

## Fully Sealed Container Cermet Potentiometer Military and Professional Grade



### FEATURES

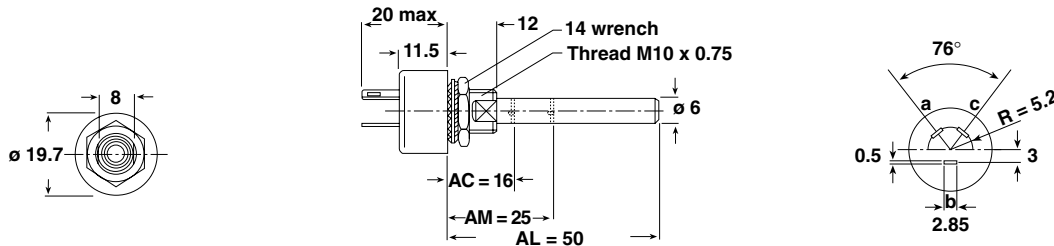
- 3 Watt at 70 °C
- High power rating
- Low temperature coefficient (100 ppm/°C typical)
- Full sealing
- Mechanical strength
- Use of faston 2.86 connections
- Tests according to CECC 41 000



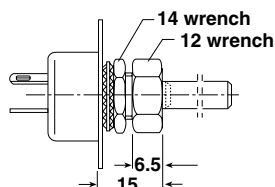
RoHS  
COMPLIANT

### DIMENSIONS in millimeters

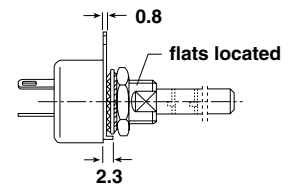
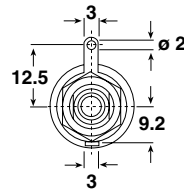
#### PE30



#### DBAN SHAFT LOCKING



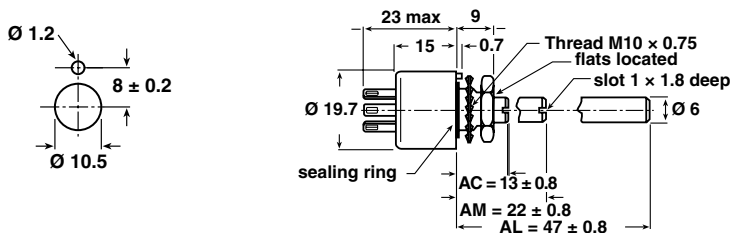
#### PE30 LPRP - WITH LOCATING PEG



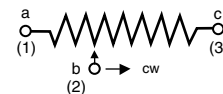
#### Panel sealed version

#### PE30P - PE30PE

PE: Including locating peg



#### CIRCUIT DIAGRAM



Tolerance unless otherwise specified  $\pm 0.5$

**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  $180^\circ$  in the potentiometer face.

ELECTRICAL SPECIFICATIONS		
Resistive Element		cermet
Electrical Travel		$270^\circ \pm 10^\circ$
Resistance Range	Linear Law	$22 \Omega$ to $10 \text{ M}\Omega$
	Logarithmic Laws	$100 \Omega$ 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 $3 \Omega$
End Resistance (Typical)		$1 \Omega$
Dielectric Strength (RMS)		2500 V
Insulation Resistance (500VDC)		$10^6 \text{ M}\Omega$

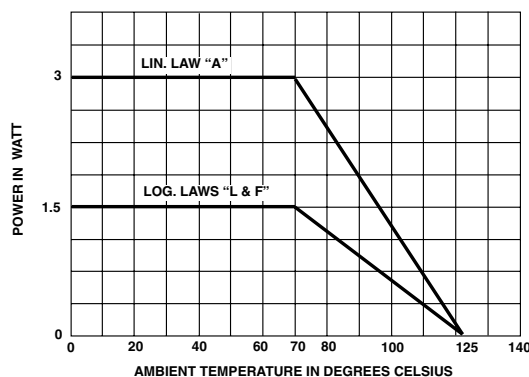
**MECHANICAL SPECIFICATIONS**

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

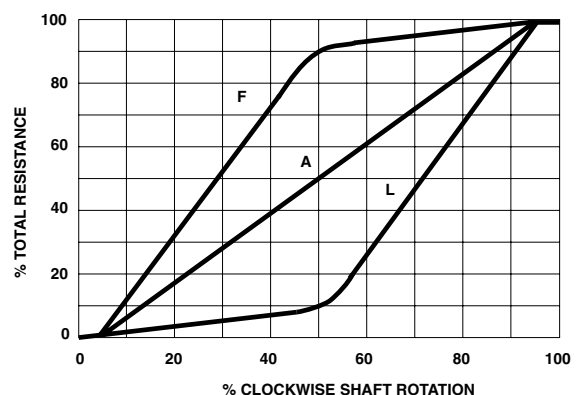
**ENVIRONMENTAL SPECIFICATIONS**

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**





Fully Sealed Container Cermet Potentiometer Vishay Sfernice  
Military and Professional Grade

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 %	± 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  ppm/°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	
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							
MODEL	FEATURE	SHAFT LENGTH	OHMIC VALUE	TOLERANCE	LAW	PACKAGING	LEAD FINISH
PE30		AC	200 kΩ	± 20 %	A	BO	e3
	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



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