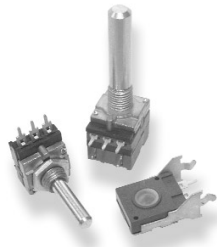


## Spindle Operated Potentiometers

### Type 51 Series

#### Type 51 Series



The Type 51 Series from Tyco offers a small, high quality potentiometer system. You can choose a standalone module or a conventional bush potentiometer with shaft. Advanced carbon polymer element technology potentiometers with or without switches are available to meet your every requirements.

#### Key Features

- Choice of Shafts and Edgewheels
- SPST Switch Style
- Available in Distribution
- Automatic Machine Insertable Modules
- Eyelet or PC Terminations
- Linear and Non-Linear Laws
- Multi Gang Versions Available

#### Characteristics - Electrical

<b>Resistance Range</b>	
<b>Linear Law:</b>	470 Ohm to 4.7 Megohm
<b>Log Law:</b>	2.2K Ohm to 470K Ohm
<b>Tolerance:</b>	± 20% (tighter by selection)
<b>Power Rating</b>	
<b>Linear Law:</b>	0.2 Watt @ 40°C
<b>Log Law:</b>	0.1 Watt @ 40°C
<b>Operating Voltage</b>	
<b>Linear Law:</b>	350 VAC or 500 VDC maximum
<b>Log Law:</b>	$\sqrt{P}$ maximum x R nominal
<b>Load Life:</b>	ΔR< 10% after 1000 hours @ 70°C
<b>Rotational Life:</b>	ΔR< 10% @ 15,000 cycles
<b>CRV (Linear Law):</b>	ΔR< 1%
<b>Isolation Voltage:</b>	500 V dc
<b>Insulation Resistance:</b>	> 100 Megohm

#### Characteristics - Mechanical

<b>Angle of Rotation:</b>	300° ± 2°
<b>Rotational Torque:</b>	10 mNm maximum
<b>Stop Strength:</b>	400 mNm maximum
<b>Rotational Life:</b>	25,000 cycles

#### Characteristics - Environmental

<b>Storage Temperature:</b>	- 40°C to 85°C
<b>Operating Temperature:</b>	- 25°C to 70°C
<b>Humidity:</b>	< 15% ΔR RH 75% @ 35°C
<b>Temperature Coefficient:</b>	± 500 PPM/°C @ -25 to 70°C
<b>Climatic Category:</b>	25/070/10

#### Characteristics - Switch - 1000 Hrs at 0.5 W

<b>Contact Resistance:</b>	< 20 milliohm initial
<b>Rating:</b>	3.5 Amp @ 14.4 VDC
<b>Contact Configuration:</b>	SPST Off @ CCW E
<b>On/Off Torque:</b>	30 mNm maximum
<b>Operational Angle:</b>	30° maximum
<b>Electrical Rotation:</b>	50° to 295°

#### Soldering Condition

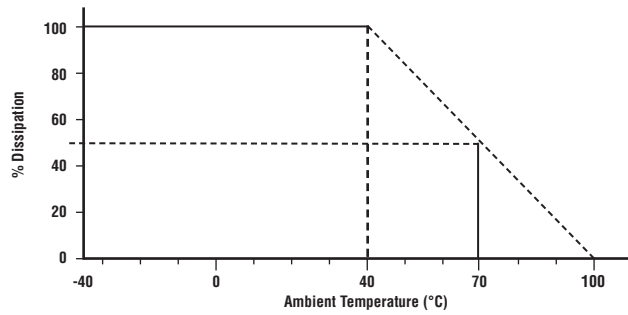
<b>This product has been designed for flow solder only.</b>	SOLDER BATH: 235°C +0°C/-5°C
	IMMERSION TIME: 2 ±0.5 seconds
	TEST CONDITIONS: IEC 391-1 clause 6.22.3
	TEST METHOD: IEC 68-2

The Type 51 Series is designed for flow soldering only. If Hand Soldering is essential please take extreme care when applying solder.

Do not overheat the terminal by prolonged exposure to heat otherwise intermittent operation could result.

**Type 51 Series**

**Derating Curve**



Dissipation as a function of temperature.  
Potentiometers covered by this specification are derated from 100% rated dissipation at 40°C to zero dissipation at 100°C.

Linear Law 100% - 0.2W  
Non-Linear Law 100% - 0.1W

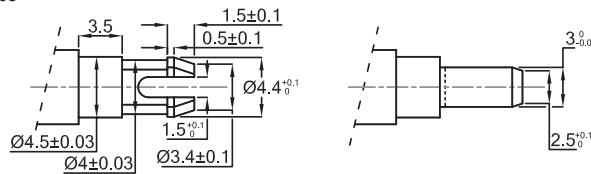
**How to Order**

<b>Please specify : Type No. e.g. 51</b>	Spindle detail e.g. 6mm diameter x 30mm long
<b>Resistance Value e.g. 220k Ohms</b>	Law e.g. Linear
	Switch detail e.g. SPST
	Accessories e.g. plug-in edgewheel & size

**Note:** The 51 Series is ordered by description due to the very wide multiples and configuration available. We will sample to your description and if approved, our technical sales group will define a discrete part number to meet your requirements and for future ordering

**Snap-In Shafts and Edgewheels -**

For Standalone Modules



The diagram illustrates the snap-in part of a plastic actuator which can be used to rotate the Series 51 Standalone module. Consult MEC Citec Sales Action Desk for details on our full custom knob and shaft capabilities. We will for example be pleased to quote for moulding your shaft and knob as a single snap-in component, subject to suitable volumes being available.

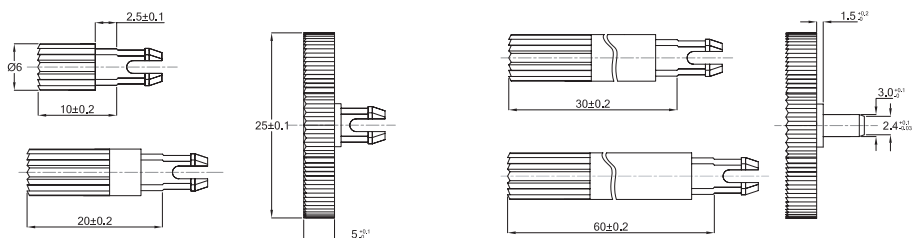
**Accessory Options -**

For Standalone Modules

At the date of publication the following mould tools exist for plug in accessories:

<b>Shafts 60 mm long x 6 mm diameter</b>	with knurl end and screwdriver slot colour black
<b>Shafts 30 mm long x 6 mm diameter</b>	with knurl end and screwdriver slot colour black
<b>Shafts 20 mm long x 6 mm diameter</b>	with knurl end and screwdriver slot colour black
<b>Shafts 10 mm long x 6 mm diameter</b>	with knurl end and screwdriver slot colour black
<b>Edgewheel for horizontal modules 25mm diameter</b>	colour black.

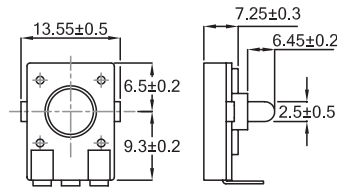
**Thumbwheel Actuating Devices**



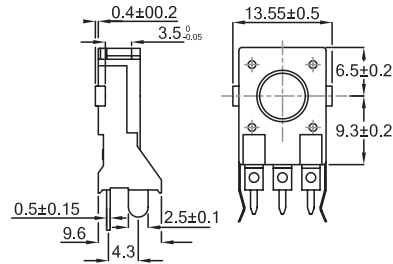
**Type 51 Series**

**Dimensions  
Single Module**

**Type 51 Horizontal**

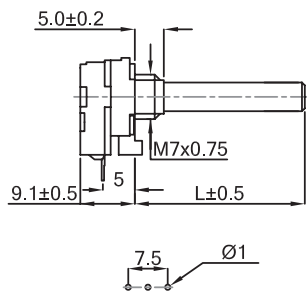


**Type 53 Vertical**

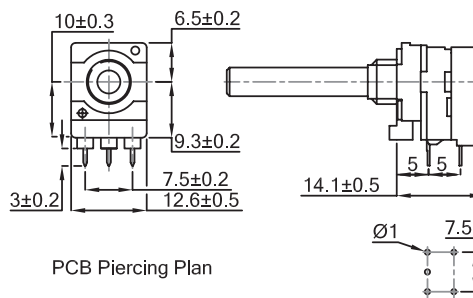


**Dimensions  
Potentiometer**

**Type 54 No Switch**



**Type 56 with Switch**

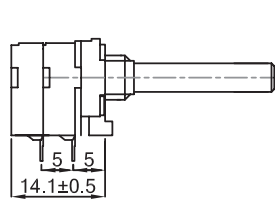


H - 10mm or 12.5mm to choice

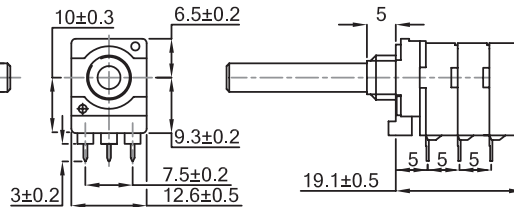
L - 5mm or 8mm to choice

**Dimensions  
Potentiometer**

**Type 55 Dual Section**



**Type 61 Triple Section**



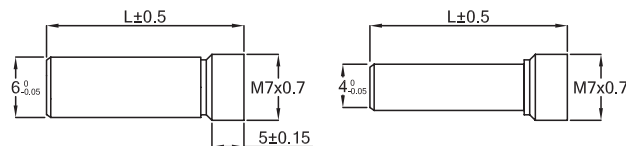
H - 10mm or 12.5mm to choice

L - 5mm or 8mm to choice

Type 61 has the same general dimensions as Type 55

**Spindle Options**

**Potentiometers with Bush**



L - We can offer any length up to 300mm, (20mm x 4mm Shafts) with or without flats or slots in metal.  
Plastic plug-in shafts shown on previous page

**Panel Hole Data -  
Potentiometers  
with Bushes**

**Required Mounting Holes in Chassis**

For Single and Dual Gang Potentiometers with Mounting Bush M7 x 0.75mm.

Fix Potentiometer with Mounting Nut Supplied.  
Max. Torque for tightening - 1 Nm  
Thickness of Mounting Plate - 1mm

