Fully Sealed Container Cermet Potentiometer
Military and Professional Grade

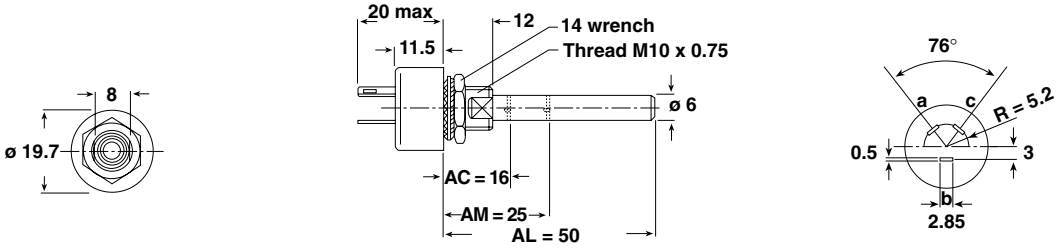
FEATURES

- 3 Watt at 70 °C
- High power rating
- Low temperature coefficient (100 ppm/°C typical)
- Full sealing
- Mechanical strength
- Use of faston 2.86 connections
- Tests according to CECC 41 000

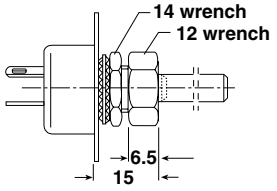
RoHS COMPLIANT

DIMENSIONS in millimeters

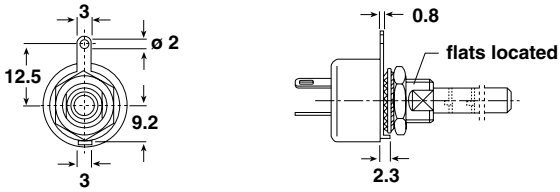
PE30



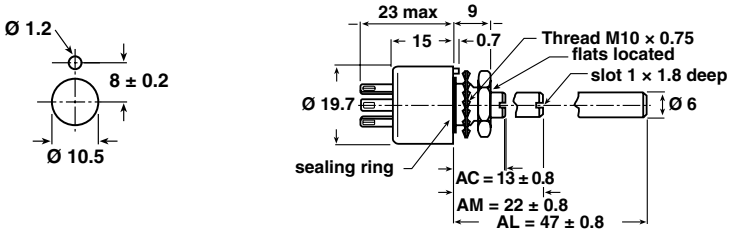
DBAN SHAFT LOCKING



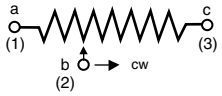
PE30 LPRP - WITH LOCATING PEG



Panel sealed version
PE30P - PE30PE
PE: Including locating peg



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 ± 10°. 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 ± 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° ± 10°
Resistance Range	**Linear Law**	22 Ω to 10 MΩ
	Logarithmic Laws	100 Ω to 2.2 MΩ
Standard series E3		1 - 2.2 - 4.7 and on request 1 - 2 - 5
Tolerance	**Standard**	± 20 %
	On Request	± 10 % - ± 5 %
Power Rating	**Linear**	3 W at + 70 °C
	Logarithmic	1.5 W at + 70 °C
Temperature Coefficient		See Standard Resistance Element Data
Limiting Element Voltage (Linear Law)		300 V
Contact Resistance Variation		3 % Rn or 3 Ω
End Resistance (Typical)		1 Ω
Dielectric Strength (RMS)		2500 V
Insulation Resistance (500VDC)		10^6 MΩ

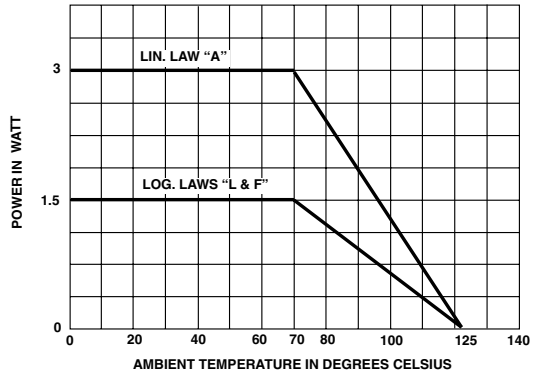
MECHANICAL SPECIFICATIONS

Mechanical Travel	300° ± 5°
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

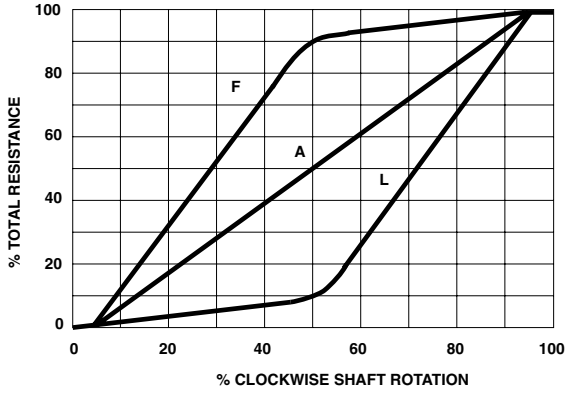
ENVIRONMENTAL SPECIFICATIONS

Temperature Range	- 55 °C to + 125 °C
Climatic Category	55/125/56
Sealing	fully sealed container IP67

POWER RATING CHART



RESISTANCE LAWS



Fully Sealed Container Cermet Potentiometer
Military and Professional Grade

Vishay Sfernice

PERFORMANCE

CECC 41 301 - 002				TYPICAL VALUES AND DRIFTS	
TESTS	CONDITIONS	$\frac{\Delta RT}{RT}$ (%) REQUIREMENTS	$\frac{\Delta R_{1-2}}{R_{1-2}}$ (%)	$\frac{\Delta RT}{RT}$ (%)	$\frac{\Delta R_{1-2}}{R_{1-2}}$ (%)
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 % Insulation resistance: > 10^4 MΩ	± 1 %
Rotational Life	25 000 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 0.75 mm or 10 g during 6 hours	± 2 %		± 0.1 %	± 0.2 %

STANDARD RESISTANCE ELEMENT DATA

STANDARD RESISTANCE VALUES	LINEAR LAW			LOGS LAW			TCR - 55 °C + 125 °C
	MAX. POWER AT 70 °C	MAX. WORKING VOLTAGE	MAX. CUR. THROUGH WIPER	MAX. POWER AT 70 °C	MAX. WORKING VOLTAGE	MAX. CUR. THROUGH WIPER	
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.