

MotionPak®

MEMS Quartz Multi-Axis Inertial Sensing System

Ideal for Instrumentation and Industrial Applications:

- Vehicle Instrumentation
- Robotics
- Automotive Testing
- Attitude Reference Systems
- Control Systems
- Dead Reckoning Aiding GPS
- Flight Testing
- Buoy Instrumentation
- Platform Stabilization

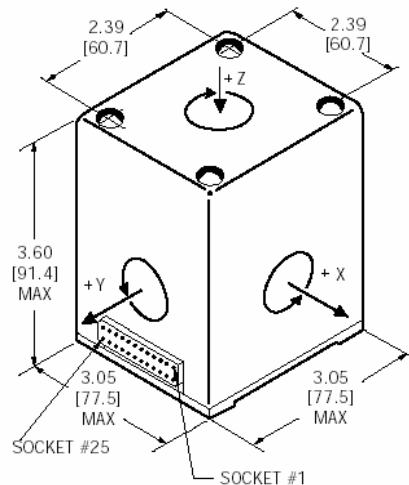


Key Performance Features:

- **Solid State Sensors**
- **Compact, Rugged Package**
- **Long Operating Life**
- **Low Cost**
- **High Level Analog Outputs**
- **Wide Bandwidth**
- **Fast Start-Up**
- **Fully Self-Contained System**
- **Customized Axis Configurations**



The MotionPak® is a solid-state sensor cluster used for measuring linear accelerations and angular rates in instrumentation and control applications. It is a highly reliable, compact, and fully self-contained motion measurement package with analog voltage outputs. It uses three orthogonally mounted solid-state, micro-machined quartz angular rate sensors, and three high-performance linear servo accelerometers mounted in a compact, rugged package, with internal power regulation and signal conditioning electronics. The MotionPak® is available in a wide range of custom configurations to suit your application's requirements.



| | Rate Channels | Acceleration Channels |
|---|--|-----------------------|
| Power Requirements | | |
| Input Voltage | + and – 15 Vdc ±10% | |
| Input Current | <270mA (each supply) | |
| Performance | | |
| Standard Range** | ±100°/sec | ±1,2,3,5,10,g's |
| Full Scale Output (Nominal) | ±2.5 Vdc | ±7.5 Vdc |
| Scale Factor Calibration (at 22°C) | ≤1% of value | |
| Scale Factor, Temperature Sensitivity | <0.03%/°C | |
| Long Term Scale Factor Stability (1 year) | 1000 ppm | <1700 ppm |
| Bias Factory Set | ≤2.0°/sec* | <±8 mg |
| Bias Variation over Temperature (Max Deviation from 22°C) | ≤2°/sec from 22°C* | ≤70 µg/°C |
| Long Term Bias Stability (1 year) | <0.2°/sec* | <1200 µg |
| G Sensitivity | ≤0.02°/sec/g | - |
| Start-Up Time | 1.0 sec | |
| Bandwidth (-90°) | >60 Hz | >300 Hz |
| Non-Linearity | ≤0.05% F.R. | - |
| Threshold/Resolution | ≤0.004°/sec* | ≤10 µg |
| Output Noise (DC to 100 Hz) | ≤0.01°/secVHz* | ≤7.0 mV |
| Environments | | |
| Operating Temperature | -40°C to +80°C | |
| Storage Temperature | -55°C to +100°C | |
| Vibration Survival*** | 10g rms 20 Hz to 2 kHz random, 5 hour duration | |
| Shock | 200 g | |
| Weight | 900 grams | |

* Values indicated are for ±100°/sec range.

** Other acceleration and rate ranges are available – consult factory.

*** Please see user's guide for more information regarding vibration tolerance and sensitivity.

Other Information

1. Part number based on ranges, options and number of channels specified
2. Rate channel options – High Performance, Low Noise, Wide Bandwidth, Special Ranges
3. Acceleration Channel Option – Current output

For more information, contact:

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