

Precision angle sensor PWG series

Current output 4...20mA

PWG 79 I (single type)

Technical Description

The angle sensor is developed for rough operation under extreme environmental conditions in mobile applications. The main application is the measurement of the steering angle in safety related electronic-hydraulic steering systems direct on the wheel boogie.

The sensor is equipped with a precision transducer which provides a 4...20 mA norm signal. With this signal angle ranges up to $\pm 175^\circ$ can be recorded.

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

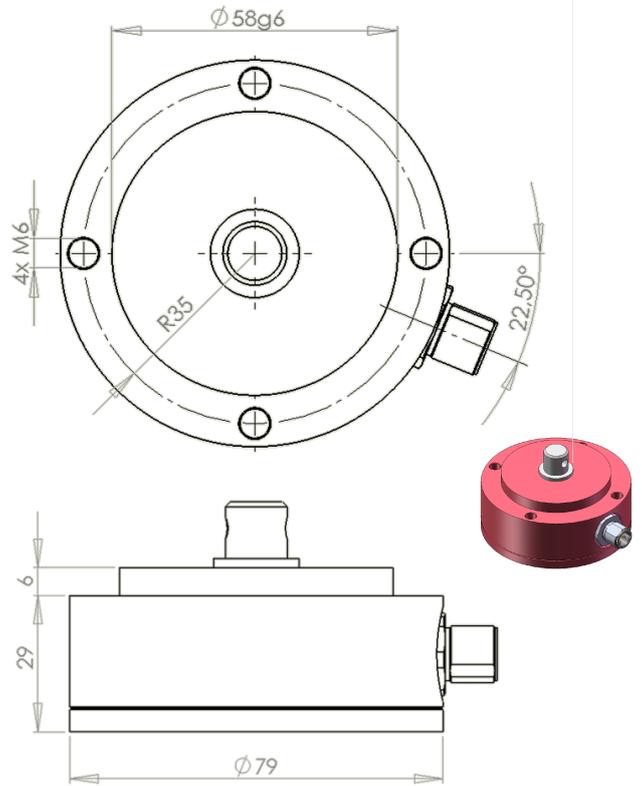
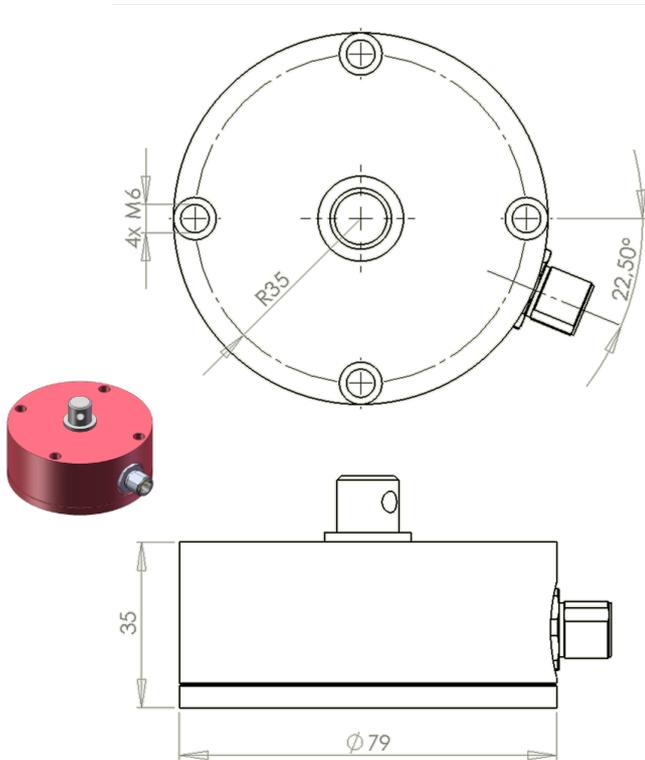
Special features

- Current output 4...20 mA
- Extreme tough design
- Absolute potentiometric measuring system with highest life time.
- Increased corrosion protection by shaft made of stainless steel and anodised housing made out of massive aluminium.
- 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

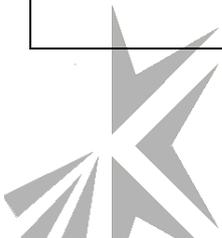
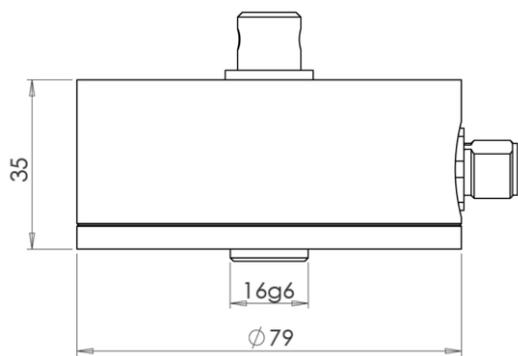


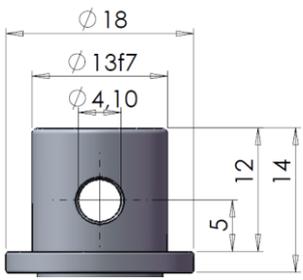
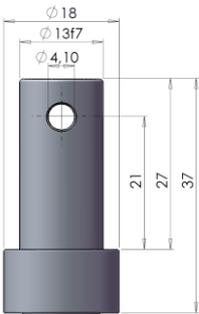
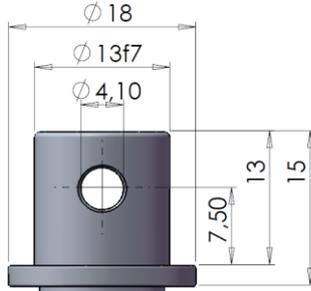
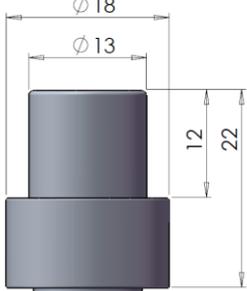
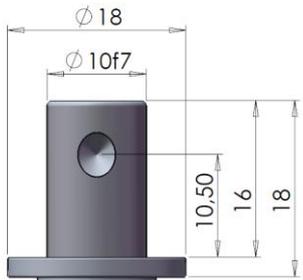
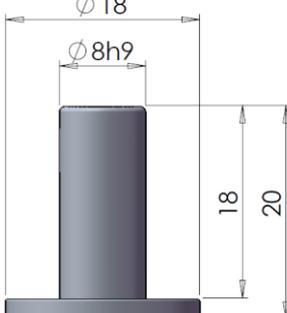
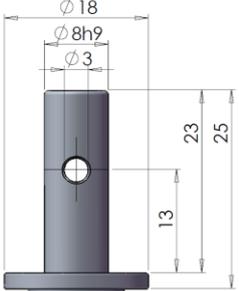
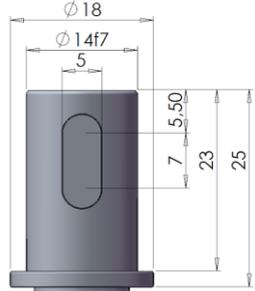
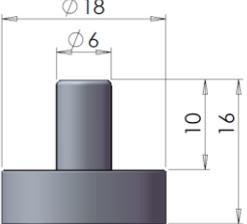
housing - standard

housing - centering flange

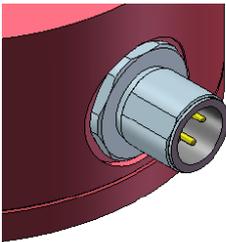
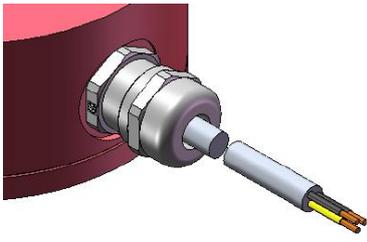
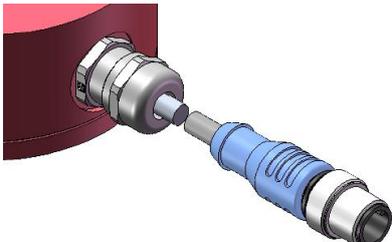
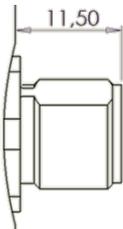
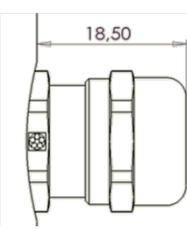
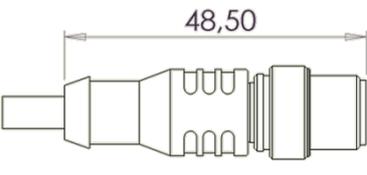
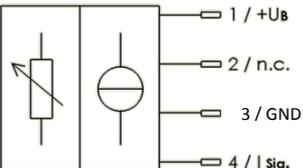
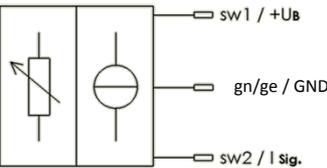
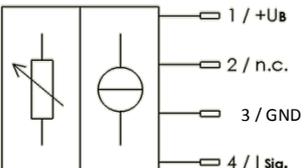


housing - spigot



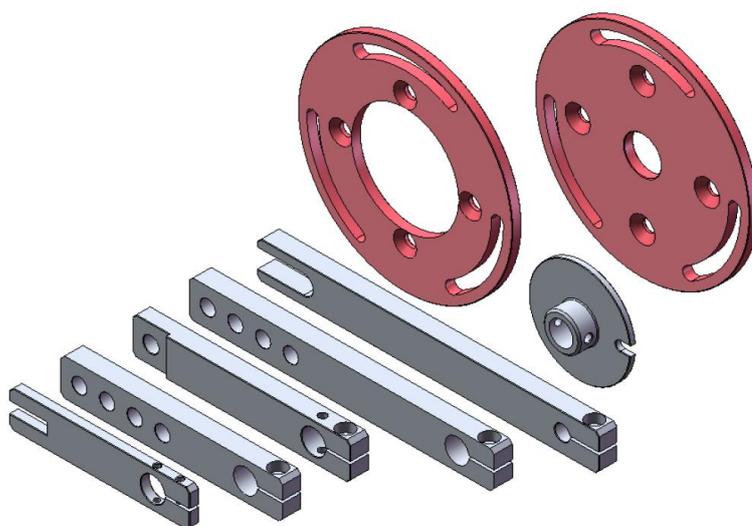
<p>Shaft 01</p> 	<p>Shaft 02</p> 
<p>Shaft 03</p> 	<p>Shaft 04</p> 
<p>Shaft 05</p> 	<p>Shaft 06</p> 
<p>Shaft 07</p> 	<p>Shaft 08</p> 
<p>Shaft 09</p> 	



Connector M12	Direct cable outlet	cable + M12 connector
Line type A, connector 02	Line type C, connector 00	Line type F, connector 02
		
		
		

Accessory

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

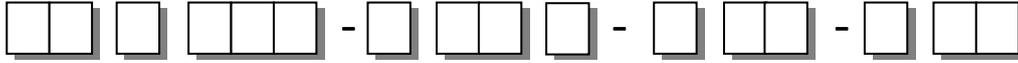


Electrical data				
Electrical function angle	30°, 60°, 80°, 120°, 175°, 200°, 350°			
absolute linearity	≤ ± 0,2%			
Micro linearity	≤ ± 0,1%			
Resolution	practically infinite			
Temperature coefficient	20 ppm/°C (typ.)			
Min. supply voltage at extern load resistor	0Ω	150Ω	240Ω	500Ω
	6V	9V	11V	16V
Max. permissible supply voltage	36 VDC			
EMV	ISO 11452 -4 ISO 11452 -5 DIN EN 61000-4-2 ISO 7637-2			
Isolation resistance	>100 MΩ at 500VDC			
Disruptive strength	1000 Vrms, 3000Vrms at POM shaft			

Mechanical data	
Permissible operation and storage temp.	-40°C to +80°C
Protection mode	IP 67 with connector IP 69 with PG gland
Life time	>100 Mio. revolutions
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 aluminum, sea water resistant
Weight	0,5kg



PWG



housing

79 - Ø79x35

type

S - Single
R - Redundant (SIL3)

electrical function angle

030 - 30° 175 - 175°
060 - 60° 200 - 200°
080 - 80° 350 - 350°
120 - 120°

centering

0 - without centering
1 - centering flange
2 - spigot

shaft

01 - Ø13x12 06 - Ø8x18
02 - Ø13x27 07 - Ø8x23
03 - Ø13x13 08 - Ø14x23 (flute)
04 - Ø13x12 09 - Ø6x10
05 - Ø10x16

shaft material

0 - stainless steel V2A (1.4305)
1 - POM

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

cable length

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

cable protection

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

connector

00 - without connector
02 - M12 (pin 1-3 -4)

Line type

A - **without cable (connector on housing)**
B - Ölflex FD 810 CY (3x0,5mm²), permanently laid
C - **Ölflex FD 855 CP (3x0,5mm²), flexible**
D - Ölflex FD 855 CP (3x0,5mm²), flexible, shield on housing
E - LiFQ-PUR lengthwise waterproof (6x0,5mm²)
F - WASS-PUR (4x0,34mm²)
G - Ployflex FLRY11Y (6x0,5mm²)



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