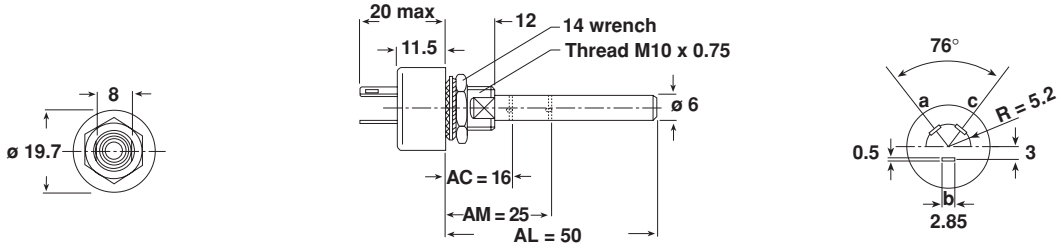
Fully Sealed Container Cermet Potentiometers
Military and Professional Grade

FEATURES

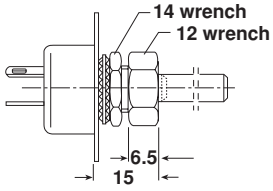
- 3 Watt at 70°C
- High power rating
- Low temperature coefficient
- Excellent stability
- Full sealing
- Low contact resistance variation
- Mechanical strength
- Use of faston 2.86 connections

DIMENSIONS in millimeters

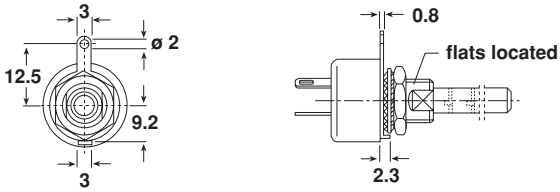
PE30



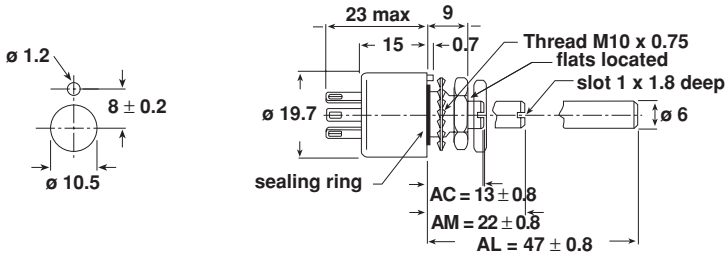
DBAN SHAFT LOCKING



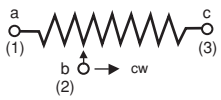
PE30 LPRP - WITH LOCATING PEG



Panel sealed version
PE30P - PE30PE
PE: Including locating ped



CIRCUIT DIAGRAM



Tolerance unless otherwise specified

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

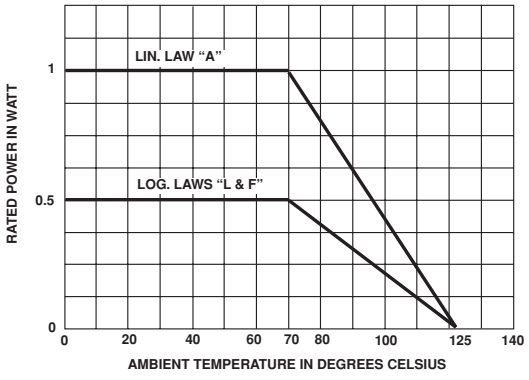
MECHANICAL SPECIFICATIONS

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

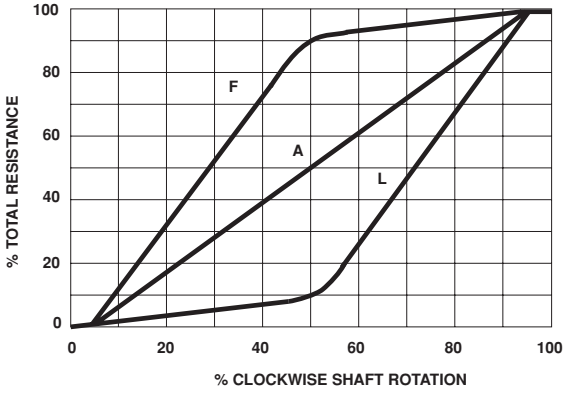
ENVIRONMENTAL SPECIFICATIONS

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

POWER RATING CHART



RESISTANCE LAWS



PERFORMANCE

NF C 83-253				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	± 10% Insulation resistance: > 100MΩ		± 0.5% Insulation resistance: > 10^4 MΩ	± 1%
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	10-55Hz 0.75mm or 10 g during 6 hours	± 2%		± 0.1 %	± 0.2%

STANDARD RESISTANCE ELEMENT DATA

STANDARD RESISTANCE VALUES	LINEAR LAW			LOGS LAW			T.C. –55°C +125°C
	MAX. POWER AT 70°C	MAX. WORKING VOLTAGE	MAX. CUR. THROUGH ELEMENT	MAX. POWER AT 70°C	MAX. WORKING VOLTAGE	MAX. CUR. THROUGH ELEMENT	
Ω	W	V	mA	W	V	mA	ppm/°C
22	33	8.12	369				200
47		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
– series
– 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	P	AC	200 KΩ	± 20%	A	BO
SERIES	FEATURE	SHAFT LENGTH	OHMIC VALUE	TOLERANCE	LAW	PACKAGING

FEATURE		SHAFT LENGTH		TOLERANCE		LAW	
P	Panel sealing*	**AC**	16 ± 0.5mm, slotted	**± 20%** standard	A	Linear	
		AM	12.5 mm, slotted	**± 10%** on request	L	clockwise logarithmic inverse	
		AL	22 mm, plain		F	clockwise logarithmic	

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

LPRP and DBAN: separate ordering (see Accessories)

SAP PART NUMBERING GUIDELINES

P	E	3	0	M	0	F	G	2	0	4	M	A	B
MODEL				BUSHING	OPTION	SHAFT		PACKAGING			TOL	LAW	PACKAGING

See the end of this data book for conversion tables