

The Model 802 **DeepWater** is a precision voltage-output tiltmeter designed for underwater measurements and other applications under high pressure. The housing is machined from a solid piece of 316 stainless steel and incorporates a high-pressure neoprene connector (700 bars depth rating). Inside are a gravity-referenced electrolytic tilt sensor and our low-noise electronics, delivering sensitivity, high dynamic range and long-term stability under the most demanding conditions. *DeepWater* tiltmeters are excellent choices for monitoring dams, oil platforms, pipelines and underwater machinery. **DeepWater** tiltmeters are also available with 4-20 mA and digital outputs.

DeepWater Model 802 Submersible Uniaxial Tiltmeter



	Model 802-H High-Gain Version	Model 802-S Standard Version	Model 802-W Wide-Angle Version
ANGULAR RANGE	±0.5 degrees	±3 degrees	±50 degrees*
SCALE FACTORS	0.1°/ Volt (single-ended) 0.05°/ Volt (differential)	0.6°/ Volt (single-ended) 0.3°/ Volt (differential)	10°/ Volt (single-ended) 5°/ Volt (differential)
RESOLUTION	<0.0001 degree (<1.75 µradians)	<0.0006 degree (10.5 µradians)	<0.01 degree
REPEATABILITY	<0.0002 degree	0.001 degree	0.02 degree
LINEARITY	1% of full span typical	<2% of full span typical	0.5% of full span typical
TEMPERATURE	Scale factor: Ks < 0.02%/°C typ.	Ks < 0.02%/ºC typ.	Ks < 0.02%/ºC typ.
COEFFICIENT	Zero shift: $K_Z = \pm 0.0002$	$K_Z = \pm 0.0002 \text{ degree/}{}^{\circ}C \text{ typ.}$	$K_Z = \pm 0.002 \text{ degree/oC typ.}$
TIME CONSTANT, T	1.75 sec. (2-pole Butterworth low-pass filter), faster response available 0.15 second		
TILT OUTPUT	\pm 5 VDC single-ended, \pm 10 VDC differential (both provided)		
TEMPERATURE OUTPUT	0.1°C/mV (single-ended), -40° to $+100^{\circ}$ C, $\pm 0.75^{\circ}$ C accuracy, 0° C = 0 mV		
OUTPUT IMPEDANCE	270 Ohms, short circuit and surge protected		
POWER REQ'TS.	+8 to +18 VDC @ 8 mA, 250 mV peak-to-peak ripple max., reverse polarity protected		
ENVIRONMENTAL	-25° to +70° C operating, -30° to +100° C storage; submersible to 250 bars (3,600 psi)		
ENCLOSURE & MOUNTING	316 stainless steel enclosure, machined from single block, 149 x 91 x 82 mm (5.85 x 3.56 x 3.20 inches). Four 5.1 mm (0.201 inch) dia. external mounting holes (see drawing)		
SEALS	Nitrile (Buna-N) face seal O-rings in lid and bulkhead connector		
CONNECTORS	6-pin male bulkhead connector (Subconn MCBH6M), neoprene over brass body; mating in-line connector on 2-ft whip (Subconn MCIL6F); 700 bars (10,000 psi) depth rating		
CABLE	6-conductors, two-types available: 1) Neoprene, 20 AWG, no shield <i>or</i> 2) PVC- jacketed, polypropylene- insulation, 24 AWG, shielded. Order cable separately.		
WEIGHT	5 kg (11 lb)		

* Greater range available

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Connector Pin	Wire Color in Cable	Function
1	Black	Power Ground*
2	White	Signal Ground*
3	Red	+8 to +18 Volts DC
4	Green	+ Tilt
5	Yellow (Orange)	Temperature
6	Blue	- Tilt
		*

*common

Ordering Information

Model 802-H/L	High-Gain Version, Longitudinal
Model 802-H/T	High-Gain Version, Transverse
Model 802-S/L	Standard Version, Longitudinal
Model 802-S/T	Standard Version, Transverse
Model 802-W/L	Wide-Angle Version, Longitudinal
Model 802-W/T	Wide-Angle Version, Transverse

Cable Options

Part No.	Feature	
70304	PVC-jacketed cable, 6mm dia. (see reverse), specify length	
SO-20/6	Neoprene cable, 9mm dia. (see reverse), specify length	
SPLICE	Waterproof cable splice	

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