

LCF-100/LCF-101 Series Inclinometer

The LCF-100/LCF-101 Series Inclinometer provides excellent turn on repeatability and very low hysteresis



The Jewell **LCF-100 Series** Flexure Suspension Servo Fluid Damped Inclinometer is a $\pm 1^\circ$ to $\pm 90^\circ$ device designed for applications where high levels of shock and vibration are present.

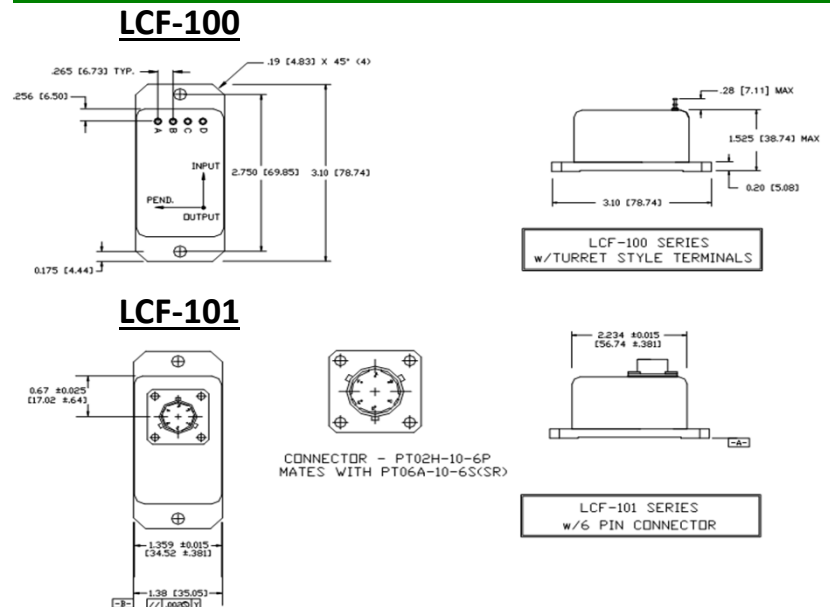
Features & Benefits

- Direct Bogie Mount
- 3-30 Hz Bandwidth
- Milligram Bias and Scale Factor
- High Level $\pm 5\text{Vdc}$ Output
- -40°C to $+80^\circ\text{C}$ Temperature Rating

Applications

- Heavy Construction, Grading
- Ship and Barge Leveling
- Deviation Surveys
- Continuous Casting for Steel Industry
- Weapons Platform Leveling
- Aircraft Flight Control
- Robot Vertical Referencing
- Auto Manufacturing Suspension Install
- Geophysical Low Range Tilt Sensing
- Platform Orientation
- Dam Sluice Gate Control

Dimensional Drawing: LCF Inclinometer Series (inch/mm)



Pin Out: LCF Inclinometer Series

LCF-100 Pin Termination

Pin A	+12 to +18 VDC
Pin B	-12 to -18 VDC
Pin C	Power/Signal Common
Pin D	Eo (Volts/g)

LCF-101 Pin Out

Pin A	+12 to +18 VDC
Pin B	PWR/SIG COM
Pin C	-12 to -18 VDC
Pin D	Eo (volts/g)
Pin E	N/C
Pin F	N/C

Rev B

LCF-100 Inclinator Specifications

PERFORMANCE

Input Range (°) (Note 1)	± 1.0	± 14.5	± 30.0	± 90.0
Full Range Output (FRO), Vdc ±0.5%	± 5.0	± 5.0	± 5.0	± 5.0
Non Linearity (%FRO' Max.) (Note 2)	0.05	0.02	0.02	0.05
Scale Factor (V/g, Nom.)	286.5	20.0	10.0	5.0
Scale Factor Temp Sens (PPM/°C, Max.)	100	100	100	100
Natural Frequency, Hz, Nom. (Note 3)	3	30	30	30
Bandwidth (-3dB), Hz, Nom.	3	30	30	30
Transverse Axis Misalignment (° Max.)	0.15	0.05	1.00	1.00
Bias, Volts Max.	0.500	0.100	0.100	0.050
Zero Tilt Temp. Sens., (Volts/°C, Max.)	0.015	0.001	0.0005	0.0003
Resolution and Threshold, μ rad (Max.)	1	1	1	1

ELECTRICAL

Input Voltage (Vdc)	±12 to ±18
Input Current (mA, Nom.)	± 15
Output Impedance (Ohms, Nom.)	100
Noise (Vrms, Max.)	0.002

ENVIRONMENTAL

Operating Temp Range	-40°C to +80°C
Survival Temp Range	-60°C to +90°C
Vibration	20 grms
Shock	1000g, 1 msec, 1/2 sine
Seal	Epoxy

- Notes:
- 1 - Full range is defined as "from negative full input angle to positive full input angle."
The Inclinator output is proportional to the sine of the tilt angle.
 - 2 - Referenced to theoretical sine value independent of misalignment.
 - 3 - Output phase angle = 90°

How to Order

LCF-100 (Pin Terminals)

Model #	Part #
LCF-100-1	458100-001
LCF-100-14.5	458100-002
LCF-100-30	458100-003
LCF-100-90	458100-004

LCF-101 (Circular Connector)

Model #	Part #
LCF-101-1	458101-002
LCF-101-14.5	458101-001
LCF-101-30	458101-003
LCF-101-90	458101-004