



Precision angle sensor PWG series

PWG 50 S 120 (120°)

PWG 50 S 200 (200°)

PWG 50 S 350 (350°)

Technical description

The angle sensor is developed for rough operation under extreme environmental conditions in mobile applications. Angle ranges of $\pm 60^\circ$, $\pm 100^\circ$ or $\pm 175^\circ$ can be recorded.

The main application is the measurement of the steering angle in safety related electronic-hydraulic steering systems direct on the wheel boogie.

Equipped with a conductive plastic resistance element and a long term stabile multiple finger wiper, the angle sensor is suitable for durable operation even under challenging conditions.

A tough full metal housing, continuous stainless steel shaft with double ball bearing and a large distance of the bearing places as well as an interlocking top cover protect the wiper from outer force effects. Hermetic sealing as well as the accuracy and reliability of the absolute analog angle measurement are further special characteristics.

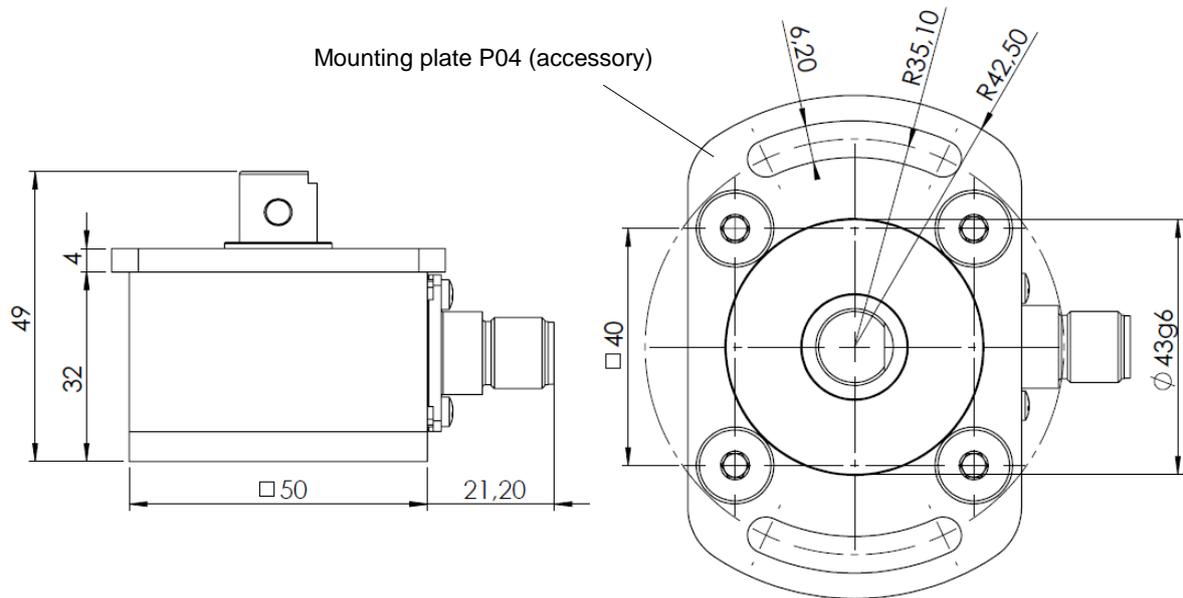
The massive and compact cube construction allows the direct installation at the axle without additional protective measures.

The stabile shaft allows a direct steering via a strong lever or tappet.

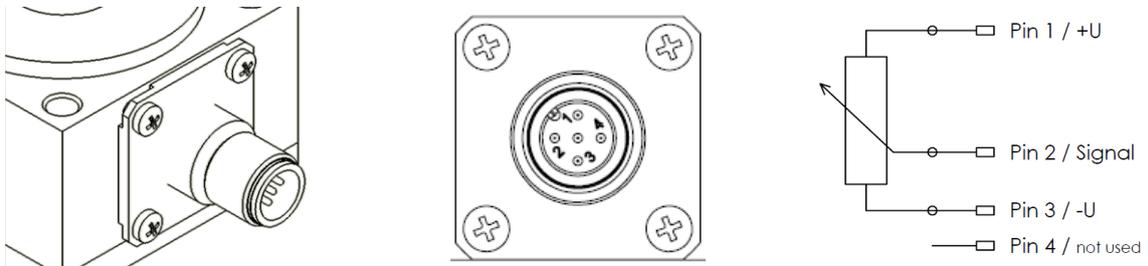
Special features

- Extreme tough cube design
- Absolute potentiometric measuring system with highest lifetime.
- Increased corrosion protection by shaft made of stainless steel and anodized housing made out of massive aluminum.
- Accurate execution with very good linearity and temperature reliability.
- Absolute splash-proof
- With connector or PG gland available.
- Very high life time even at vibration-rich places.
- High resolution
- No mechanical turning limit

Dimensions

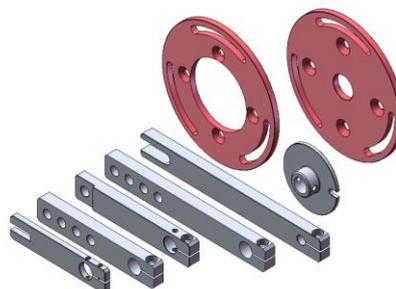


Electrical connection connector M12



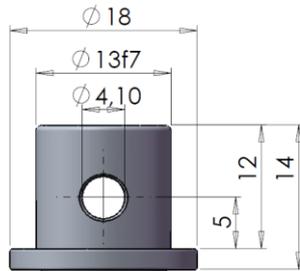
Accessory

An extensive program of accessories enables a professional assembling in all imaginable installation circumstances

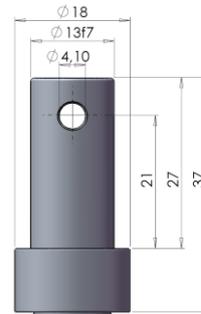


Shaft types

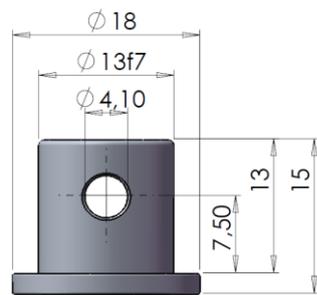
Shaft 1



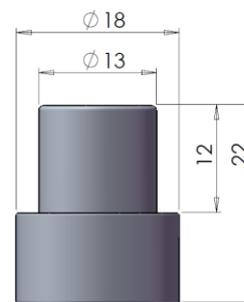
Shaft 2



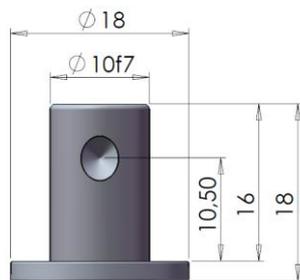
Shaft 3



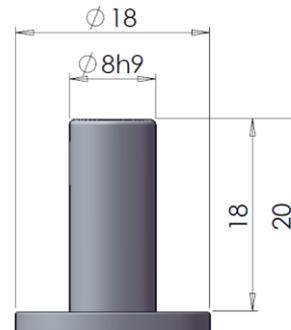
Shaft 4



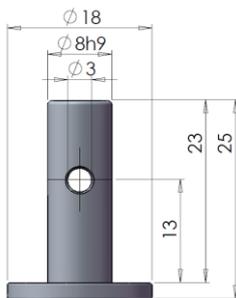
Shaft 5



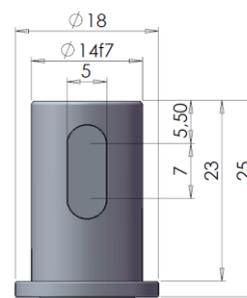
Shaft 6



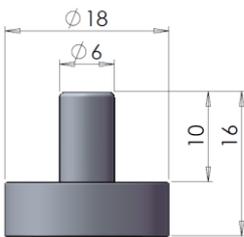
Shaft 7



Shaft 8



Shaft 9



Technical data

Electrical data

	PWG 50 S 120	PWG 50 S 200	PWG 50 S 350
Electrical function angle	120° ±2°	200° ±2°	350° ±2°
Nominal resistance	2kΩ	2kΩ	5kΩ
Independent linearity	≤±0,2%	≤±0,15	≤±0,1
Nominal resistance tolerance	±15%		
Micro linearity	≤±0,1%		
Resolution	infinite		
Temperature coefficient	5 ppm/°C (typ.)		
Wiper rated current	10µA		
Max. permissible wiper current	10mA (not for continuous operation)		
Max. power loss at +70°C	3W		
Max. permissible supply voltage	42V		
Isolation resistance	>100 MΩ at 500VDC		
Disruptive strength	1000 Vrms, 3000Vrms with POM-shaft		

Mechanical data

Permissible operation and storage temp.	-40°C to +100°C
Protection mode	IP 67
Life time	>100 mio. revolution
Mechanical angle	360° rotatable
Max. adjustment speed	50Hz
Oscillation strength (5...2000Hz)	$A_{max} = 0,75mm$, $a_{max} = 20G$
Impact strength	50G/11ms
Max. axial load	300N
Max. radial load	400N
Max. torque	4Ncm (0,04Nm)
Corrosion resistance shaft	stainless steel V2A (1.4305)
Corrosion resistance housing	Red anodized aluminium, sea water resistant
Weight	0,3kg

Order code

