

Panel Potentiometer

Model P09x Series



OBSOLETE (P098N AND P098 ONLY)

Features:

- Multi-ganged—up to 8 gangs
- Excellent 100,000 cycles life
- Rotary and Momentary Switch options
- Push-lock options
- Concentric shaft option
- Centre tap option



Description:

9mm Rotary Potentiometer, with metal shaft and bushing. Options include audio and linear tapers; knurled, flatted and slotted shafts.

Applications:

- Audio / video equipment / Amplifiers / Mixers
- TV and multimedia sound systems / Portable electronics

Model Styles Available:

- | | |
|---|--------|
| • Side Adjust, 1 to 8 gangs | P09xN |
| • Side Adjust, 1 to 4 gangs, w/Rotary switch | P09xS |
| • Side Adjust, 1 to 4 gangs, w/Momentary switch | P09xM |
| • Top Adjust, 1 or 2 gangs | P09x5N |
| • Side Adjust, with Push-Lock, 1 or 2 gangs | P09xP |
| • With Concentric shaft, 2 to 4 gangs | P09xC |
| • With Centre Tap, 2 gangs only | P09xT |

Electrical Characteristics

$T_A = 25^\circ\text{C}$ unless otherwise noted

Resistance Range	1K Ω to 1M Ω
Standard Resistance Tolerance	$\pm 20\%$
Residual Resistance	20 ohms max
Resistance Taper	Audio (10A, 15A, 15C), Linear (1B) - see note 3
Maximum Operating Voltage	50Vac
Rated Power	Linear Taper B: 0.05W Other Tapers: 0.025W
Dielectric Strength	300 Vac , 1 minute
Rotational Noise	100mV max
Insulation Resistance	>100M ohms at 250 Vdc
Gang Error (Multi-ganged)	-40dB to 0dB, $\pm 3\text{dB}$

General Note

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Switch Characteristics

T_A = 25°C unless otherwise noted

Switch Circuit	SPST
Contact Resistance	<100mohms
Rated Power	3.0A at 16Vdc
Switch Life	15,000 cycles min.

Mechanical Characteristics

T_A = 25°C unless otherwise noted

Mechanical Travel (Rotational angle)	300° ± 10°
Rotational Torque	35 to 90 gf.cm
Rotational Stop Strength, Minimum	3.0kgf.cm
Shaft Pull Strength, Minimum	6.0 kgf
Detent Torque	50 to 200 gf.cm
Nut Tightening Strength, Minimum	8.0 kgf
Rotational Life	100,000 cycles

Environmental Characteristics

T_A = 25°C unless otherwise noted

Operating Temperature	-10°C to 70°C
IP Rating	IP50
Soldering Condition	Compatible with Industry standard soldering processes: Manual: SAC 270 °C max. for 3 seconds. Wave: SAC 260 °C max. for 5 seconds.
RoHS	Please refer to TT Electronics Website
REACH	Please refer to TT Electronics Website

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Ordering Information

P09	1		N	-		E	A	20	B	R	10K
Part Family 9mm Rotary											Total Resistance See Resistance table below
Number of Gangs x = x gangs 1 = single gang to 8 = 8 gangs (maximum)											Resistance Taper A = Audio (15A) B = Linear (1B) C = Rev. Audio (15C) D = Audio (10A) (see Note 3)
Model Style Omit = Side Adjust 5 = Top Adjust (1-2 gang)											
Switch type N = No switch S = Rotary switch M = Momentary switch P = Push-Lock (1-2 gang) C = Concentric Shaft (2 or 4 gang only) T = Center Tap (2 gang only)											Shaft Length - L 10 = 10mm 15 = 15mm 17 = 17.5mm 20 = 20mm 25 = 25mm 30 = 30mm 35 = 35mm (See Note 1)
Number of Detents Omit = No detent 1 = Center only 2 = 11 3 = 21 4 = 41											Full CCW Position A = 300° B = 120° C = 30° D = 210° (see Note 2)
Shaft Type E = Slotted F = Flatted Q = Split knurled (see Note 1)											

Resistance table										
Resistance (Ohms)	1,000	2,000	5,000	10,000	20,000	50,000	100,000	200,000	500,000	1,000,000
Code	1K	2K	5K	10K	20K	50K	100K	200K	500K	1MEG

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Note 1: Shaft type and Length

Shaft Types: P09xN, P09xS, P09x5N, P09xT

E-TYPE		F-TYPE		Q-TYPE	
L	10 15 20 25 30	L	10 15 20 25 30	L	10 15 20 25 30
T	4 7 12 12 12	T	4 7 12 12 12	T	4 6 12 12 12

Shaft Types: P09xP (Push-Lock)

E-TYPE		F-TYPE		Q-TYPE	
L	25 30 35	L	25 30 35	L	25 30 35
M	5.7 10.7 15.7	T	4.5 7 12	T	3 6 12
		M	5.7 10.7 15.7	M	5.7 10.7 15.7

Shaft Types: P09xM (Momentary Switch)

F-TYPE		Q-TYPE	
L	10 15 20 25 30	L	10 15 20 25 30
T	4 7 12 12 12	T	4 6 12 12 12

Shaft Types: P09xC (Concentric Shafts)

E-TYPE		F-TYPE		Q-TYPE	
L	20	L	15 17 20 25	L	20
		L1	10 10 10 15		
		T	5 5 6 7		
		P	4 4 4 5		

Note: L = 17 Is 17.5mm

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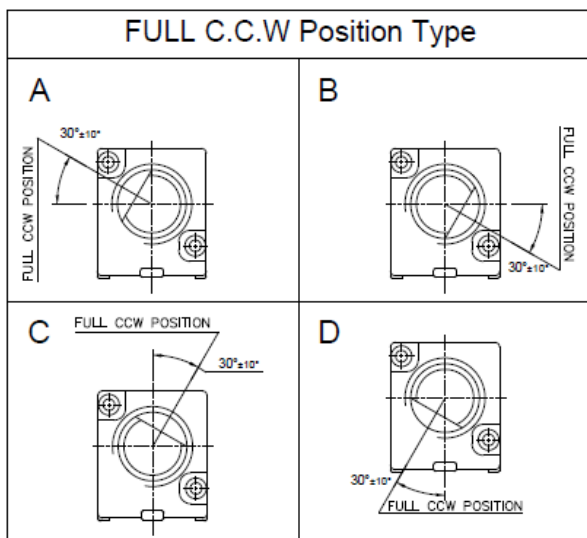


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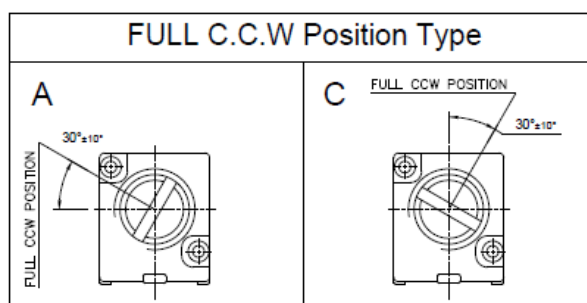
Note 2: Shaft Position

Models: P09xN, P09xS, P09xM, P09x5N, P09xP, P09xT

F Shaft Type

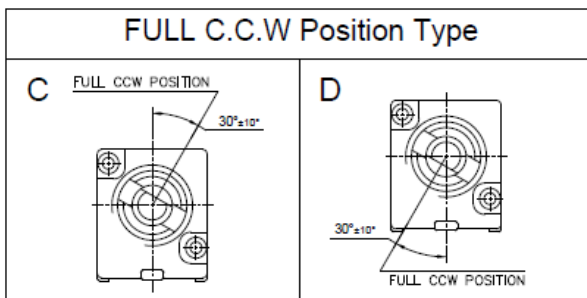


E /Q Shaft Type

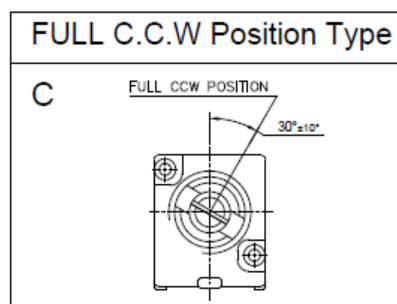


Models: P09xC

F Shaft Type



E /Q Shaft Type



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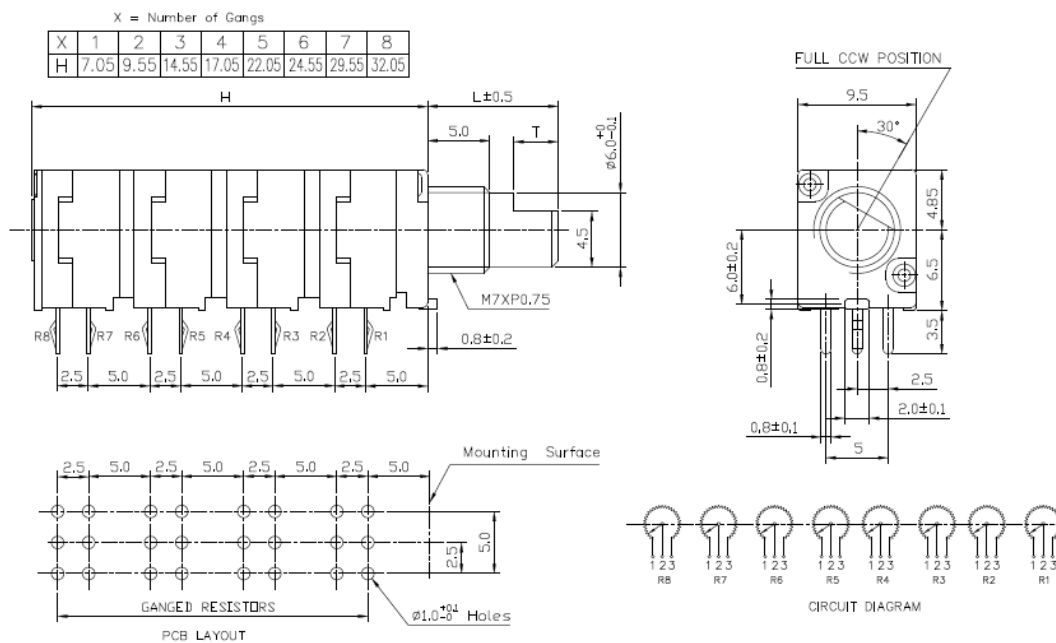
Model P09x Series

OBSOLETE (P098N AND P098 ONLY)



Outline Drawings

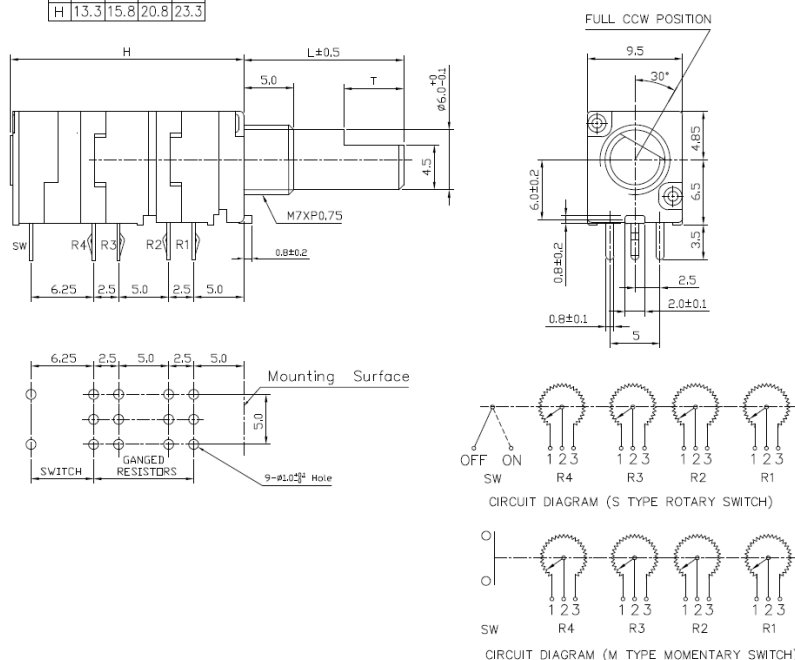
Model P09xN (Side Adjust, PCB pins, up to 8 gangs)



Model P09xS and P09xM (Side Adjust, PCB pins, up to 4 gangs with Switch)

X = NUMBER OF GANGS + 1 SWITCH

X	1	2	3	4
H	13.3	15.8	20.8	23.3



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Model P09x Series



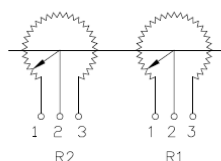
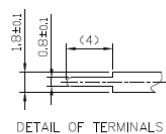
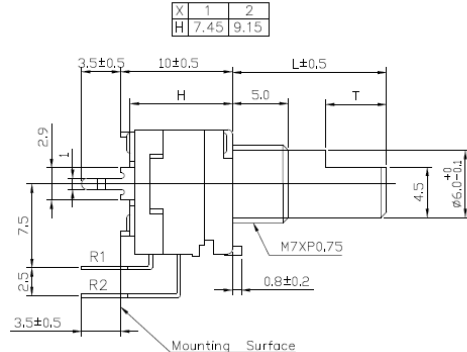
OBSOLETE (P098N AND P098 ONLY)

Outline Drawings

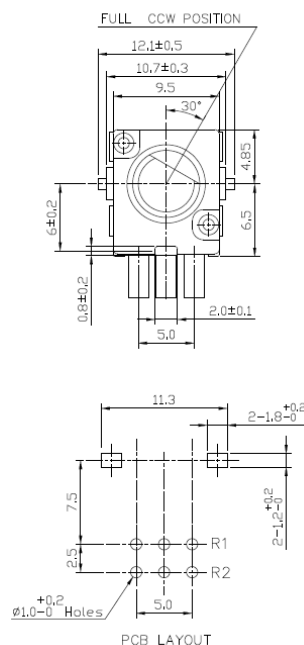
Model P09x5N (Top Adjust, PCB pins, up to 2 gangs)

X = Number of Gangs

X	1	2
H	7.45	9.15



CIRCUIT

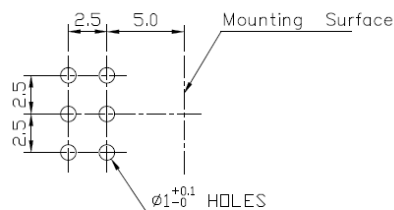
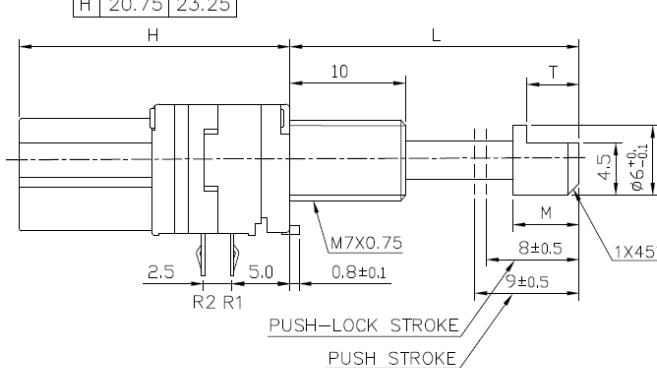


PCB LAYOUT

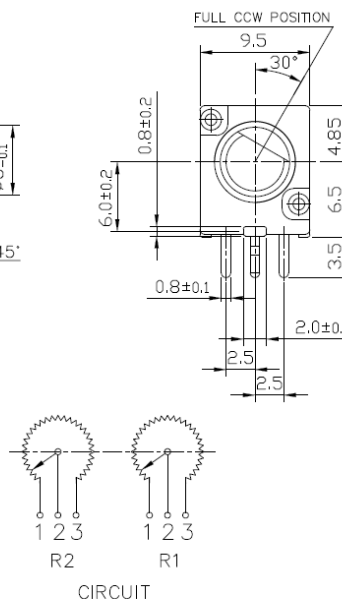
Model P09xP (Side Adjust, PCB pins, with Push-Lock, up to 2 gangs)

X = Number of Gangs

X	1	2
H	20.75	23.25



PCB LAYOUT



CIRCUIT

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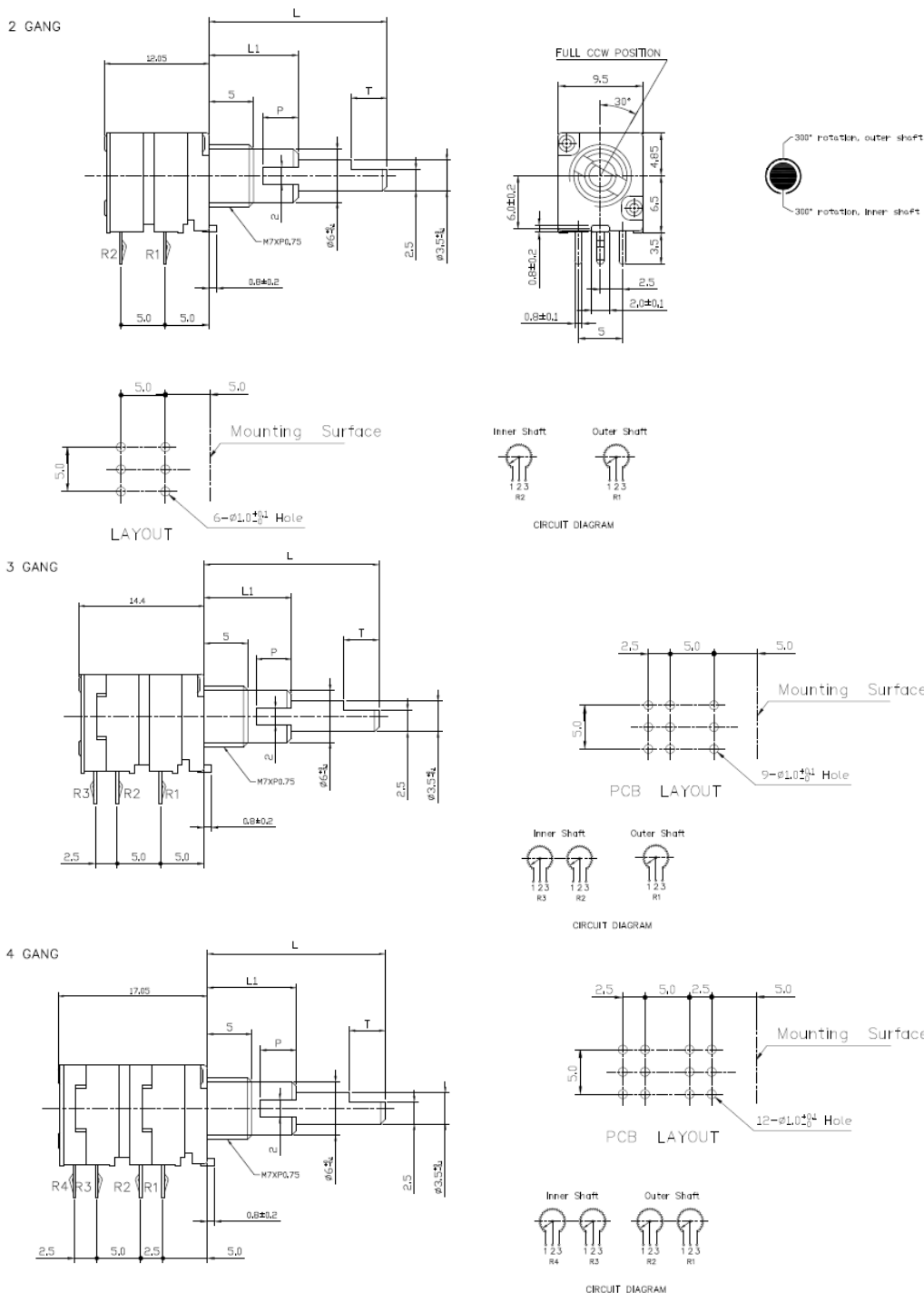
Model P09x Series



OBSOLETE (P098N AND P098 ONLY)

Outline Drawings

Model P09xC (Side Adjust, PCB pins with Concentric Shaft, 2 to 4 gangs)



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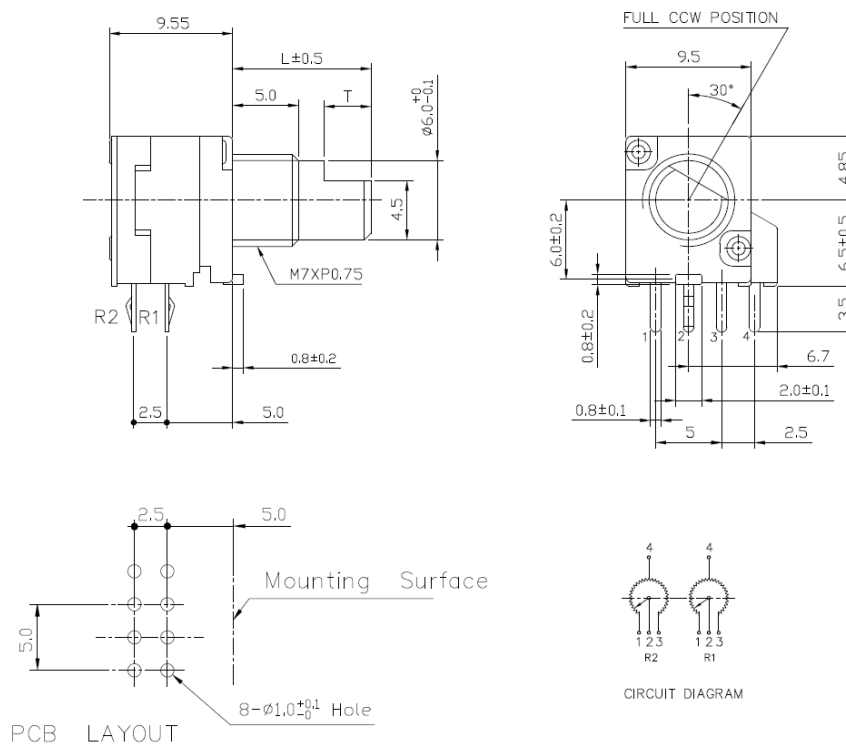
Model P09x Series



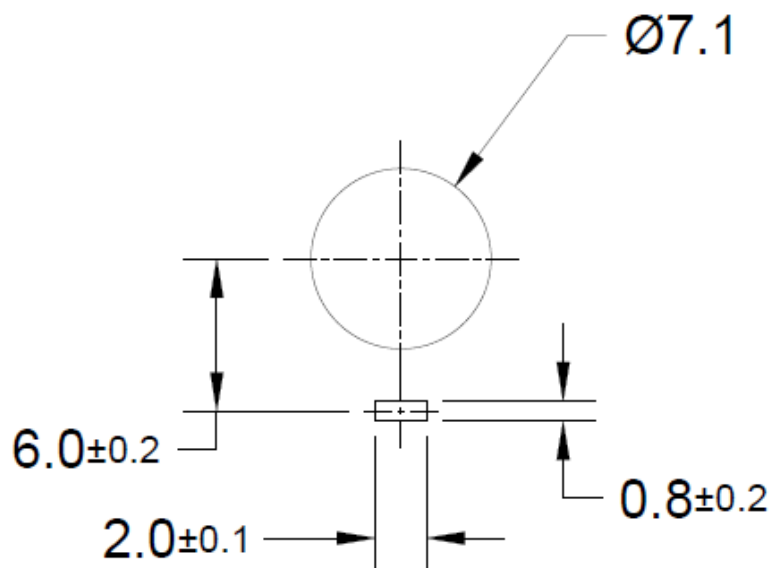
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Outline Drawings

Model P09xT (Side Adjust, PCB pins, with Center Tap, 2 gangs only)



Panel Layout



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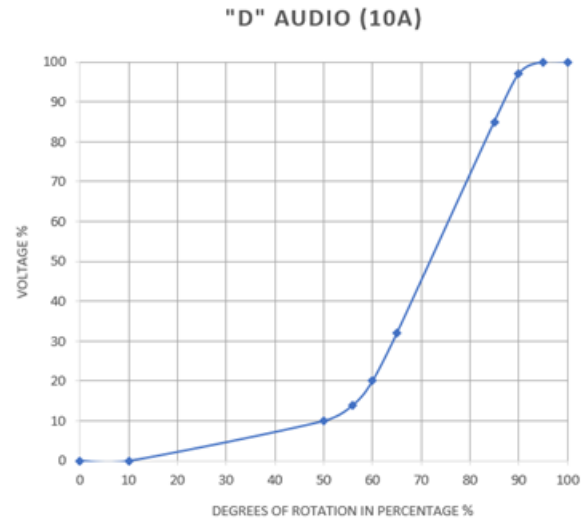
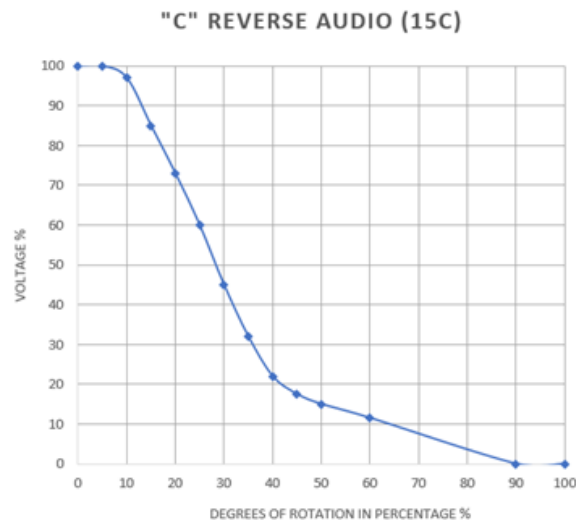
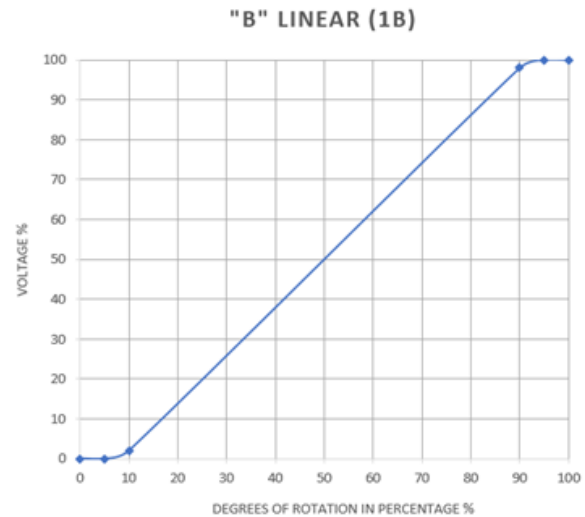
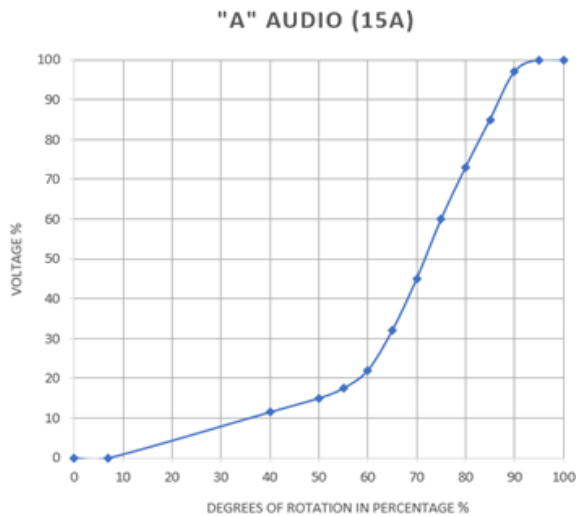
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Note 3: Standard Tapers



Packaging

Standard Packaging	Plastic Trays
Hardware	Two flat washers and mounting nut

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