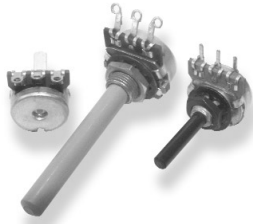


## Spindle Operated Potentiometers

### Type 23 Series

#### Type 23 Series



A popular range of 20mm control potentiometers, the type 23 series can be tailored to suit more specific requirements. The potentiometers are available with printed carbon resistance element, choice of bush lengths in metal or plastic and insulated shafts up to 50mm in length. In addition, approved mains and low current switches are available as standard options.

#### Key Features

- Versatile design can be customised to suit your requirements
- 0.4 Watt at 40°C
- Die Cast Metal Bush Available
- Insulated Bush Available
- Insulated Shafts up to 50mm
- Eyelet or PC Terminations
- Rugged Construction
- Mounting Bracket
- Audio Laws Available
- Dual Gang and Dual Concentric Styles

#### Characteristics - Electrical

<b>Resistance Range (Law):</b>	1K to 1M (Linear) 4K7 to 470K (Non Linear)
<b>Resistance Values:</b>	1, 2.2 and 4.7 per decade
<b>Resistance Tolerance:</b>	± 20% (± 10% by selection)
<b>Rated Dissipation at 40°C:</b>	0.4W (Linear), 0.2W (Non Linear)
<b>Limiting Element Voltage:</b>	500V DC or AC RMS
<b>Electrical Rotation:</b>	267° without switch, 232° with switch
<b>Terminal Resistance:</b>	5 Ohms maximum
<b>Noise (ENR):</b>	2% maximum (Linear), 3% maximum (Non Linear)
<b>Insulation Resistance:</b>	4G minimum
<b>Voltage Proof:</b>	1000 V AC peak

#### Characteristics - Mechanical

<b>Operating Torque:</b>	15 mNm maximum
<b>Mechanical Rotation:</b>	300°
<b>End Stop Torque:</b>	800 mNm maximum

#### Characteristics - Environmental

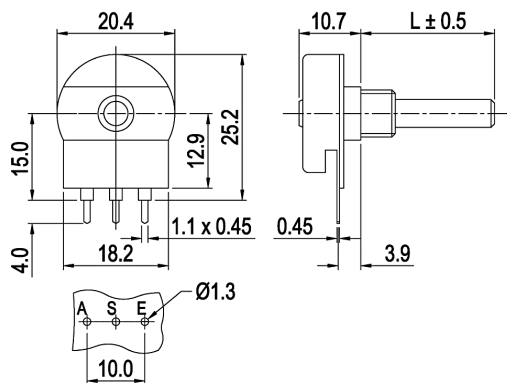
<b>Limits of Resistance Change:</b>	15% (After 1000 hours endurance)
<b>Operating Temperature Range:</b>	-25°C to +70°C
<b>Temperature Characteristics of Resistance:</b>	5% (-55°C to 125°C)
<b>Bump Severity:</b>	390m/s <sup>2</sup> , 4000 Bumps
<b>Vibration Severity:</b>	10 - 500 Hz, 0.75mm or 98m/s <sup>2</sup>
<b>Climatic Category:</b>	8 days @ 36°C 82% RH R < 15%
<b>Mechanical Endurance:</b>	15000 Operations (minimum)

#### DIY Design

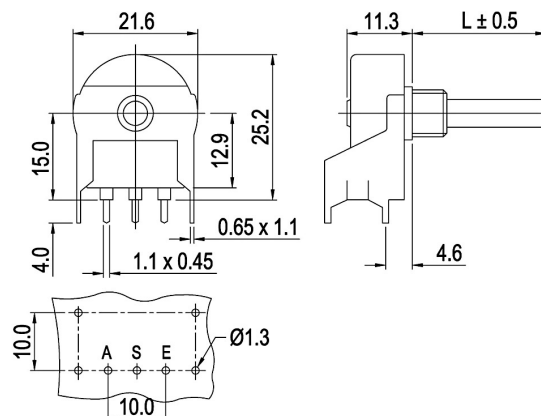
The 23 Series can be customised to suit your individual requirements with features such as detent action, track centre tap etc.

Please call our technical sales team to discuss variations on these 20mm diameter devices.

#### Dimensions Type 23

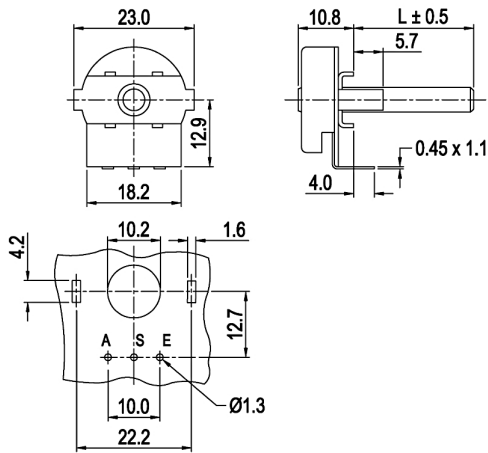


#### Type 24

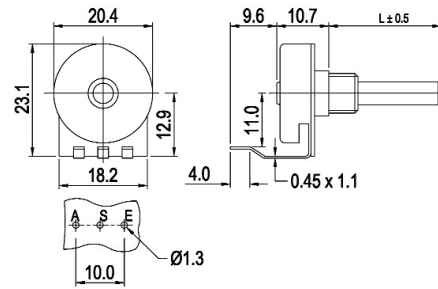


Type 23 Series

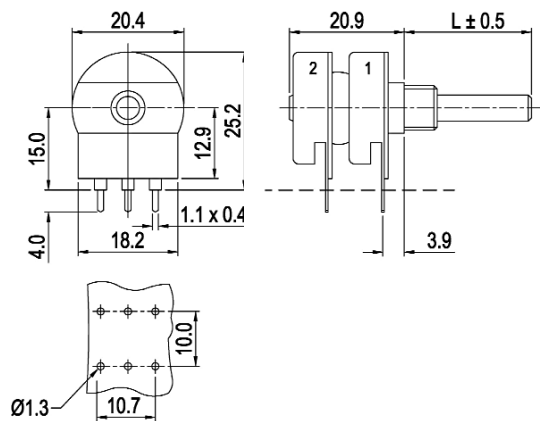
Dimensions (continued)  
Type 25



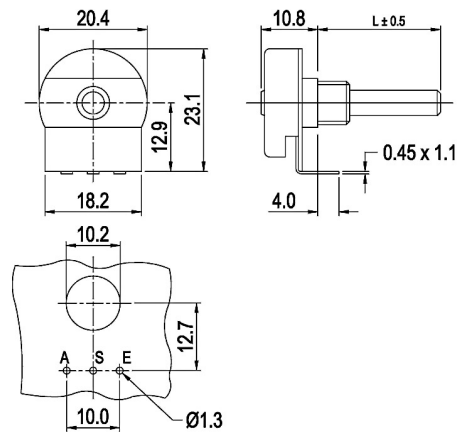
Type 26



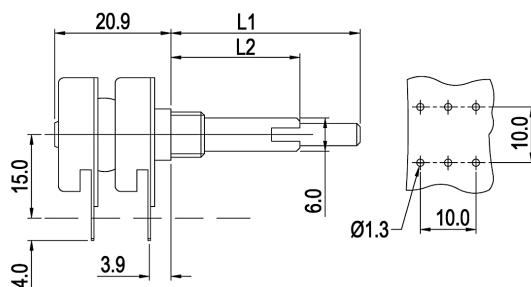
Type 27



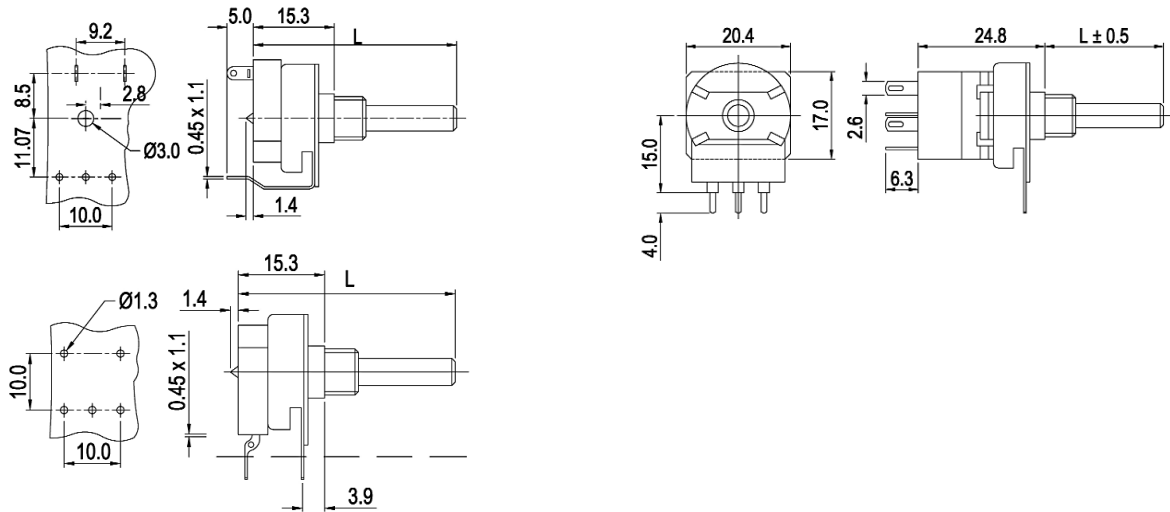
Type 28



Type 29



**Dimensions (continued)  
Switched Types**



**How to Order**

<b>23</b>	<b>E</b>	<b>X</b>	<b>A</b>	<b>104</b>	<b>M</b>	<b>L</b>	<b>B</b>	<b>22</b>	<b>A</b>
<b>Potentiometer Type</b>	<b>Customer Identity</b>		<b>Resistance Value</b>		<b>Bush Details</b>		<b>Shaft Length</b>		
23 - Std Spindle Style 24 - Standard 20mm with Mounting Bracket 25 - No Bush - Mounting Bracket Terminations swept forward parallel to shaft 26 - PC Terminations swept down to board for rear mounting 27 - Dual gang style single shaft same value / tol on each section 28 - PC Terminations swept forward parallel to shaft 29 - Dual Concentric style	S - Standard X - Customer Special See Drawing (provide copy with order) D - Special Cut and Mtd track		The first two digits are significant figures of resistance value and the third denotes the number of zeros following.  e.g. 100R Ohms: 101 4.7K Ohms: 472 22K Ohms: 223 100K Ohms: 104		L - Diecast M10 x 9mm no location lug, 6mm hole W - Diecast M10 x 9mm with locator, 6mm hole Y - Diecast M10 x 9mm no locator, 4mm hole M - Diecast 3/8" x 8mm with location lug, 6.35mm hole K - Diecast 3/8" x 8mm no locator, 6.35mm hole P - Diecast M7 x 6mm no locator, 4mm hole S - Insulated M10 x 7mm 6mm hole T - Insulated M10 x 10mm 6mm hole U - No Bush F - Diecast 3/8" x 12mm 6.35mm hole G - Diecast 3/8" x 8mm no locator, 4mm hole		FMF in mm i.e. 22mm		
<b>Termination Style</b>	<b>Resistance Law</b>		<b>Resistance Tolerance</b>		<b>Shaft Style</b>		<b>Switch Details</b>		
E - Std Eyelet P - Std PC 15mm MH R - Long PC X - Extra long PC S - PC bend forward at 90°	A - Linear B - Log C - Inv. Log		M - 20% K - 10%		A - Plain 6mm B - Slotted 6mm C - Flatted 6mm (5mm A/F) D - Flatted 6mm deep flat 4mm A/F E - Plain 4mm F - Full 6.35mm flat - special angle G - Flatted 4mm H - Plain 6.35mm J - Flatted 5.5mm L - Flatted 6mm (4.6mm A/F)		A - DPST 4A/250V AC B - SPST - Eyelet Termination C - DPDT - Changeover Switch D - DPST - Eyelet Terminations N - No Switch T - SPST - PC Terminals		

N.B. Where a potentiometer is rear mounting then the SHAFT LENGTH is measured from the PCB to the tip of the shaft whether or not it is fitted with a mounting bush.