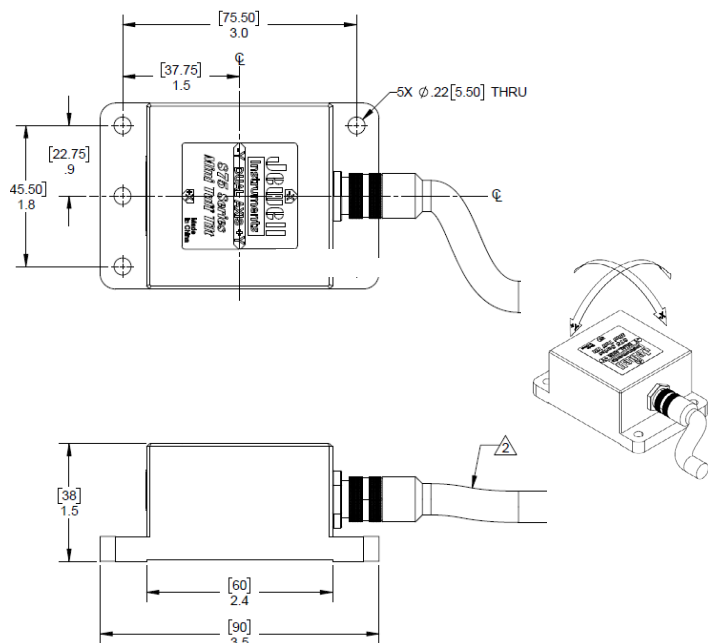


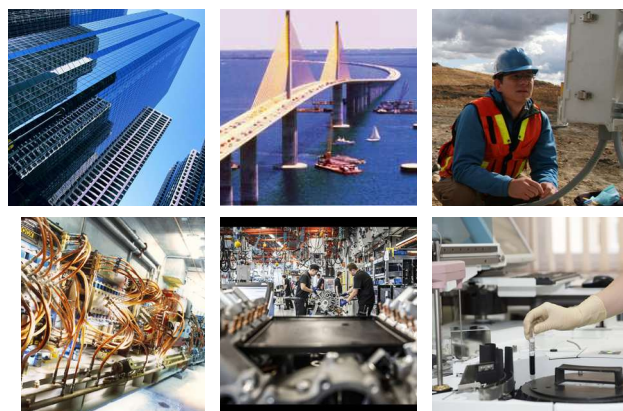
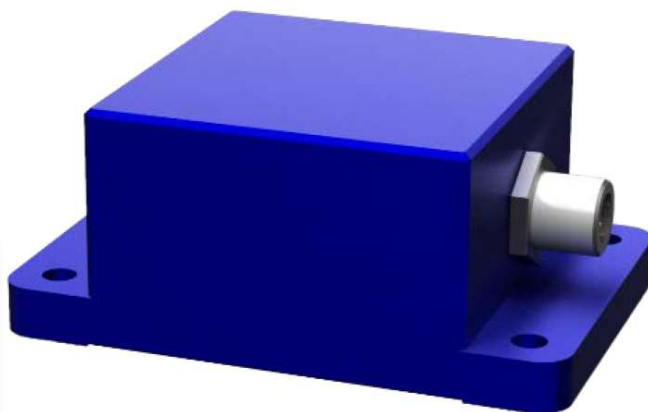
Model D875

Digital MEMS Tiltmeter

The model 875 MEMS Tiltmeter combines high precision and durability in a miniaturized and economical instrument package. Using MEMS technology, the 875 delivers superior measurement accuracy with virtually no long-term drift and a resolution of 0.05° . Output options include 0.5-4.5Vdc, 4-20mA and digital RS485. All units are rated IP67 waterproof for advanced protection from the elements. Use the D875 for structural monitoring, angle measurement and control, platform leveling, testing and research, OEM and more. This product is RoHS compliant.



Dimensions: in [mm]



APPLICATIONS:

- Structural Monitoring
- Platform Leveling
- Laboratory Testing
- Angle Measurement
- Educational Research
- OEM

PIN OUT:

	OUTPUT OPTIONS			
WIRE COLOR	0.5-4.5V	4-20MA	RS485	RS232
BROWN	+PWR			
BLACK	GND			
BLUE	X OUT	X OUT	D+(A)	TXD
WHITE	Y OUT	Y OUT	D-(B)	RXD
GREY	ZERO CAL	ZERO CAL	NC	ZERO CAL

PERFORMANCE SPECIFICATIONS: D875

PERFORMANCE

ANGULAR RANGE (°) ¹	±5°	±15°	±30°
RESOLUTION	0.05°		
FULL RANGE OUTPUT (FRO) ² VDC ± 0.5%	±0.5		
SCALE FACTOR (mA/°)	1.00 ± 0.005		
SCALE FACTOR TEMP. SENSITIVITY (PPM/°C, max)	±150		
NONLINEARITY (%FRO) ³ max	0.20		
NONREPEATABILITY (° max)	0.005		
BANDWIDTH (-3db, Hz, nominal)	<1		
TRANSVERSE AXIS MISALIGNMENT (° max)	±0.50		
RELATIVE ACCURACY (° max)	0.10	0.11	0.21
0° OUTPUT RANGE (Volts)	±0.3000		
0° OUTPUT TEMP. SENSITIVITY (Volts/°C, max)	±0.008		
START UP TIME (seconds max)	5		
RESPONSE TIME (seconds max)	0.3		

ELECTRICAL & ENVIRONMENTAL

NUMBER OF AXES	1 or 2
INPUT VOLTAGE RANGE (VDC)	9 to 30
INPUT CURRENT (mA @ 24V max)	<20 mA @24 Vdc
NOISE (mA rms max)	0.006
OPERATING TEMPERATURE RANGE	-40° to +85°C
STORAGE TEMPERATURE RANGE	-50° to +105°C
SHOCK (g, 1 msec, ½-sine)	500
WEIGHT (grams)	210 (7.4 oz.)
SEAL	IP67
CABLE	2m (6.6 ft), flying leads

NOTES:

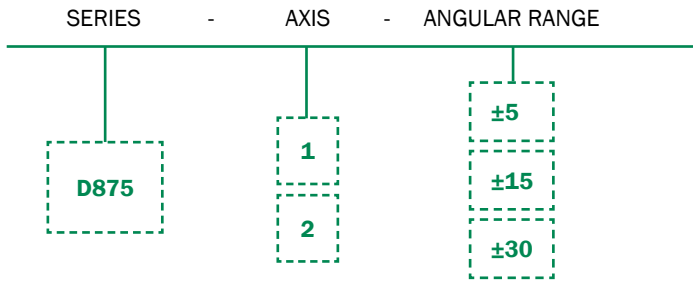
1. Custom ranges available on request
2. Full range is defined as "from negative full input angle to positive full input angle." The Inclinometer output is proportional to the sine of the tilt angle.
3. Nonlinearity is specified as variation around the best straight line from null to full-range output.

Specifications are subject to change without notice due to continued product development

ORDERING INFORMATION

HOW TO ORDER

Model Numbers are comprised of the series, the number of axes, and the angular range.



	MODEL #	PART #
±5	D875-1-5	98875-131
	D875-2-5	98875-231
±15	D875-1-15	98875-132
	D875-2-15	98875-232
±30	D875-1-30	98875-133
	D875-2-30	98875-233

RS485 Communication Protocol:

1. Configuration: Baud rate 9600(default), see options below.
2. Data output format
X:±xx.xx;Y:±xx.xx<CR><LF>
3. Commands Table

	Command	Function
1	\$za<CR>	Set axis X & Y to zero
2	\$br=[1-7] <CR>	Modify baud rate. See Baud Rate Code Table
3	\$oc=[0/1] <CR>	0-Enter ASK mode, 1-Enter Continuous output ¹
4	\$up=[0-9] <CR>	Set data output rate. See Data Update Code Table

¹In ASK mode, when the inclinometer receives a letter 'A', it will output data once. When command is implemented, the inclinometer will return "Set OK!<0x0d>0x0a>"

Baud Rate Code Table

Code	1	2	3	4	5	6	7	8
Baud Rate	1200	2400	4800	9600	19200	38400	57600	115200

(Default - 9600)

Data Update Code Table

Code	1	2	3	4	5	6
Update	5Hz	10Hz	20Hz	25Hz	33Hz	50 Hz

(Default - 5Hz)

*Output is linear with change in degrees tilt.

*Zero Function: Short green and black wires at power-on for 3 seconds and release. Do not short wires in operation mode

RS232 UART Communication Protocol:

1. Configuration: Baud rate 9600(default), see options below.
2. Data output format
X:±xx.xx;Y:±xx.xx<CR><LF>
3. Commands Table

	Command	Function
1	\$za<CR>	Set axis X & Y to zero
2	\$br=[1-7] <CR>	Modify baud rate. See Baud Rate Code Table
3	\$oc=[0/1] <CR>	0-Enter ASK mode, 1-Enter Continuous output ¹
4	\$up=[0-9] <CR>	Set data output rate. See Data Update Code Table

¹In ASK mode, when the inclinometer receives a letter 'A', it will output data once. When command is implemented, the inclinometer will return "Set OK!<0x0d>0x0a>"

Baud Rate Code Table

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