# **Blore Edwards Series 45 Potentiometers**



WE'RE IN CONTROL

# General characteristics of Series 45 Carbon Track Potentiometers

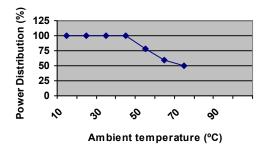
The Series 45 Carbon Composition Potentiometer has a proven track record in all aspects of the electronics industry, and can claim to be among the most versatile general purpose potentiometers available.

Our Series 45 potentiometers are highly customisable and are available as single, dual, triple, quad and five gang units. In addition to this we can fit all our pots with our in house AR Mains switch which can also be made in a numbers of variations from standard double pole, double throw to more bespoke options such as reverse action off on. Standard pots are fitted with a plastic shaft, but all are available with metal shafts. In May 2017 we re-introduced the knurled and slotted brass shaft model for guitars, a decision driven by customers looking for an alternative to the more commonly used CTS models. In addition, to this, the Series 45 is customisable even further by our wide range of resistance values, in linear, logarithmic and reverse logarithmic laws, our shaft options, termination options and bushing options. We can also offer different torque settings on our metal shaft potentiometers from our standard 0.7Ncm to a much higher torque of 3.6Ncm, with varying degrees in between to suit your requirements. This is particularly useful for audio applications where the feel of the pot is critical.

#### STANDARD RESISTANCE ELEMENT DATA

Standard	Maximum	Maximum	Max current	Standard	Maximum	Maximum	Max current
resistance	power	working	through	resistance	power	working	through
values		voltage	element at	values		voltage	element at
(Ω Ohms)	(W)	(V)	40°C (mA)	(Ω Ohms)	(W)	(V)	40°C (mA)
500	0.5	15.8	31.6	100K	0.5	224	2.2
1K	0.5	22.4	22	250K	0.5	353	1.4
2.5K	0.5	35.3	14	500K	0.5	500	1.0
5K	0.5	50	10	1M	0.5	500	0.05
10K	0.5	70.7	7.1	2.5M	0.5	500	0.02
25K	0.5	111.8	4.5	5M	0.5	500	0.01
50K	0.5	158	3.2	10M	0.5	500	0.005

#### **OPERATING CURVE**



#### MECHANICAL SPECIFICATION

#### **Mechanical Rotation**

300° +/- 5° without switch 320° +/- 5° with switch

#### **Operating Torque**

0.7 - 3.6 Ncm

#### **End Stop Torque**

113Ncm minimum

#### **Resistor Adjustment**

Integral moulded spindle Plug-in metal spindle Integral metal spindles (outer and inner) Integral metal spindle (outer) integral moulded spindle (inner) \*Lengths, diameters and end configurations are customisablé.

#### **Terminal options**

Solder, Printed circuit, wire wrap

#### **Mounting Details**

Bush

9.5mm diameter diecast bush, 32 TPI Whitworth form 6.35mm diameter diecast bush, 32 TPI Whitworth form Locating key, 7.9mm long located left (terminals down, viewed from spindle end).

Locating key fits 3.2mm diameter hole on an 11.1mm radius.

Each potentiometer comes supplies with one fixing nut and one internal tooth lock washer

M10 diecast bush, M10x0.75x8mm long with standard or DIN locating key.

Bushes of other lengths and materials are available upon request

#### **ELECTRICAL SPECIFICATION**

#### **Effective Rotation**

270° +/- 5°

#### Resistance Range

500 Ω to 10M Ω Linear 1K  $\Omega$  to 10M  $\Omega$  Logarithmic (positive and negative laws) Non standard resistance values are available on request

#### **Resistance Tolerance**

Standard +/- 20% for values to 1M  $\Omega$ +/- 30% for values above 1M  $\Omega$ Special +/- 10%

Linear, Log, Reverse Log. Other specials available on request.

## **Insulation Resistance**

>5000M Ω

#### **Voltage Rating**

500V d c maximum

#### **Terminal Resistance**

Linear: 0.5% RN Log: low slope end 0.5% high slope end 2.0% Standard minimum resistance value 5 Ω

#### **Voltage Proof**

1.5 kV peak minimum **Temperature Range** 

-25°C to 70°C

# Temperature Coefficient Typically +/- 500 ppm

# Power Rating at 40°C Ambient Temperature

0.5W Linear 0.25W Logarithmic

# Matching

Controls can be supplied matched to the following limits:

STANDARD A: Linear Law 3dB matching from 20dB attenuation
Log Law 3dB matching from 32dB attenuation
STANDARD B: Linear Law 2dB matching from 20dB attenuation

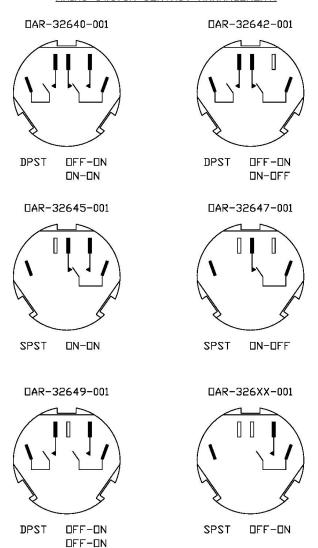
Log Law 2dB matching from 32dB attenuation

### MAINS SWITCH-TYPE AR

The Series 45 can be fitted with our AR Mains switch. Simply choose the part number from the drawings below.

The switch is rated at 2A/250V with a surge rating of 64A

#### MAINS SWITCH CONTACT ARRANGEMENT.



SWITCHES SHOWN IN FULLY ANTICLOCKWISE POSITION

#### ORDERING CODE

All custom and standard potentiometers are strictly assembled to meet full performance specifications. To ensure these parameters are met it is essential that a detailed description of the potentiometer required is given at the time of placing the order. Below you will find a basic table which outlines the critical information needed to quote. All our potentiometers can be ordered using this criteria.

R = Resistance value

L = Law (linear, logarithmic or reverse logarithmic)
A = Shaft length from the mounting face (FMF)
B = Bush type, 1/4"(6.35mm), 3/8"(9.5mm) or M10
C = Length of flat if requested

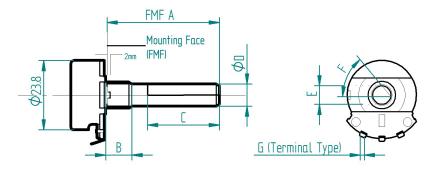
D = Diameter of spindle 3.18mm, 4mm, 6mm or 6.35mm (other diameters are available on request)

E = Depth of flat (5.54mm is standard)

F = Angle of flat (measured from extreme CCW position)

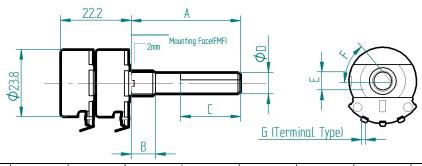
G = Terminal option (solder or PCB)
H = Mains variation (see Mains Switch Contact Arrangement for part numbers)

TYPE 45 - Single gang pot



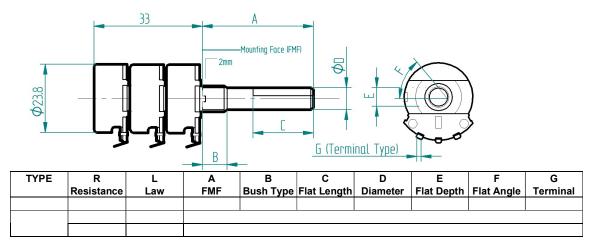
TYPE	R	L	Α	В	С	D	E	F	G	i
	Resistance	Law	FMF	Bush Type	Flat Length	Diameter	Flat Depth	Flat Angle	Terminal	1
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TYPE 2-45 - Dual gang pot



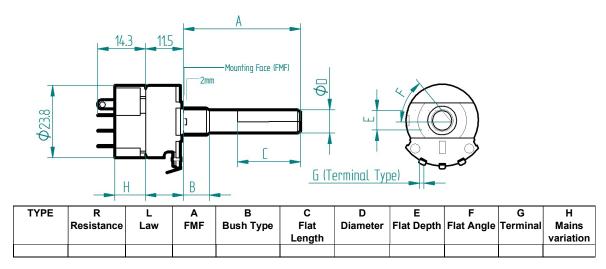
TYPE	R	L	Α	В	С	D	E	F	G
	Resistance	Law	FMF	Bush Type	Flat Length	Diameter	Flat Depth	Flat Angle	Terminal
					•		•	•	

TYPE 3-45 - Triple gang pot\*

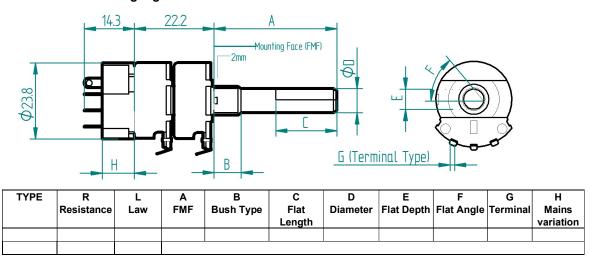


\*NB - Also available as a 4 gang and 5 gang. Just input the required values and laws

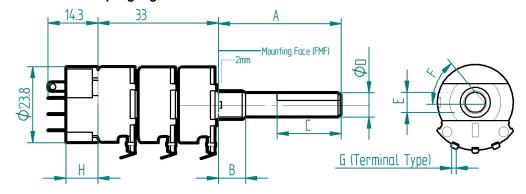
TYPE AR-45 - Single gang with AR MAINS switch



TYPE 2AR-45 - Dual gang with AR MAINS switch



# TYPE 3AR-45 - Triple gang with AR MAINS switch



	TYPE	R	L	Α	В	С	D	E	F	G	Н
		Resistance	Law	FMF	Bush Type	Flat	Diameter	Flat Depth	Flat Angle	Terminal	Mains
						Length					variation
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### **DUAL CONCENTRIC ORDER CODE**

The order code for our dual concentric potentiometers differs slightly from our standard Series 45. See below for differences.

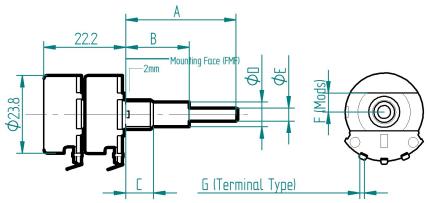
R = Resistance value

R = Resistance value
L = Law (linear, logarithmic or reverse logarithmic)
A = Outer shaft length from the mounting face (FMF)
B = Inner shaft length from the mounting face (FMF)
C = Bush type, 1/4"(6.35mm), 3/8"(9.5mm) or M10
D = Diameter of inner spindle 3.18mm or 4mm (other diameters are available on request)
E = Diameter of outer spindle 6mm, 6.35mm or 8mm (other diameters are available on request
F = Outer and inner spindle modifications (flats, through holes etc)

G = Terminal option (solder or PCB)

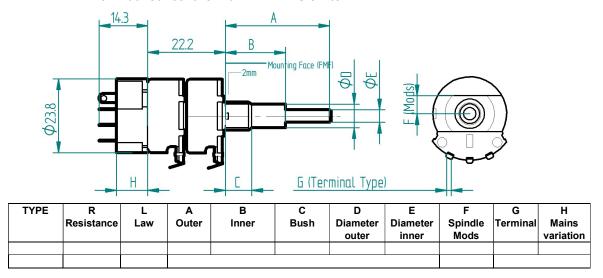
H = Mains variation (see Mains Switch Contact Arrangement for part numbers)

# TYPE C2-45 - Dual concentric



TYPE	R	L	Α	В	С	D	E	F	G
	Resistance	Law	Outer	Inner	Bush	Diameter	Diameter	Spindle	Terminal
						outer	inner	modifications	

#### TYPE AR C2-45 - Dual concentric with AR MAINS switch



#### **Further Variations**

As well as the standard listed above we are also able to offer with the same degree of versatility the following TYPES.

- **TYPE P45** like the standard Series 45 but featuring a twist tab mounting rather than bushing. (Details available on request)
- **TYPE FS45** like the standard Series 45 but features snap in flush panel mounting and PCB terminals as standard
- **TYPE HB45** like the standard Series 45 but features bracket and or bush mounting and PCB terminals as standard

#### **Typical Applications**

The Series 45 in all it's variants is a versatile product. It has many uses from simple volume controls on Radios, Amplifiers and Guitars, to sensitivity controls for Cable Detection. The Series 45 is used in Audio, both Professional and High-end, in Aviation for bulk head controls, Test Equipment, Dimmer controls and many other applications.