New

CRH02

High Performance Single Axis MEMS Gyroscope

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).

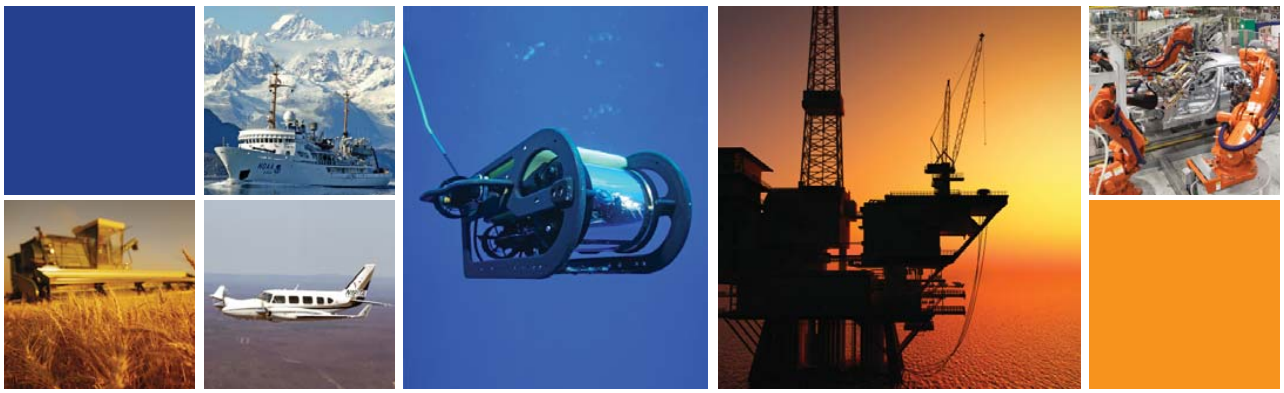
An on board temperature sensor and the resonant frequency of the MEMS enables additional external conditioning to be applied to the CRH02 by the host, enhancing the performance even further.

Key features

- Proven and Robust silicon MEMS VSG3Q^{MAX} vibrating ring sensor
- Four rate ranges available: ±25°/s, ±100°/s, ±200°/s and ±400°/s
- FOG - like performance
- Low Bias Instability - 0.12°/hr (100°/s)
- Excellent Angle Random Walk - 0.17°/√hr
- Low noise - 0.15°/s rms
- Precision analogue output
- High shock and vibration rejection
- -40°C to +85°C operating temperature range
- Temperature sensor output for precision thermal compensation
- MEMS frequency output for precision thermal compensation
- RoHS Compliant

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

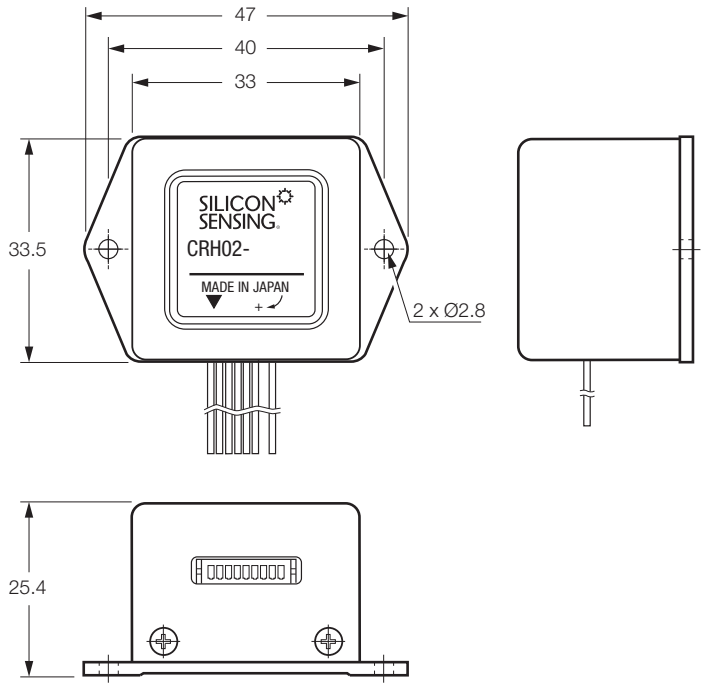


CRH02

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
Clittaford 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

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DCR No. 710008487

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 00
info.de@pewatron.com

PEWATRON
SENSORS · POWER SOLUTIONS

We are here for you. Addresses and Contacts.

Sales Germany & Austria

Geometrical sensors
Other products

Kurt Stritzelberger
Phone +49 89 374 288 87 22
kurt.stritzelberger@pewatron.com

Pressure sensors
Other products

Gerhard Vetter
Phone +49 89 374 288 87 26
gerhard.vetter@pewatron.com

Gas sensors and modules

Peter Felder
Phone +41 44 877 35 05
peter.felder@pewatron.com

Sales Switzerland & Liechtenstein

Postcode 3000 – 9999

Basil Frei
Phone +41 44 877 35 18
basil.frei@pewatron.com

Postcode 1000 – 2999

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

Sales International Key Accounts

Peter Felder
Phone +41 44 877 35 05
peter.felder@pewatron.com

Sales Other Countries / Product Management

Pressure Sensors
Load Cells

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

Power supplies

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

Drive technology
CH Postcode 5000 – 9999 / DE

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

Gas sensors
Gas sensor modules

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

Linear position sensors
Angle sensors

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

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

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

Flow / Level / Medical products

Dr. Adriano Pittarelli
Phone +49 89 374 288 87 67
adriano.pittarelli@pewatron.com

Accelerometers
Sensor elements

Christoph Kleye
Phone +49 89 374 288 87 61
christoph.kleye@pewatron.com

Harald Thomas
Phone +49 89 374 288 87 23
harald.thomas@pewatron.com