



## D820 Shallow Water Digital Tiltmeter

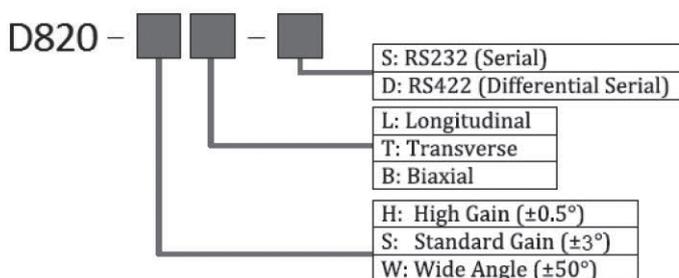
The model D820 Shallow Water is a high-precision submersible tiltmeter for use in fresh and salt water applications with RS232 or RS422 digital output. Using an absolute gravity referenced electrolytic sensor, the D820 delivers superior measurement accuracy with virtually no long-term drift. High-gain units are sensitive to <math><0.0017\text{ mm/m}</math> or better. All units are rated to 200 meters (656.2 ft) water-proof for advanced protection from the elements. Use the D820 "Shallow Water" for structural monitoring, angle measurement and control, platform leveling and more.



### SPECIFICATIONS

	High Gain	Standard Gain	Wide Angle
Angular Range	$\pm 0.5^\circ$	$\pm 3^\circ$	$\pm 50^\circ$
Resolution	$<0.0001^\circ$	$0.0001^\circ$	$0.002^\circ$
Repeatability	$0.0003^\circ$	$0.0003^\circ$	$0.004^\circ$
Non-Linearity	0.1%	0.1%	0.1%
Kz Temp Coefficient	$\pm 0.0002\text{ }^\circ/\text{ }^\circ\text{C}$ (typical)		$\pm 0.002\text{ }^\circ/\text{ }^\circ\text{C}$ (typical)
Ks Temp Coefficient	$0.04\%/^\circ\text{C}$ (typical)		$<0.1\%/^\circ\text{C}$ (typical)
Channels	Tilt, Temperature, Serial No.		
Time Constant	0.15 sec		
Output	RS232, RS422		
Output Format	NMEA XDR, Trimble TCM, Ashtec compatible, Simple (default: X, Y, Temp., S/N)		
Baud Rate	9600 (default), 19200, 28800, 57600, 115200, 130400		
Power	7-28 VDC @ 30mA, 250 mV ripple max, reverse polarity protected		
Environmental	$-4^\circ$ to $+60^\circ\text{C}$ operational, $-30^\circ$ to $+100^\circ\text{C}$ storage. Submersible to 200 meters (656.2 ft)		
Mounting	Two no. 10 stainless steel mounting screws.		
Materials	316 SS		
Dimensions & Weight	92.1 x 112.4 x 61 mm, 1.6 kg		
Housing Connector	6-pin bulkhead, male plug		
Mating Cable	6-conductor unshielded, 20AWG female receptacle with locking sleeve, neoprene jacket, 24"		

### HOW TO ORDER





**HOW TO ORDER**

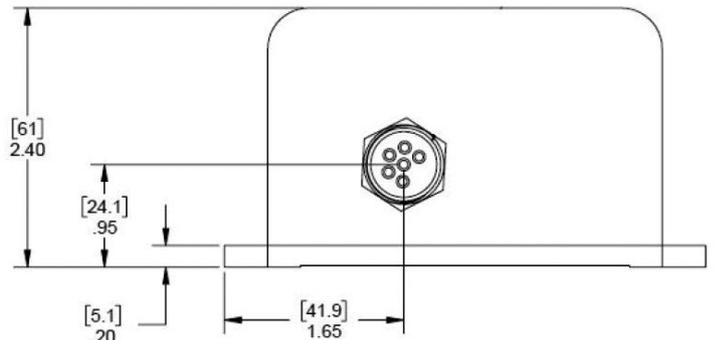
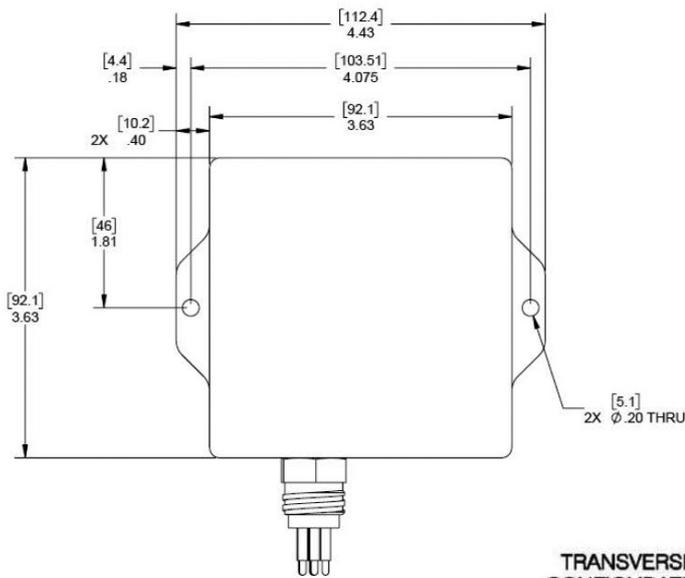
**Wiring/Pin Out – RS232**

Pin	Assignment	Color
1	Pwr Gnd	Black
2	N/C	White
3	Pwr	Red
4	RxD	Green
5	N/C	Orange
6	TxD	Blue

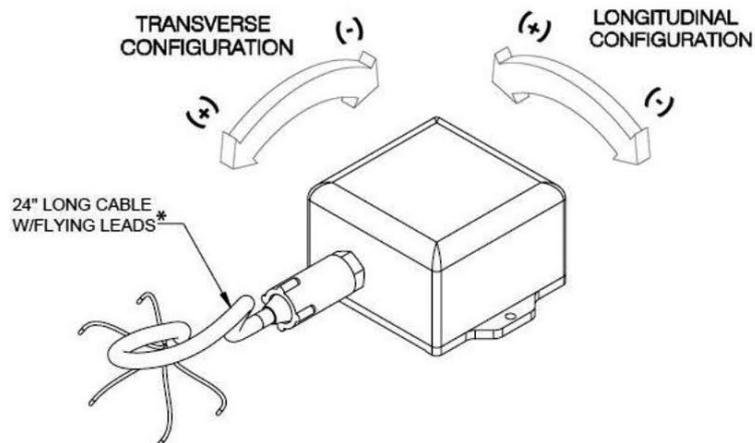
**Wiring/Pin Out – RS422**

Pin	Assignment	Color
1	Pwr Gnd	Black
2	Tx-	White
3	Pwr	Red
4	TX+	Green
5	RX-	Orange
6	RX+	Blue

**DIMENSIONS**



UNITS: [mm]  
IN



\*Custom cable lengths available on request



**PART NUMBERS**

<b>D820 with RS232 Output</b>	
<b>Part Number</b>	<b>Model Long Description</b>
98821-01	D820-HB-S, $\pm 0.5^\circ$ Shallow Water, High Gain, Biaxial, RS232 Digital Tiltmeter
98821-02	D820-SB-S, $\pm 3^\circ$ Shallow Water, Standard-Angle, Biaxial, RS232 Digital Tiltmeter
98821-03	D820-WB-S, $\pm 50^\circ$ Shallow Water, Wide-Angle, Biaxial, RS232 Digital Tiltmeter
98821-04	D820-HT-S, $\pm 0.5^\circ$ Shallow Water, High Gain, Transverse (Uniaxial), RS232 Digital Tiltmeter
98821-05	D820-ST-S, $\pm 3^\circ$ Shallow Water, Standard-Angle, Transverse (Uniaxial), RS232 Digital Tiltmeter
98821-06	D820-WT-S, $\pm 50^\circ$ Shallow Water, Wide-Angle, Transverse (Uniaxial), RS232 Digital Tiltmeter
98821-07	D820-HL-S, $\pm 0.5^\circ$ Shallow Water, High Gain, Longitudinal (Uniaxial), RS232 Digital Tiltmeter
98821-08	D820-SL-S, $\pm 3^\circ$ Shallow Water, Standard-Angle, Longitudinal (Uniaxial), RS232 Digital Tiltmeter
98821-09	D820-WL-S, $\pm 50^\circ$ Shallow Water, Wide-Angle, Longitudinal (Uniaxial), RS232 Digital Tiltmeter

<b>D820 with RS422 Output</b>	
<b>Part Number</b>	<b>Model Long Description</b>
98822-01	D820-HB-D, $\pm 0.5^\circ$ Shallow Water, High Gain, Biaxial, RS422 Digital Tiltmeter
98822-02	D820-SB-D, $\pm 3^\circ$ Shallow Water, Standard-Angle, Biaxial, RS422 Digital Tiltmeter
98822-03	D820-WB-D, $\pm 50^\circ$ Shallow Water, Wide-Angle, Biaxial, RS422 Digital Tiltmeter
98822-04	D820-HT-D, $\pm 0.5^\circ$ Shallow Water, High Gain, Transverse (Uniaxial), RS422 Digital Tiltmeter
98822-05	D820-ST-D, $\pm 3^\circ$ Shallow Water, Standard-Angle, Transverse (Uniaxial), RS422 Digital Tiltmeter
98822-06	D820-WT-D, $\pm 50^\circ$ Shallow Water, Wide-Angle, Transverse (Uniaxial), RS422 Digital Tiltmeter
98822-07	D820-HL-D, $\pm 0.5^\circ$ Shallow Water, High Gain, Longitudinal (Uniaxial), RS422 Digital Tiltmeter
98822-08	D820-SL-D, $\pm 3^\circ$ Shallow Water, Standard-Angle, Longitudinal (Uniaxial), RS422 Digital Tiltmeter
98822-09	D820-WL-D, $\pm 50^\circ$ Shallow Water, Wide-Angle, Longitudinal (Uniaxial), RS422 Digital Tiltmeter

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.

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