

LCF 196 Inclinometer



**BEST OF
CLASS**

The Jewell LCF 196 Biaxial Inclinometer is a ± 14.5 to ± 90 device, with lower ranges available with customization. It is a high accuracy sensor: designed for applications where high levels of shock and vibration are present. The LCF 196 is a two-axis tilt sensor in a 22 mm diameter stainless steel package. It is characterized by excellent turn-on-repeatability and very low hysteresis.

LCF 196 Inclinometer Specifications

Performance

Input Range, °:	± 14.5	± 30.0	± 90.0
Full Range Output (FRO), VDC, $\pm 1\%$ ¹ :	± 5.0	± 5.0	± 5.0
Nonlinearity, % FRO ² , maximum:	0.02	0.02	0.10
Scale Factor, volts/g, nominal:	20.0	10.0	5.0
Scale Factor Temp Sensitivity, PPM/°C, maximum:	100.0	100.0	100.0
Natural Frequency, Hz, nominal ³ :	30.0	30.0	30.0
Bandwidth (-3dB) Hz, nominal:	30.0	30.0	30.0
Input Axis Misalignment, °, maximum:	1.00	1.00	1.00
Bias, volts, maximum:	0.040	0.020	0.020
0° Output Temp Sensitivity, volts/°C, maximum:	0.001	0.0005	0.0003
Resolution and Threshold:	3 μ radians		

Electrical

Input Voltage, VDC, ⁴ :	± 12 to ± 18		
Input Current, mA, nominal:	15		
Output Impedance, ohms, nominal:	100		
Noise, Vrms, maximum:	0.002	0.001	0.001

Environmental

Operating Temp Range:	-40° C to $+80^{\circ}$ C		
Survival Temp Range:	-60° C to $+90^{\circ}$ C		
Vibration:	10 grms		
Shock:	500 G, 0.001 sec		
Seal:	MIL-STD 202, Method 112		
Weight:	11.0 oz.		

Applications

- ▶ Geophysical Measurement
- ▶ Earth Movement Monitoring
- ▶ Oil & Gas Well Logging
- ▶ Dam Monitoring
- ▶ Heavy Construction, Grading
- ▶ Ship & Barge Leveling
- ▶ Deviation Surveys
- ▶ Continuous Casting
- ▶ Weapons Platform Leveling

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 Output Phase angle = -90° .

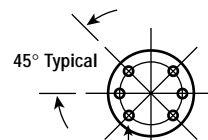
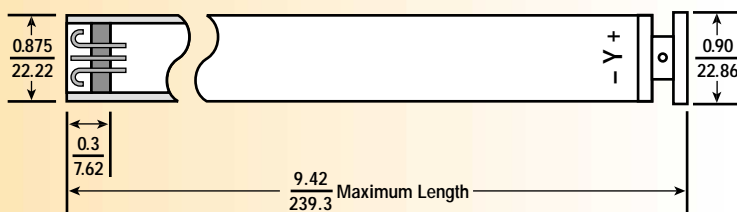
⁴ Unit Power connections can be easily adapted for operations from single-ended, floating power supplies of 24 to 36 Volts DC.

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Dimensional Drawing for the LCF 196 Inclinometer (inch/mm)

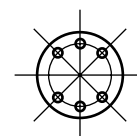
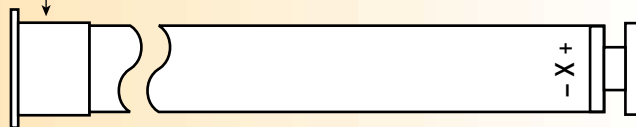
Pin-Out

- 1 - -12 to -18 Vdc
- 2 - Common
- 3 - Output, Axis X
- 4 - Output, Axis Y
- 5 - +12 to +18 Vdc
- 6 - Case Ground (connection optional)



#4-40 UNC-28 4 Places
Eq. Sp. on 16.99 B.C.

End Cap
(For protection during shipping)



Block Diagram for the LCF Inertial Sensor

