Horizon™

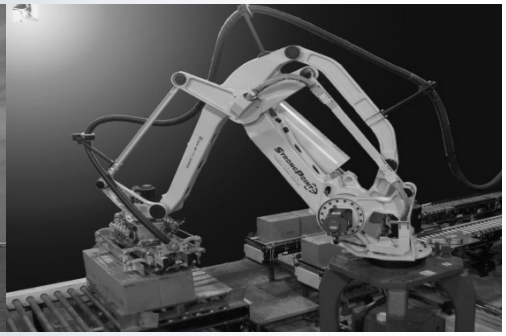
MEMS Quartz Angular Rate Sensor

Ideal for Industrial and Marine Applications:

- Antenna Stabilization & Pointing
- Platform Stabilization
- Factory Automation
- GPS Augmentation
- Instrumentation
- Underwater Motion Control

Key Performance Features:

- **Compact, Lightweight Design**
- **High Reliability**
- **DC Input, DC Output Operation**
- **Internal Power Regulation**
- **Low Drift**
- **Fast Start-Up**



The Horizon™ is a compact, high reliability, solid-state angular rotation sensor designed for use by original equipment manufacturers (OEM). It features a monolithic quartz sensing element, internal power regulation and a simple interface which provides a high-level +0.5 to +4.5 Vdc output signal. Designed to operate from a +12 Vdc power supply, it also provides a +2.5 Vdc reference to allow for differential monitoring of the output.

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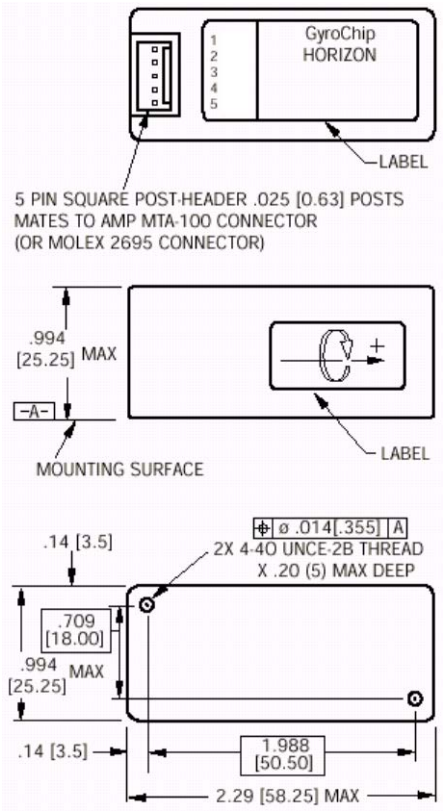

Notes:
1. Horizon is supplied with a mating connector (AMP MTA100 or Molex 2695).
2. Angular rate applied as shown will produce a positive output.
3. Unit of measure is in inches/[mm].

	HZ1-90-100A	HZ1-100-100
Power Requirements		
Input Voltage	+ 8 to +15 Vdc	
Input Current	< 20 mA	
Performance		
Standard Range Full Scale	± 90°/sec.	± 100°/sec.*
Full Scale Output (Nominal)	+ 0.5 Vdc (-FS) to +4.5 Vdc (+FS)	
Scale Factor Calibration (at 22°C)	≤ 2% of value	
Scale Factor over Temperature (Dev. from 22°C)	≤ 0.08%/°C	
Bias Calibration (at 22°C)	+2.5 ±0.045 Vdc	
Bias Variation over Temperature (Dev. from 22°C)	<4.5°/sec.	
Long-Term Bias Stability (1 year)	≤ 1.0°/sec.	
G Sensitivity (Typical)	< 0.06°/sec/g	
Start-Up Time (Typical)	< 1.0 sec.	
Bandwidth (-90° Phase Shift)	>18 Hz	>60 Hz
Non-Linearity (% Full Range)	≤ 0.05%	
Threshold/Resolution	< 0.004°/sec.	
Output Noise (DC to 100Hz)	≤ 0.025°/sec./√Hz	
Environments		
Operating Temperature	-40°C to +71°C	
Storage Temperature	-55°C to +100°C	
Vibration Operating**	2 g_{rms} 20 Hz to 2 kHz Random - flat	
Vibration Survival**	10 g_{rms} 20 Hz to 2 kHz random (5 min/axis)	
Shock	200g	
Weight	≤ 60 grams	

* 200 deg/sec variant is also available – consult factory for details.
** Please see user's guide for more information regarding vibration tolerance and sensitivity.

HORIZON PIN ASSIGNMENT

1	-	+Vdc Input
2	-	Rate Output
3	-	Ref. Voltage +2.5Vdc
4	-	No Conn. – Leave Open
5	-	Power & Signal Ground

For more information, contact:

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