

Horizon

Applications

The Horizon has a wide variety of applications:

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



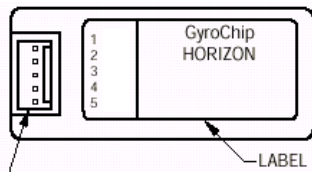
Description

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.

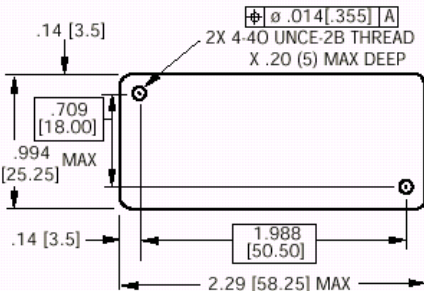
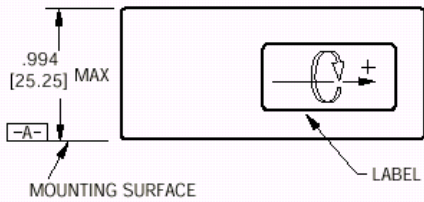


Key Performance Features

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



5 PIN SQUARE POST-HEADER .025 [0.63] POSTS
MATES TO AMP MTA-100 CONNECTOR
(OR MOLEX 2695 CONNECTOR)



Notes:

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

Connector Pin	Assignment
1	+Vdc Input
2	Rate Output
3	Ref. Voltage +2.5 Vdc
4	No Connection, Leave Open
5	Power and Signal Ground

PARAMETER	SUMMARY SPECIFICATIONS	
PART NUMBER	HZ1-100-100	HZ1-90-100A
Power Requirements		
Input Voltage	+8 to +15 Vdc	
Input Current	<20 mA	
Performance		
Standard Ranges	$\pm 100^\circ/\text{sec}^*$	$\pm 90^\circ/\text{sec}^*$
Full Scale Output (Nominal)	+0.5 Vdc (-FS) to +4.5 Vdc (+FS)	
Scale Factor Calibration (at 22°C Typical)	$\leq 2\%$ of value	
Scale Factor over Temperature (Dev. from 22°C Typical)	$\leq 0.08\%/^\circ\text{C}$	
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)	$\leq 1.0^\circ/\text{sec}$	
G Sensitivity (Typical)	$\leq 0.06^\circ/\text{sec/g}$	
Start-Up Time (Typical)	<1.0 sec	
Bandwidth (-90°)	>60 Hz	>18 Hz
Non-Linearity	$\leq 0.05\%$ of F.R.	
Threshold/Resolution	$\leq 0.004^\circ/\text{sec}$.	
Output Noise (DC to 100 Hz)	$\leq 0.025^\circ/\text{sec}/\sqrt{\text{Hz}}^{**}$	
Environments		
Operating Temperature	-40 to +71°C	
Storage Temperature	-55°C to +100°C	
Vibration Operating	2 g_{rms} 20 Hz to 2 kHz random	
Vibration Survival	10 g_{rms} 20 Hz to 2 kHz random 5 minutes/axis	
Shock	200g	
Weight		
	≤ 60 grams	
* $\pm 200^\circ/\text{sec}$ range also available – Consult Factory		

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