

JMI-100/200-L MEMS Inclinometer Series

4-20mA Output

Jewell has a 40+ year history of providing precision force-balanced inclinometers and is pleased to provide MEMS parts with the same attention to detail that our customers demand.

The JMI-100/200 series is available in single (JMI-100) and dual (JMI-200) axis configurations. This presents a robust and rugged design for industrial use, but with the benefit of low-cost MEMS technology.



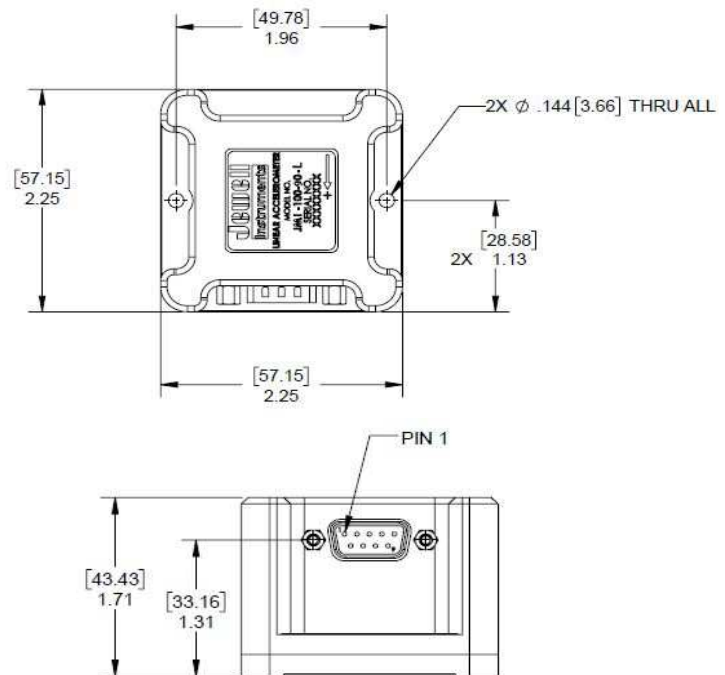
Features

- $\pm 14.5^\circ$, $\pm 30^\circ$ and $\pm 90^\circ$ ranges
- Robust and Rugged Enclosure
- Single and Dual Axis Models Available
- Low-Cost MEMS Technology
- RoHS Compliant
- Filtering Available
- Single Power Input
- 4-20 mA Output
- Temperature Sensor Option Available
- IP65 Seal

Applications

- Industrial Automation & Control
- Construction & Agricultural Equipment
- Solar Tracking
- Mobile Cranes
- Platform Leveling/Positioning
- Mobile Radar Equipment
- Railway Track Alignment & Maintenance

Outline Diagram



Pin Out

Pin #	Function
1	+Vin
2	Pwr Gnd
3	N/C
4	X Out
5	Y Out
6	N/C
7	Sig Rtn
8	Temp Out
9	N/C

Performance Specifications

STATIC/DYNAMIC

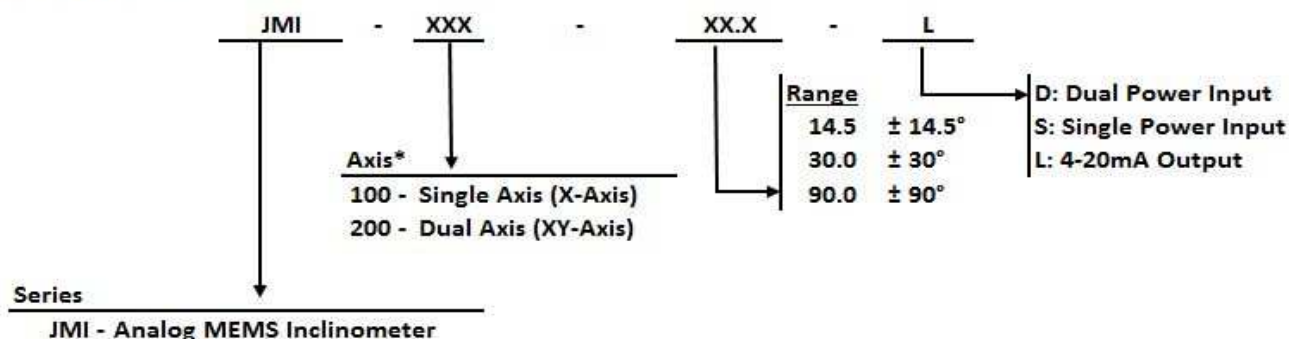
Measurement Range ¹ (°)	±14.5	±30	±90
Output Current Range (mA)	4-20	4-20	4-20
Scale Factor Tolerance (%)	±1	±1	±1
Scale Factor Temp. Coefficient (PPM/°C max)	150	150	150
0° Output (mA)	12 ±0.3	12 ±0.3	12 ±0.3
0° Output Temp. Sensitivity (mA/°C max)	±0.004	±0.004	±0.004
Transverse Axis Misalignment (° max)	±0.5	±0.5	±0.5
Resolution (° max)	0.002	0.002	0.004
Threshold (° max)	0.002	0.002	0.002
Non-linearity (% FRO max)	0.05	0.05	0.05
Nonrepeatability, Hysteresis (% FRO max)	0.004	0.004	0.004
Bandwidth (Hz nom) (-3 dB)	5	5	5
Warm Up Time (Seconds max)	0.5	0.5	0.5
Current to Radian conversion ²	$\arcsin((\text{<output>} - 12\text{mA}) / 32\text{mA})$	$\arcsin((\text{<output>} - 12\text{mA}) / 16\text{mA})$	$\arcsin((\text{<output>} - 12\text{mA}) / 8\text{mA})$

ELECTRICAL AND ENVIRONMENTAL

Number of Axes	1 or 2
Input Voltage Range (VDC)	12 to 30
Input Current (mA max)	28
Output Noise (vrms max)	0.01
Output Impedance (Ohms nom)	1
Operating Temp. Range (°C)	-40 to +85
Storage Temp. Range (°C)	-40 to +95
Shock	100 g, 0.011 sec, ½ sine
Weight (grams)	165 (1 axis), 170 (2 axes)
Seal	IP65

Notes: 1 - Custom ranges available on request. 2 - Does not take into account any sources of error.

How To Order:



Example: JMI-100-14.5-L = JMI series, single axis, ±14.5° range, 4-20mA Output

*Call factory for customized axis configurations

Single Axis Part Numbers

JMI-100-14.5-L	02550375-135
JMI-100-30-L	02550375-136
JMI-100-90-L	02550375-139

Dual Axis Part Numbers

JMI-200-14.5-L	02550375-235
JMI-200-30-L	02550375-236
JMI-200-90-L	02550375-239