

# Hollow-Shaft Conductive Plastic Potentiometric Sensors

# WAL300/305 Series



## Special features

- hollow shaft
- low-cost
- $4 \times 10^6$  movements
- $\bullet$  very high resolution better than  $0.3^\circ$

Careful selection of materials and high-quality components ensure a constant and accurate angle measurement throughout the entire service life of the sensor.

Special designs with other angular ranges are available on request.



Description		
Size	housing diameter 32 mm	
Housing	Thermoplast	
Bearings	sleeve bearings	
Resistance element	conductive plastic	
Wiper assembly	precious metal multi-finger wiper	
Electrical connections	soldering pads	

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#### WAL300 WAL305 Type designations Mechanical Data Dimensions see drawing A see drawing B 0 Mechanical travel continuous Permitted shaft loading (axial and radial) static or dynamic force 1 Ν Torque ≤ 1 Ncm Maximum operational speed 120 RPM 8 Weight g Electrical Data Actual electrical travel 340 0 Resistance value 5 kΩ Resistance tolerance % ±20 0.09 (=0.3°) Repeatability % Effective temperature coefficient of the output-to-applied voltage 5 (typical) ppm/K Independent linearity ±2 % V Max. permissible applied voltage 35 Recommended operating wiper current ≤ 1 μA Max. wiper current in case of malfunction 5 mΑ Insulation resistance (500 VDC, 1 bar, 2 s) ≥ 10,000 MΩ Dielectric strength V (AC, 50 Hz, 1 min, 1 bar) 500 Environmental Data -25...+75 °C Temperature range Vibration 50...500 Hz $A_{max} = 0.75$ mm $a_{max} = 2$ g Life 4 x 10<sup>6</sup> movements Shock (DIN IEC 68 T2-27) 50 g 10 ms Protection class (DIN 40050) IP 50

Order designations			
Туре	Art. no.	R in kΩ	
WAL300 5K0 1A	044100	5	
WAL305 5K0 1A	044101	5	

# Order designations / Abbreviations

1A: soldering pads

## Recommended accessories

MAP process-control indicators and display. MUP signal conditioner for standardized output signals.

## Important

All values given for this series – including linearity, lifetime, microlinearity, resistance to external disturbances and temperature coefficient in voltage dividing mode – are quoted for the device operating with the wiper voltage driving an operational amplifier working as a voltage follower where virtually no load is applied to the wiper (le  $\leq 1 \mu$ A).