

## Type 51 Series

### 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



The Type 51 Series from TE Connectivity 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.

### Characteristics - Electrical

Resistance Range	Linear Law:	470 Ohm to 4.7 Megohm
	Log Law:	2.2K Ohm to 470K Ohm
Resistance Values:		1.0, 2.2, 4.7 per decade
Tolerance:		$\pm 20\%$ (tighter by selection)
Power Rating	Linear Law:	0.2 Watt @ 40°C
	Log Law:	0.1 Watt @ 40°C
Operating Voltage	Linear Law:	360 VAC or 600 VDC maximum
	Log Law:	P maximum x R nominal
Life:		$\Delta R < 10\%$ after 1000 hours @ 70°C
Rotational Life:		$\Delta R < 10\%$ @ 15,000 cycles
$\Delta R$ (Linear Law):		$\Delta R < 1\%$
Insulation Voltage:		500 V dc
Insulation Resistance:		> 100 Megohm

### Characteristics - Mechanical

Angle of Rotation:	$300^\circ \pm 2^\circ$
Rotational Torque:	10 mNm maximum
Stop Strength:	400 mNm maximum
Rotational Life:	25,000 cycles

### Characteristics - Environmental

Storage Temperature:	-40°C to 85°C
Operating Temperature:	-25°C to 70°C
Humidity:	< 15% $\Delta R$ RH 75% @ 35°C
Temperature Coefficient:	$\pm 500 \text{ PPM}^\circ\text{C}$ @ -25 to 70°C
Climatic Category:	25070/10

## Type 51 Series

### Characteristics - Switch

Load Life:	1000 Hours at 0.5 W
Contact Resistance:	< 20 milliohm initial
Rating:	3.5 Amp @ 14.4 VDC
Contact Configuration:	SPST On @ CCW E
On/Off Torque:	30 mNm maximum
Operational Angle:	30° maximum
Electrical Rotation:	50° to 295°

### Soldering Condition

This product has been designed for flow solder only.

SOLDER BATH: 236°C ±0°C/5°C

IMMERSION TIME: 2 ±0.5 seconds

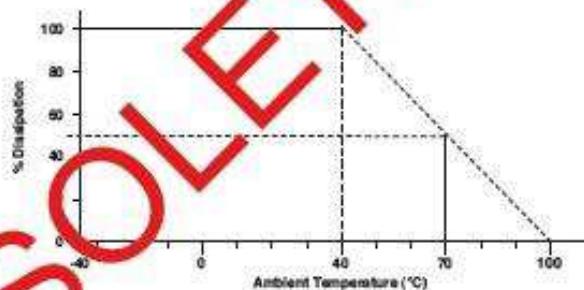
TEST CONDITIONS: IEC 391-1 clause 6.22.3

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 or otherwise intermittent operation could result.

### Derating Curve

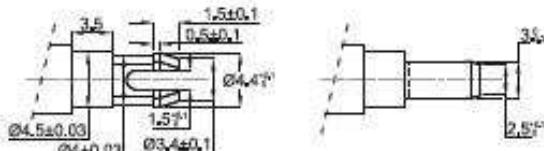


Dissipation as a function of temperature.  
Potentiometers covered by this specification are derated from 100% rated dissipation at 40°C to zero dissipation at 100°C.

Linear Law 100% - 0.2W

Non-Linear Law 100% - 0.1W

### Accessories - 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.

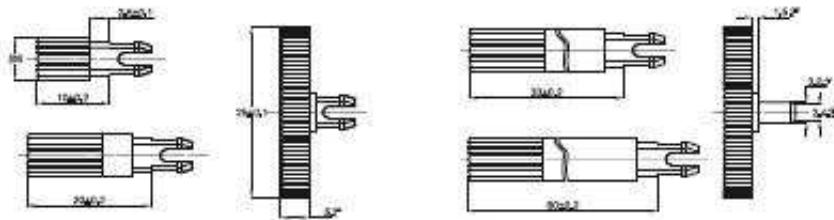
### Accessory Options - For Standalone Modules

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

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

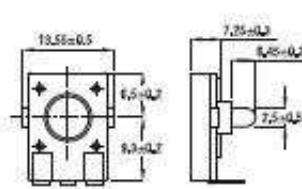
## Type 51 Series

### Thumbwheel Actuating Devices

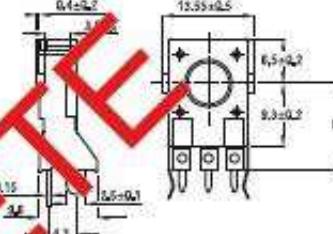


### Dimensions - Single Module

#### Type 51 Horizontal

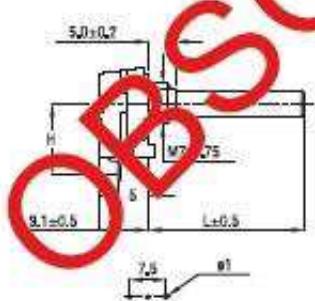


#### Type 53 Vertical

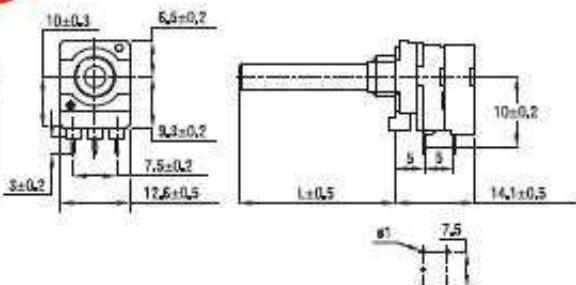


### Dimensions - Potentiometer

#### Type 54 No Switch

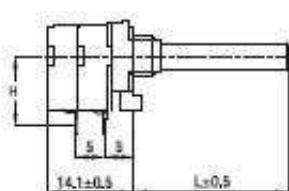


#### Type 56 with Switch



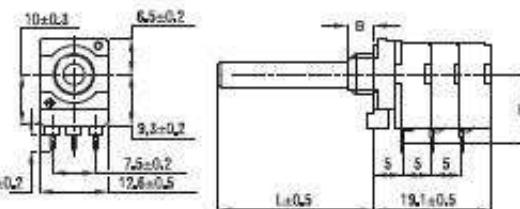
H - 10mm or 12.5mm to choice

#### Type 55 Dual Section



H - 10mm or 12.5mm to choice

#### Type 61 Triple Section



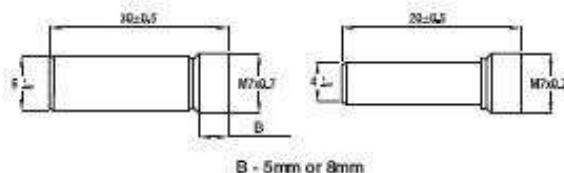
B - 5mm or 8mm

Type 61 has the same general dimensions as Type 55

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**Type 51 Series**


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**Spindle Options - Potentiometers with Bush**

**Panel Hole Data - Potentiometers with Bushes  
Required Mounting Holes in Chassis**

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

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


**How to Order**

51	102	A	4	20	PL
Common Part	Value The first two digits are significant figures of the resistance value and the third one denotes the number of zeros following.  e.g. 4K7: 472 47K: 473 470K: 474	Resistance Law A - Linear B - Log C - Inverse Log	Shaft Dia. 4 - 4mm 6 - 6 mm	Shaft Length 20 - 20mm 30 - 30mm	Spindle Style PL - Plain FL - Flatted

**OBSOLETE**

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