

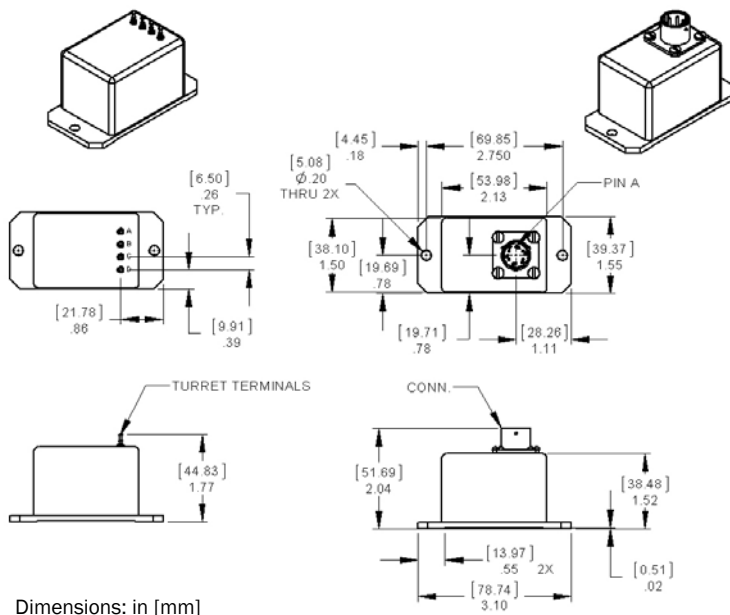
SMI SERIES

Single-Axis Analog Inclinometer

The Jewell SMI Single-Axis Analog Inclinometer series are rugged, high precision force-balanced inclinometers. These RoHS compliant inclinometers are available in three different versions (D, L, & S Series), with either a connector or a pin option, and varying input and output specifications in order to meet your needs.

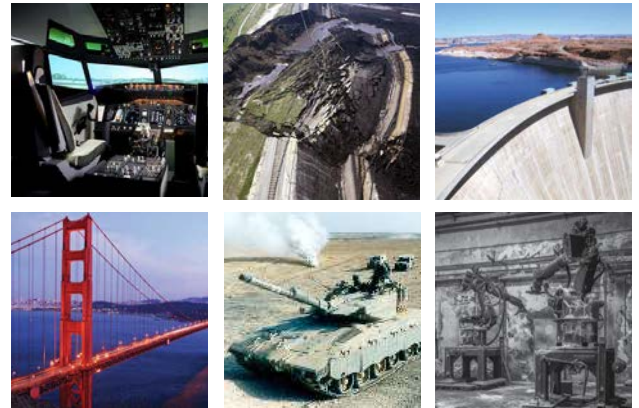
FEATURES:

- Rugged Design
- Lower Cost than Traditional Forced-Balance Inclinometers
- High Resolution
- Greater Precision than MEMS Technologies
- $\pm 5V$ DC, $0-5V$ DC, and $4-20mA$ Outputs Available
- Single-Ended and Dual Power Inputs Available
- RoHS Compliant



JEWELL EMERALD SERIES

The Jewell Emerald Series inclinometer is a low cost, inclinometer designed with higher precision than comparable MEMS devices.



APPLICATIONS:

- Aerospace
- Military
- Robotics
- Academic Research
- Geotechnical Monitoring
- Track Monitoring and Testing
- Vehicle Wheel Alignment



SMI-S: 0-5V OUTPUT

The Jewell SMI series version S is a rugged, high precision **single-ended** power input inclinometer. This version features a 0-5V DC output and input ranges from $\pm 3^\circ$ to $\pm 90^\circ$. Available with either a connector or a pin option.

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PERFORMANCE SPECIFICATIONS

STATIC/DYNAMIC

INPUT RANGE ($^\circ$)	± 3	± 14.5	± 30	± 45	± 60	± 90
FULL RANGE OUTPUT (VDC, FRO $\pm 0.5\%$)¹	0-5					
NONLINEARITY (% FRO)² max	0.05	0.02	0.02	0.02	0.04	0.05
SCALE FACTOR (Volts/g) nominal	47.8	10.0	5.0	3.5	2.9	2.5
SCALE FACTOR TEMP. SENSITIVITY (SFTS) PPM/$^\circ$C max	100					
BANDWIDTH (-3dB) Hz, nominal	5.0					
OUTPUT AXIS MISALIGNMENT, $^\circ$ max	0.25	0.50	0.50	0.50	0.50	0.50
PENDULOUS AXIS MISALIGNMENT, $^\circ$ max	0.25	0.50	0.50	0.50	0.50	0.50
0$^\circ$ OUTPUT (Volts Range)	+2.45 to +2.55					
0$^\circ$ OUTPUT TEMP. SENSITIVITY (Volts/$^\circ$C) max	0.0036	0.0010	0.0007	0.0005	0.0005	0.0005
RESOLUTION & THRESHOLD (μrad)³	3.5					

PIN OUTS

PIN OPTION

A	POSITIVE INPUT POWER
B	POWER/SIGNAL COMMON
C	N/C
D	SIGNAL

CONNECTOR OPTION

A	RED	POSITIVE INPUT POWER
B	WHITE	POWER/SIGNAL COMMON
C	BLACK	N/C
D	ORANGE	SIGNAL
E	N/C	N/C
F	BLUE	N/C

NOTES:

1. Full Range is defined "from negative full input angle to positive full input angle."
2. Nonlinearity is specified as deviation of output referenced to theoretical sine function value, independent of misalignment.
3. Full Resolution is achieved with noise reduction techniques

PRODUCT SPECIFICATIONS: SMI-S

ELECTRICAL

NUMBER OF AXES	1
INPUT VOLTAGE RANGE (VDC)	+15 to +30
INPUT CURRENT (mA, max)	40
OUTPUT IMPEDANCE (Ohms, nom)	10
NOISE (Vrms, max)	0.002

ENCLOSURE

SEAL	IP65
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ENVIRONMENTAL

OPERATING TEMP. RANGE	-55° to +85° C
STORAGE TEMP. RANGE	-60° to +90° C
SHOCK	500g, 1 msec, ½ sine

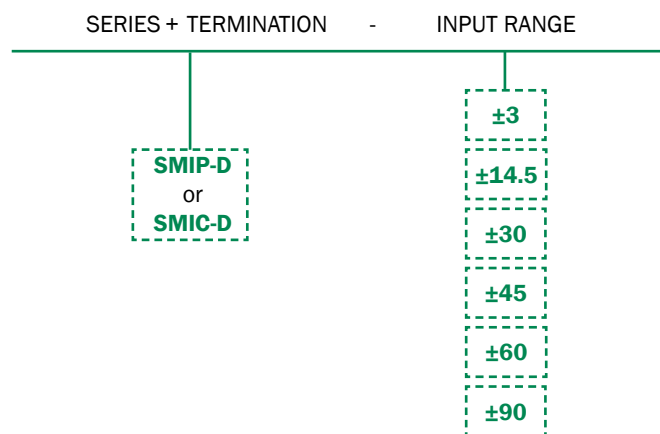
CUSTOM CAPABILITIES

- S-SERIES**
- Pigtail & Connector alternative options available
 - Custom ranges available

ORDERING INFORMATION

HOW TO ORDER

Model numbers are comprised of the series and connectivity, the series version, and the input range.



	TERMINATION	MODEL #	PART #
±3	PIN	SIMP-S-3	02550303-001
	CONNECTOR	SIMC-S-3	02550304-001
±14.5	PIN	SIMP-S-14.5	02550303-002
	CONNECTOR	SIMC-S-14.5	02550304-002
±30	PIN	SIMP-S-30	02550303-003
	CONNECTOR	SIMC-S-30	02550304-003
±45	PIN	SIMP-S-45	02550303-004
	CONNECTOR	SIMC-S-45	02550304-004
±60	PIN	SIMP-S-60	02550303-005
	CONNECTOR	SIMC-S-60	02550304-005
±90	PIN	SIMP-S-90	02550303-006
	CONNECTOR	SIMC-S-90	02550304-006