Vishay Sfernice

Fully Sealed Potentiometer Professional Grade



www.vishay.com

LINK TO ADDITIONAL RESOURCES

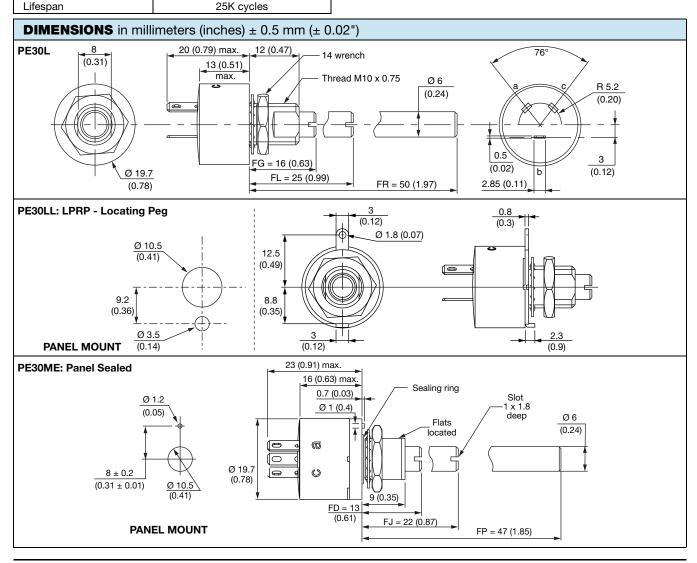


'ISHA`

QUICK REFERENCE DATA						
Multiple module	No					
Switch module	n/a					
Detent module	Yes					
Special electrical laws	A: linear, L: logarithmic, F: reverse logarithmic					
Sealing level	IP 67					

FEATURES

- High power rating 3 W at 70 °C
- · Low temperature coefficient (150 ppm/°C typical)
- Cermet element
- Full sealing
- Use of faston 2.86 connections
- Tests according to CECC 41000 or IEC 60393-1
- · Wires and connectors available
- · Custom design on request
- Center detent option
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912



Revision: 15-Apr-2020

For technical questions, contact: sferpottrimmers@vishay.com

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Document Number: 51037



PE30

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ELECTRICAL SPECIFICA	TIONS	
Resistive element		Cermet
Electrical travel		270° ± 10°
Resistance range	Linear taper	22 Ω to 10 MΩ
Le Le	ogarithmic taper	100 Ω to 2.2 MΩ
Standard series E3		1 - 2.2 - 4.7 and on request 1 - 2 - 5
Tolerance	Standard	± 20 %
TORIAICE	On request	± 10 % to ± 5 %
Taper		100 (%) every service of the servic
Power rating	Linear Logarithmic	3 W at 70 °C 1.5 W at 70 °C 0 0 0 0 0 0 0 0 0 0 0 0 0
Circuit diagram		$ \begin{array}{c} a \\ (1) \\ b \\ (2) \\ \end{array} $
Temperature coefficient (typical)		± 150 ppm/°C
Limiting element voltage	<u>,</u>	300 V
Contact resistance variation (typical))	3 % Rn or 3 Ω
End resistance (typical)		1 Ω
Dielectric strength (RMS)		2500 V
Insulation resistance (300 V _{DC})		10 ⁵ MΩ
Independent linearity (typical)		± 5 %

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STANDARD	STANDARD RESISTANCE ELEMENT DATA								
STANDARD		LINEAR TAPEF	1	LOGS TAPER					
RESISTANCE VALUES	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	8.1	369						
47	3	11.9	252						
100	3	17.3	173	1.5	12.2	122			
220	3	25.7	116	1.5	18.2	82.6			
470	3	37.5	79	1.5	26.6	56.6			
1K	3	54.8	54	1.5	38.7	38.7			
2.2K	3	81.2	37	1.5	57.4	26.1			
4.7K	3	118.7	25	1.5	83.9	17.9			
10K	3	173.2	17	1.5	122	12.2			
22K	3	256.9	11	1.5	181.6	8.25			
47K	1.91	299.6	6.3	1.5	265	5.64			
100K	0.90	300.0	3	0.9	300	3			
220K	0.41	300.0	1.36	0.41	300	1.36			
470K	0.19	298.8	0.63	0.19	300	0.63			
1M	0.09	300.0	0.3	0.09	300	0.30			
2.2M	0.04	296.6	0.13	0.04	300	0.13			
4.7M	0.02	300.0	0.06						
10M	0.01	300.0	0.03						

MECHANICAL SPECIFICATIONS							
Mechanical travel	300	0° ± 5°					
Operating torque / typical value	3 Ncm	4.25 ozinch					
End stop torque	120 Ncm max.	10.51 lb ozinch max.					
Tightening torque of mounting nut	250 Ncm max.	22 lb-inch max.					
Unit weight	23 g to 32 g max.	0.8 oz. 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 $\pm 10^{\circ}$. 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
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.

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CENTER DETENT	
Stable position in mid mechanical travel	
• Output ratio 50 % ± 10 %	
Rotational life: 10 000 actuations	
ORDERING INFORMATION (First order only)	
CV1M	

MARKING

- Vishay trademark
- Full ordering information (see Ordering Information table)
- Manufacturing date code
- Marking of terminals 3, and a, b, c

PERFORMANCE								
TEOTO		TYPICAL VALUES AND DRIFTS						
TESTS	CONDITIONS	∆ R_T/R_T (%)	∆ R₁₋₂/R₁₋₂ (%)	OTHER				
Electrical endurance	1000 h at rated power 90'/30' - ambient temp. 70 °C	±1%	-	Contact res. variation: < 3 % Rn				
Climatic sequence	Phase A dry heat 125 °C Phase B damp heat Phase C cold -55 °C Phase D damp heat 5 cycles	± 0.5 %	±1%	-				
Damp heat, steady state	56 days 40 °C 93 % HR	± 0.5 %	±1%	Insulation resistance: > $10^4 M\Omega$				
Change of temperature	5 cycles -55 °C at +125 °C	± 0.5 %	-	-				
Mechanical endurance	25 000 cycles	± 3 %	-	Contact res. variation: < 2 % Rn				
Shock	50 g's at 11 ms 3 successive shocks in 3 directions	± 0.1 %	± 0.2 %	-				
Vibration	10 Hz to 55 Hz 0.75 mm or 10 <i>g</i> 's during 6 h	± 0.1 %	± 0.2 %	-				

Note

Nothing stated herein shall be construed as a guarantee of quality or durability

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ORDERING INFORMATION (part number)									
P E 3 0 L B F G 2 0 4 M A B									
MODEL BUSHING	OPTION	SHAFT	OHMIC VALUE	TOLERANCE	TAPER	PACKAGING	SPECIAL NUMBER		
PE30 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 For M bushing E = peg A = peg and DBAN	FR 50 mm, plain = AL For M bushing FD = 13 mm, slotted = AC FJ = 22 mm, slotted = AM	A law = from 22 Ω to 10 M Ω L and F laws = from 100 Ω to 2.2 M Ω		A = linear L = clockwise logarithmic F = clockwise inverse logarithmic	B = box of 10 pieces	(if applicable) Given by Vishay for custom design or E105 CV1M		

PART NUMBER DESCRIPTION (for information only)													
PE30		LPRP	AC	200K	20 %	Α	DBAN		CV1M	во			e3
MODEL	FEATURES	OPTION	SHAFT	VALUE	TOL.	TAPER	OPTION	SPECIAL	DETENT	PACKAGING	CUSTOM SHAFT	SPECIAL	LEAD (Pb)-FREE

RELATED DOCUMENTS	
APPLICATION NOTES	
Potentiometers and Trimmers	www.vishay.com/doc?51001
Guidelines for Vishay Sfernice Resistive and Inductive Components	www.vishay.com/doc?52029

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