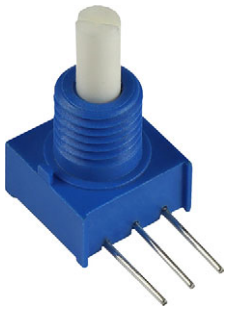
9 mm Sealed Panel Potentiometer



FEATURES

- Conductive plastic
- Industrial grade
- Wide ohmic range (1 kΩ to 1 MΩ)
- Minimal depth package: only 5 mm behind panel
- PC board and bushing mount
- Withstands typical industrial washing processes
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

RoHS COMPLIANT

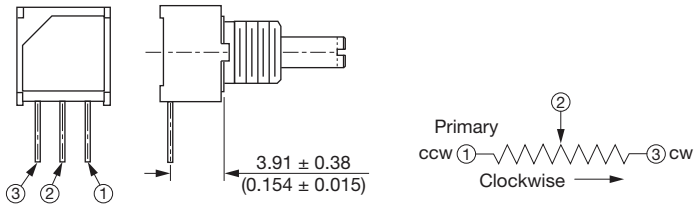
LINKS TO ADDITIONAL RESOURCES

3D Models

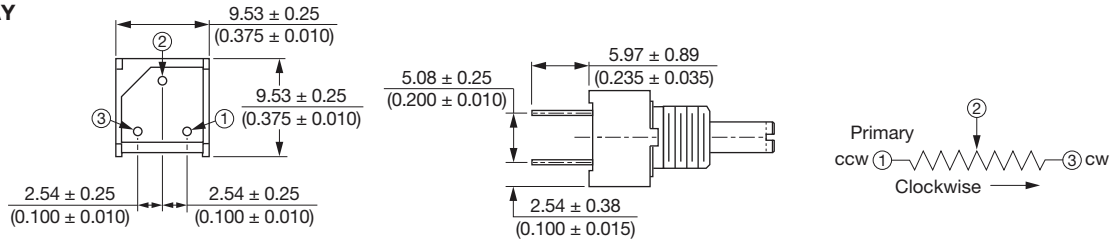
QUICK REFERENCE DATA	
Multiple module	No
Switch module	Yes
Detent module	n/a
Special electrical laws	A: linear
Sealing level	IP 67
Lifespan	50K cycles

DIMENSIONS in millimeters (inches) ± 0.5 mm (± 0.02")

P9AC



P9AY



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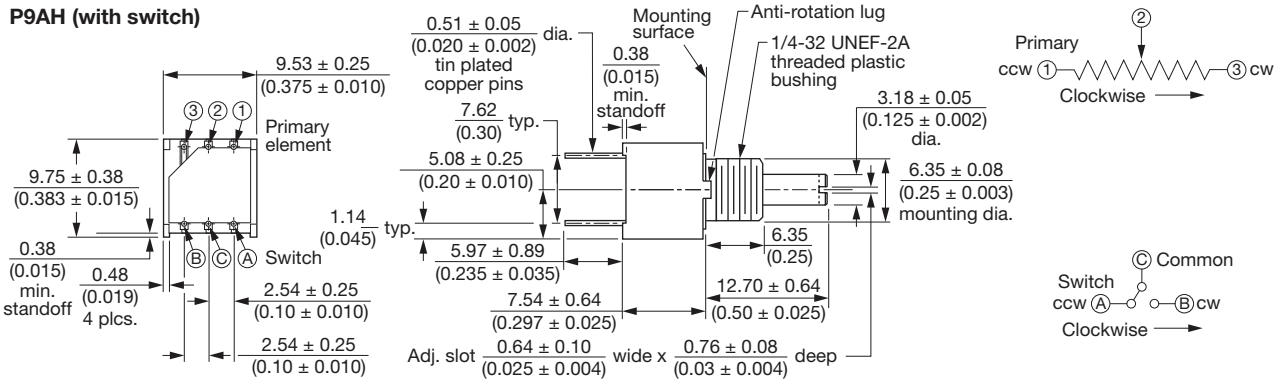
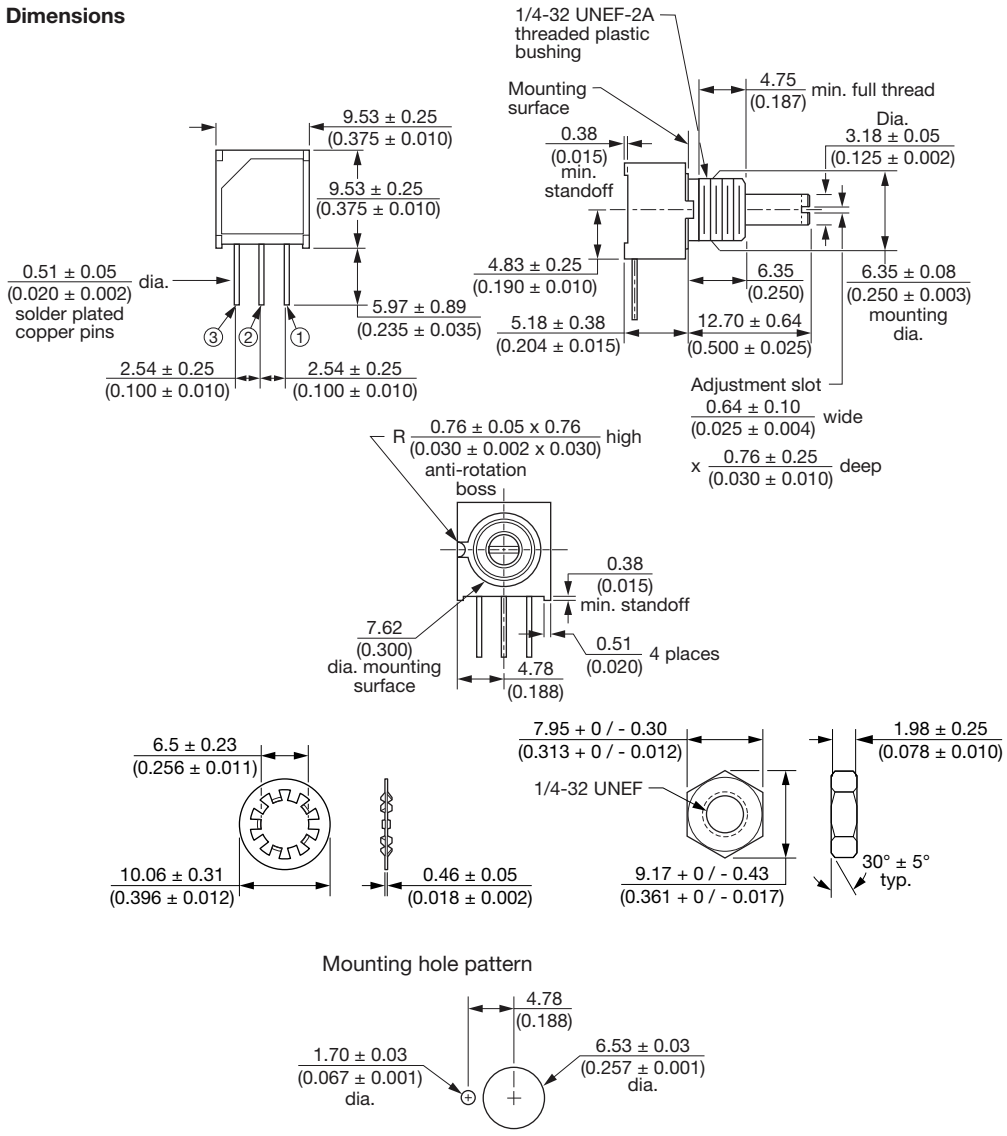
DIMENSIONS in millimeters (inches) ± 0.5 mm (± 0.02")

P9AH (with switch)



Common Dimensions



Mounting hole pattern

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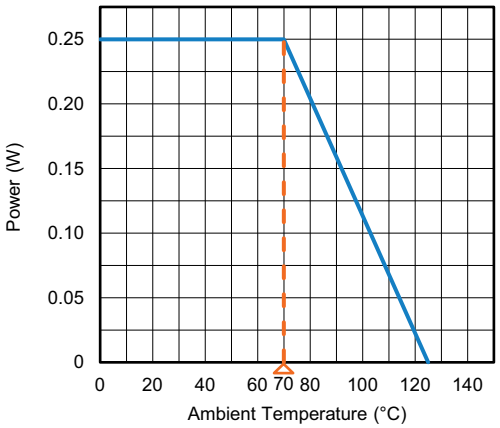
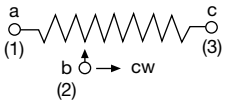
ELECTRICAL SPECIFICATIONS	
Resistive element	Conductive plastic
Electrical travel	270° ± 15°
Resistance range	1 kΩ to 1 MΩ (see “Standard Resistance Element Data”)
Tolerance	± 20 % (standard)
Power rating (linear)	0.25 W at +70 °C 
Circuit diagram	
Temperature coefficient	± 1000 ppm/°C
Limiting element voltage	200 V_{AC}
Contact resistance variation (typical)	1 % or 1 Ω max.
End resistance (typical)	2 % or 2 Ω max.
Dielectric strength (RMS)	900 V_{AC}
Insulation resistance (500 V_{DC})	1000 MΩ min.
Independent linearity (typical)	± 5 %

MECHANICAL SPECIFICATIONS	
Mechanical travel	295° ± 10°
Operating torque (max. Ncm)	3.53 Ncm (5 oz.in.)
End stop torque	5.65 Ncm (8 oz.in.)
Mounting torque	45 Nm (4.0 lb.in.) max. (plastic bushing) 79 Nm (7.0 lb.in.) max. (metal bushing)
Unit weight (max.)	4.5 g

ENVIRONMENTAL SPECIFICATIONS	
Temperature range	-40 °C to +125 °C (-40 °F to +257 °F)

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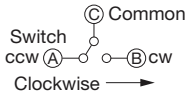
SWITCH OPTION		
Switch actuation angle	- Switch connection between “A” and “C” at ccw end stop - Switch connection between “C” and “B” after traveling 14° approx. at cw direction	
Switching current maximum	100 mA at 16 V_{DC}	
Dielectric strength	350 V_{DC}	
Contact resistance	2 Ω max.	
Detent torque	0.5 oz.in. min.	
Life span	10 000 actuations	
Electrical diagram: RSID single pole CHANGEOVER: in full ccw position, the contact is made between C and A, and open between C and B. Switch actuation (cw direction) reverses these positions.		

PERFORMANCE		
TESTS	**CONDITIONS**	**TYPICAL VALUES AND DRIFTS**
Load life	1000 h at rated power, ambient temperature +70 °C	Total resistance shift = ± 10 %
Moisture resistance	MIL-STD-202 Method 103, Condition B	Total resistance shift = ± 10 %
Rotational life (no load)	50 000 cycles	Total resistance shift = ± 5 % Contact resistance variation = ± 3 % or ± 3 Ω, whichever is greater
Shock	100 *g*	Total resistance shift = ± 1 % Voltage resistance shift = ± 1 %
Vibration	30 *g*	Total resistance shift = ± 1 % Voltage resistance shift = ± 1 %

Note

- Nothing stated herein shall be construed as a guarantee of quality or durability

STANDARD RESISTANCE ELEMENT DATA				
RESISTANCE CODE	**STANDARD RESISTANCE VALUES**	**LINEAR LAW**		
		MAX. POWER AT 70 °C	**MAX. WORKING VOLTAGE**	**MAX. CURRENT THROUGH WIPER**
	Ω	**W**	**V**	**mA**
102	1000	0.25	15.81	15.8
202	2000	0.25	22.36	11.2
502	5000	0.25	35.36	7.1
103	10 000	0.25	50.00	5.0
203	20 000	0.25	70.71	3.5
503	50 000	0.25	111.80	2.2
104	100 000	0.25	158.11	1.6
204	200 000	0.20	200.00	1.0
504	500 000	0.08	200.00	0.4
105	1 000 000	0.04	200.00	0.2

MARKING

Vishay trademark
Resistance code
Manufacturing date code
Model number
Product code
Terminal style

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ORDERING INFORMATION (part number)

P	9	A	C	0	A	G	B	S	1	0	3	M	A				

MODEL	STYLE	SWITCH	BUSHING	SHAFT				END SHAFT	OHMIC VALUE	TOLERANCE	TAPER	SPECIAL NUMBER
					Ø	L	Bushing					
P9A	C Y H (only available with switch	0 = without switch 1 = RSID	A = Ø 1/4" length 1/4" 0 = bushingless (board level control)	BB	3.18 mm (1/8")	12.7 mm (1/2")	A	S = slotted F = flatted	From 1 kΩ to 1 MΩ **103** = 10 kΩ See "Standard Resistance Element Data"	**M** = 20 %	**A** = linear	(If applicable) Given by Vishay for custom design
				BH		19.1 mm (3/4")	A					
				BX		5.59 mm	0					

PART NUMBER DESCRIPTION (for information only)

P9A	C	0	A	BB	Slotted	10K	20 %	Linear
MODEL	STYLE	SWITCH	BUSHING	SHAFT	END SHAFT	VALUE	TOLERANCE	TAPER

STANDARD COMBINATION OF STYLE / SWITCH / BUSHING / SHAFT

STYLE	SWITCH	BUSHING	SHAFT / END SHAFT	AVAILABLE VERSION
C	0	A	BBS	P9AC0ABBS__MA
		0	BXF	P9AC00BXF__MA
Y	0	A	BBS	P9AY0ABBS__MA
H	1		BHS	P9AH1ABHS__MA

ACCESSORIES

Additional Accessories (to order separately)	www.vishay.com/doc?51051
Control Knobs	www.vishay.com/doc?51101

RELATED DOCUMENTS

APPLICATION NOTES	
Potentiometers and Trimmers	www.vishay.com/doc?51001
Guidelines for Vishay Sfernice Resistive and Inductive Components	www.vishay.com/doc?52029

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