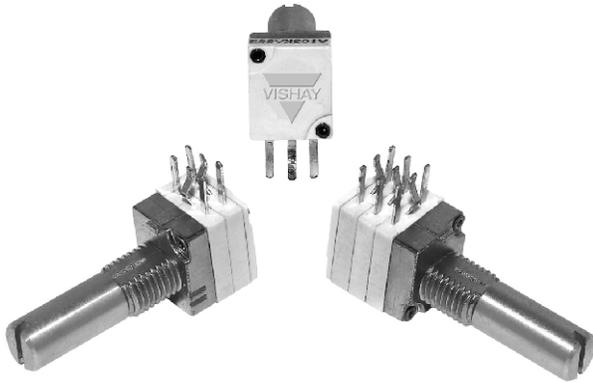


# 9 mm Multi-Ganged Potentiometer



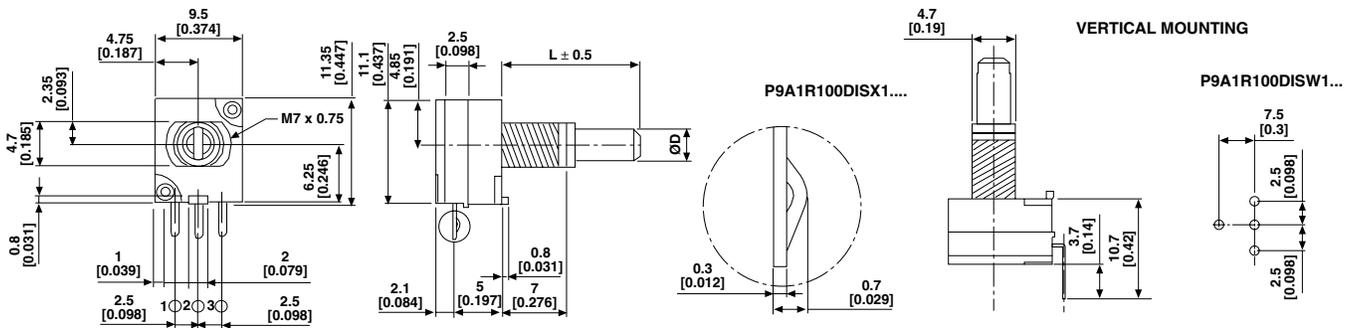
## FEATURES

- 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

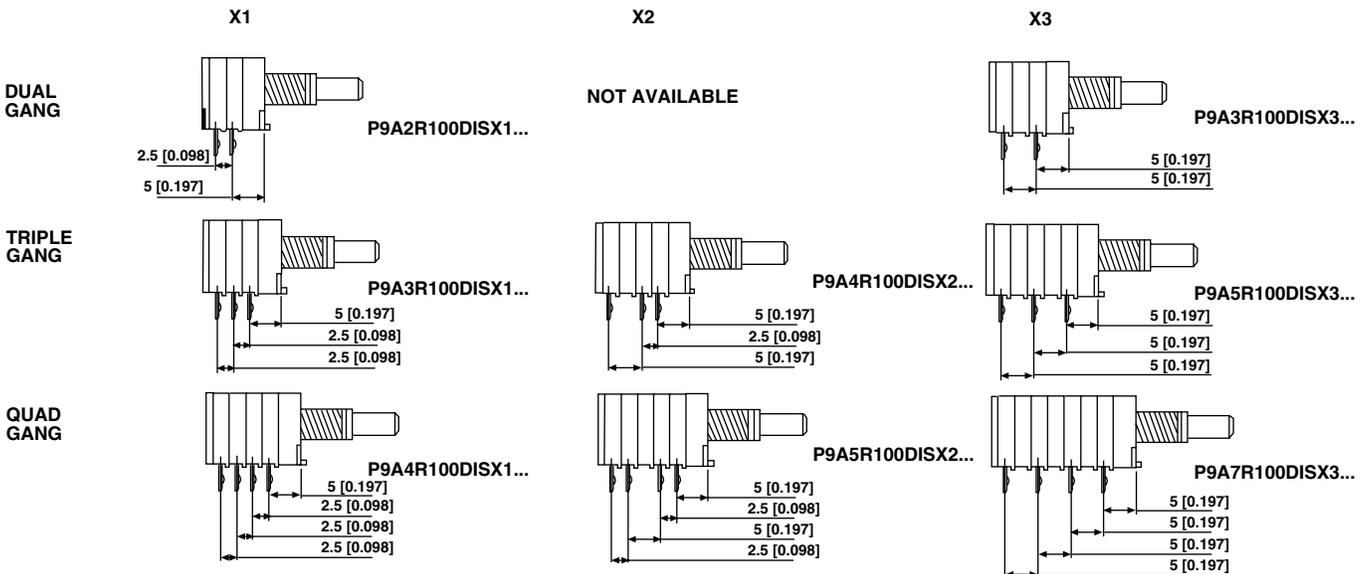


VERSATILE	MODULAR	ULTRA-COMPACT	ROBUST
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**DIMENSIONS** in millimeters [inches] - General tolerance:  $\pm 0.5$  mm **Note:** Shaft is shown in mid-travel

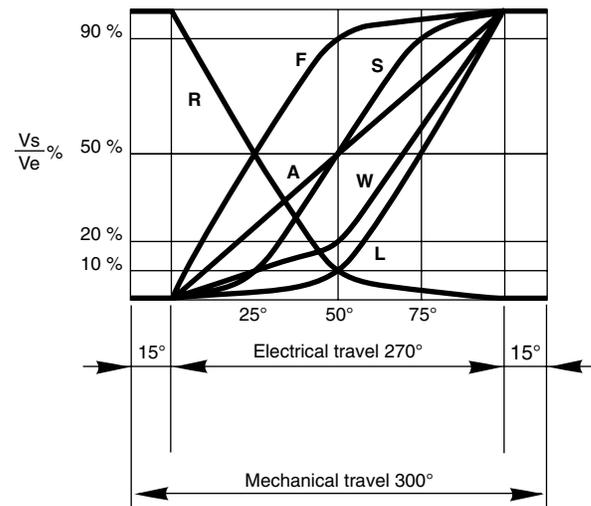


## MOST COMMON PINS STYLES - OTHERS AVAILABLE ON REQUEST



<b>ELECTRICAL SPECIFICATIONS</b>		
Resistive Element		Conductive Plastic
Electrical Travel		270° ± 10°
Resistance Range	Linear Law	1 kΩ up to 1 MΩ
	Non-Linear Law	2K2 up to 500 kΩ
Tolerance	Standard	± 20 %
	On request	± 10 %
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 (typical) Linear Law		± 5 %
Insulation Resistance		100 MΩ at 250 VDC
Dielectric Strength		300 V <sub>AC</sub> during 1 min
Attenuation (typical)		90 dB max/0.05 dB min

<b>MECHANICAL SPECIFICATIONS</b>	
Mechanical Travel	300 ± 5°
Mechanical Rotational Life	25 000 cycles
Operating Torque	0.2 N.cm up to 2.5 N.cm (0.3 to 3.5 oz inch)
End Stop Torque	50 N.cm (4.4 lb inch)
Nut Tightening Torque for M7 Bushing	120 N.cm max. (10.6 lb inch max.)
Shaft Push/Pull Force	7 DaN max. (15.7 lb f. max.)
Weight (one module)	6.25 g, 0.22 oz (without nut and washer)

**VARIATION LAWS**




ENVIRONMENTAL SPECIFICATIONS	
TEMPERATURE RANGE	- 55 °C up to + 100 °C
CLIMATIC CATEGORY	55/100/21

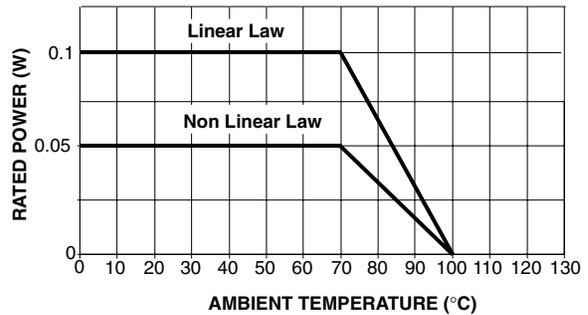
**AVAILABLE OPTIONS**

- Custom shafts or design on request
- Bushing with or without locating PEG (with as a standard at 6 o' clock position)
- Spacer module(s) to increase the distance between rows of pins (by step of 2.5 mm - 3 spacers max)
- Center tap
- Specific linearity/interlinearity on request

**MARKING**

- Type of element: A-conductive plastic
- Code for tolerance
- Code for ohmic value
- Taper
- Code for date code

**POWER RATING CHART**



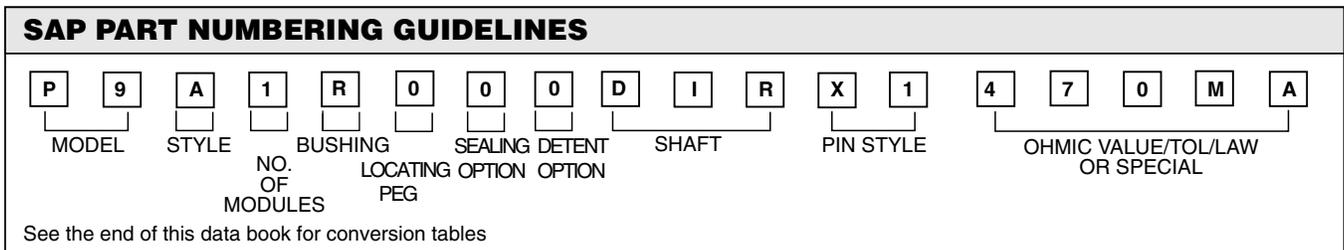
PERFORMANCES				
TESTS	CONDITIONS	TYPICAL VALUE AND DRIFTS		
		$\frac{\Delta RT}{RT}$ (%)	$\frac{\Delta R_{1-2}}{R_{1-2}}$ (%)	OTHER
Load Life	1000 hours under nominal power at 70 °C (90 on/30 off)	± 5 %	± 10 %	Contact resistance variation < 5 % Rn
Temperature Cycle	- 55 °C to + 100 °C 5 cycles	± 0.5 %	-	-
Moisture	21 days at 40 ± 2 °C and 90 - 95 % relative humidity	± 5 %	-	Insulation resistance > 10 MΩ
Rotational Life	25 000 cycles	± 6 %	± 12 %	Contact resistance variation < 2 % Rn
Shock	50 g 11 ms 3 shocks - 3 directions	± 0.2 %	± 0.5 %	-
Vibration	10 - 55 Hz 0.75 mm or 10 g 6 hours	± 0.2 %	-	$\frac{\Delta V_{1-2}}{V_{1-2}} \leq \pm 0.5 \%$



SHAFT STYLES													
DIAMETER (mm)	L (mm)	15			20			25			30		
	STYLE	ROUND	SLOTTED	FLAT									
	3.5	DFR	DFS	DFF	DIR	DIS	DIF	DLR	DLS	DLF	DMR	DMS	DMF
6	FFR	FFS	FFF	FIR	FIS	FIF	FLR	FLS	FLF	FMR	FMS	FMF	

Note: The grey shaded cells show the most common dimensions.

ORDERING INFORMATION										
P9	A	1	R	0	0	0	DIR	X1	470MA	e3
MODEL	STYLE	NUMBER OF MODULE	BUSHING	LOCATION PEG	SEALING	DETENT	SHAFTS	PIN STYLE	RESISTANCE CODE/TOL/TAPER OR SPECIAL	LEAD FINISH
General term for 9 mm potentiometer	A = Conductive Plastic element	1 = one module 2 = two modules 3 = three modules 4 = four modules 5 = five modules 6 = six modules 7 = seven modules	R = M7 x 0.75 Length = 7 mm X = M7 x 0.75 Length = 5 mm	1 = with 0 = without	0 = without	0 = without center detent	Dimensions Shafts: Standard shafts = See above (Example DI) Custom shafts = AP  Style: R = Round S = Slotted F = Flat K = Knurled	X1 = PC pins for horizontal mounting (2.5 mm between gangs) X2 = PC pins for horizontal mounting (2.5 - 5 - 2.5 mm between gangs) X3 = PC pins for horizontal mounting (5 mm between gangs) W1 = PC pins for vertical mounting (only for one module potentiometer)	Given by VISHAY to determine ohmic value, tolerance, taper, custom design, etc OR Resistance code (see table below) in case of unique value, tolerance and taper for all modules	e3: pure Sn
								Note: pitch between pins = 2.5 mm (0.1 inch)		





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