

# JMI-100/200-S MEMS Inclinometer Series

## 0-5Vdc 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.



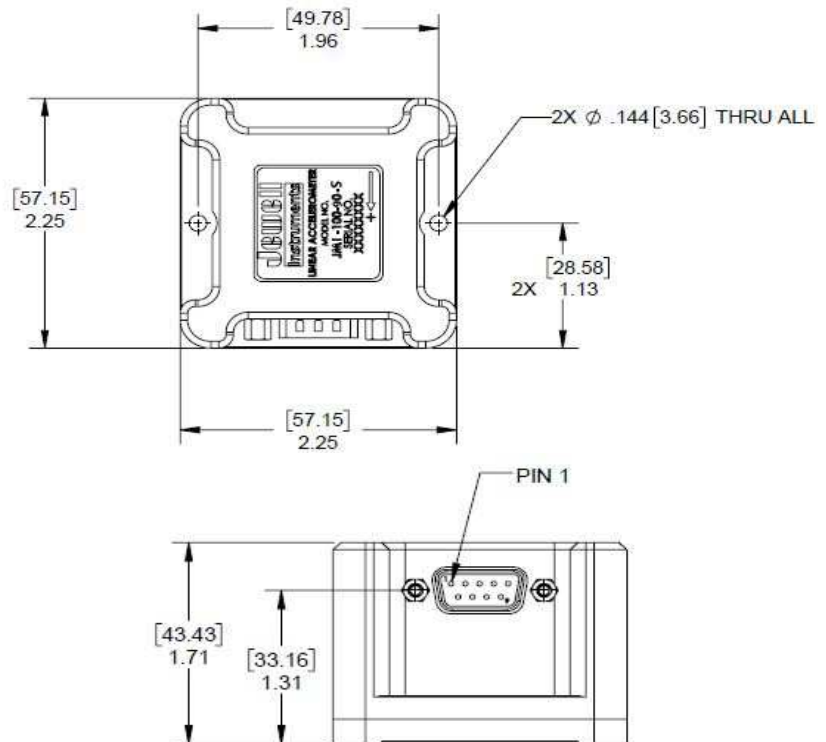
### Features

- $\pm 14.5^\circ$ ,  $\pm 30^\circ$  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
- 0-5 VDC 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

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## 0-5Vdc Output



Making Sense out of Motion...

### Performance Specifications

#### STATIC/DYNAMIC

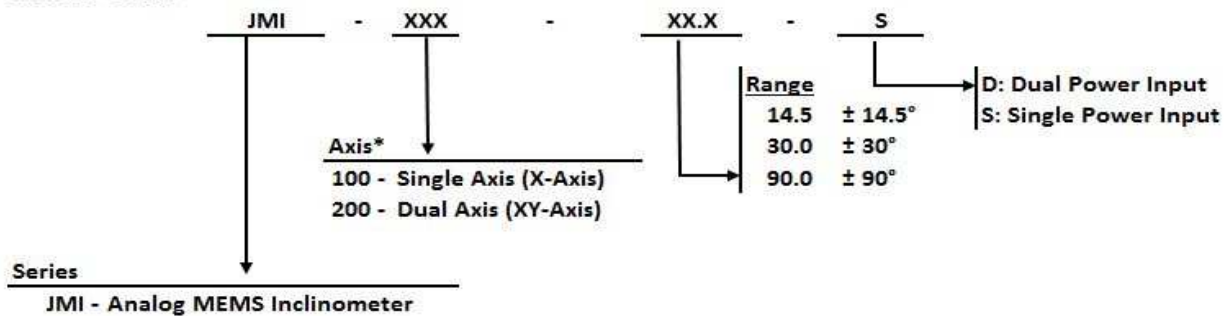
Measurement Range <sup>1</sup> (°)	±14.5	±30	±90
Output Voltage Range (VDC)	0-5	0-5	0-5
Scale Factor Tolerance (%)	±1	±1	±1
Scale Factor Temp. Coefficient (PPM/°C max)	150	150	150
0° Output Error (Volts max)	±0.03	±0.03	±0.03
0° Output Temp. Sensitivity (V/°C max)	±0.004	±0.004	±0.004
Transverse Axis 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)	0.014	0.007	0.004
Bandwidth (Hz nom) (-3 dB)	5	5	5
Warm Up Time (Seconds max)	0.5	0.5	0.5
Voltage to Radian conversion <sup>2</sup>	ASIN((<voltage> - 2.5)/10) ASIN((<voltage> - 2.5)/5) ASIN((<voltage> - 2.5)/2.5)		

#### ELECTRICAL AND ENVIRONMENTAL

Number of Axes	1 or 2
Input Voltage Range (VDC)	12 to 30
Input Current (mA max)	7
Output Noise (vrms max)	0.005
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-D = JMI series, single axis, ±14.5° range, dual power input

\*Call factory for customized axis configurations

#### Single Axis Part Numbers

JMI-100-14.5-S	02550375-115
JMI-100-30-S	02550375-116
JMI-100-90-S	02550375-119

#### Dual Axis Part Numbers

JMI-200-14.5-S	02550375-215
JMI-200-30-S	02550375-216
JMI-200-90-S	02550375-219