

Fully Sealed Container Cermet Potentiometer Military and Professional Grade



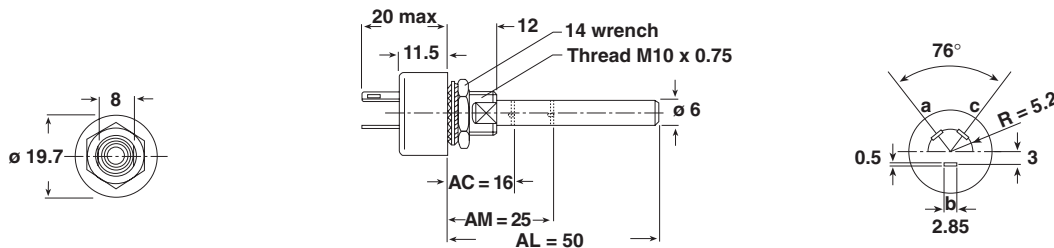
FEATURES

- 3 Watt at 70 °C
- High power rating
- Low temperature coefficient
- Excellent stability
- Full sealing
- Low contact resistance variation
- Mechanical strength
- Use of faston 2.86 connections
- Tests according to CECC 41 000

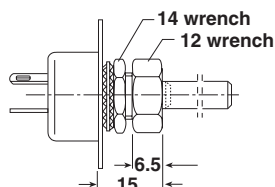


DIMENSIONS in millimeters

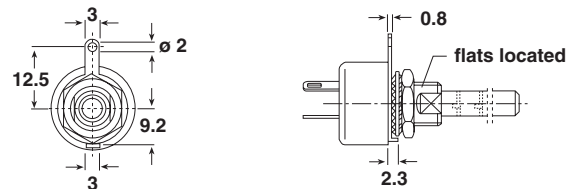
PE30



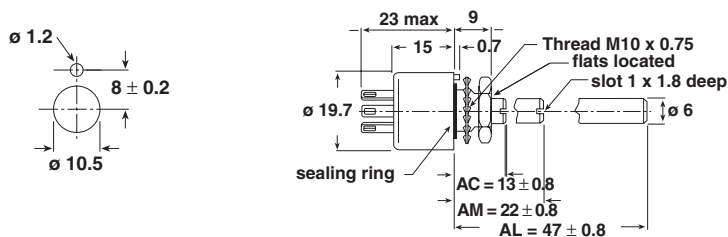
DBAN SHAFT LOCKING



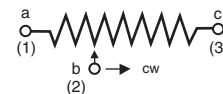
PE30 LPRP - WITH LOCATING PEG



Panel sealed version PE30P - PE30PE



CIRCUIT DIAGRAM



Tolerance unless otherwise specified ± 0.5

**SPECIAL FEATURES
COMMAND SHAFT**

Length is measured from the mounting surface to the free end of the shaft. The screwdriver slot is aligned with the wiper within $\pm 10^\circ$. Special shafts are available, in accordance to drawings supplied by customers. We recommend that customers should not machine shafts, in order to avoid damage. Bending or torsion of terminals should also be avoided.

PANEL SEALING: PE30P

The panel sealing device consists of a ring located in a slot on the potentiometer face. Sealing is obtained by tightening the ring against the panel when mounting the potentiometer.

LINEARITY

The typical linearity of linear variation law potentiometers is $\pm 5\%$. Guaranteed linearity on request. Consult VISHAY.

SHAFT LOCKING: DBAN

The shaft locking device consists of a tapered nut tightening a slotted notched washer against both bushing and shaft. DBAN tightening torque is 200 Ncm, shaft locking torque being 30 Ncm.

DBAN is also available with all special types.

This device is normally supplied in a separate bag. Can be pre-mounted on request.

LOCATING PEG: LPRP

Location is obtained by fitting a special washer in 2 holes drilled at 180° in the potentiometer face.

ELECTRICAL SPECIFICATIONS		
Resistive Element		cermet
Electrical Travel		$270^\circ \pm 10^\circ$
Resistance Range	Linear Law	22Ω to $10 \text{ M}\Omega$
	Logarithmic Laws	100Ω to $2.2 \text{ M}\Omega$
Standard series E3		1 - 2.2 - 4.7 and on request 1 - 2 - 5
Tolerance	Standard	$\pm 20 \%$
	On Request	$\pm 10 \%$ - $\pm 5 \%$
Power Rating	Linear	3 W at $+ 70^\circ \text{C}$
	Logarithmic	1.5 W at $+ 70^\circ \text{C}$
Temperature Coefficient		See Standard Resistance Element Data
Limiting Element Voltage (Linear Law)		300 V
Contact Resistance Variation		3 % R_n or 3 Ω
End Resistance (Typical)		1 Ω
Dielectric Strength (RMS)		2500 V
Insulation Resistance (500VDC)		$10^6 \text{ M}\Omega$

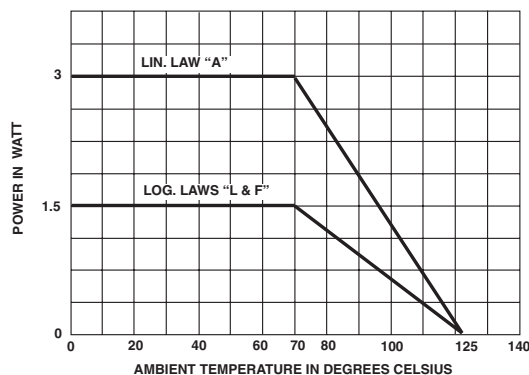
MECHANICAL SPECIFICATIONS

Mechanical Travel $300^\circ \pm 5^\circ$
 Operating Torque (max. Ncm) 3 typical
 End Stop Torque (max. Ncm) 70
 Max Tightening Torque of Mounting Nut (Ncm) 250
 Unit Weight (max. g) 23 to 32

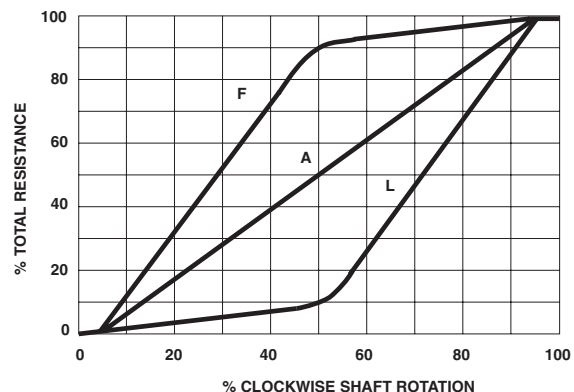
ENVIRONMENTAL SPECIFICATIONS

Temperature Range $- 55^\circ \text{C}$ to $+ 125^\circ \text{C}$
 Climatic Category 55 / 125 / 56
 Sealing fully sealed container IP67

POWER RATING CHART



RESISTANCE LAWS





PERFORMANCE			
CECC 41 301 - 002			TYPICAL VALUES AND DRIFTS
TESTS	CONDITIONS	$\frac{\Delta RT}{RT}$ (%) REQUIREMENTS	$\frac{\Delta R_{1-2}}{R_{1-2}}$ (%)
Climatic Sequence	Phase A dry heat 125 °C Phase B damp heat Phase C cold – 55 °C Phase D damp heat 5 cycles	± 10 %	± 10 % ± 0.5 % ± 1 %
Long Term Damp Heat	56 days 40 °C 93 % HR	± 10 % Insulation resistance: > 100 MΩ	± 0.5 % ± 1 % Insulation resistance: > 10 ⁴ MΩ
Rotational Life	25000 cycles	± 10% Contact res. variation: < 7 % Rn	± 3 % Contact res. variation: < 2 % Rn
Load Life	1000 h at rated power 90/30' - ambient temp. 70 °C	± 10 % Contact res. variation: < 7 % Rn	± 1 % Contact res. variation: < 3 % Rn
Rapid Temperature Change	5 cycles – 55 °C at + 125 °C	± 3 %	± 0.5 %
Shock	50 g at 11 ms 3 successive shocks in 3 directions	± 2 %	± 0.1 % ± 0.2 %
Vibration	10-55 Hz 0.75mm or 10 g during 6 hours	± 2 %	± 0.1 % ± 0.2 %

STANDARD RESISTANCE ELEMENT DATA							
STANDARD RESISTANCE VALUES	LINEAR LAW			LOGS LAW			TC. –55°C +125°C
	MAX POWER AT 70°C	MAX WORKING VOLTAGE	MAX CUR THROUGH WPER	MAX POWER AT 70°C	MAX WORKING VOLTAGE	MAX CUR THROUGH WPER	
Ω	W	V	mA	W	V	mA	ppm/°C
22	3	8.12	369				200
47	3	11.87	252				
100	3	17.32	173				± 100
220	3	25.69	116				
470	3	37.55	79				
1k	3	57.44	54	1.5	38.7	38.7	
2.2k	3	81.24	37	1.5	57.4	26.1	
4.7k	3	118.74	25	1.5	83.9	17.9	
10k	3	173.20	17	1.5	122	12.2	
22k	3	256.9	11	1.5	181.6	8.25	
47k	1.91	300	6.3	1.5	265	5.64	
100k	0.90	300	3	0.9	300	3	
220k	0.41	300	1.36	0.41	300	1.36	
470k	0.19	300	0.63	0.19	300	0.63	
1M	0.09	300	0.30	0.09	300	0.30	
2.2M	0.04	300	0.13				
4.7M	0.02	300	0.06				
10M	0.01	300	0.03				

MARKING

- Printed:
 – VISHAY trademark
 – model
 – NF types if applicable
 – ohmic value (in Ω, kΩ or MΩ)
 – tolerance (in %)
 – manufacturing date
 – marking of terminals 1, 2, 3 or a, b, c

ORDERING INFORMATION							
PE30	AC	200 KΩ	± 20 %	A	BO	e3	
MODEL	FEATURE	SHAFT LENGTH	OHMIC VALUE	TOLERANCE	LAW	PACKAGING	LEAD FINISH
	P Panel sealing*	AC 16 mm, slotted AM 25 mm, slotted AL 50 mm, plain		± 20 % standard ± 10 % on request	A Linear L clockwise logarithmic inverse F clockwise logarithmic		e3: pure Sn

* PE Panel sealing with locating peg (former designation E108)

SAP PART NUMBERING GUIDELINES																	
P	E	3	0	L	0	F	G	2	0	4	M	A	B				
MODEL			BUSHING OPTION		SHAFT		OHMIC VALUE			TOL	LAW	PACKAGING		SPECIAL (IF APPLICABLE)			

See the end of this data book for conversion tables



Notice

Specifications of the products displayed herein are subject to change without notice. Vishay Intertechnology, Inc., or anyone on its behalf, assumes no responsibility or liability for any errors or inaccuracies.

Information contained herein is intended to provide a product description only. No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document. Except as provided in Vishay's terms and conditions of sale for such products, Vishay assumes no liability whatsoever, and disclaims any express or implied warranty, relating to sale and/or use of Vishay products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright, or other intellectual property right.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Vishay for any damages resulting from such improper use or sale.