LCF-300-L

LCF-300-L - 4-20mA -Precision Fluid Damped

The LCF-300 Series Inclinometer is a rugged, high performance, single-axis tilt sensor designed for peak performance in extreme conditions. The fluid damped mechanism delivers superior noise rejection in high shock and vibration environments as well as excellent output stability. Units are available with a 6-pin connector or pin-terminals. Available outputs include +/-5V, 0-5V and 4-20mA. Custom input ranges, filters and temperature compensation are also available on request.

Features

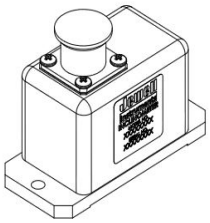
- ***Resolution of 1 µrad***
- ***Temperature Compensation Available***
- ***4-20 mA Output***
- ***+20 to +30 Volts DC Power Input***
- ***RoHS Compliant***

Applications

- ***High-precision Geotech***
- ***Oil and Gas, Riser Tilt Monitoring***
- ***Railroad MOW Equipment***
- ***Pavement Profiling Rigs***
- ***Vehicle Wheel Alignment***
- ***Robotics***

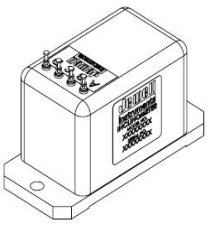
Connector Version

PIN	FUNCTION 4-20 mA OUTPUT
A	+ VDC
B	PWR / SIG COM
C	N/C
D	SIG OUT
E	N/C
F	N/C



Pin Terminal Version

PIN	FUNCTION 4-20 mA OUTPUT
A	+ VDC
B	N/C
C	PWR / SIG COM
D	SIG OUT



PM Instrumentation | 47 avenue de l'Europe | F-92400 Courbevoie | France
+33(0)1 46 91 93 32 | contact@pm-instrumentation.com | www.pm-instrumentation.com

LCF-300-L

LCF-300-L - 4-20mA -Precision Fluid Damped

STATIC/DYNAMIC

Input Range (deg.)	±1	±3	±14.5	±30	±60	±90
Full Range Output (mA)[1]	4-20	4-20	4-20	4-20	4-20	4-20
Non-linearity (% FRO)[2]	0.05	0.03	0.03	0.03	0.03	0.05
Scale Factor (mA/g nom.)	458.4	152.9	32.0	16.0	9.2	8.0
Scale Factor Sensitivity (PPM/°C max)	350	300	100	60	60	60
Bandwidth, Hz (-3 dB)	0.5	2	15	20	30	30
Transverse Axis Misalignment (° max)	±0.25	±0.25	±0.5	±0.5	±0.5	±0.5
0° Output nominal (mA)	12 ±0.6	12 ±0.6	12 ±0.3	12 ±0.3	12 ±0.3	12 ±0.3
0° Output Temp. Sensitivity (mA/°C max)	0.024	0.01	0.002	0.001	0.001	0.0008
Resolution & Threshold (µradians)[3]	1	1	1	1	1	1

[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.

ELECTRICAL

Number of Axes:	1
Input Voltage Range, (VDC):	+20 to +30
Input Current, mA, max:	40
Noise, µArms, maximum:	0.002
Mass (grams)	230

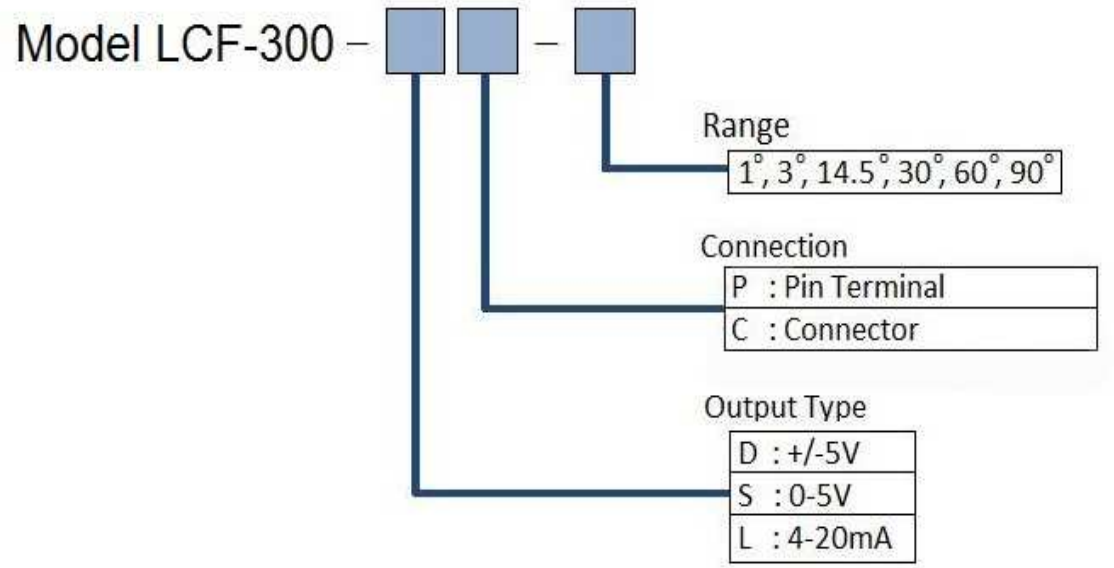
ENVIRONMENTAL

Operating Temp Range:	-40°C to +80°C
Storage Temp Range:	-60°C to +90°C
Shock:	1500g, 0.5 msec, ½ sine

ENCLOSURE

Seal:	IP65

Order Code



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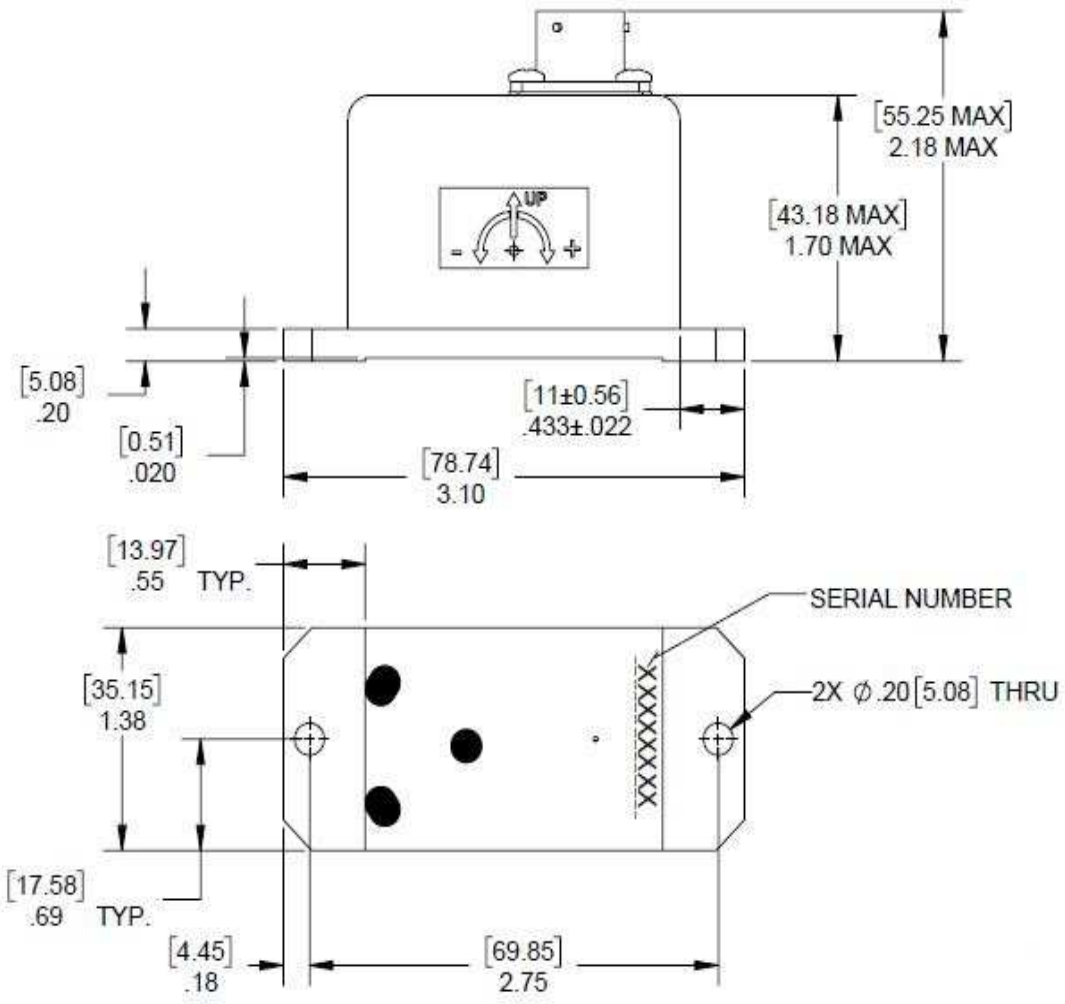
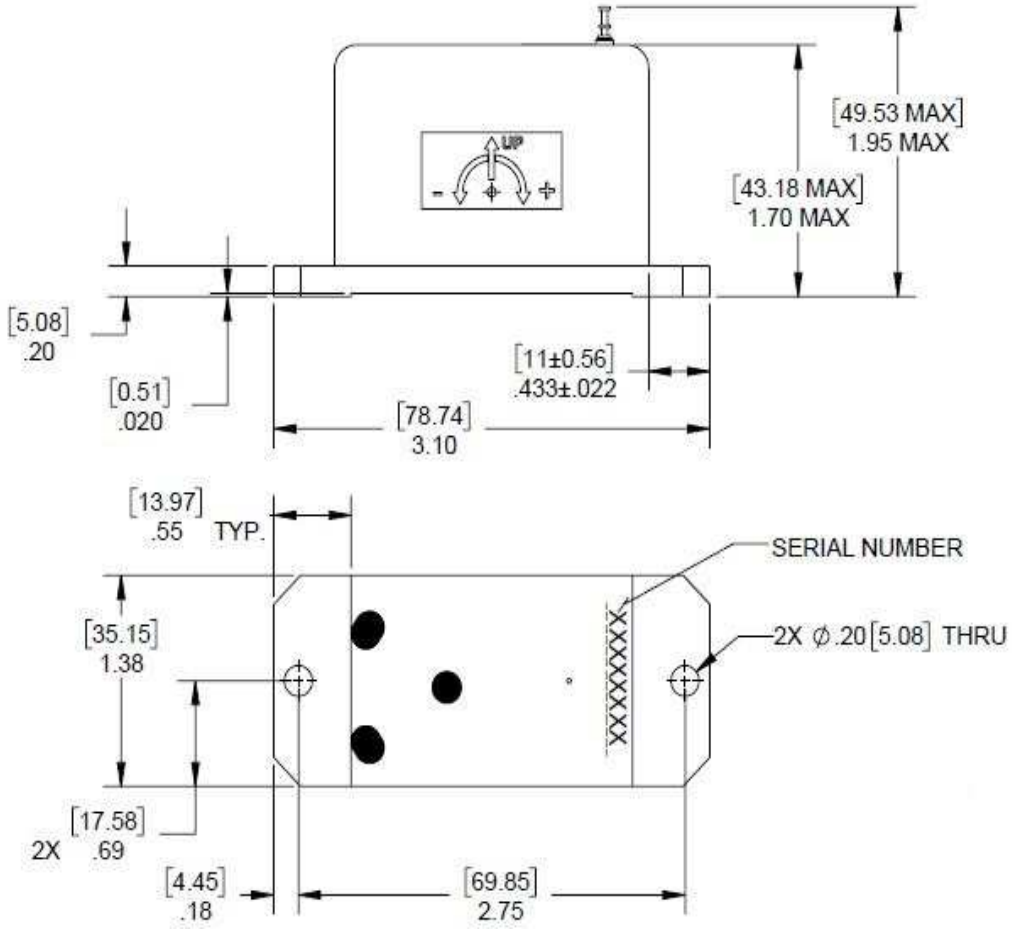
+33(0)1 46 91 93 32 | contact@pm-instrumentation.com | www.pm-instrumentation.com

Outline Drawing: Connector Version



Outline Drawing: Pin Terminal Version



LCF-300-S

LCF-300-S-0-5Vcc - Precision Fluid Damped

The LCF-300 Series Inclinometer is a rugged, high performance, single-axis tilt sensor designed for peak performance in extreme conditions. The fluid damped mechanism delivers superior noise rejection in high shock and vibration environments as well as excellent output stability. Units are available with a 6-pin connector or pin-terminals. Available outputs include +/-5V, 0-5V and 4-20mA. Custom input ranges, filters and temperature compensation are also available on request.

Features

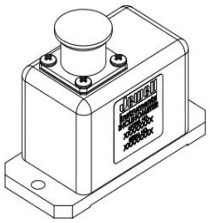
- ***Resolution of 1 µrad***
- ***Temperature Compensation Available***
- ***0-5V Output***
- ***+9 to +18 Volts DC Power Input***
- ***RoHS Compliant***

Applications

- ***High-precision Geotech***
- ***Oil and Gas, Riser Tilt Monitoring***
- ***Railroad MOW Equipment***
- ***Pavement Profiling Rigs***
- ***Vehicle Wheel Alignment***
- ***Robotics***

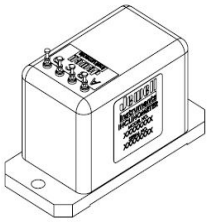
Connector Version

PIN	FUNCTION SINGLE SUPPLY
A	+ VDC
B	PWR / SIG COM
C	N/C
D	SIG OUT
E	N/C
F	N/C



Pin Terminal Version

PIN	FUNCTION SINGLE SUPPLY
A	+ VDC
B	N/C
C	PWR / SIG COM
D	SIG OUT



PM Instrumentation | 47 avenue de l'Europe | -92400 Courbevoie | France
+33(0)1 46 91 93 32 | contact@pm-instrumentation.com | www.pm-instrumentation.com

LCF-300-S

LCF-300-S-0-5Vcc - Precision Fluid Damped

STATIC/DYNAMIC

Input Range (deg.)	±1	±3	±14.5	±30	±60	±90
Full Range Output (VDC)[1]	0-5	0-5	0-5	0-5	0-5	0-5
Non-linearity (% FRO)[2]	0.05	0.02	0.02	0.02	0.02	0.05
Scale Factor (V/g nom.)	143.2	47.8	10.0	5.0	2.9	2.5
Scale Factor Sensitivity (PPM/°C max)	350	300	100	60	60	60
Bandwidth, Hz (-3 dB)	0.5	2	15	20	30	30
Transverse Axis Misalignment (° max)	±0.25	±0.25	±0.5	±0.5	±0.5	±0.5
0° Output nominal (mA)	±0.10	±0.04	±0.02	±0.02	±0.02	±0.02
0° Output Temp. Sensitivity (V/°C max)	0.015	0.005	0.001	0.0005	0.0004	0.0003
Resolution & Threshold (µradians)[3]	1	1	1	1	1	1

[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.

ELECTRICAL

Number of Axes:	1
Input Voltage Range, (VDC):	+9 to +18
Input Current, mA, max:	40
Noise, µArms, maximum:	0.002
Output Impedance (ohms)	1
Mass (grams)	230

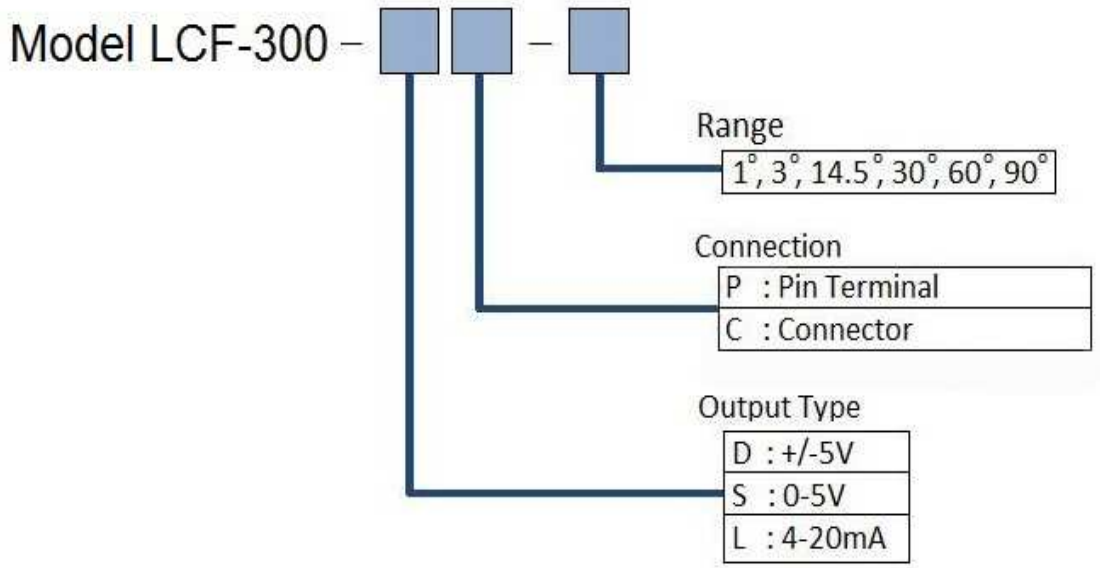
ENVIRONMENTAL

Operating Temp Range:	-40°C to +80°C
Storage Temp Range:	-60°C to +90°C
Shock:	1500g, 0.5 msec, ½ sine

ENCLOSURE

Seal:	IP65

Order Code



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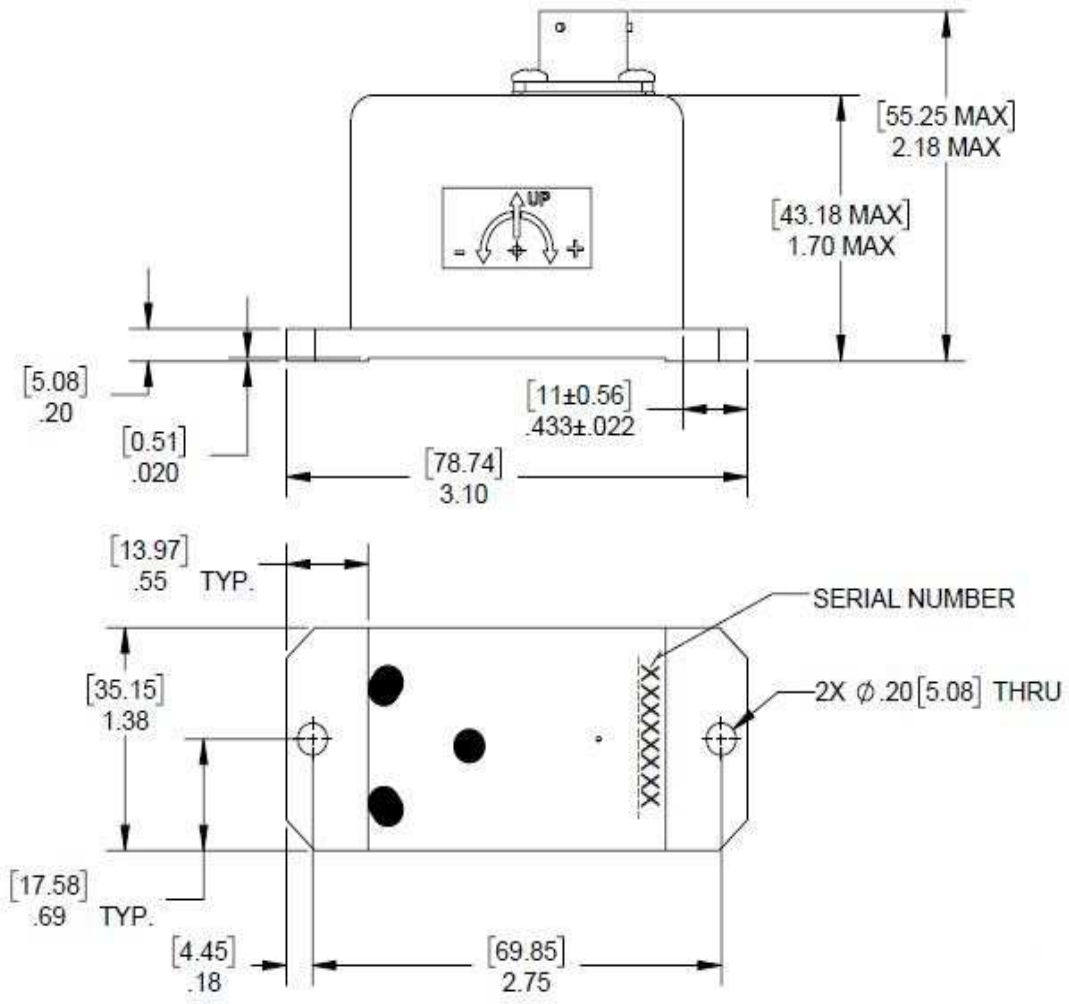
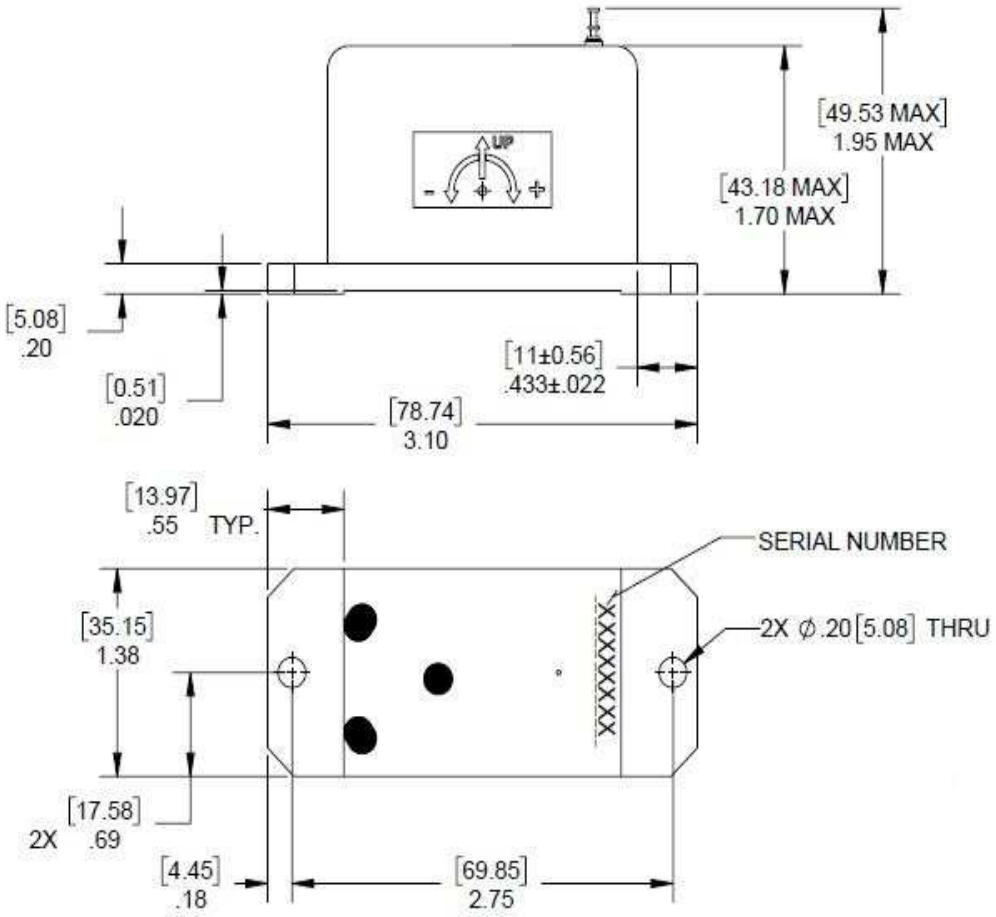
Outline Drawing: Connector Version



Outline Drawing: Pin Terminal Version



LCF-300-D Precision Fluid Damped Inclinometer ±5V DC Output

Making Sense out of Motion…

The LCF-300 Series Inclinometer is a rugged, high performance, single-axis tilt sensor designed for peak performance in extreme conditions. The fluid damped mechanism delivers superior noise rejection in high shock and vibration environments as well as excellent output stability. Units are available with a 6-pin connector or pin-terminals. Available outputs include +/-5V, 0-5V and 4-20mA. Custom input ranges, filters and temperature compensation are also available on request.

Features

- ***Resolution of 1 µrad***
- ***Temperature Compensation Available***
- ***±5V Output***
- ***±12 to ±18 Volts DC Power Input***
- ***RoHS Compliant***

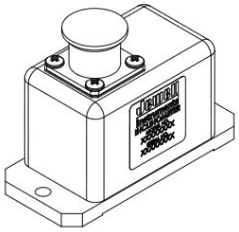
Applications

- ***High-precision Geotech***
- ***Oil and Gas, Riser Tilt Monitoring***
- ***Railroad MOW Equipment***
- ***Pavement Profiling Rigs***
- ***Vehicle Wheel Alignment***
- ***Robotics***

RoHS COMPLIANT

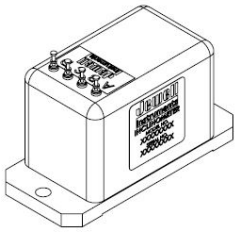
Connector Version

PIN	FUNCTION DUAL SUPPLY
A	+ VDC
B	PWR / SIG COM
C	- VDC
D	SIG OUT
E	N/C
F	N/C



Pin Terminal Version

PIN	FUNCTION DUAL SUPPLY
A	+ VDC
B	- VDC
C	PWR / SIG COM
D	SIG OUT



Jewell Instruments LLC 850 Perimeter Road, Manchester, NH 03103
sales@jewellinstruments.com • www.jewellinstruments.com • Tel (800) 227-5955

LCF-300-D Precision Fluid Damped Inclinometer
±5V DC Output

Jewell Instruments

Making Sense out of Motion…

STATIC/DYNAMIC

Input Range (deg.)	±1	±3	±14.5	±30	±60	±90
Full Range Output (VDC)[1]	±5	±5	±5	±5	±5	±5
Non-linearity (% FRO)[2]	0.05	0.02	0.02	0.02	0.02	0.05
Scale Factor (V/g nom.)	285.5	95.5	20.0	10.0	5.8	5.0
Scale Factor Sensitivity (PPM/°C max)	350	300	100	60	60	60
Bandwidth, Hz (-3 dB)	0.5	2	15	20	30	30
Transverse Axis Misalignment (° max)	±0.25	±0.25	±0.5	±0.5	±0.5	±0.5
0° Output nominal (VDC)	±0.10	±0.04	±0.02	±0.02	±0.02	±0.02
0° Output Temp. Sensitivity (V/°C max)	0.015	0.005	0.001	0.0005	0.0004	0.0003
Resolution & Threshold (µradians)[3]	1	1	1	1	1	1

[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.

ELECTRICAL

Number of Axes:	1
Input Voltage Range, (VDC):	±12 to ±18
Input Current, mA, max:	±15
Noise, Vrms, maximum:	0.002
Output Impedance (ohms)	1
Mass (grams)	230

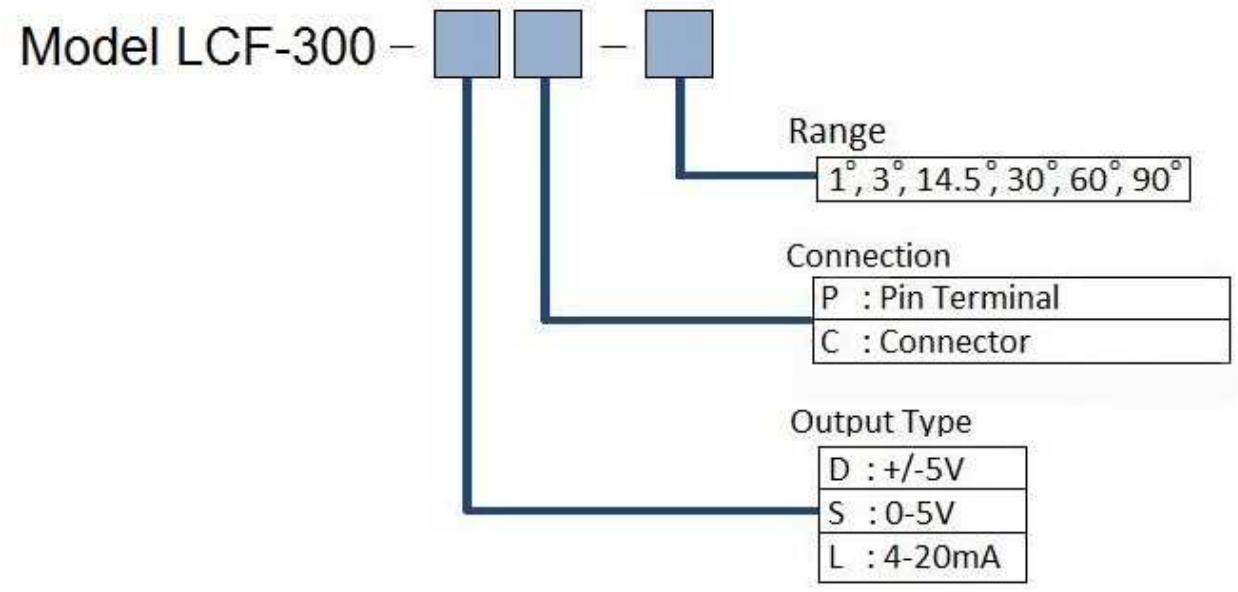
ENVIRONMENTAL

Operating Temp Range:	-40°C to +80°C
Storage Temp Range:	-60°C to +90°C
Shock:	1500g, 0.5 msec, ½ sine

ENCLOSURE

Seal:	IP65

Order Code



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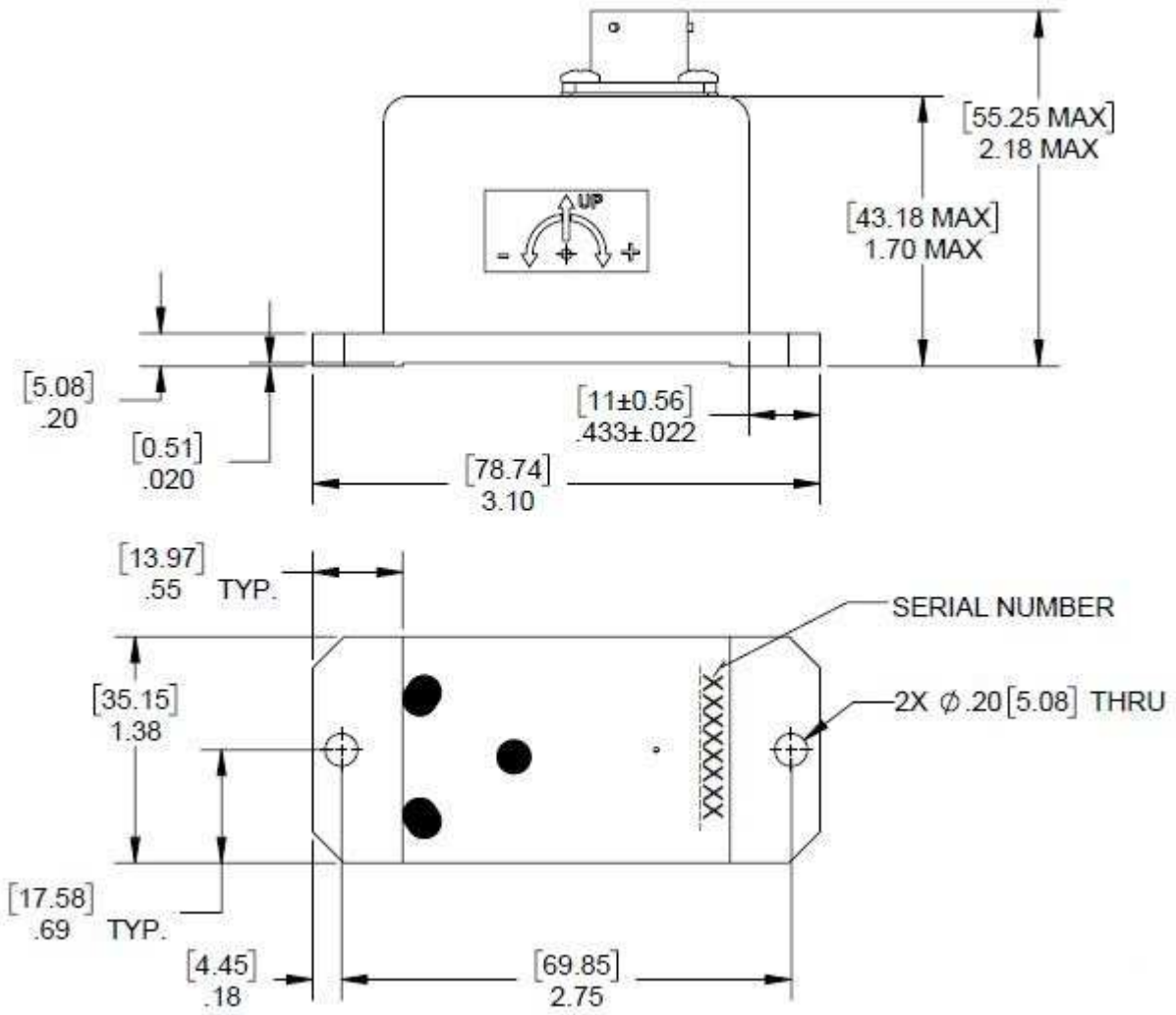
Outline Drawing: Connector Version



Outline Drawing: Pin Terminal Version