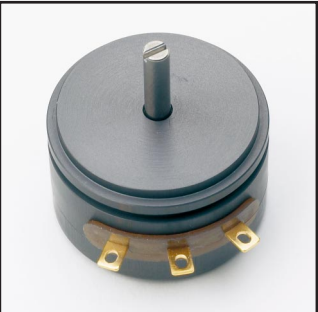


# Standard Potentiometer

## Series P 2500

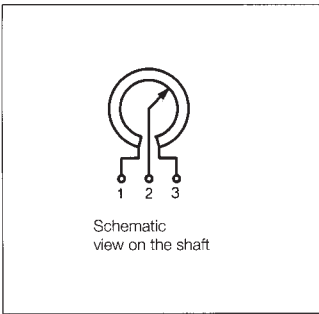
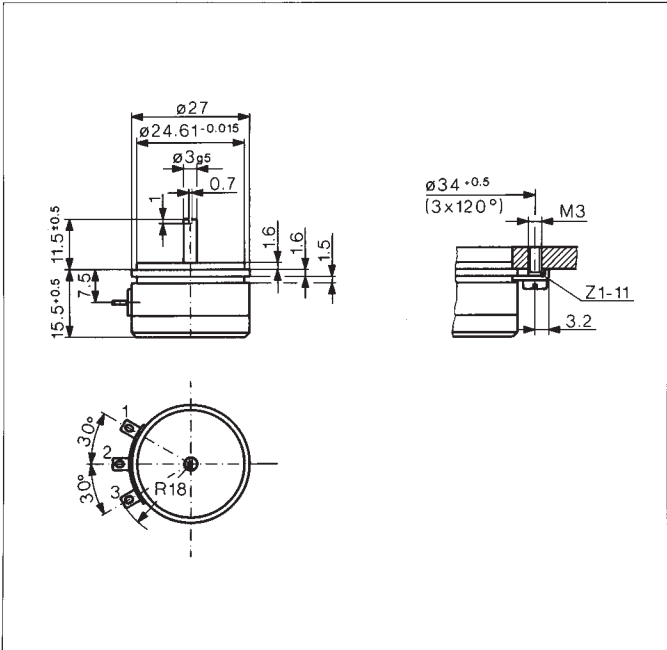


### Special features

- unmatched combination of size, performance and price
- very long life -  $100 \times 10^6$  shaft revolutions
- very good independent linearity - standard  $\pm 0.2 \%$
- very high resolution - better than  $0.01^\circ$
- high admissible operating speed -  $10\,000 \text{ min}^{-1}$
- unrestricted continuous rotation

Precision potentiometer with conductive plastic resistance track. For measuring, control and instrumentation applications.

The distinguishing features of the P 2500 include an all metal case, ball-bearings, conductive-plastic collector track and elastomer-damped wipers for both resistance and collector tracks. Because of its reliability, long life, good linearity, high resolution, high operational speed and corrosion resistance, this component opens applications hitherto closed to conventional potentiometers. Special versions with different electrical travels and shaft dimensions are available.



Description	
Size	Synchro 11
Case	two part, anodized aluminium case and cover
Shaft	stainless steel
Bearings	stainless steel ball bearings
Resistance element	conductive plastic
Wiper assembly	precious metal multi-finger wiper
Electrical connections	gold-plated brass terminals

Mechanical Data		
Dimensions	see drawing	
Mounting	with 3 clamps Z 1 - 11	
Mechanical travel	360, continuous	°
Permitted shaft loading (axial and radial) static or dynamic force	15	N
Torque	≤0.07	Ncm
Maximum operational speed	10 000	min <sup>-1</sup>
Weight	20	g
Electrical Data		
Actual electrical travel	345 ±2	°
Available resistance values	1; 2; 5	kΩ
Resistance tolerance	±10	%
Repeatability	0.003 (Δ 0.01°)	%
Effective temperature coefficient of the output-to-applied voltage ratio	typical 5	ppm/°C
Independent linearity	±0.2 (< 0.2 on request)	%
Max. permissible applied voltage	42	V
Recommended operating wiper current	< 1	μA
Max. wiper current in case of malfunction	10	mA
Insulation resistance (500 VDC, 1 bar, 2 s)	≥10	MΩ
Dielectric strength (50 Hz, 2 s, 1 bar, 500 VAC)	≤100	μA

Environmental Data		
Temperature range	-40...+100	°C
Vibration	5...2000 A <sub>max</sub> = 0.75 a <sub>max</sub> = 20	Hz mm g
Shock	50 11	g ms
Life	100 x 10 <sup>6</sup>	rev.
Protection class	IP 40 (DIN 400 50 / IEC 529)	

Order designations		
Type	Art.no.	R in kΩ
P2501a102	003001	1
P2501a202	003002	2
P2501a502	003003	5

Type designations for non-standard models  
will be specified upon receipt of order.

#### Included in delivery

3 mounting clamps Z 1 - 11

#### Recommended accessories

Fork coupling Z 103 g 3  
(backlash free),  
Process-controlled indicators  
MAP... with display,  
Signal conditioner MUP.../  
MUK ... for standardized  
output signals

#### Important

All the values given in this  
data sheet for linearity, life-  
time, micro-linearity, resis-  
tance to external disturbances  
and temperature coefficient in  
the voltage dividing mode are  
quoted for the device opera-  
ting with the wiper voltage  
driving on operational amplifier  
working as a voltage follower,  
where virtually no load is  
applied to the wiper  
(I<sub>e</sub> ≤ 1 μ A).