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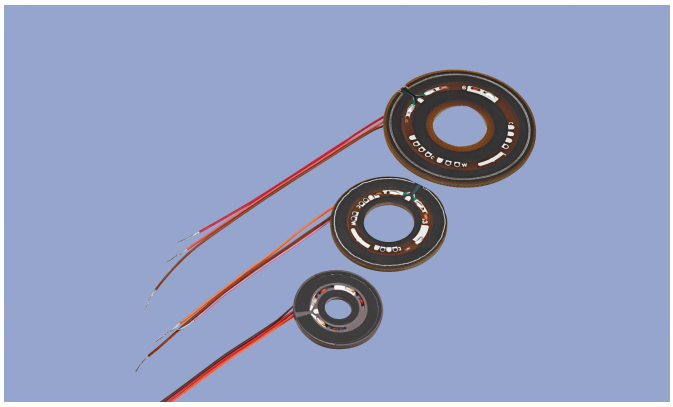
Siedle Group

Resistance Element Potentiometric

PRS



Special Features

- Very flat, suitable for mounting in small fitting conditions
- Easy mounting by bonding (silicone free)
- Outstanding linearity
- Very long live

Applications

- Measuring/control technology
- Manufacturing Engineering (woodwork machines, riveting machines, packaging machines, welding machines)
- Assembly/test devices
- Medical appliances
- Building automation

The PRS series offers the excellent accuracy of potentiometric measuring technology combined with compact installation dimensions.
Rotary resistance elements in open design without housing paired with a wiper are ideally suited for integration in applications that only offer small installation spaces.
The two-part measuring system can be easily integrated into the application. The resistance element is centered over the tightly tolerated inner diameter and can be glued on the support surface. The wiper assembly is simply pressed onto a 3 mm or 6 mm shaft, depending on the model. Compliance with the specified working distance between wiper and resistance element ensures proper function over the entire life time.
The electrical connection is provided via three strain-relieved lead wires.
Due to the open design, the sensor can be used both at the end of a drive shaft and in hollow shaft applications.
The PRS series is available in three sizes, each with a suitable wiper assembly.
Resistance elements in other designs, measuring range and wire lengths on request.

Description

Material	Carrier: glass fiber reinforced epoxy resin
Mounting	Glueing
Resistance element	Conductive plastic
Wiper	Precious metal multi-finger wiper, elastomer damped
Electrical connection	Lead wires 0.034 mm² (AWG 32), PTFE

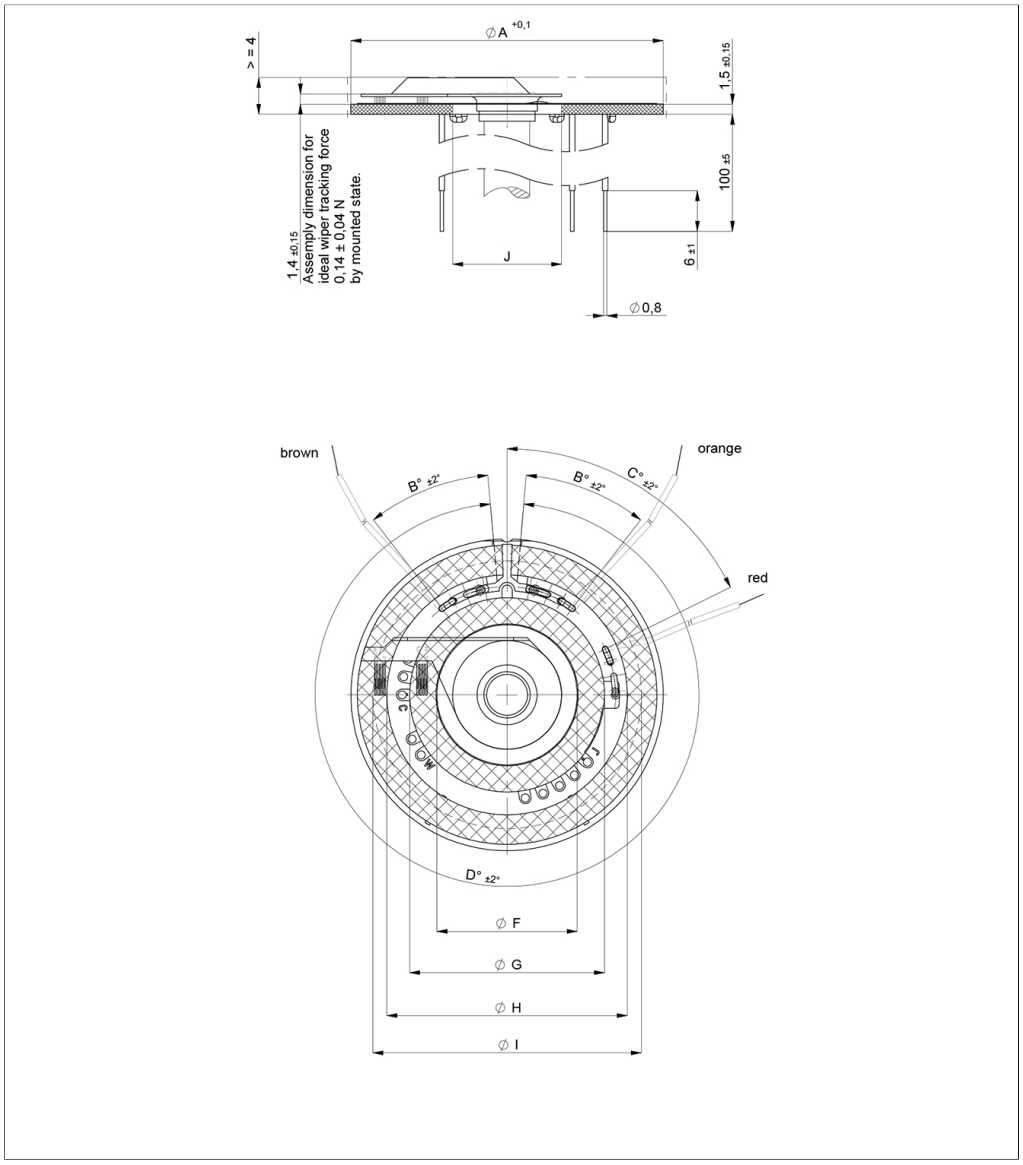
Mechanical Data

Type	**PRS-25-A502**	**PRS-45-A502**	**PRS-65-A502**
Outer diameter dim. A	25.2 ±0.1 mm	34 ±0.1 mm	45.86 ±0.1 mm
Electrical outlet dim. B	76° ± 2°	50° ± 2°	37° ± 2°
Electrical outlet dim. C	165° ± 2°	123° ± 2°	65° ± 2°
Diameter dim. F	8 ±0.2 mm	14.7 ±0.2 mm	20.6 ±0.2 mm
Diameter dim. G	11.8 ±0.2 mm	18.6 ±0.2 mm	28.6 ±0.2 mm
Diameter dim. H	16.4 ±0.2 mm	25 ±0.2 mm	35.3 ±0.2 mm
Diameter dim. I	20.2 ±0.2 mm	28.9 ±0.2 mm	39.4 ±0.2 mm
Inner diameter dim. J	7.6 +0.04 mm	14.4 +0.04 mm	16 +0.05 mm

Ordering Specifications

P/N	Type
400065111	PRS-25-A502
400065114	PRS-45-A502
400065115	PRS-65-A502

Drawing



CAD data see
www.novotechnik.de/en/download/cad-data/

Technical Data

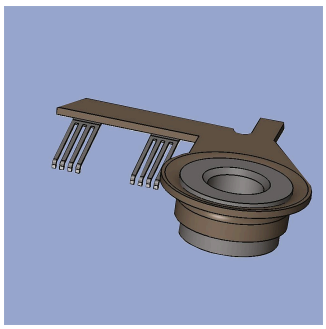
Type	PRS-25-A502	PRS-45-A502	PRS-65-A502
Electrical measuring range (dim. D)	345° ±2°	350° ±2°	355° ±2°
Defined electr. measuring range	339°	344°	349°
Output signal	Voltage divider		
Resistance value	5 kΩ	5 kΩ	5 kΩ
Resistance tolerance	± 20 %		
Independent linearity	≤ ±0.2 %FS	≤ ±0.15 %FS	≤ ±0.1 %FS
Repeatability	≤ ±0.01°		
Recommended operating wiper current	≤ 1 µA		
Max. wiper current in case of malfunction	10 mA		
Max. permissible supply voltage Ub	42 VDC		
Effective temp. coefficient of the output-to-applied voltage ratio	typ. 5 ppm/K		
Insulation resistance (500 VDC)	≥ 10 MΩ		
Environmental Data			
Operating temperature	-40 ... +100°C		
Life	typ. > 100 Mio. movements (Depending on installation tolerances and environmental conditions)		
Functional safety	If you need assistance in using our products in safety-related systems, please contact us		

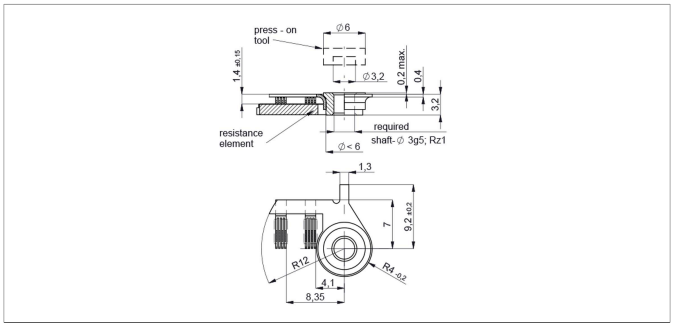
Important:
All values specified in this data sheet for linearity, lifetime and temperature coefficient are only valid for a sensor used as a voltage divider with virtually no load applied to the wiper (Ie ≤ 1 µA).

Connection Assignment

Signal	Lead wires
Connection 1	BN
Connection 2 Signal output	RD
Connection 3	OG

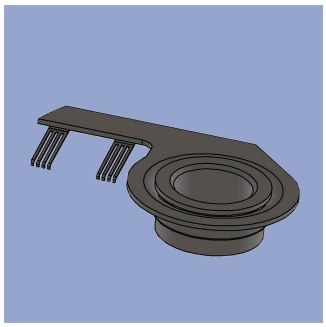
Wipers

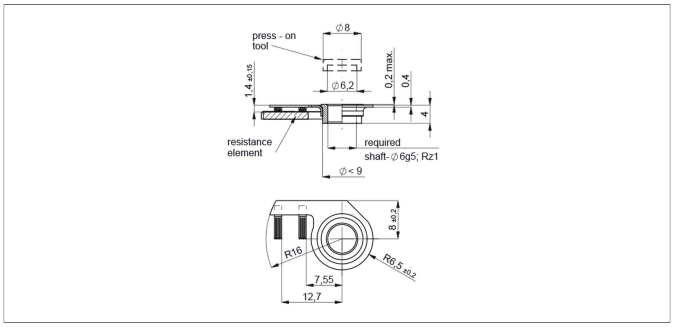




S-094
Wiper assembly for resistance element PRS-25-A502 to press on shaft diameter 3 mm, pressing force 80 ... 250 N.
Contact force of 1 wiper with 4 fingers 0.14 ±0.04 N when mounted (distance dimension according drawing).
Installation dimensions are not production dimensions.

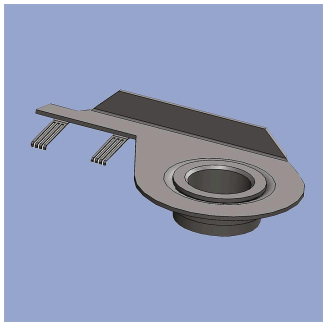
P/N	Pack. unit [pcs]
400070137	1

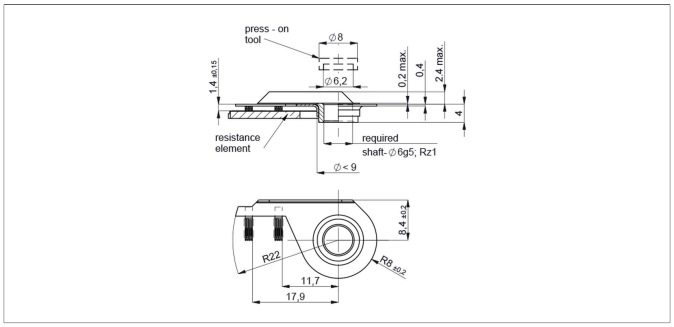




S-098
Wiper assembly for resistance element PRS-45-A502 to press on shaft diameter 6 mm, pressing force 200 ... 360 N.
Contact force of 1 wiper with 4 fingers 0.14 ±0.04 N when mounted (distance dimension according drawing).
Installation dimensions are not production dimensions.

P/N	Pack. unit [pcs]
400070138	1





S-152
Wiper assembly for resistance element PRS-65-A502 to press on shaft diameter 6 mm, pressing force 200 ... 360 N.
Contact force of 1 wiper with 4 fingers 0.14 ±0.04 N when mounted (distance dimension according drawing).
Installation dimensions are not production dimensions.

P/N	Pack. unit [pcs]
400070139	1

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The specifications contained in our datasheets are intended solely for informational purposes. The documented specification values are based on ideal operational and environmental conditions and can vary significantly depending on the actual customer application. Using our products at or close to one or more of the specified performance ranges can lead to limitations regarding other performance parameters. It is therefore necessary that the end user verifies relevant performance parameters in the intended application. We reserve the right to change product specifications without notice.