

CRS39

Analogue Angular Rate Sensor
High Performance MEMS Gyroscope

CRS39-03



Key features

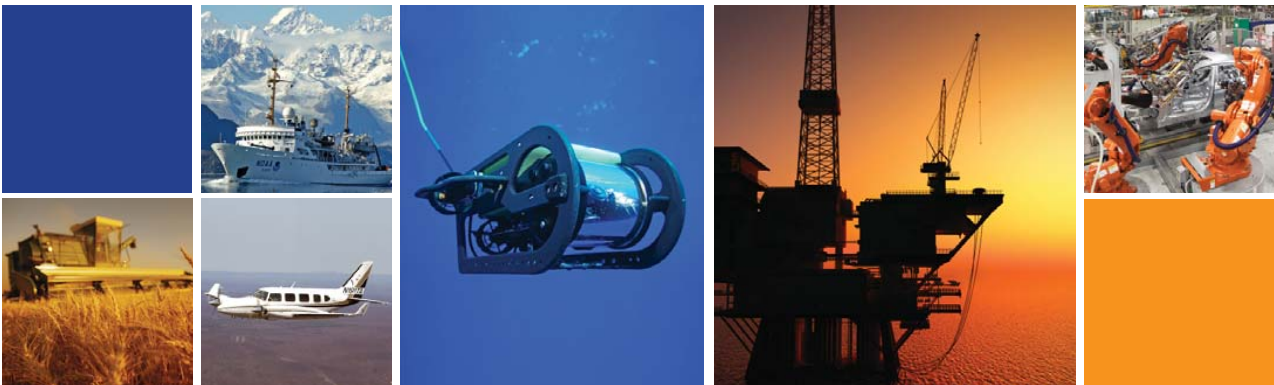
- Proven and Robust silicon MEMS vibrating ring structure
- FOG-like performance
- DTG-like size and performance
- Low Bias Instability ($0.1^\circ/\text{h}$)
- Excellent Angle Random Walk ($0.015^\circ/\sqrt{\text{h}}$)
- Ultra-low noise ($<0.006^\circ/\text{s rms}$.)
- Optimised for low rate range environments (e.g. North Finding)
- Precision analogue output
- Temperature range from -10°C to $+110^\circ\text{C}$
- High shock and vibration rejection
- Three temperature sensors and MEMS frequency output for precision thermal compensation
- RoHS Compliant

CRS39 provides the optimum solution for low angular rate range applications where bias instability, angle random walk and low noise are of critical importance.

The outstanding stability, low noise and size of the CRS39 makes this a viable alternative to fibre-optic and dynamically tuned gyros.

Applications

- Platform Stabilization
- Precision, Downhole Surveying, North Finding
- Maritime Guidance and Control
- Gyro-compassing and Heading Control
- Autonomous Vehicles and ROVs
- Rail Track monitoring
- Robotics



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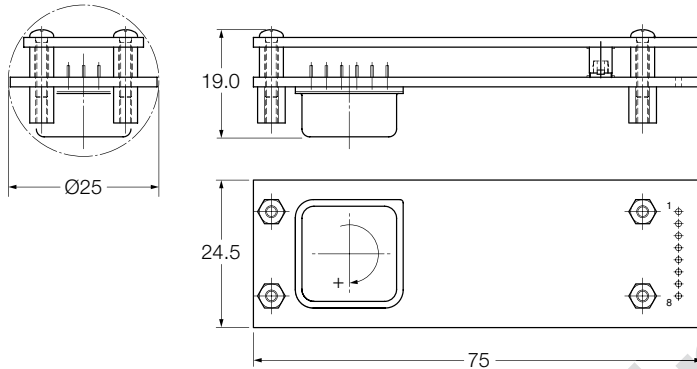
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For full technical datasheets please go to our website where the documents can be downloaded

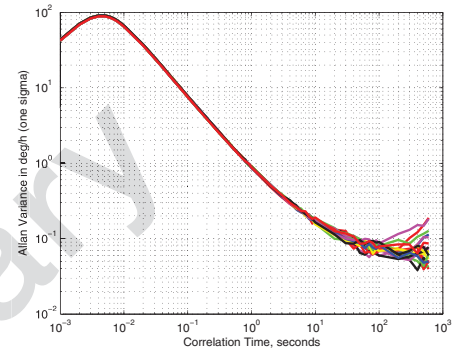


CRS39-03



All dimensions in millimetres

Allan Variance



Typical Data

Angular Rate Range	$\pm 25^\circ/\text{s}$
Output	Analogue (non-ratiometric)
Scale Factor	
Nominal	80mV/ $^\circ/\text{s}$
Setting tolerance (+45°C)	$\pm 0.4\text{mV}/^\circ/\text{s}$
Variation over temperature	$\pm 0.35\%$
Non-linearity	$\pm 0.02\%$ of full scale
Bias	
Setting error (+45°C)	$\pm 0.1\text{V}$
Variation over temperature	$\pm 500^\circ/\text{h}$
Angular Random Walk	0.015 $^\circ/\sqrt{\text{h}}$
Bias instability	0.1 $^\circ/\text{h}$
Bandwidth (normal)	25Hz $\pm 10\text{Hz}$
Noise to 10Hz	0.006 $^\circ/\text{s}$ rms
Wideband Noise	0.03 $^\circ/\text{s}$ rms
Environment	
Temperature	-10°C to +110°C
Operational shock	250g
Non-operational shock	1,000g
RoHS Compliant	Yes

Pin Connections

1	+5V (4.9 to 5.25)	5	TMP1
2	GND	6	TMP2
3	Rate Output	7	TMP3
4	Reference	8	FREQ

Silicon Sensing Systems Limited
Clifford 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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CRS39-03-0100-131 Rev 1
DCR No. 71009064

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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

**Gas sensors
Gas sensor modules**

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

Flow / Level / Medical products

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

Power supplies

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

**Linear position sensors
Angle sensors**

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

**Accelerometers
Sensor elements**

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

Drive technology

CH Postcode 5000 – 9999 / DE

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

Drive technology

CH Postcode 1000 – 4999 / AT / IT / FR

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

Harald Thomas

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