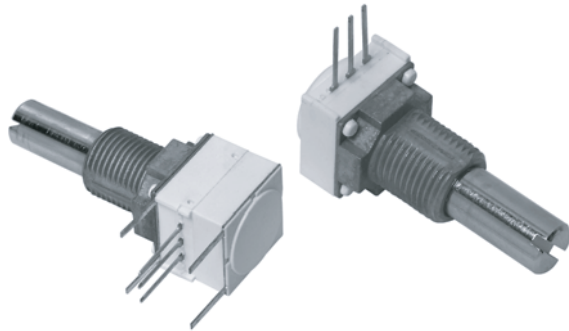


1/2" (12.7 mm) Conductive Plastic and Cermet Potentiometer



FEATURES

- Robust construction
- High rotational life (50 000 cycles)
- Up to three sections PC support plates
- Rotary switches and solder lug terminals available
- Tests according to CECC 41000 or IEC 60393-1
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912



RoHS
COMPLIANT

148 FEATURES

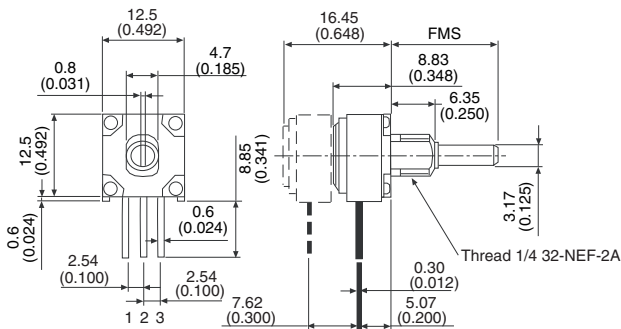
- Conductive plastic element
- Quiet electrical output

149 FEATURES

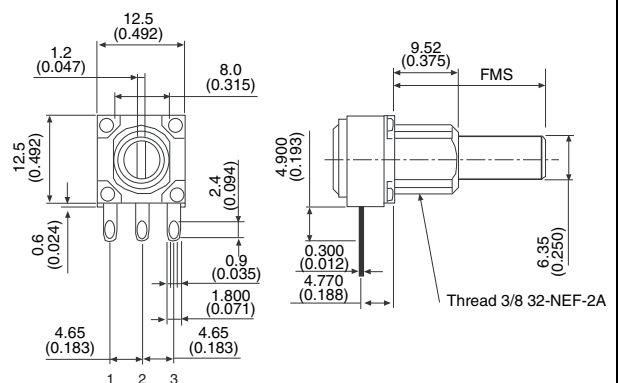
- Cermet element
- Low temperature coefficient (± 150 ppm/ $^{\circ}$ C)

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

Single, dual or triple

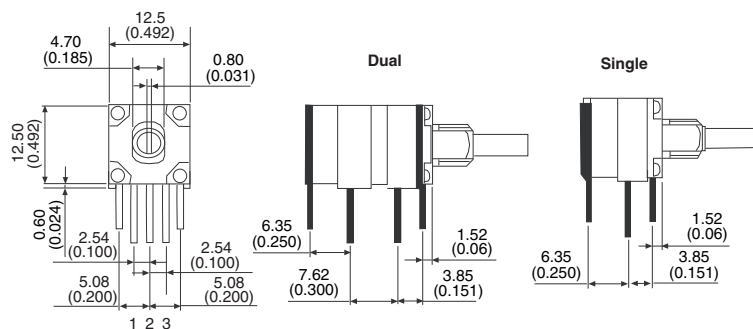


Solder lug terminals



Front and rear support plates

E = Flush with board surface





ELECTRICAL SPECIFICATIONS		
PARAMETER		
Resistance range	Linear	1 kΩ to 1 MΩ
	Non-linear	500 Ω to 500 kΩ
Tolerance	Linear	10 %
	Non-linear	20 % on request 10 %
Linearity (typical)	± 5 % independent	
End resistance	4 Ω maximum each end	
Power rating	0.5 W at 70 °C 0 W at 120 °C	
	1 W at 70 °C 0 W at 150 °C	
	Non-linear or PC mount, derate 50 %	
Circuit diagram		
Effective rotation	270° ± 10° without rotary switch 240° ± 10° with rotary switch	
Contact resistance variation (typical)	1.5 % of total resistance	3 % of total resistance
Maximum continuous working voltage	350 V _{AC} across end terminals, but within power rating	
Dielectric withstanding voltage	Sea level -750 V _{AC}	

MECHANICAL SPECIFICATIONS		
Mechanical travel	300° ± 5°	
Operating torque (typical)	Single section 0.2 oz. to 3.0 oz. - in dual or triple section 0.3 oz.-inch to 4.5 oz.-inch	
End stop torque	Bushing A and B	2.1 lb-inch max.
	Bushing F	6.8 lb-inch max.
Weight (approx.)	Single	0.19 oz.
	Dual	0.27 oz.
	Triple	0.35 oz.
Terminals	Electrical elements	e3: pure Sn
	Switch elements	e4: gold plated

ENVIRONMENTAL SPECIFICATIONS		
	148	149
Operating temperature	-40 °C to +125 °C	-40 °C to +125 °C
Storage temperature	-55 °C to +125 °C	-55 °C to +125 °C
Temperature cycling (5 cycles)	-40 °C to +125 °C (4 % ΔR _T)	-40 °C to +125 °C (3 % ΔR _T)
Load life (1000 h rated load at 70 °C)	10 % ΔR _T	5 % ΔR _T
Mechanical endurance	50 000 cycles	
TCR (typical)	± 500 ppm/°C	± 150 ppm/°C
Sealing	IP64	

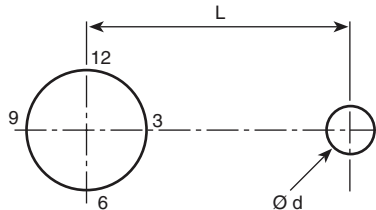
Note

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

LOCATING PEGS (anti-rotation lug)

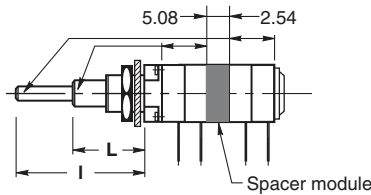
The locating peg is provided by a plate mounted on the bushing and positioned by the module sides. Four set positions are available, clock face orientation: 12, 3, 6, 9.

All 148, 149 bushings have a double flat. When panel mounting holes have been punched accordingly, an anti-rotation lug is not necessary.



CODE	VERSION	BUSHING A, B	BUSHING F	EFFECTIVE HIGH PEG
A	Ø d mm	2	2	0.7
	L mm	6.2	6.2	-
B	Ø d mm	2	2	0.7
	L mm	7.75	7.75	-
C	Ø d mm	-	3.5	1.1
	L mm	-	13.5	-

Locating pegs are supplied in separate bags with nuts and washers

RSID OPTION: ROTARY SWITCH MODULES


- Rotary switches
- Current up to 2 A
- SPDT: Single pole, changeover switch in CCW position - 3 pins
- Sealing IP60

**MODULES: RS ON/OFF SWITCH
RSI CHANGEOVER SWITCH**

The position of each module is free.

RS and RSI rotary switches are housed in a standard 148, 149 module size 12.7 mm x 12.7 mm x 5.08 mm (0.5" x 0.5" x 0.2"). They have the same terminal styles as the assembled electrical modules.

An assembly can comprise 1 or more switch modules.

Switch actuation is described as seen from the shaft end.
D: means actuation in maximum CCW position

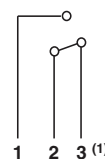
The switch actuation travel is 25° with a total mechanical travel of 300° ± 5° and electrical travel of electrical modules is 238° ± 10°.

RSID Single Pole CHANGEOVER

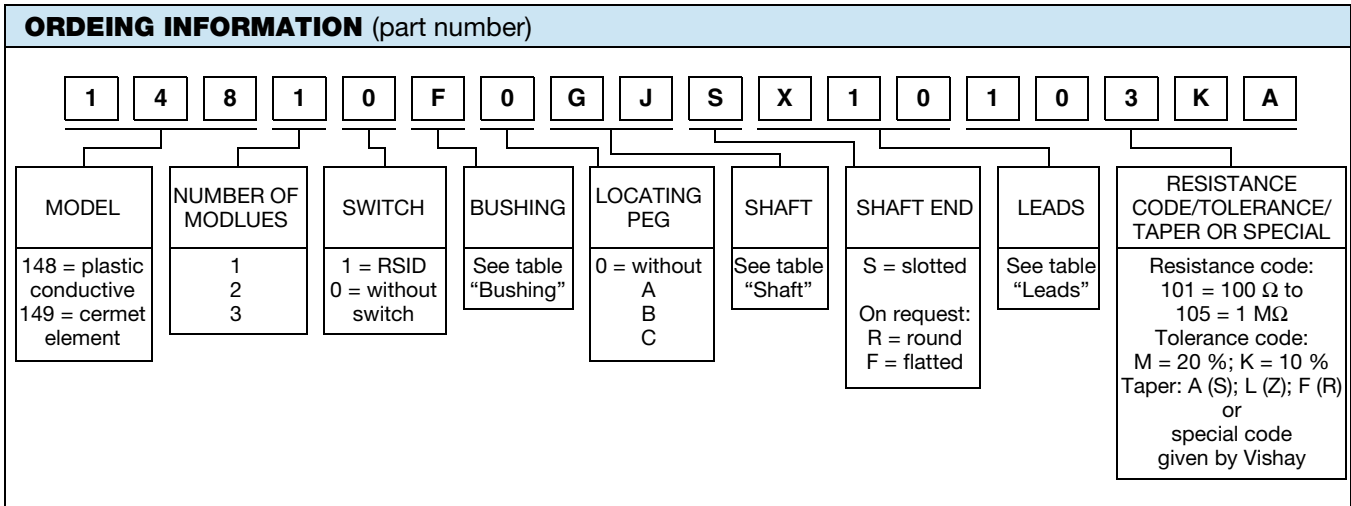
In full CCW position, the contact is made between 3 and 2 and open between 3 and 1. Switch actuation (CW direction) reverses these positions.

SWITCH SPECIFICATIONS

Switching Power Maximum	62.5 VA v 15 VA =	
Switching Current Maximum	0.25 A 250 V v 0.5 A 30 V =	
Maximum Current Through Element	2 A	
Contact Resistance	100 mΩ	
Dielectric Strength	Terminal to Terminal	1000 V _{RMS}
	Terminal to Bushing	2000 V _{RMS}
Maximum Voltage Operation	250 V v 30 V =	
Insulation Resistance Between Contacts	10 ⁶ MΩ	
Life at P _{max.}	10 000 actuations	
Minimal Travel	25°	
Operating Temperature	-40 °C to +85 °C	

ELECTRICAL DIAGRAM
**RSID
CCW POSITION**

Note

(1) Common



BUSHING			
	Ø	L	OLD CODES
A	1/4"	1/4"	N
B	1/4"	3/8"	J
F	3/8"	3/8"	G

SHAFT			
	Ø	FMS	OLD CODES
BB	1/8"	1/2"	32
BG	1/8"	5/8"	40
BH	1/8"	3/4"	48
BJ	1/8"	7/8"	56
GB	1/4"	1/2"	32
GG	1/4"	5/8"	40
GH	1/4"	3/4"	48
GJ	1/4"	7/8"	56
GL	1/4"	1"	64
GN	1/4"	1 1/4"	80

LEADS				
	TYPE	PIN SPACING	SPACE BETWEEN MODULES	OLD CODES
X10	PCB pins	2.54 mm (0.100")	n/a	P
X13			7.62 mm (0.300")	
A10	PCB pins and support plates	2.54 mm (0.100")	n/a	E
A13			7.62 mm (0.300")	
Y00	Sold, lugs	4.65 mm (0.183")	n/a	S
Y03			7.62 mm (0.300")	

PART NUMBER DESCRIPTION (for information only)															
148	1	0	F	0	GJ	S	X10	BO50	10K	10 %	A				e3
MODEL	MODLUES	SWITCH	BUSHING	LOCATING PEG	SHAFT	SHAFT	LEADS	PACK.	VALUE	TOL.	TAPER	SPECIAL	SPECIAL	LEAD FINISH	

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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