

Fully Sealed Container Cermet Potentiometer Military and Professional Grade



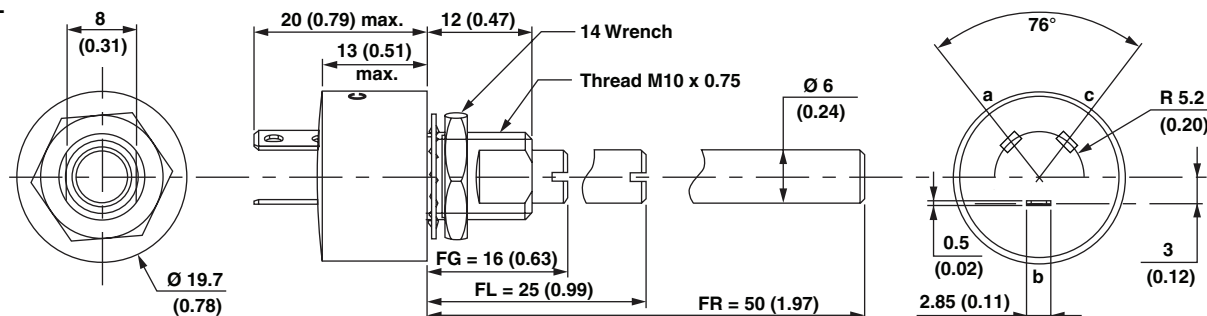
FEATURES

- High power rating (3 W at 70 °C)
- Low temperature coefficient (150 ppm/°C typical)
- Full sealing
- Use of faston 2.86 connections
- Tests according to CECC 41 000
- Wires and connectors available
- Custom design on request

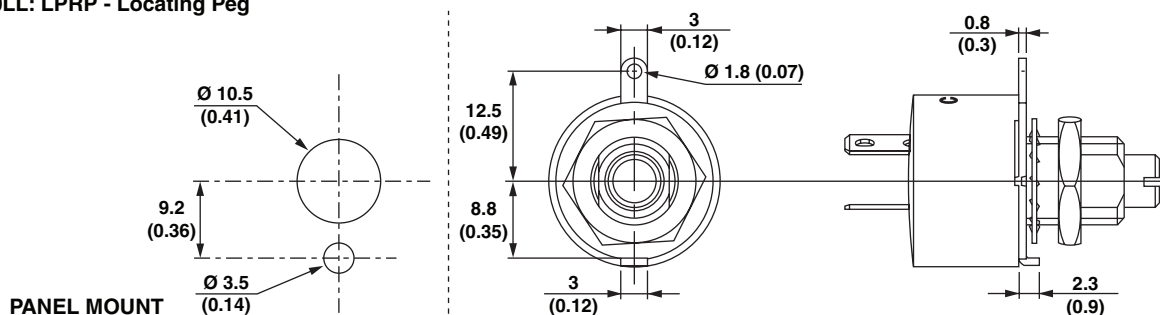

RoHS
COMPLIANT

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

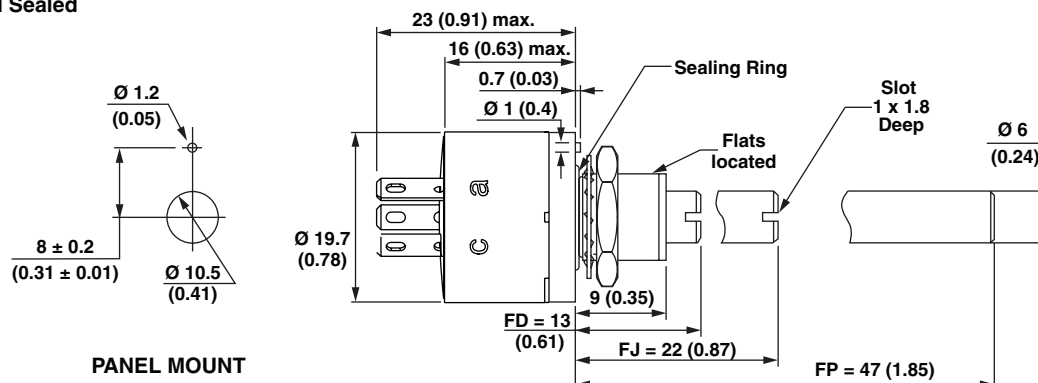
PE30L

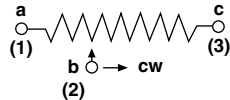
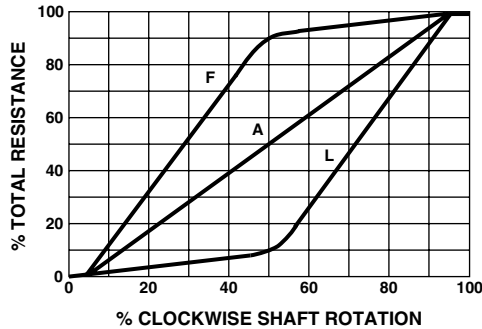
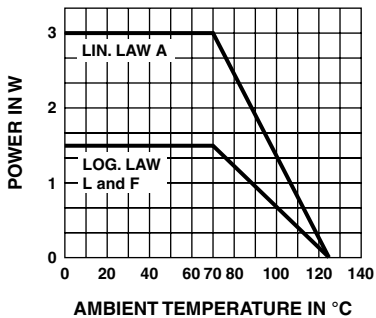


PE30LL: LPRP - Locating Peg



PE30ME: Panel Sealed



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 $\pm 10 \%$ to $\pm 5 \%$
Variation Law	Linear A
	CIRCUIT DIAGRAM  
Power Rating	Linear 3 W at 70°C
	Logarithmic 1.5 W at 70°C
	
Temperature Coefficient (Typical)	$\pm 150 \text{ ppm}/^\circ \text{C}$
Limiting Element Voltage	300 V
Contact Resistance Variation	3 % R_n or 3Ω
End Resistance (Typical)	1Ω
Dielectric Strength (RMS)	2500 V
Insulation Resistance (300 VDC)	$10^5 \text{ M}\Omega$
Independent Linearity (Typical)	$\pm 5 \%$

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STANDARD RESISTANCE ELEMENT DATA

STANDARD RESISTANCE VALUES	LINEAR LAW			LOGS LAW			TYPICAL 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				± 150
47	3	11.87	252				
100	3	17.32	173				
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				

MECHANICAL SPECIFICATIONS

Mechanical Travel	300° ± 5°	
Operating Torque (Typical)	3 Ncm max.	4.25 oz.-inch max.
End Stop Torque	120 Ncm max.	10.51 lb oz.-inch max.
Tightening Torque of Mounting Nut	250 Ncm max.	22 lb-inch max.
Unit Weight	23 to 32 g max.	0.8 to 1.13 oz.
Terminals	e3: pure Sn	

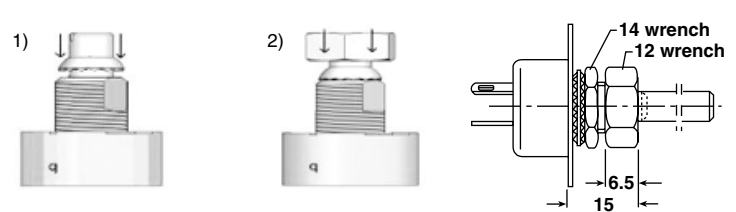
ENVIRONMENTAL SPECIFICATIONS

Temperature Range	- 55 °C to 125 °C
Climatic Category	55/125/56
Sealing	Fully sealed - Container IP67

OPTIONS

Special Feature 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 tool shafts, in order to avoid damage. Bending or torsion of terminals should also be avoided.
Panel Sealing (PE30M)	The panel sealing device consists of a ring located in a groove on the potentiometer face. Sealing is obtained by tightening the ring against the panel when mounting the potentiometer. Old code: PE30P

OPTIONS

Locating Peg (PE30LL)	Location is obtained by fitting a special washer on the mounting face of the potentiometer. Old code: LPRP
Shaft Locking (PE30LD)	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. Assembling Method 

MARKING

- VISHAY trademark
- Model
- Ohmic Value (in Ω , k Ω or M Ω)
- Tolerance (in %)
- Manufacturing date code
- Marking of terminals 3, and a, b, c

PERFORMANCE

CECC 41 301 - 002				TYPICAL VALUES AND DRIFTS	
TESTS	CONDITIONS	$\frac{\Delta RT}{RT}$ (%) REQUIREMENTS	$\frac{\Delta R1-2}{R1-2}$ (%)	$\frac{\Delta RT}{RT}$ (%)	$\frac{\Delta R1-2}{R1-2}$ (%)
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 M Ω		± 0.5 % Insulation resistance: > 10 ⁴ M Ω	± 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 to 55 Hz 0.75 mm or 10 g during 6 hours	± 2 %		± 0.1 %	± 0.2 %

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SAP ORDERING INFORMATION (Part Number 18 digits)

P	E	3	0	L	B	F	G	2	0	4	M	A	B				
MODEL	BUSHING	OPTION	SHAFT				OHMIC VALUE	TOLERANCE	LAW	PACKAGING	SPECIAL NUMBER						
	L = M10 x 0.75 M = Panel sealed M10 x 0.75	0 = none For L Bushing D = DBAN L = LPRP B = DBAN and LPRP A = Peg and DBAN For M Bushing E = Peg	For L Bushing (= old codes:) FG 16 mm, slotted = AC FL 25 mm, slotted = AM FR 50 mm, plain = AL For M Bushing FD = 13 mm, slotted = AC FJ = 22 mm, slotted = AM FP = 47 mm, plain = AL				A law = from 22 Ω to 10 M Ω L and F laws = from 100 Ω to 2.2 M Ω	$\pm 20\%$ on request $\pm 10\%$ $\pm 5\%$	A = Linear L = Clockwise logarithmic F = Clockwise inverse logarithmic	B = Box of 10 pieces	(if applicable) Given by VISHAY for custom design						

PART NUMBER DESCRIPTION (for information only)

PE30		LPRP	AC	200K	20 %	A	DBAN		BO10			e4
MODEL	FEATURES	OPTION	SHAFT	VALUE	TOLERANCE	TAPER	OPTION	SPECIAL	PACKAGING	CUSTOM SHAFT	SPECIAL	LEAD (Pb)-FREE



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