

# CRS03

## Angular Rate Sensor



A robust and affordable mass-produced gyroscope for automotive and commercial customers.

Angular rate sensors are used wherever rate of turn sensing is required without a fixed point of reference. The sensor will output a DC voltage proportional to the rate of turn and input voltage.

High performance motion sensing even under severe shock and vibration.

Whatever your application, the unique silicon ring technology, coupled with closed loop electronics, gives advanced and stable performance over time and temperature, overcoming the mount sensitivity problems experienced with simple beam or tuning fork based sensors.

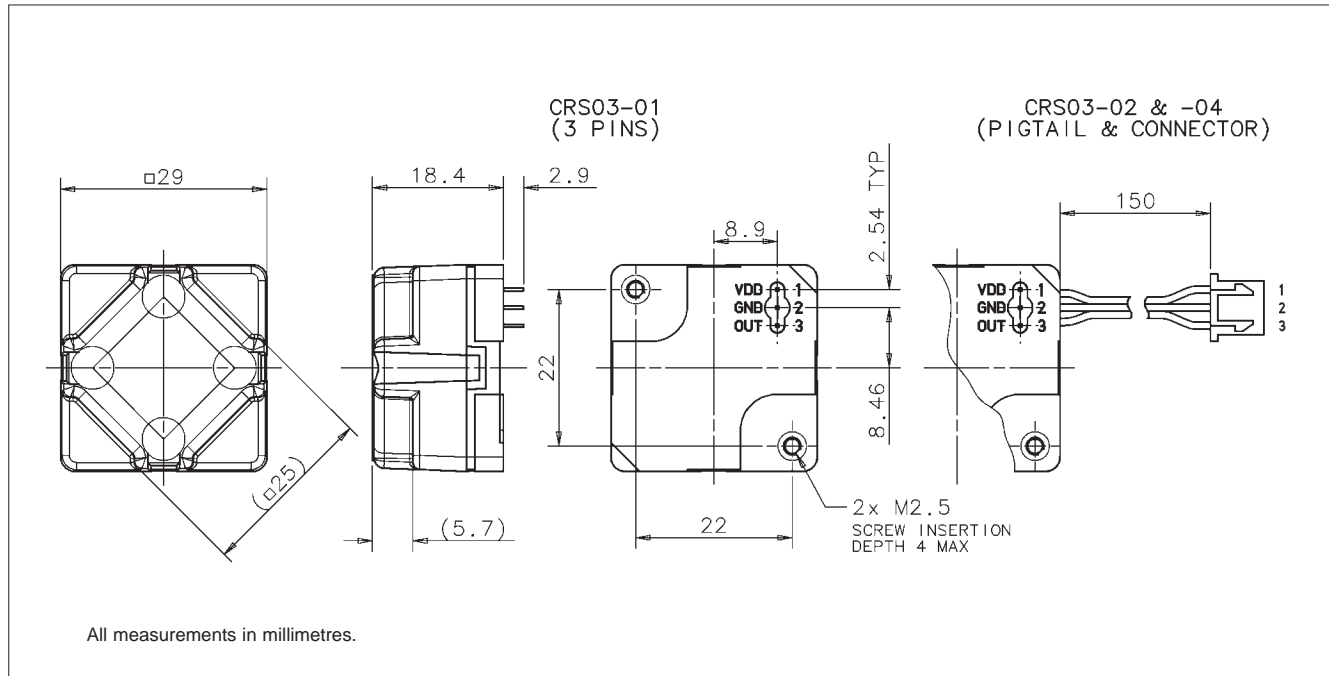
### Key Features

- Three model types available
- Excellent performance over temperature
- Repeatable drift characteristic
- High shock and vibration operation
- High reliability
- Metalised housing



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## Angular Rate Sensor



## Specification

Specification (Typical Data)	-01 & -02	-04
<b>Rate Range</b>	$\pm 100^\circ/\text{s}$	$\pm 200^\circ/\text{s}$
<b>Output</b>	Analogue voltage (ratiometric)	
<b>Scale Factor</b>		
Nominal	$20\text{mV}/^\circ/\text{s}$	$10\text{mV}/^\circ/\text{s}$
Variation over temperature range	$< \pm 3\%$	
Non linearity	$< \pm 0.5\%$ of full scale	
<b>Bias</b>		
Setting tolerance	$< \pm 3^\circ/\text{s}$	$< \pm 3^\circ/\text{s}$
Variation over temperature range	$< \pm 2^\circ/\text{s}$	$< \pm 2^\circ/\text{s}$
Ratiometric error	$< \pm 1^\circ/\text{s}$	
Drift vs. time	$< \pm 0.55^\circ/\text{s}$ in any 30s period (after ready time)	
g Sensitivity	$< \pm 0.1^\circ/\text{s}/\text{g}$ on any axis	
<b>Bandwidth</b>	10Hz (-3dB)	10Hz (-3dB)
<b>Quiescent Noise</b>	$< 1\text{mV rms}$	
<b>Environment</b>		
Temperature	$-40^\circ\text{C}$ to $+85^\circ\text{C}$	
Linear acceleration	$< 100\text{g}$	
Shock	200g (1ms, 1/2 sine)	
Vibration	2g rms (20Hz to 2kHz, random)	
Cross-axis sensitivity	$< 5\%$	
<b>Mass</b>	$< 18\text{ gram}$	$< 18\text{ gram}$
<b>Electrical</b>		
Voltage (supply)	$+4.75\text{V}$ to $+5.25\text{V}$	
Current (supply)	$< 35\text{mA}$ (steady state)	
Noise and ripple	$< 15\text{mV rms}$ (DC to 100Hz)	
Ready time	$< 0.2\text{s}$	

### Pin Connections

Pin	Function
1	+5V
2	Ground
3	Rate Output

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