

D750-100/200 Series Tiltmeter

RS485 Digital Output



Jewell
Instruments

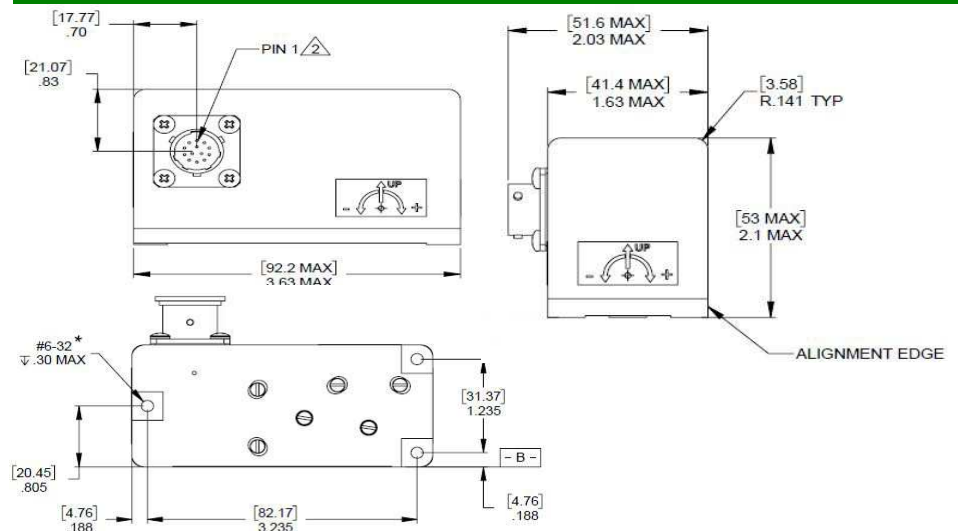
Making Sense out of Motion...

The Jewell D750-100 (Single Axis) and D750-200 (Dual Axis) Black Diamond Tiltmeter series are fluid damped inclinometers with RS485 digital output



The Jewell **D750-100/200 Series** is the digital version of the Black Diamond tilt sensor line for geotechnical measurement. It features a 0.001° resolution with RS485 digital output signal

Outline Diagram: D750-100/200 Series Digital Tiltmeter



*Also available in M6 metric through holes

Features & Benefits

- Digital output
- Resolution 0.001°
- Mechanical Shock 1500g 1msec 1/2 sine
- Industry Standard EIA RS485
- For use in high shock and vibration environments
- High Precision and Performance
- Low Noise

Applications

- Radar/Antenna Control
- Structural Monitoring
- Seismic Monitoring
- Platform Leveling
- Lab Testing & Research

Pin Out:

CONNECTOR PINOUT		
PIN	COLOR	FUNCTION
1	-	FACTORY
2	-	FACTORY
3	GREEN	CASE GROUND
4	BLUE	+SERIAL PORT
5	YELLOW	-SERIAL PORT
6	-	FACTORY
7	-	FACTORY
8	-	FACTORY
9	-	FACTORY
10	-	FACTORY
11	BLACK	PWR RTN
12	RED	+PWR
13	-	FACTORY

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Rev B

D750-100/200 Series Tiltmeter

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Performance

Input Range ¹ , °	±1.0	±3.0	±14.5	±30.0	±60.0
Number of Axis	1,2	1,2	1,2	1,2	1,2
Non Linearity ² , %FRO, Max	0.02	0.015	0.02	0.02	0.03
Scale Factor Tolerance, % Max	0.05	0.05	0.05	0.05	0.05
Scale Factor Temperature Sensitivity, % reading/°C, Max	0.01	0.01	0.01	0.01	0.01
Output at 0° Tilt, °Max	0.01	0.01	0.05	0.05	0.05
0° Output Temperature Sensitivity, °/°C, Max	0.001	0.001	0.005	0.005	0.005
Bandwidth (-3dB), Hz, Nom ³	3	6	30	30	30
Transverse Axis Misalignment, °, Max	0.15	0.15	0.5	0.5	0.5
Hysteresis, °, Max	0.001	0.001	0.001	0.001	0.001
Resolution and Threshold, °, Max	0.001	0.001	0.001	0.001	0.001
Power On Repeatability, °Max	0.001	0.001	0.001	0.001	0.001
Repeatability, °Max	0.001	0.001	0.002	0.002	0.003

Digital Output

Interface	EIA-RS485
Protocol	Proprietary (Custom)
Output Representation	Degrees
Baud Rate ⁴	19200, 38400, 57600, 115200, 230400

Electrical

Supply Voltage, Volts DC	10 to 30
Input Current, mA, Max	Transmitting D750-100 (32 mA) & D750-200 (50 mA) Not transmitting D750-100 22 (mA) & D750-200 (40 mA)

Environmental

Operational Temp Range, °C	-40 to +85
Storage and Temp Range, °C	-40 to +85
Protection Class per IEC 529	IP67
NEMA Enclosure Rating	6
Seal	MILD-STD-202 Method 112
Shock Survival	1500g, 1msec, ½ sine
Vibration Survival, grms (20Hz to 2 KHz)	20

Enclosure

Housing Material	Anodized and Alodine Aluminum
Weight	DXI-100 8oz [226.80 g]/ DXI-200 10oz [283.50 g]
Connector Type	MS27476Y10D35P
Recommended Mating Connector	MS27473T10B35S

- NOTES:
- 1- Full range is defined as "from negative full input angle to positive full input angle"
 - 2 - Non-linearity is specified as deviation of output referenced to a best fit straight line, independent of misalignment.
 - 3 - In default condition without averaging enabled.
 - 4- Default Baud Rate is 38400

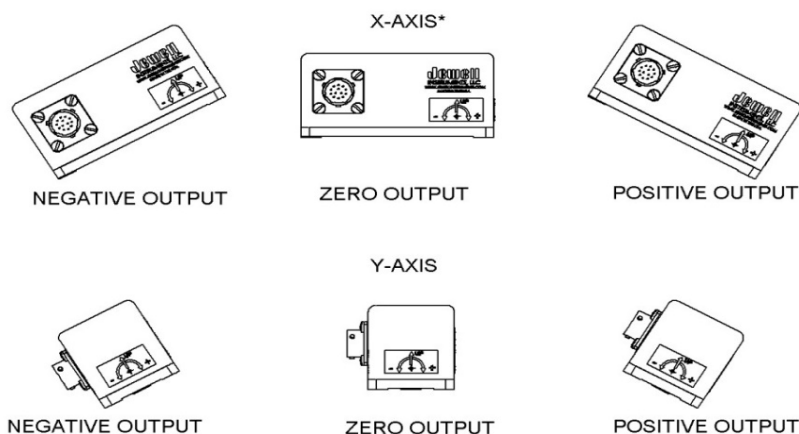
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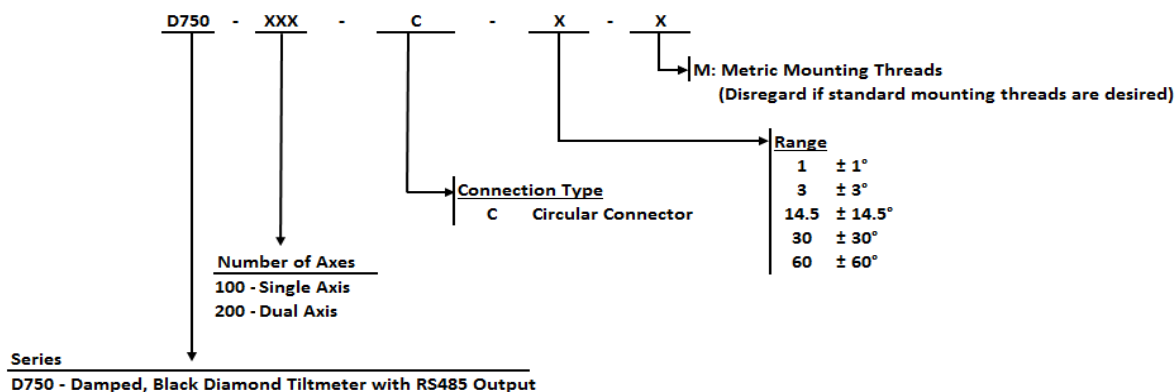
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Tilt Configuration



*SENSITIVE AXIS THIS DIRECTION ONLY

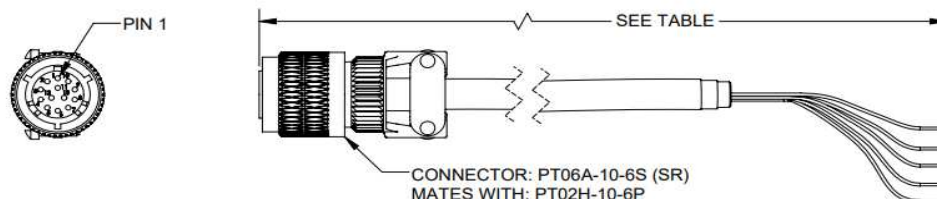
How to Order



Example:
D750-100-C-1-M
RS485 output, damped, circular connector, $\pm 1.0^\circ$ range, metric mounting threads

Accessories

Connector Cable



Mating Connector

Description	Part Number
Standard 13-pin connector	847774-002

Cable Assemblies*

PART #	LENGTH m (ft)
847774-002	-
879839-01	5 (16.5)
879839-03	3 (9.84)
879839-03	1.8 (6)

*All cable assemblies come with mating connector

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