



LCF-100

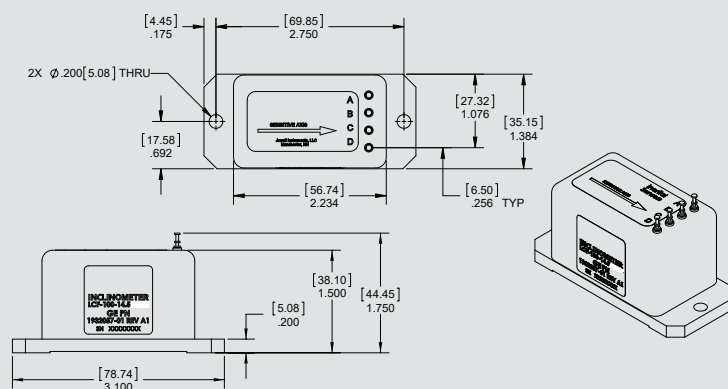
Single-Axis Analog Inclinometer

Introduction

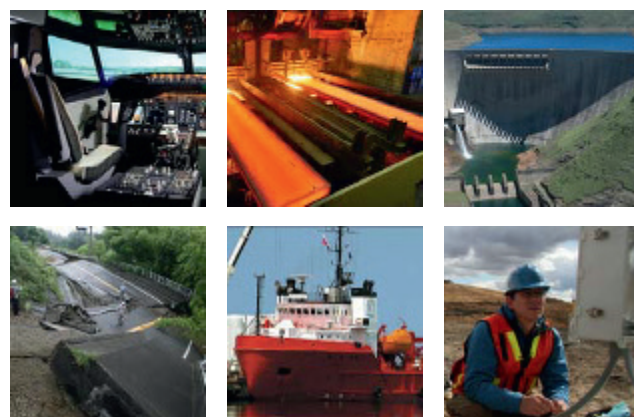
The LCF Series flexure suspension servo fluid damped inclinometer is a $\pm 1^\circ$ to $\pm 90^\circ$ device designed for applications where high levels of shock and vibration are present. LCF units are characterized by excellent turn on repeatability and very low hysteresis. This unit is available with a pin terminal connection or a 6-pin cable connection.

Features

- 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



Dimensions in [mm]



Application

- 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



Performance specifications LCF-100

Performance

| | | | | |
|---|-------|-------|--------|--------|
| Input range (°) | ±1.0 | ±14.5 | ±30.0 | ±90.0 |
| Full range output VDC (fro ± 1%) ¹ | ±5.0 | | | |
| Non linearity (%fro max) ² | 0.05 | 0.02 | 0.02 | 0.05 |
| Scale factor (V/g, nominal) | 286.5 | 20.0 | 10.0 | 5.0 |
| Scale factor temp. Sensitivity (ppm/°C, max) | 100 | | | |
| Bandwidth (-3db hz, nominal) | 3.0 | 30.0 | 30.0 | 30.0 |
| Transverse axis misalignment (° max) | 0.15 | 0.05 | 1.00 | 1.00 |
| Bias (Volts) max | 0.500 | 0.100 | 0.100 | 0.050 |
| 0° Tilt temperature sensitivity (Volts/°C, max) | 0.015 | 0.001 | 0.0005 | 0.0003 |
| Resolution & threshold (µradian) | 1 | | | |

Electrical

| | |
|----------------------------------|------------|
| Input voltage range (VDC) | ±12 to ±18 |
| Input current (mA, max) | ±15 |
| Output impedance (Ohms, nominal) | 100 |
| Noise (Vrms max) | 0.002 |

Environmental

| | |
|-----------------------|-----------------------|
| Operating temp. Range | -40° to +80°C |
| Survival temp. Range | -60° to +90°C |
| Shock | 1500g, 1 msec, ½ sine |
| Epoxy | Epoxy |
| Vibration | 20 grms |

Notes

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

*Specifications subject to change without notice on account of continued product development

Pin outs

Pin Version

| | |
|---|------------------|
| A | +12 to +18 VDC |
| B | -12 to -18 VDC |
| C | Power/Sig Common |
| D | Eo [Volts/g] |

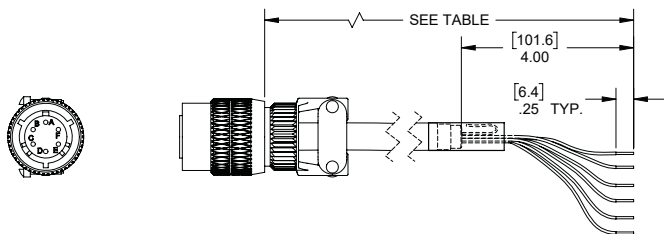
Connector Version

| | |
|---|------------------|
| A | +12 to +18 VDC |
| B | Power/Sig Common |
| C | -12 to -18 VDC |
| D | Eo [Volts/g] |
| E | N/C |
| F | N/C |



Accessories

Connector cable



| PART # | MODEL # | LENGTH m (ft) |
|--------------|------------------------|---------------|
| 62101011-001 | 6-Pin Mating Connector | - |
| 879605-007 | DSI-CBL-02M-1 | 2 (6.56) |
| 879605-008 | DSI-CBL-03M-1 | 3 (9.84) |
| 879605-020 | DSI-CBL-05M-1 | 5 (16.4) |
| 879605-027 | DSI-CBL-10M-1 | 10 (32.8) |
| 879605-015 | DSI-CBL-15M-1 | 15 (49.21) |
| 879605-016 | DSI-CBL-24M-1 | 24 (78.75) |
| 879605-026 | DSI-CBL-40M-1 | 40 (131.2) |
| 879605-024 | DSI-CBL-68M-1 | 68 (228.1) |
| 879605-021 | DSI-CBL-100M-1 | 100 (325.1) |

Ordering information

Pin Version

| | | |
|--------------|--------------|------------|
| ±1.0 | LCF-100-1 | 458100-001 |
| ±14.5 | LCF-100-14.5 | 458100-002 |
| ±30.0 | LCF-100-30 | 458100-003 |
| ±90.0 | LCF-100-90 | 458100-004 |

Connector Version

| | | |
|--------------|--------------|------------|
| ±1.0 | LCF-101-1 | 458101-002 |
| ±14.5 | LCF-101-14.5 | 458101-001 |
| ±30.0 | LCF-101-30 | 458101-003 |
| ±90.0 | LCF-101-90 | 458101-004 |