



A750-050 Series Tiltmeter
0-5Vdc Output



Input Ranges From $\pm 3^\circ$
to $\pm 90^\circ$ Rugged, High
Precision, Low Cost,
Single-Ended Power Input
Inclinometer

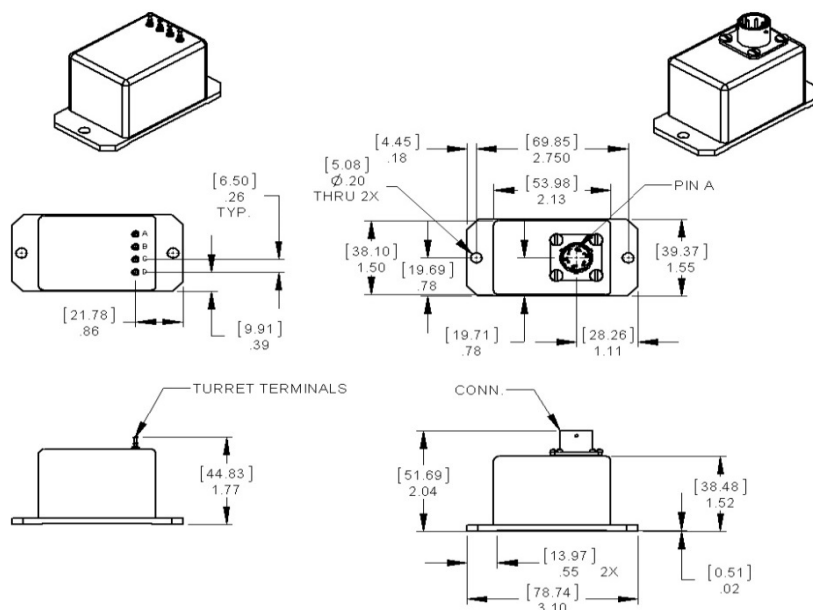
The Jewell Black Diamond Series inclinometer is a low cost, high precision tilt sensor designed with higher accuracy than comparable MEMS devices. It is meant for geotechnical monitoring applications including bridge sag and sway, deflection measurement, platform leveling and structural analysis. All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

OUTLINE DIAGRAM



Dimensions in inches [mm]

APPLICATIONS

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

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

PIN OPTION

A	Input Power
B	Power/Signal Common
C	N/C
D	Signal

CONNECTOR OPTION

A	Input Power
B	Power/Signal Common
C	N/C
D	Signal
E	N/C
F	N/C



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.

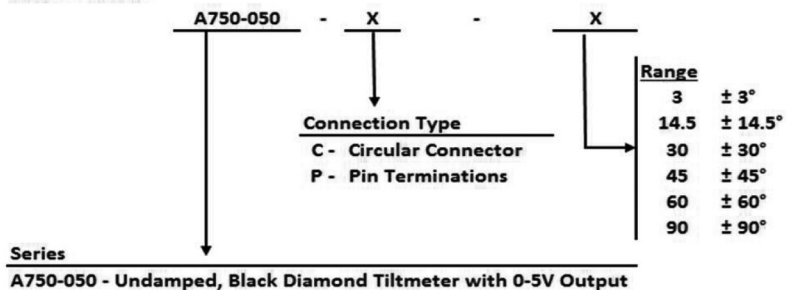
ENCLOSURE

Seal:	IP65
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CUSTOM CAPABILITIES

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

How To Order:



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



C750-050 Series Tiltmeter
4-20mA Output



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

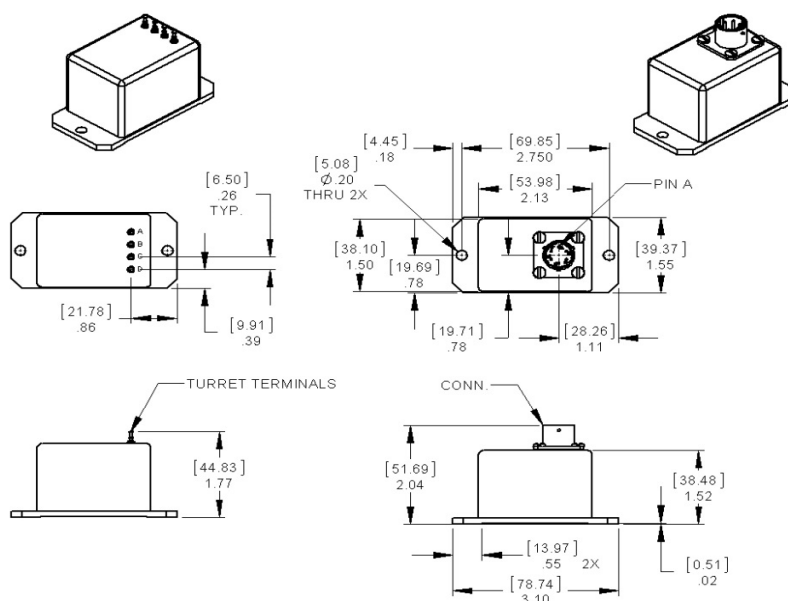


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FEATURES

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

OUTLINE DIAGRAM



Dimensions in inches [mm]

APPLICATIONS

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

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

PIN OPTION

CONNECTOR OPTION

A	Input Power
B	Power/Signal Common
C	N/C
D	Signal

A	Input Power
B	Power/Signal Common
C	N/C
D	Signal
E	N/C
F	N/C



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 to 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."

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.

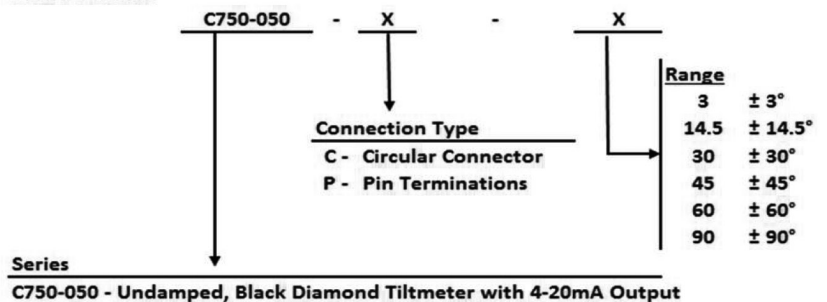
ENCLOSURE

Seal:	IP65
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CUSTOM CAPABILITIES

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

How To Order:



Example:
C750-050-C-3
4-20mA 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