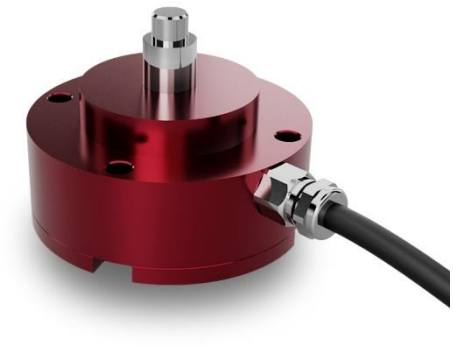

Precision angle sensor PWG series

PWG 64 R 120 (120°)

Technical Description

The angle sensor is developed for rough operation under extreme environmental conditions in mobile applications. Angle ranges of ±60° can be recorded semi redundantly.

With two independent resistance elements and wipers, the angle sensor complies the safety requirements according to SIL-2.

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 construction allows the direct installation at the axle without additional protective measures.

Special features

- Two independent measuring systems
- Extreme tough design
- Safety Integrity Level up to SIL 3.
- Absolute potentiometric measuring system with highest life time.
- 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 water proof
- With connector or PG gland available.
- Very high life time even at vibration-rich places.
- High resolution
- No mechanical turning limit

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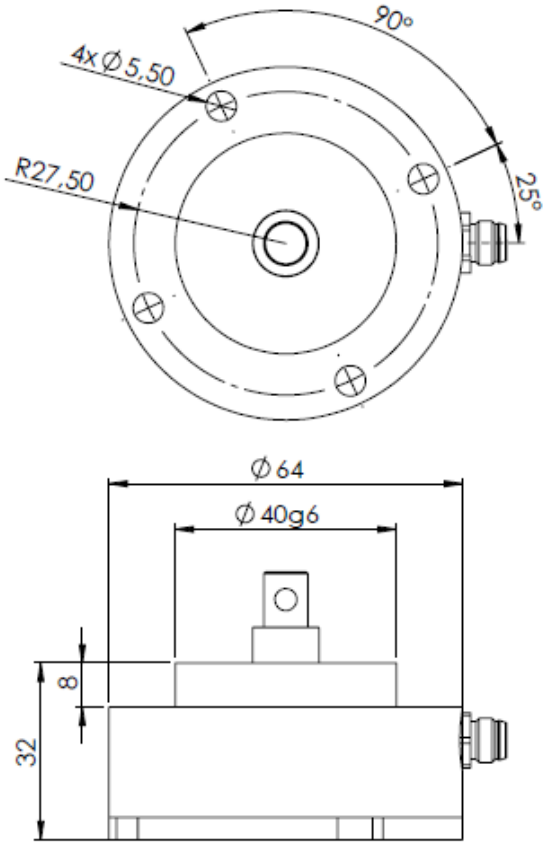
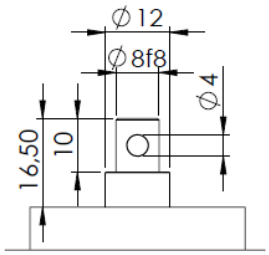
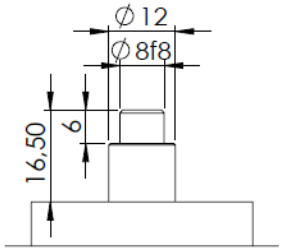
Dimensions



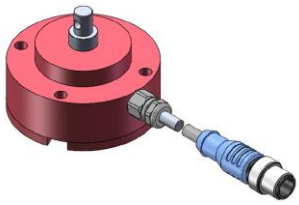
Shaft types

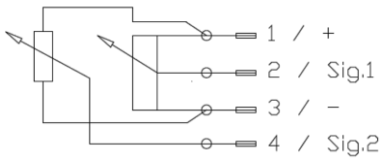
Shaft 10	
Shaft 11	

Electrical connections

Connector M12 & cable

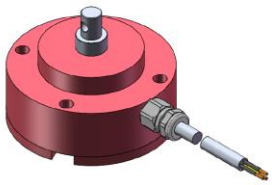
Line type F,
connector 03

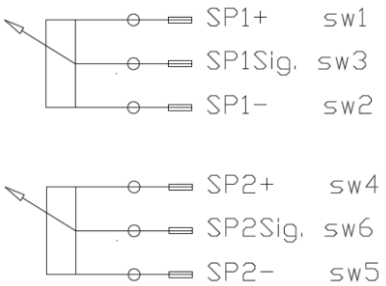




Cable

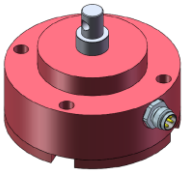
Line type E,
connector 00

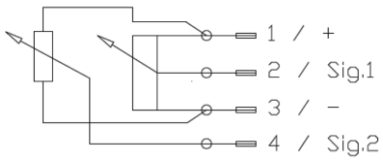




Connector M8

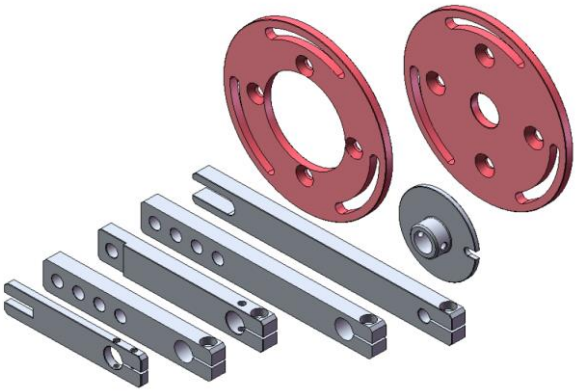
Line type A,
connector 06





Accessory

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



Technical data

Electrical data

Electrical function angle	120°
Nominal resistance	2kΩ
Wiper protect. resistance	1kΩ ±30%
Wiper junction resistance, static	approx. 200 Ω (as delivered condition)
Slope of gradient	0,833% (U/U_0)/°
Nominal resistance tolerance	±20%
Micro linearity	≤± 0,1%
Gradient tolerance	≤± 0,1%
Absolute linearity	≤± 0,2%
Max. deviation track 1 to track 2	≤± 0,2%
Wiper rated current	2µA
Max. permissible wiper current	10mA (not for continuous operation)
Momentary max. wiper current	25mA for <10s at 20°C
Max. permissible supply voltage	28V
Isolation resistance	10MΩ
Temperature coefficient	5 ppm/°C (typ.)

Mechanical data

Permissible operation an storage temp.	-40°C to +100°C
Protection mode	IP 67
Life time	>100 Mio. revolution
Mechanical angle	360° routable
Oscillation strength (10…1000Hz)	0,07g²/Hz, a_{max} =20G
Impact strength	50G /11ms
Max. axial load	200N
Max. radial load	300N
Max. torque	<0,06 Nm (6Ncm)
Corrosion resistance shaft	Stainless steel V2A (1.4305)
Corrosion resistance housing	Red anodized aluminum, sea water resistant
Weight	0,4kg

Order code

PWG □□ □ □□□ - □ □□ □ - □ □□ - □ □□

housing
64 - Ø64x32

type
R - redundant

electrical function angle
120 - 120°

centering
0 - without centering
1 - spigot

shaft
10 - Ø8x16,5 (bore Ø4)
11 - Ø8x16,5
12 - Ø10x16

shaft material
0 - stainless steel V2A (1.4305)
1 - POM

line type
A - without cable (connector on housing)
E - LiFQ-PUR lenghtwise waterproof (6x0,5mm²)
F - WASS-PUR (4x0,34mm²)

connector
00 - without connector
03 - M12 (pin 1-2-3-4), half red. (SIL 2)
06 - M8 (pin 1-2-3-4), half red. (SIL 2)

cable protection
0 - without protection
1 - corrugated tube, NW10
2 - hydraulic hose, DN12
3 - armored conduit

cable length
01 - 1m
02 - 2m
05 - 5m
08 - 8m
10 - 10m
15 - 15m

Preferential types are **in bold**, other on demand.