 (0)1752 723331
E sales@siliconsensing.com
W siliconsensing.com

Silicon Sensing Systems Japan Limited
1-10 Fuso-Cho,
Amagasaki,
Hyogo 6600891, Japan

T +81 (0)6 6489 5868
F +81 (0)6 6489 5919
E sssj@spp.co.jp
W siliconsensing.com

Specification subject to change without notice.

© Copyright 2015
Silicon Sensing Systems Limited
All rights reserved. Printed in England 02/15

CRH02-00-0100-131 Rev1
DCR No. 710008487

Silicon Sensing Systems Limited Registered in England & Wales No. 3635234 Cliffatford Road, Southway, Plymouth, Devon PL6 6DE
The device mark Silicon Sensing is a registered trade mark of Silicon Sensing Systems Community Trade Mark 003587664

Headquarter Switzerland:
Pewatron AG
Thurgauerstrasse 66
CH-8050 Zurich
Phone +41 44 877 35 00
info@pewatron.com

Office Germany:
Pewatron Deutschland GmbH
Edisonstraße 16
D-85716 Unterschleißheim
Phone +49 89 374 288 87-0
info.de@pewatron.com



PEWATRON
SENSORS · POWER SOLUTIONS

We are here for you. Addresses and Contacts.

Sales Germany & Austria

Postcode 00000 – 31999
Postcode 38000 – 39999
Postcode 80000 – 99999
Austria

Kurt Stritzelberger

Phone +49 89 260 52 80
Mobile +49 171 803 41 35

kurt.stritzelberger@pewatron.com

Postcode 32000 – 37999
Postcode 40000 – 79999

Gerhard Vetter

Phone +49 674 394 75 75
Mobile +49 163 762 74 30

gerhard.vetter@pewatron.com

Geometrical sensors
Sensor elements

Thorsten Ravagni

Phone +49 60 479 53 627

thorsten.ravagni@pewatron.com

Sales Switzerland & Liechtenstein

Postcode 3000 – 9999

Basil Frei

Phone +41 44 877 35 18
Mobile +41 76 279 37 26

basil.frei@pewatron.com

Postcode 1000 – 2999

Christian Mohrenstecher

Mobile +41 76 444 57 93

christian.mohrenstecher@pewatron.com

Sales International Key Accounts

Peter Felder

Phone +41 44 877 35 05
Mobile +41 79 406 49 83

peter.felder@pewatron.com

Sales Other Countries / Product Management

Pressure Sensors

Philipp Kistler
Phone +41 44 877 35 03
philipp.kistler@pewatron.com

Accelerometers / Level Flow sensor elements

Thorsten Ravagni
Phone +49 60 479 53 627
thorsten.ravagni@pewatron.com

Drive technology CH Postcode 5000 – 9999 / DE

Roman Homa
Mobile +41 76 444 00 86
roman.homa@pewatron.com

Gas sensors / Gas sensor modules Load cells

Dr. Thomas Clausen
Phone +41 44 877 35 13
thomas.clausen@pewatron.com

Power supplies

Sebastiano Leggio
Phone +41 44 877 35 06
sebastiano.leggio@pewatron.com

Drive technology CH Postcode 1000 – 4999 / AT / IT / FR

Christian Mohrenstecher
Mobile +41 76 444 57 93
christian.mohrenstecher@pewatron.com

Flow / Level / Medical products

Dr. Adriano Pittarelli
Phone +49 8245 774 95 44
adriano.pittarelli@pewatron.com

Linear position sensors Angle sensors

Eric Letsch
Phone +41 44 877 35 14
eric.letsch@pewatron.com

Current sensors Power solutions

Osman Coban
Phone +49 71 635 363 898
osman.coban@pewatron.com