

OSMOS Inclinometers of high measuring accuracy for inclination measurement in the ranges of ± 10 degrees with a non-amplified, non-conditioned output signal.

Features

- linear output characteristics
- high measurement accuracy
- minimal linearity deviation
- high long-term stability
- hysteresis free output signal
- minimal zero point drift
- integrated sensor electronics
- low power consumption
- different output signal options
- no interference by ambient electromagnetic fields
- shockproof as without moving mechanical parts
- hermetically sealed
- sensor electrically isolated within the housing from point of measurement - no ground connections
- zero point adjustable through 360° using clamping ring

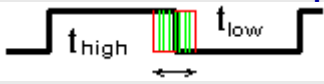
Description

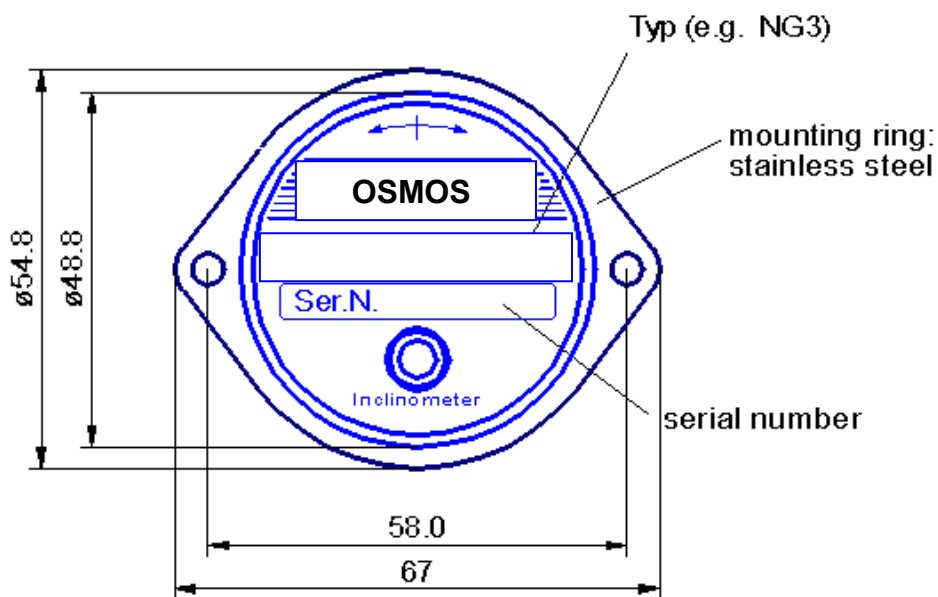
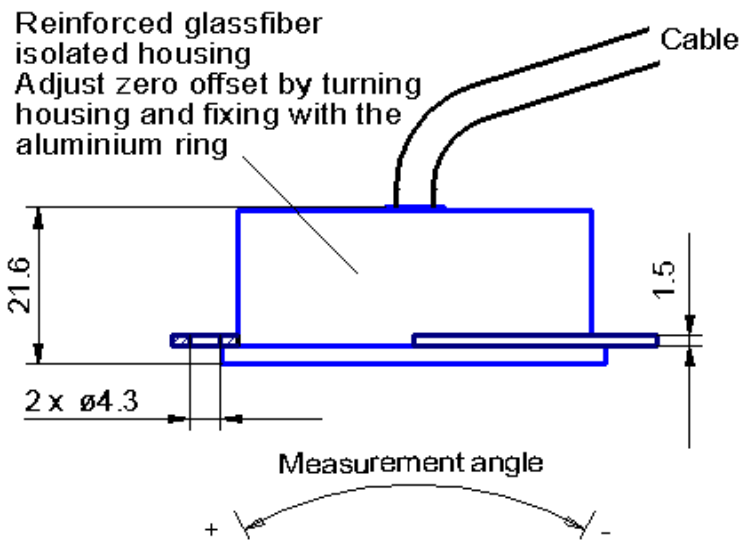
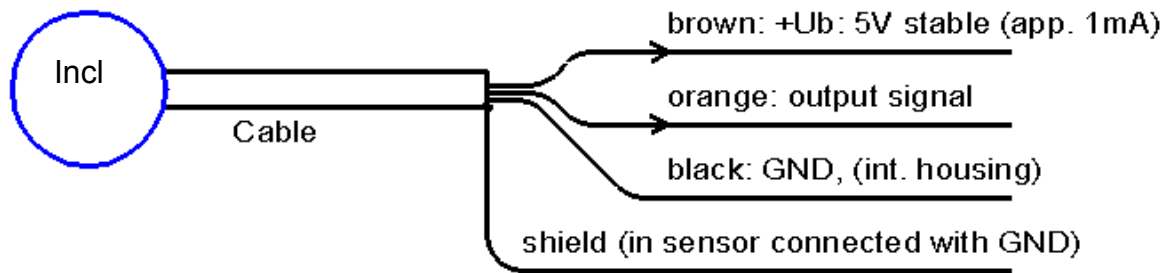
The OSMOS Tilt_05_V is a capacitive, liquid based inclinometer with integrated sensor electronics. They are manufactured with either an analog DC or a pulse width modulated output. The sensor electronics require only minimal power and are in conjunction with the capacitive primary transformer characterized by high accuracy and high long-term stability. The measurement technique enables a linear relationship between the angle to be measured and the output signal. The determined angle is independent of the local gravitational acceleration, that means that no matter where the measurement is being taken, whether in Europe, Australia, on Mount Everest or on the moon, the inclination will be measured correctly anywhere.

Application

The OSMOS inclinometers Tilt_05_V are suitable for applications requiring high measurement accuracy with low linearity deviations and high long-term stability for measurement of relatively large inclination angles. Typical areas of application include construction, mining, vehicles, surveying equipment, aircraft, transportation and conveyor systems as well as ships.

Technical Specifications

Type	OSMOS Tilt_05_V
Measuring range	± 10 degrees
Resolution	<0,001 degrees
Dimensions	see dimension drawing
Linearity deviation	<0,1% of measuring range
Transverse sensitivity	<0.5% at 45° tilt
Settling time	approx. 0,3 seconds
Supply voltage U_{bN} (regulated)	5 Volt
Permissible supply voltage range U_{bz}	3...6 Volt
Current drawn at $U_b=5$ Volt	approx. 1mA
Degree of protection	IP65
Operating temperature	-40...+85°C
Storage temperature	-45...+90°C
Weight (without clamping ring or cable)	approx. 110 grams
Electrical connection	0,5m shielded cable \varnothing 4,6mm
Values for analog DC output at $U_{bN}=5$Volt	
Sensitivity	approx. 9,5mV/degree
Temperature drift of sensitivity	<-0,12% /K
Temperature drift of zero point	<0,01mV/K
Zero offset at $U_b=5$ V	2,5 \pm 0,1Volt - generally: 0,5 U_b \pm 4%
Output impedance	10 kOhm
Values for pulse width modulated output at $U_{bN}=5$Volt	
	
Sensitivity $dt_{(E)}/(t_{high}+t_{low})$	approx. $60 \cdot 10^{-3}$ /degree
Temperature drift of sensitivity	<-0,12% / K
Temperature drift of zero point	< $2 \cdot 10^{-5}$ / K
Zero pulse width ratio t_{high}/t_{low}	1 \pm 4%
Output frequency	approx. 100Hz to approx. 1MHz (optional)



**Caution! Do not reverse operating voltage polarity!
6 Volts is the maximum supply voltage!**