

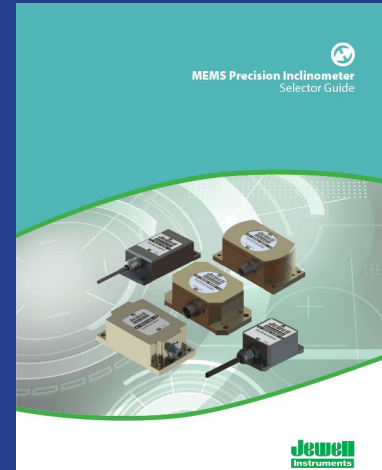
Other Product Groups Available:



Force-Balanced Precision Accelerometer Selector Guide



Force-Balanced Precision Inclinometer Selector Guide



MEMS Inclinometer Selector Guide

Jewell Instruments is a world leader in the manufacture and distribution of acceleration and tilt sensors as well as avionics components, solenoids, and panel meters. From sales and design through manufacturing, testing, delivery and support, Jewell Instruments offers complete customer care and engineering expertise. We have two fully modernized manufacturing facilities, one in Manchester, New Hampshire and one in Barbados, West Indies, to handle the most stringent manufacturing requirements with a cost-competitive advantage.



MEMS Precision Accelerometer Selector Guide



Distributed By:



Making Sense Out of Motion...



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Features & Benefits

Applications

Performance Specs Static/Dynamic

	Industrial Sensor			Rail Sensors		Commercial Sensors		
	±0.5	±1.0	±1.5	±0.5	±1.0	±2	±10	±40
Measurement Range ¹ (g):	±0.5	±1.0	±1.5	±0.5	±1.0	±2	±10	±40
Resolution (mg, Max.):		0.04		0.025	0.15	0.1	0.6	2.8
Bias/Zero (g max):	±0.01	±0.01	±0.02	-0.01 to 0.01		0.01	0.05	0.15
Scale Factor Tolerance (mg):	±5	±10	±15	±7.5	±15	10	50	150
Scale Factor Temp Coefficient (PPM/°C):	150	150	150	300	150	100		100
Non-Linearity (% FRO max):	0.05	0.05	0.08	0.2	0.1	0.1	0.5	0.6
Bandwidth (Hz nom) (-3 dB):	100			100		400		

Electrical & Environmental

	Industrial Sensor	Rail Sensors	Rail Sensors (With Heater)	Commercial Sensors	Custom Applications
Output:	0-5 VDC, ±5 VDC or 4-20mA	±5 VDC	±5 VDC	0-5V or 4-20mA	RS232, RS485 or TTL
Input Voltage Range (VDC):	12 to 30, ±12 to ±18 or 28mA	±12 to ±18	±12 to ±18	9 to 36	9 to 36
Operating Current:	7 mA or ±8 mA	±8 mA	-8mA/+150mA quiescent (+500mA peak max., 30 sec. max.)	<3mA at 12Vdc	<3mA at 12Vdc
Temperature Rating, Operation:	-40 to +85°C	-40 to +70°C	-40 to +70°C	-40 to +85°C	-40 to +85°C
Temperature Rating, Storage:	-40 to +95°C	-55 to +85°C	-55 to +85°C	-55 to +100°C	-55 to +100°C
Shock:	100 g, 0.011 sec, ½ sine	10 g, 0.011 sec, ½ sine	10 g, 0.011 sec, ½ sine	100g 11msec ½ sine	100g 11msec ½ sine
Seal:	IP65	IP65	IP65	IP67	IP67
Weight (grams):	165 (1 axis), 170 (2 axes), 180 (3 axes)	85	85	100	100
Number of Axes:	1, 2 or 3	1	1	1, 2 or 3	1, 2 or 3

Notes: 1 - Custom ranges available on request.

Industrial Sensor

JMA-100/200/300 Series



- Single, Dual and Triaxial Configuration
- **Rugged & Robust Enclosure**
- **Low-cost MEMS technology**
- RoHs Compliant
- Single or Dual Power Input
- ±0.5 g, ±1.0 g and ±1.5 g ranges

- Vehicle Testing
- Railway Maintenance & Testing
- Acceleration/Deceleration Control
- Aerospace/Space Craft Testing
- Lateral Train Control

Rail Sensors

JMA-165 Series



- ±0.5 g & ±1.0 g full ranges
- **CENELEC/AREMA certified**
- **RoHs Compliant**
- Filtering Available
- Low-cost MEMS technology

- Automated Train Controls
- Rail Maintenance & Testing
- Acceleration/Deceleration Control
- Train Performance Testing

JMA-165 Series (With Heater)

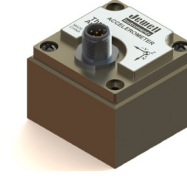


- ±0.5 g & ±1.0 g full ranges
- **CENELEC/AREMA certified**
- **Internal heater for reduced thermal drift**
- Filtering Available
- RoHs Compliant
- Low-cost MEMS technology

- Automated Train Controls
- Rail Maintenance & Testing
- Acceleration/Deceleration Control
- Train Performance Testing

Commercial Sensors

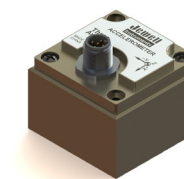
AMA Series



- 1.85" x 1.85" x 1.89" size
- **Analog Output (0-5V or 4-20mA)**
- **Single, Dual and Triaxial Configuration**
- Excellent long term stability
- Ruggedized for harsh environment operation
- High Sensitivity

- Tower Cranes
- Robotics
- Low Frequency Vibration Measurement
- Automatic Control Systems
- Vehicle Testing

DMA Series



- 1.85" x 1.85" x 1.89" size
- **Digital Output (RS232, RS485 or TTL)**
- **Single, Dual and Triaxial Configuration**
- Excellent long term stability
- Ruggedized for harsh environment operation
- High Sensitivity

- Tower Cranes
- Robotics
- Low Frequency Vibration Measurement
- Automatic Control Systems
- Vehicle Testing

Custom Applications



JEWELL INSTRUMENTS' ENGINEERING TEAM PROVIDES THE FOLLOWING:

- Modification of existing products
- New, application specific custom designs requiring special features and specifications and close interaction between Jewell's engineering team and the customer's
- Customer proprietary solutions requiring non-disclosure agreements
- Customization for harsh environments
- Designs to meet EMC surge requirements including lightning strikes
- Qualification to aerospace, military, and industrial standards including CE, RoHS, FAA DO-160 and CENELEC/AREMA

CUSTOM CAPABILITIES

- Custom accelerometer ranges from +/-0.17 to +/-40 g
- Custom filtering to provide bandwidth and response time tailored to the application
- Digital bus outputs including RS232, RS422/485 and Ethernet
- 4 - 20 mA current output to drive long cable lengths
- Custom output impedance
- Temperature compensation, thermal modeling and characterization for the highest levels of accuracy over wide temperature ranges
- Solder terminals and flying leads in place of connectors
- Factory set zero biasing for non-horizontal applications
- Custom mounting plates and mechanical assemblies