

A750-050 Series Tiltmeter 0-5Vdc Output

Input Ranges From ±3° to ±90° Rugged, High Precision, Low Cost, Single-Ended Power Input Inclinometer

The Jewell Black Diamond Series inclinometer is a low cost, high precision till sensor designed with higher accuracy than comparable MEMS devices. It is meant for geotechnical monitoring applications including bridge sag and sway, deflection measurement, platform leveling and structural analysis. All 750-050 Series inclinometers are RoHS compliant.





FEATURES

- Extremely Rugged
- Lower Cost than traditional Force-Balanced Inclinometers
- High Accuracy
- Greater Precision than **MEMS** Technologies
- 0-5V DC Output
- Single-Ended Power Input
- **RoHS** Compliant

APPLICATIONS

- Bridge Sag & Sway
- **Deflection Monitoring**
- Platform Leveling
- Structural Analysis



PIN OPTION

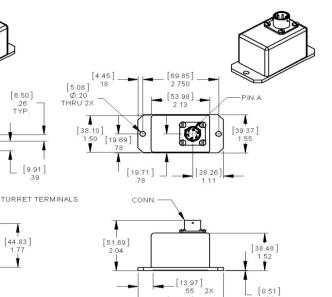
CONNECTOR OPTION

Θ

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Α	Input Power
В	Power/Signal Common
С	N/C
D	Signal

	А	Input Power
ommon	В	Power/Signal Common
	С	N/C
	D	Signal
	E	N/C
	F	N/C



[78.74] 3.10

Dimensions in inches [mm]

[0.51]

OUTLINE DIAGRAM







PERFORMANCE SPECIFICATIONS

STATIC/DYNAMIC						
Input Range, °:	±3	±14.5	±30	±45	±60	±90
Full Range Output (FRO -Note 1) VDC ±0.5%:	0-5	0-5	0-5	0-5	0-5	0-5
Nonlinearity (Note 2) % FRO maximum:	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 /°C maximum:	100	100	100	100	100	100
Bandwidth (-3 dB), Hz nominal:	5.0	5.0	5.0	5.0	5.0	5.0
Output Axis Misalignment, ° maximum:	0.25	0.50	0.50	0.50	0.50	0.50
Pendulous Axis Misalignment, ° maximum:	0.25	0.50	0.50	0.50	0.50	0.50
0° Output, Volts range:			+2.45 to	+2.55		
0° Output Temp. Sensitivity, Volts /°C maximum:	0.0036	0.0010	0.0007	0.0005	0.0005	0.0005
Resolution and Threshold, µradians maximum:	3.5	3.5	3.5	3.5	3.5	3.5

ELECTRICAL

Number of Axes:	1
Input Voltage Range, (VDC):	+15 to +30
Input Current, mA, max:	40
Output Impedance, Ohms, nom:	10
Noise, Vrms, maximum:	0.002

ENVIRONMENTAL

Operating Temp Range:	-55°C to +85°C
Storage Temp Range:	-60°C to +90°C
Shock:	500g, 1 msec, ½ sine

Notes: Note 1: Full Range is defined "from negative full input angle to positive full input angle."

Note 2: Nonlinearity is specified as deviation of output referenced to theoretical sine function value, independent of misalignment.

Note 3: Full Resolution is achieved with noise reduction techniques.

ENCLOSURE

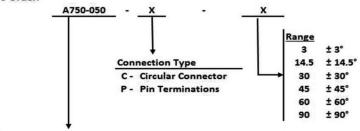
Seal:

CUSTOM CAPABILITIES

- ±15V bipolar input option available
- Pigtail and Connector alternative options available
- Custom ranges and bandwidths available

How To Order:

Series



IP65

A750-050 - Undamped, Black Diamond Tiltmeter with 0-5V Output

Example: A750-050-C-3 0-5Vdc output, undamped, circular connector & ±3.0°range

ACCESSORIES

Mating Connector

Description	Part Number	
Standard 6-pin connector	62101011-001	

Cable Assemblies*

Description	Part Number
6 Ft Cable	879605-001
10 Ft Cable	879605-002
2 M Cable	879605-007
3 M Cable	879605-008

*All cable assemblies come with mating connector

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The information provided herein is to the best of our knowledge true and accurate, it is provided for guidance only. All specifications are subject to change without prior notification. Althen – Your expert partner in Sensors & Controls | althensensors.com

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C750-050 Series Tiltmeter 4-20mA Output

Model C750-050 Rugged, High Precision Single-axis Force Balance 4-20mA Inclinometer

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FEATURES

- Extremely Rugged
- Lower cost than traditiona Force-Balanced Inclinometers
- High Accuracy
- Greater precision than MEMS technologies
- 4-20mA Output
- Single-Ended Power Input
- **RoHS** Compliant

APPLICATIONS

- Bridge Sag & Sway
- **Deflection Monitoring**
- Platform Leveling
- Structural Analysis

PIN OUT (OPTIONS: C-CONNECTOR, P-PIN)

PIN OPTION

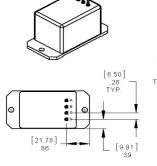
CONNECTOR OPTION

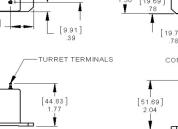
Α	Input Power	Α	Input Power	
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D	Signal	D	Signal	
		E	N/C	
		F	N/C	

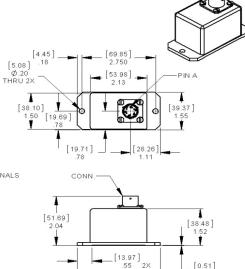




OUTLINE DIAGRAM







2X

[78.74] 3.10

Dimensions in inches [mm]

[0.51]





PERFORMANCE SPECIFICATIONS

STATIC/DYNAMIC						
Input Range (deg.)	±3	±14.5	±30	±45	±60	±90
Full Range Output (mA, +/-1%) ¹	4-20	4-20	4-20	4-20	4-20	4-20
Non-linearity (% FRO) ²	0.05	0.02	0.02	0.02	0.04	0.05
Scale Factor (mA/g nom.)	152.9	32	16	11.3	9.2	8
Scale Factor Temp. Sensitivity (PPM/°C max)	100	100	100	100	100	100
Bandwidth, Hz (-3 dB)	5	5	5	5	5	5
Output Axis Misalignment (deg. max)	0.25	0.5	0.5	0.5	0.5	0.5
Pendulous Axis Misalignment (deg. max)	0.25	0.5	0.5	0.5	0.5	0.5
0° Output nominal (mA)			11.7 t	o 12.3		
0° Output Temp. Sensitivity (mA/°C max)	0.01	0.003	0.002	0.0015	0.0015	0.0015
Resolution & Threshold (µradians) ³	3.5	3.5	3.5	3.5	3.5	3.5

ELECTRICAL

Number of Axes:	1
Input Voltage Range, (VDC):	+12 to +28
Input Current, mA, max:	55
Noise, Vrms, maximum:	0.006

ENVIRONMENTAL

Operating Temp Range:	-55°C to +85°C
Storage Temp Range:	-60°C to +90°C
Shock:	500g, 1 msec, ½ sine

Notes: Note 1: Full Range is defined "from negative full input angle to positive full input angle."

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Note 3: Full Resolution is achieved with noise reduction techniques.

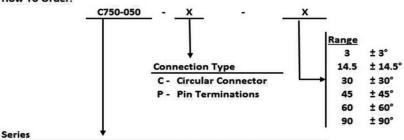
ENCLOSURE Seal:

IP65

CUSTOM CAPABILITIES

- Pigtail and Connector alternative options available
- Custom ranges and bandwidths available

How To Order:



C750-050 - Undamped, Black Diamond Tiltmeter with 4-20mA Output

Example: C750-050-C-3 4-20mA output, undamped, circular connector & ±3.0°range

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Description	Part Number		
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