

# TUFF TILT 801 - Uniaxial Tiltmeter



PRECISION & DURABILITY  
 ELECTROLYtic TILT TRANSDUCER  
 RUGGED WEATHERPROOF ENCLOSURE

The TUFF TILT 801 uniaxial tiltmeter combines precision and durability in an economical instrument for a wide variety of monitoring and measurement applications

## Description

The **TUFF TILT 801** is an economical uniaxial tiltmeter for a wide variety of monitoring and measurement applications. It incorporates a gravity-referenced electrolytic tilt transducer as the internal sensing element, offering unrivaled precision and long-term stability. Housed in a rugged NEMA 4X enclosure, this analog output tiltmeter may be used outdoors and in other wet or harsh environments, although the unit is not submersible.

The **TUFF TILT** Uniaxial Tiltmeter is ideal for structural load testing, monitoring of walls and foundation movement, surveillance of natural and manmade structures (bridges, dams, etc.) and machine positioning and control.



## Key Features

- Easy to install
- Long-term stability
- High dynamic range
- Precision and durability

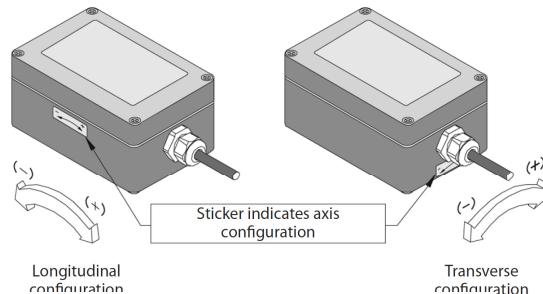
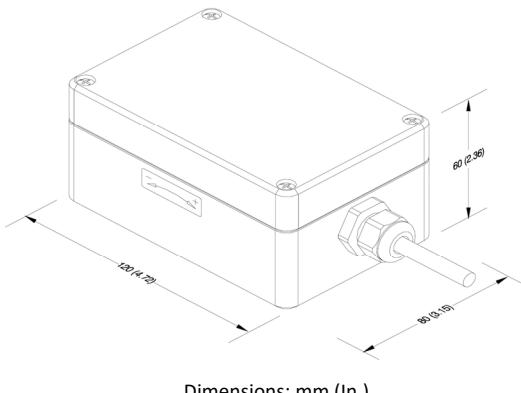
## Applications

- Dams
- Bridges
- Structural load testing
- Monitoring of walls and foundation movement
- Machine positioning

# TUFF TILT 801 - Uniaxial Tiltmeter

## Specifications

Model	801-H	801-S	801-W
	HIGH-GAIN VERSION	STANDARD VERSION	WIDE-ANGLE VERSION
Angular range	$\pm 0.5^\circ$	$\pm 3^\circ$	$\pm 50^\circ*$
Scale factor	0.1°/ volt (single-ended)	0.6°/ volt (single-ended)	10°/ volt (single-ended)
Resolution	0.0001° (1.75 $\mu$ radian)	0.0006° (10.5 $\mu$ radian)	0.01°
Repeatability	0.0002°	0.001°	0.02°
Linearity	1% of F.S., typical	<2% of F.S., typical	0.5% of F.S., typical
Temperature coefficient			
Scale factor	$K_s < 0.02\% / {}^\circ C$ , typ.	$K_s < 0.02\% / {}^\circ C$ , typ.	$K_s < 0.02\% / {}^\circ C$ , typ.
Zero shift	$K_z = \pm 0.0002^\circ / {}^\circ C$ , typ.	$K_z = \pm 0.0002^\circ / {}^\circ C$ , typ.	$K_z = \pm 0.0002^\circ / {}^\circ C$ , typ.
Time constant (T)	1.75 s (2-pole Butterworth low-pass filter) (801-H and 801-S), 0.15 s (801-W)		
Power requirements	+8 to +18 VDC @ 8 mA, 250 mV peak-to-peak ripple max., reverse polarity protected		
Output channels			
Tilt	$\pm 5$ VDC single-ended, $\pm 10$ VDC differential (both are provided)		
Temperature	-400 to +1000 mV, single-ended. Scale factor of temperature sensor = $0.1^\circ C / mV$ , 0 mV = $0^\circ C$		
Operating temperature	-25 to +70°C NEMA 4X (IP-65) rated enclosure for outdoor applications		
Storage temperature	-30 to +100°C		
Cable	3 m, 6-conductor + one overall shield, PVC jacket, tinned ends		
Enclosure & Mounting	Painted, die-cast aluminum box, 120 × 80 × 60 mm		
	Four 4.4 mm dia. mounting holes on 107 × 67 mm pattern		
Weight	0.6 kg		



Longitudinal and Transverse Configurations