

**Standard  
Potentiometers**

Series P2500

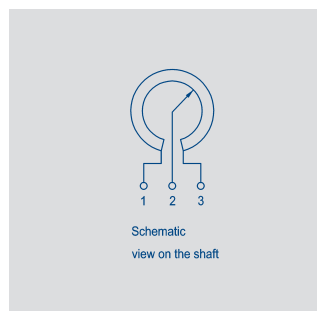
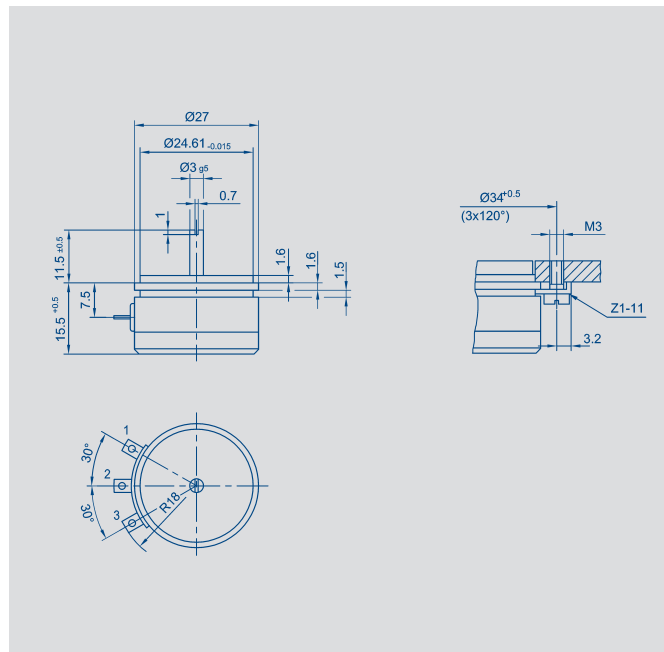


**Special features**

- unmatched combination of size, performance and price
- very long life -  $100 \times 10^6$  movements
- very good 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                   | servo size 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                 |

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| Mechanical Data   |                         |                   |
|---|-------------------------|-------------------|
| Dimensions  | see drawing             |                   |
| Mounting  | with 3 clamps Z 1 - 11  |                   |
| Mechanical travel   | 360, continuous         | °                 |
| Permitted shaft loading<br>(axial and radial) static or<br>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<br>the output-to-applied voltage ratio | typical 5               | ppm/K             |
| Independent linearity   | ±0.2 (< 0.2 on request) | %                 |
| Max. permissible applied voltage  | 42                      | V                 |
| Recommended operating<br>wiper current                                      | ≤ 1                     | μA                |
| Max. wiper current in case of malfunction                                   | 10                      | mA                |
| Insulation resistance<br>(500 VDC, 1 bar, 2 s)                              | ≥ 10                    | MΩ                |
| Dielectric strength<br>(50 Hz, 2 s, 1 bar, 500 VAC)                         | ≤100                    | μA                |

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

| Order designations |         |         |
|--------------------|---------|---------|
| Type               | Art.no. | R in kΩ |
| P2501 A102         | 003001  | 1       |
| P2501 A202         | 003002  | 2       |
| P2501 A502         | 003003  | 5       |

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

#### Included in delivery

3 mounting clamps Z1-11

#### Recommended accessories

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

#### Important

All the values given in this  
data sheet for linearity, lifetime  
and temperature coefficient in  
the voltage dividing mode are  
quoted for the device opera-  
ting with the wiper voltage dri-  
ving on operational amplifier  
working as a voltage follower,  
where virtually no load is ap-  
plied to the wiper ( $I_{\theta} \leq 1 \mu A$ ).

Subject to changes