

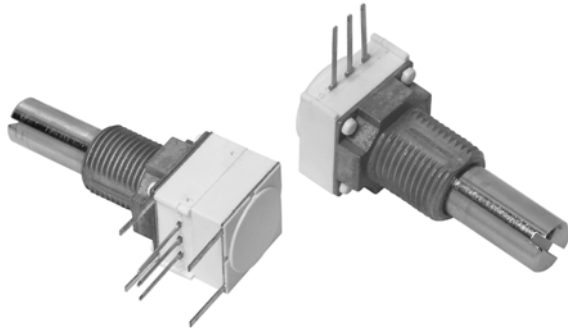
1/2" (12.7 mm) Conductive Plastic and Cermet Potentiometers

FEATURES

- Robust construction
- High rotational life (50 000 cycles)
- Up to three sections PC support plates
- Rotary switches and solder lug terminals available
- Compliant to RoHS directive 2002/95/EC since date code 0414



RoHS
COMPLIANT



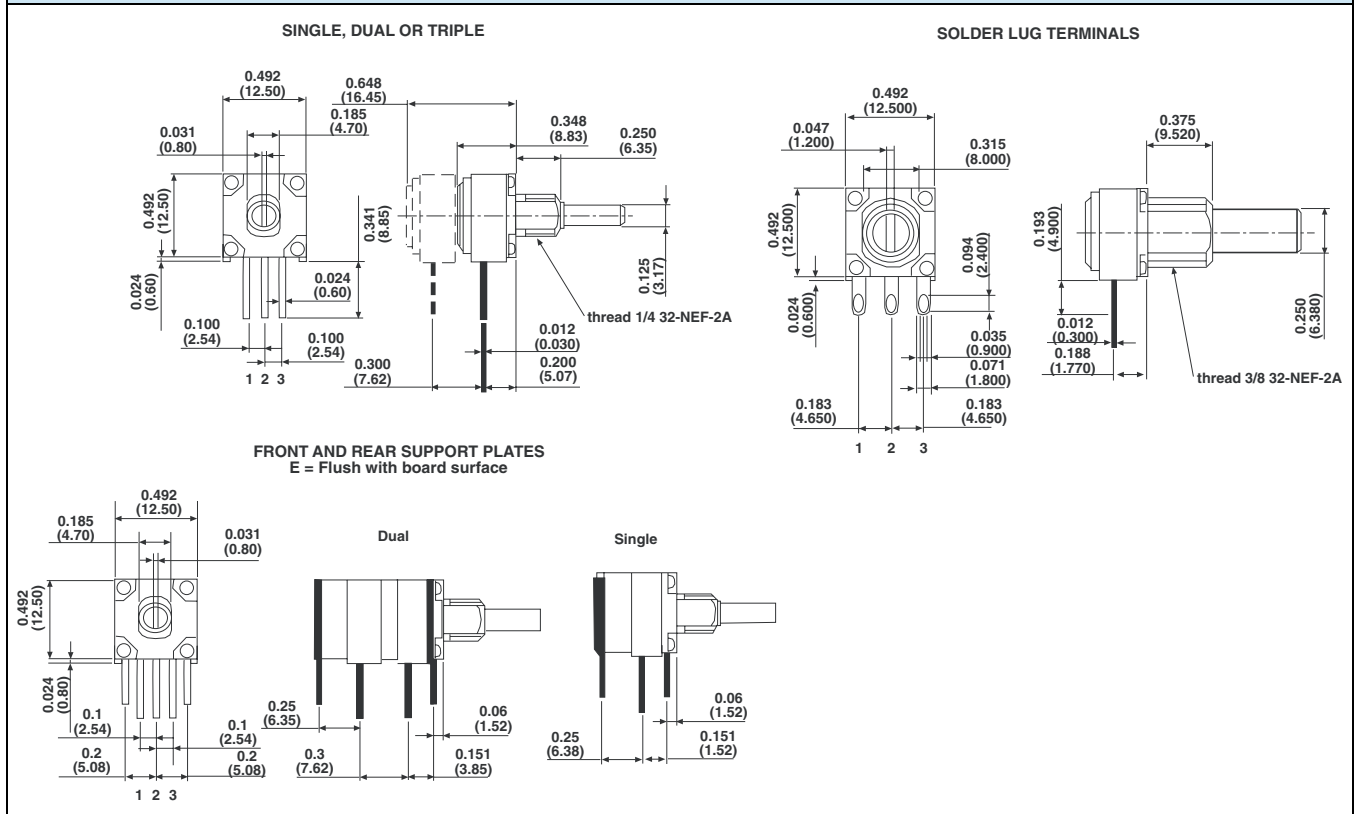
148 FEATURES

- Conductive plastic element
- Quiet electrical output

149 FEATURES

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

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





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

Vishay Spectrol

ELECTRICAL SPECIFICATIONS			
PARAMETER		148	149
Resistance Range	Linear	1 kΩ to 1 MΩ	100 Ω to 2 MΩ
	Non-Linear	500 Ω to 500 kΩ	250 Ω to 1 MΩ
Tolerance	Linear	10 %	10 %
	Non-Linear	20 % on request 10 %	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		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}	

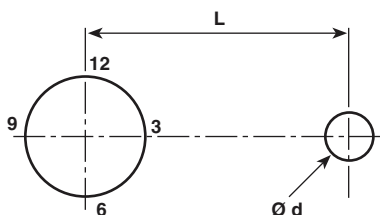
MECHANICAL SPECIFICATIONS			
Mechanical Travel		300° ± 5°	
Operating Torque (Typical)		Single section 0.2 to 3.0 oz. - in dual or triple section 0.3 to 4.5 oz.-in	
End Stop Torque	Bushing A and B	2.1 in-lbs max.	
	Bushing F	6.8 in-lbs max.	
Weight (approx.)	Single	0.19 oz.	
	Dual	0.27 oz.	
	Triple	0.35 oz.	
Terminals	Electrical Elements	e3: Pure Sn	
	Switch Elements	e4: Gold plated	

ENVIRONMENTAL SPECIFICATIONS		
	148	149
Operating Temperature	- 40 °C to + 120 °C	- 40 °C to + 125 °C
Storage Temperature	- 55 °C to + 120 °C	- 55 °C to + 150 °C
Temperature Cycling (5 Cycles)	- 40 °C to + 120 °C (4 % ΔR _T)	- 40 °C to + 150 °C (3 % ΔR _T)
Load Life (1000 h Rated Load at 70 °C)	10 % ΔR _T	5 % ΔR _T
Rotational Load Life	50 000 cycles	
TCR (Typical)	± 500 ppm/°C	± 150 ppm/°C
Sealing	IP64	

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.

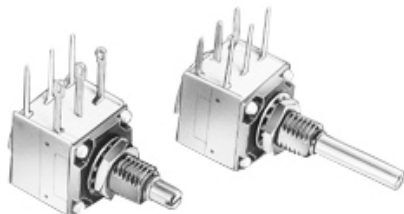
All 148, 149 bushings have a double flat. When panel mounting holes have been punched accordingly, an anti-rotation lug is not necessary.



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

**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 module is 238° ± 10°.

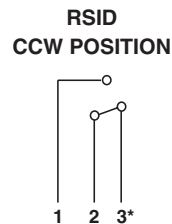
RSID SINGLE POLE CHANGEOVER

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	30 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

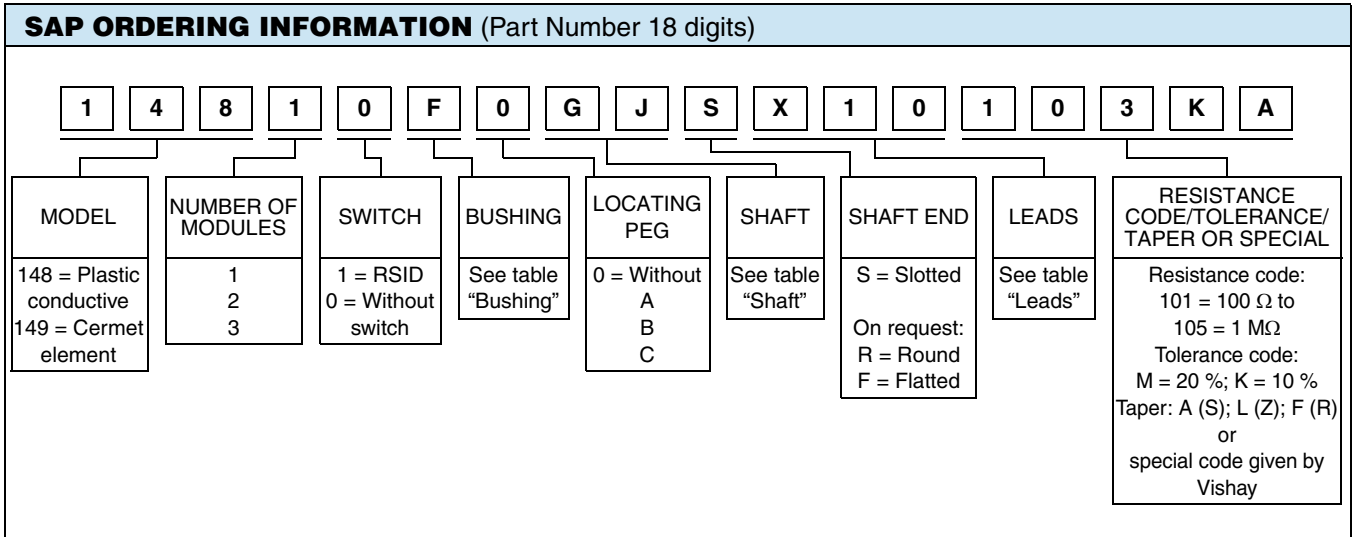


- Note**
- Common



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

Vishay Spectrol



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

SHAFT			
	Φ	L	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	MODULES	SWITCH	BUSHING	LOCATING PEG	SHAFT	SHAFT	LEADS	PACK.	VALUE	TOL.	TAPER	SPECIAL	SPECIAL	LEAD FINISH



Disclaimer

All product specifications and data are subject to change without notice.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained herein or in any other disclosure relating to any product.

Vishay disclaims any and all liability arising out of the use or application of any product described herein or of any information provided herein to the maximum extent permitted by law. The product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein, which apply to these products.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications unless otherwise expressly indicated. Customers using or selling Vishay products not expressly indicated for use in such applications do so entirely at their own risk and agree to fully indemnify Vishay for any damages arising or resulting from such use or sale. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

Product names and markings noted herein may be trademarks of their respective owners.