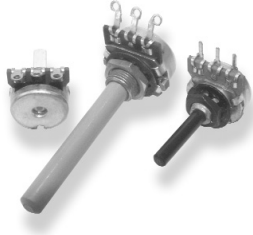


## Spindle Operated Potentiometers

### Type 31 Series

#### Type 31 Series



Tyco will customize these neat 16mm diameter control potentiometers to suit your requirements. They comprise a printed carbon resistance element with 0.25 W current handling and are available with various bush, termination and spindle styles.

As an additional feature, the range includes a twist tab design with mounting bracket applications for use where low price is an important consideration.

#### Key Features

- Versatile Design can be Customised to Suit Your Requirements
- SPST Switch Style
- Low Cost Twist Tab Model
- PC Mounting Bracket
- Insulated Shafts Up To 50mm
- Non Linear Laws
- Available with Choice of Bush Styles
- Eyelet or PC Terminations

#### Characteristics - Electrical

|                                   |   |
|-----------------------------------|---|
| <b>Resistance Range (Law):</b>    | 1K Ohm to 1M Ohm Linear<br>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> | 0.25W (Linear), 0.125W (Non Linear)                 |
| <b>Limiting Element Voltage:</b>  | 350Vdc or ac RMS                                    |
| <b>Electrical Rotation:</b>       | 267° NOM without switch, 240° NOM with switch       |
| <b>Terminal Resistance:</b>       | 5 Ohms, Max.  |
| <b>Noise (ENR):</b>               | 2% Max. (Linear), 3% Max. (Non Linear)              |
| <b>Insulation Resistance:</b>     | 4 G Ohms Min.                                       |
| <b>Voltage Proof:</b>             | 500 Vac peak  |

#### Characteristics - Mechanical

|                             |               |
|-----------------------------|---------------|
| <b>Operating Torque:</b>    | 15 mNm, Max.  |
| <b>Mechanical Rotation:</b> | 270° Nominal  |
| <b>End Stop Torque:</b>     | 350 mNm, Max. |

#### Characteristics - Environmental

|  |   |
|--|---|
| <b>Limits of Resistance Change:</b>                                | 15% (After 1000 hours endurance)          |
| <b>Temperature characteristics of resistance ( 20°C to 70°C ):</b> | 5%  |
| <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 DR < 15%             |
| <b>Mechanical Endurance:</b>                                       | 15000 Operations ( Min )                  |

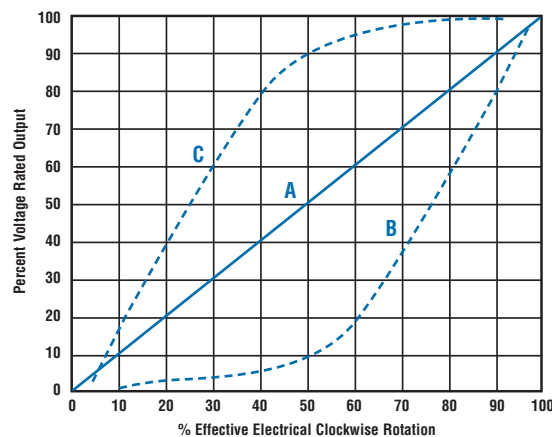
#### DIY Design

The 31 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 16mm diameter devices.

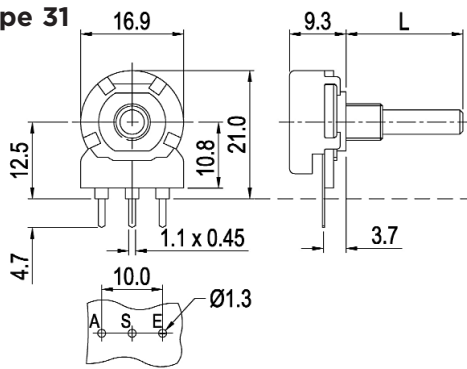
#### Resistance Laws

- A - Linear
- B - Log
- C - Inverse Log

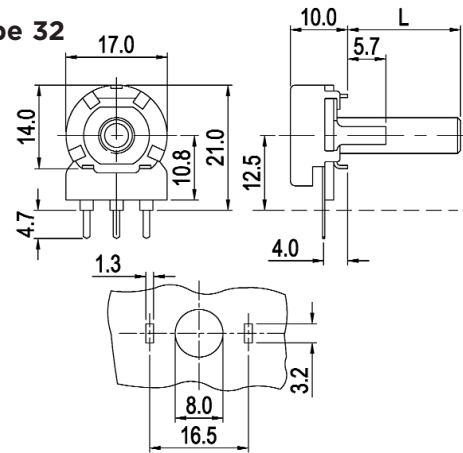


### Dimensions

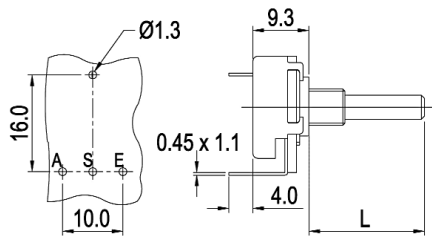
**Type 31**



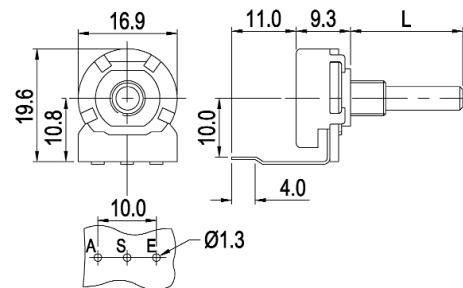
**Type 32**



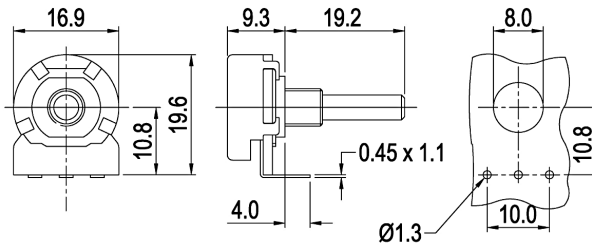
**Type 34 (Non Switched only)**



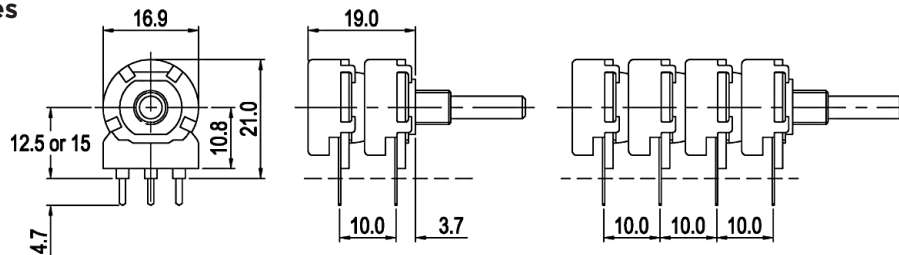
**Type 35 (Non Switched only)**



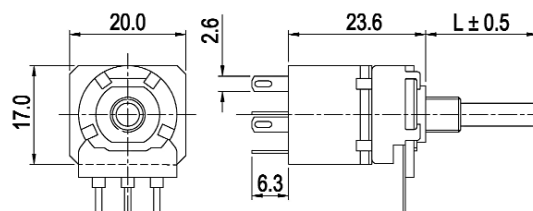
**Type 36**



### Multi Ganged Types



### Switched Types



### How to Order

| 31  | E  | X  | A  | 104  | M   | W  | B   | 25   | B   |
|---|--|--|--|--|---|--|---|--|---|
| <b>Potentiometer Type</b><br>31 - Std Spindle Style<br>32 - No Bush Mtg Bracket<br>33 - Spindle with Integ Knurled Knob 4mm State Colour<br>34 - Rev Mount with mounting pin and PC terminals swept down to board<br>35 - Rev Mount with PC Terminals swept down to board.<br>No terminal on case<br>36 - Forward mount with PC pins swept forward to parallel to shaft<br>37 - Dual gang style single shaft same value / tol on each section<br>38 - Single Spindle Pot with centre detent | <b>Customer Identity</b><br>S - Standard<br>X - Customer Special See Drawing (provide copy with order) | <b>Resistance Value</b><br>The first two digits are significant figures of resistance value and the third denotes the number of zeros following.<br>e.g. 4.7K Ohms: 472<br>22K Ohms: 223<br>100K Ohms: 104 | <b>Bush Details</b><br>N - Black plastic 8mm A/F - M10 with 4mm hole<br>P - Diecast M7 x 6mm 4mm hole<br>S - Diecast M10 x 8mm 6.35mm hole<br>T - Diecast M7 x 9mm 4mm hole<br>U - No Bush<br>V - Diecast M10 x 8mm 6mm hole<br>W - Black plastic M10 8mm M10 6mm hole | <b>Shaft Length</b><br>FMF in mm<br>Standard Lengths are 15, 20, 25 and 50mm | <b>Termination Style</b><br>E - Std Eyelet<br>P - Std PC 12.5mm MH<br>R - Long PC 15mm MH<br>X - Extra long for rear PC Mtg<br>S - PC bend forward at 90° | <b>Resistor Law</b><br>A - Linear<br>B - Log<br>C - Inv. Log | <b>Resistance Tolerance</b><br>K - 10%<br>M - 20% | <b>Shaft Style</b><br>A - Plain 6mm<br>B - Slotted 6mm<br>C - Flatted 6mm (5mm A/F)<br>D - Flatted 6mm deep flat 4mm A/F<br>E - Plain 4mm<br>F - Full 6.35mm flat - special angle<br>G - Flatted 4mm<br>H - Plain 6.35mm<br>J - Flatted 6.35mm (4.6mm A/F) | <b>Switch Details</b><br>A - DPST - Demko approved 4A/250V AC<br>B - SPST - Eyelet Termination<br>C - DPDT - Changeover Switch<br>T - SPST - PC Push Switch |