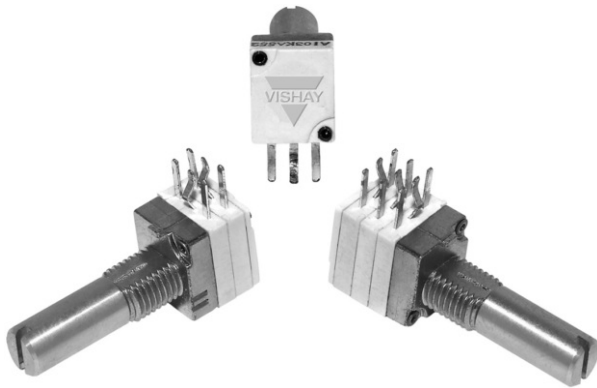


9 mm Multi-Ganged Potentiometer



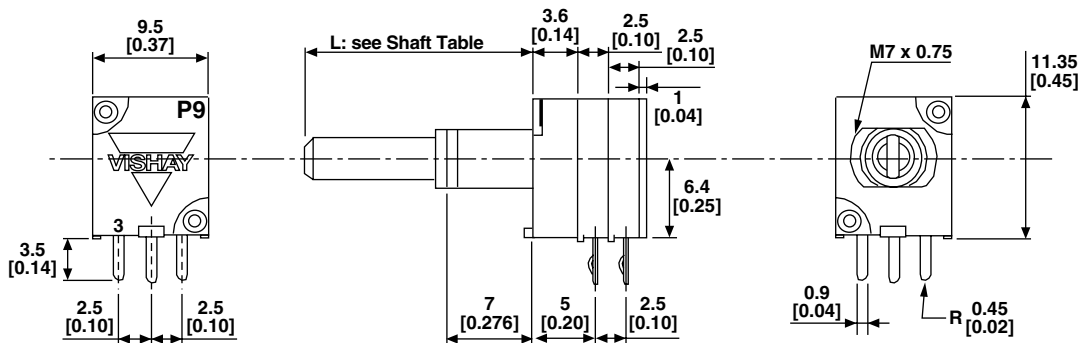
FEATURES

- Conductive plastic element
- Ultra compact (extra miniature module size)
- Multiple assemblies (up to seven modules)
- Shaft and panel sealed option
- Center mechanical detent fully integrated in option
- Center tap option
- Custom designs available on request

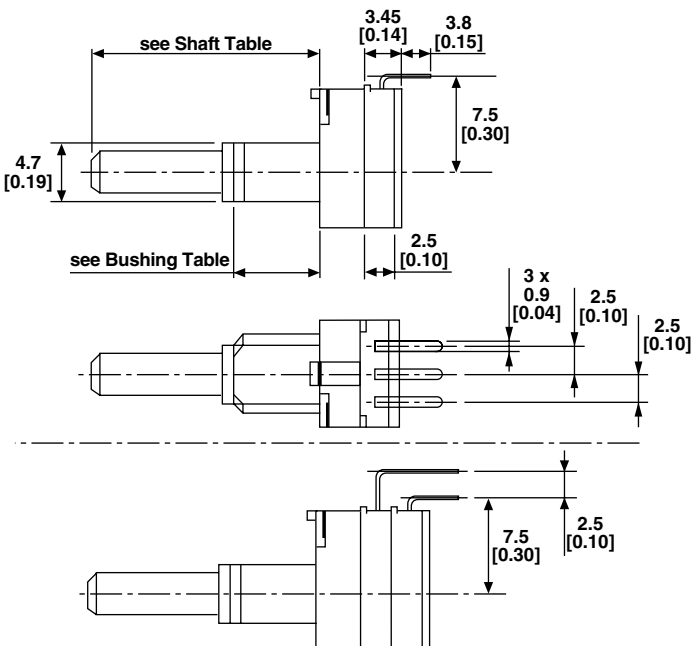


DIMENSIONS in millimeters [inches] (± 0.5 mm)

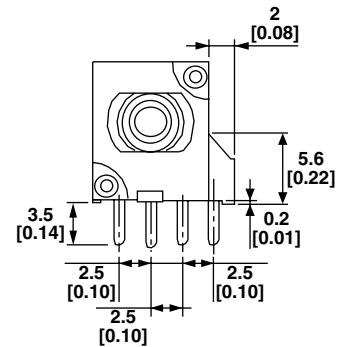
P9A



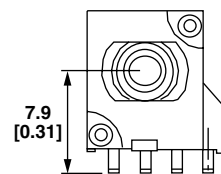
P9A: Vertical Mounting



P9A Center Tap:



P9A Center Tap: Vertical Mounting



**P9 - GENERAL SPECIFICATIONS**

ELECTRICAL	
Resistive Element	Conductive Plastic
Electrical Travel	270° ± 10°
Resistance Range	linear law 1 kΩ up to 1 MΩ
	non linear law 2.2 kΩ up to 500 kΩ
Power Rating at 70 °C	linear law 0.1 W
	non linear law 0.05 W
	multiple assemblies linear law 0.05 W per module
	multiple assemblies non linear law 0.025 W per module
Temperature Coefficient (Typical)	± 500 ppm
Limiting Element Voltage	10 V _{DC} 50 V _{AC}
End Resistance (Typical)	3 Ω
Contact Resistance Variation	linear law (typical) 2 % of nominal resistance
Independent Linearity	linear law (typical) ± 5 %
Insulation Resistance	100 MΩ at 250 V _{DC}
Dielectric Strength	300 V _{AC} during 1 min
Attenuation (Typical)	90 dB max./0.05 dB min.

MECHANICAL	
Mechanical Rotational Life	25 000 cycles min.
Mechanical Travel	300° ± 5
Operating Torque	0.2 Ncm up to 2.5 Ncm (0.3 to 3.5 oz.inch)
End Stop Torque	50 Ncm max. (4.4 lbinch max.)
Shaft Push/Pull Force	7 DaNcm max. (15.7 lbf max.)
Weight (One Module)	6.25 g (without nut and washer) (0.22 oz.)

ENVIRONMENTAL	
Temperature Range	- 55 °C up to 100 °C
Climatic Category	55/100/21

MARKING
<ul style="list-style-type: none"> • Type of element • Code for tolerance • Code for ohmic value • Taper • Code for date code

PACKAGING
<ul style="list-style-type: none"> • B2 = Box of 25 pieces • B4 = Box of 100 pieces

PERFORMANCES				
TESTS	CONDITIONS	TYPICAL VALUE AND DRIFTS		
		$\Delta R_1/R_1$ (%)	$\Delta R_{1-2}/R_{1-2}$ (%)	OTHER
Load Life	1000 h under nominal power at 70 °C (90 ON/30 OFF)	± 5 %	± 10 %	Contact resistance variation < 5 % Rn
Temperature Cycle	- 55 °C to + 100 °C 5 cycles	± 0.5 %	-	-
Moisture	21 days at 40 ± 2 °C and 90 - 95 % relative humidity	± 5 %	-	Insulation resistance > 10 MΩ
Rotational Life	25 000 cycles at rated power 90 % of electrical travel 16 cycles per minute Temperature: 20 °C	± 6 %	± 12 %	Contact resistance variation
Shock	50 g, 11 ms 3 shocks - 3 directions	± 0.2 %	± 0.5 %	-
Vibration	10 - 55 Hz 0.75 mm or 10 g 6 h	± 0.2 %	-	± 0.5 %

SAP ORDERING INFORMATION (Part Number 18 digits)																	
P	9	A	1	R	1	0	0	F	I	R	X	1	1	0	3	M	A
MODEL	NUMBER OF MODULES	BUSHING	LOCATING PEG	PANEL SEALED	DETENT OPTION	SHAFT	PIN STYLE		RESISTANCE CODE/TOLERANCE CODE/TAPER								
	1 to 7	R = M7 x 0.75 - 7 mm X = M7 x 0.75 - 5 mm															

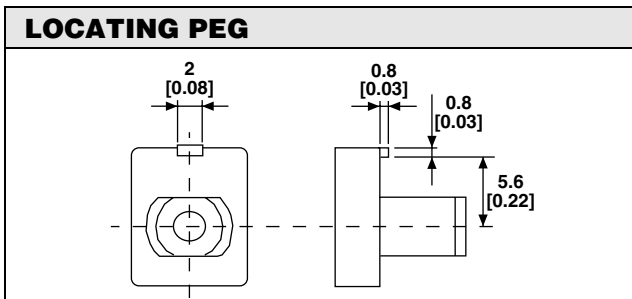
BUSHING

X: Bushing

R: Bushing

- Nut tightening torque M7 bushing 120 Ncm max. (10.6 lbinch max.)
- Nut and washer are delivered in standard packaging

SAP ORDERING INFORMATION (Part Number 18 digits)																	
P	9	A	1	R	1	0	0	F	I	R	X	1	1	0	3	M	A
MODEL	NUMBER OF MODULES	BUSHING	LOCATING PEG	PANEL SEALED	DETENT OPTION	SHAFT	PIN STYLE			RESISTANCE CODE/TOLERANCE CODE/TAPER							
			0 = without 1 = with	0 = without P = with	0 = without M = center detent	see code below											



PANEL SEALED

- Only for R bushing without locating peg.
- Front mounting surface for R bushing with panel sealed option is: 6.2 mm ± 0.5
- The ring is delivered with nut and washer.
- The seal should be placed between panel and body. Sealing is obtained by tightening the seal against the panel when mounting the potentiometer. Tightening torque 50 Ncm up to 100 Ncm
- Advised Panel Hole dimensions

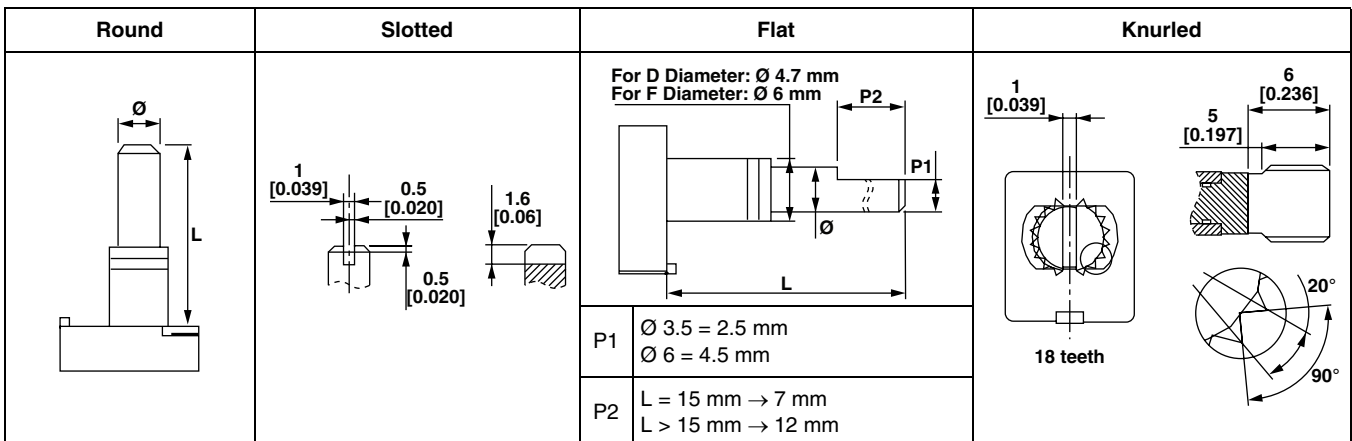
DETENT OPTION

- Stable position and in Mid mechanical travel
- Rotational life: 10 000 actuations

SHAFT DIAMETER - FMS - STYLE

L (mm)	15				20			25			30		
Style	Round	Slotted	Flat	Knurled	Round	Slotted	Flat	Round	Slotted	Flat	Round	Slotted	Flat
Ø 3.5	DFR	DFS	DFF	-	DIR	DIS	DIF	DLR	DLS	DLF	DMR	DMS	DMF
Ø 6	FFR	FFS	FFF	FGK ⁽¹⁾	FIR	FIS	FIF	FLR	FLS	FLF	FMR	FMS	FMF

Note
⁽¹⁾ For X bushing (16 mm)



SAP ORDERING INFORMATION (Part Number 18 digits)																	
P	9	A	1	R	1	0	0	F	I	R	X	1	1	0	3	M	A
MODEL	NUMBER OF MODULES	BUSHING	LOCATING PEG	PANEL SEALED	DETENT OPTION	SHAFT	PIN STYLE					RESISTANCE CODE/TOLERANCE CODE/TAPER					
							see Pin Table First digit: Pin type X, J, S, Z, P, L W or N Second digit: Pin Configuration 1, 2, 3, 4 or N										

PIN STYLE - HORIZONTAL MOUNTING		
PIN TYPE		
X	PC mount	
J	PC mount center tap	
S	Soldering style	
Z	Center tap soldering style	
L	Long pin	
P	Center tap with long pin	
NN	If different types of pin style in the same potentiometer	
PIN CONFIGURATION		
1	2	3
2.5 mm between gang	2.5 - 5 - 2.5 mm between gang	5 mm between gang

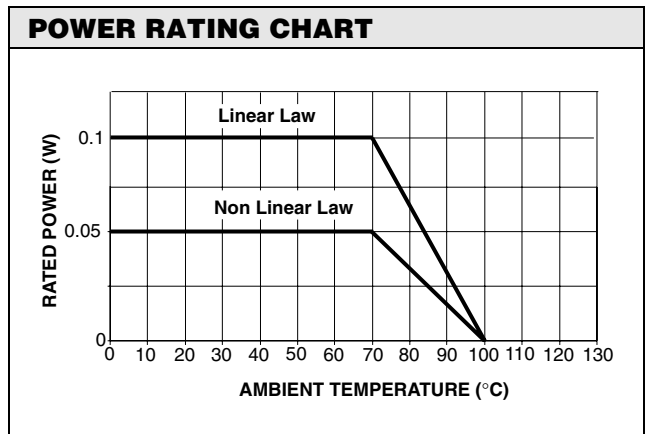
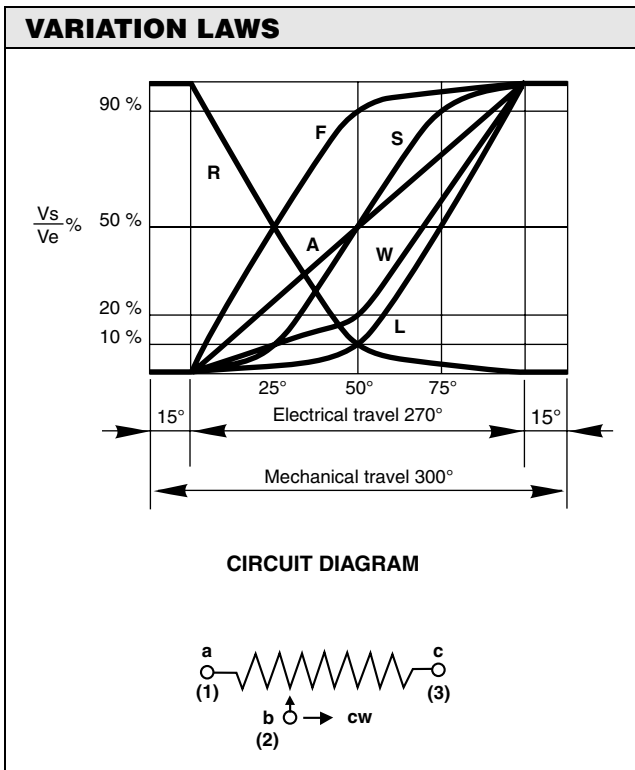
SAP ORDERING INFORMATION (Part Number 18 digits)																	
P	9	A	1	R	1	0	0	F	I	R	X	1	1	0	3	M	A
MODEL	NUMBER OF MODULES	BUSHING	LOCATING PEG	PANEL SEALED	DETENT OPTION	SHAFT	PIN STYLE					RESISTANCE CODE/TOLERANCE CODE/TAPER					
							see Pin Table First digit: Pin type X, J, S, Z, P, L W or N Second digit: Pin Configuration 1, 2, 3, 4 or N										

PIN STYLE - VERTICAL MOUNTING			
W1	Single gang vertical mounting		
W2	Dual gang vertical mounting		
W3	Single gang with center tap vertical mounting		
W4	Dual gang with center tap vertical mounting		

SAP ORDERING INFORMATION (Part Number 18 digits)																	
P	9	A	1	R	1	0	0	F	I	R	X	1	1	0	3	M	A
MODEL	NUMBER OF MODULES	BUSHING	LOCATING PEG	PANEL SEALED	DETENT OPTION	SHAFT	PIN STYLE			RESISTANCE CODE/ TOLERANCE CODE/ TAPER							
										Resistance code: 102 = 1 kΩ to 105 = 1 MΩ Tolerance code: M = 20 % - K = 10 % Taper: A, L, W, F, S, R or Special code given by VISHAY							

RESISTANCE CODE
See Conversion Table for ohmic value

TOLERANCE
Standard: M = ± 20 %
On request: K = ± 10 %



SPECIAL CODES GIVEN BY VISHAY
<p>OPTIONS AVAILABLE</p> <ul style="list-style-type: none"> • Custom shaft • Design on request • Specific linearity • Specific interlinearity • Specific variation law

PART NUMBER DESCRIPTION (for information only)														
P9A	1	R	1	0	0	FI	R	X1	10K	20%	A			e3
MODEL	MODULES	BUSHING	LOCATING PEG	SEALING OPTIONS	DETENT OPTIONS	SHAFT	SHAFT	LEADS	VALUE	TOL.	TAPER	SPECIAL	SPECIAL	LEAD (Pb)-FREE



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