

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

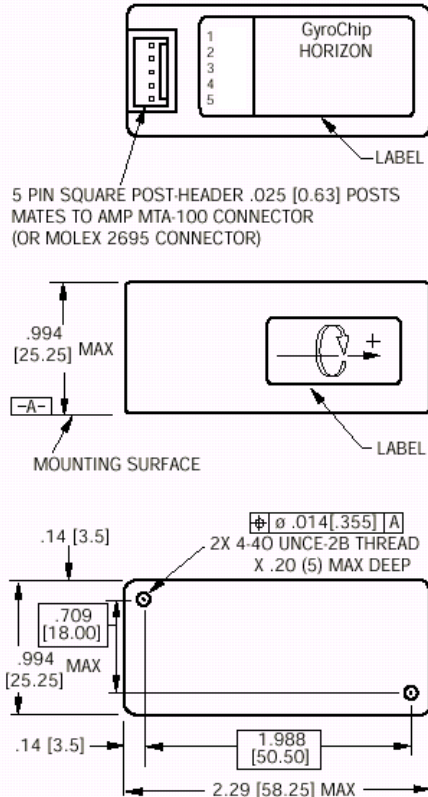


Key Performance Features:

- **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.



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].

HORIZON PIN ASSIGNMENT

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

| | 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 grms 20 Hz to 2 kHz Random - flat | |
| Vibration Survival** | 10 grms 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.

For more information, contact:

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