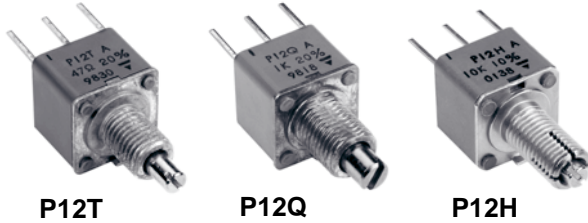


Fully Sealed Container Cermet Potentiometers Military and Professional Grade



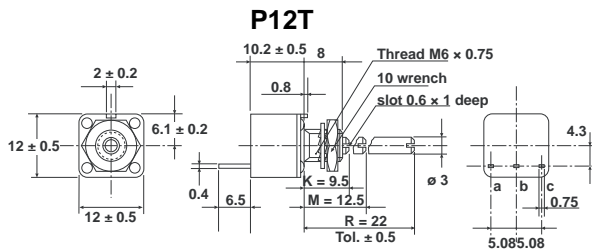
FEATURES

- 1 Watt at 70 °C
- CECC 41 300
- Full sealing
- Mechanical strength

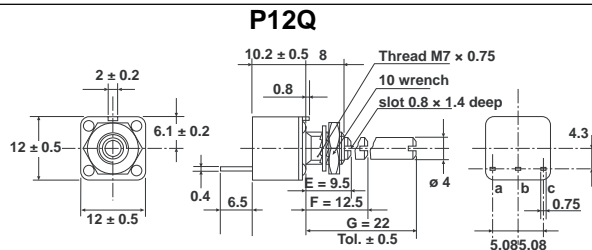
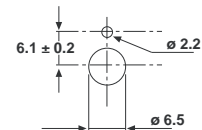


Model P12 potentiometers fully meet the requirements of CECC 41300

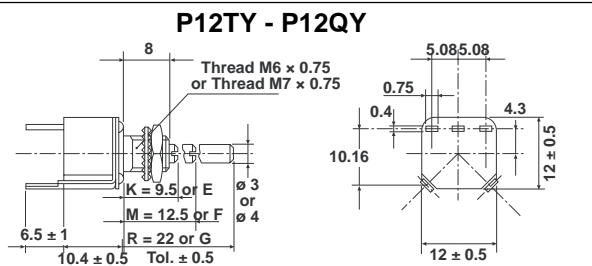
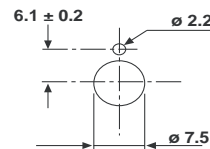
DIMENSIONS in millimeters



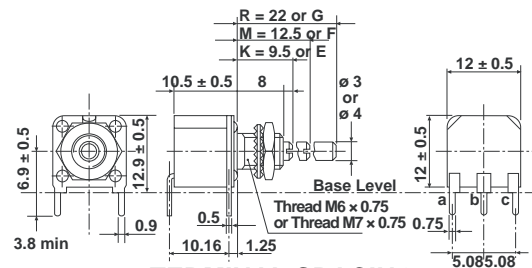
PANEL CUTOUT PANEL THICKNESS: 4 max



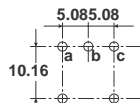
PANEL CUTOUT



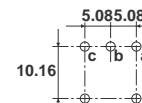
P12TX - P12QX



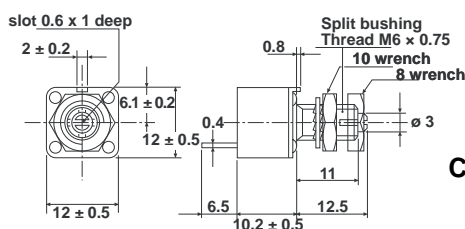
TERMINAL SPACING



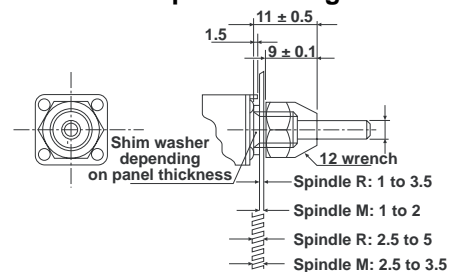
TERMINAL SPACING



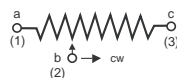
P12HL with spindle locking nut



DE Shaft and panel sealing hardware



CIRCUIT DIAGRAM



Tolerance unless otherwise specified ± 0.5

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 %
Power Rating	Linear	1 W at + 70 °C
	Logarithmic	0.5 W at + 70 °C
Temperature Coefficient		See Standard Resistance Element Data
Limiting Element Voltage (Linear Law)		350 V
Contact Resistance Variation		3 % or 3 Ω
End Resistance (Typical)		1 Ω
Dielectric Strength (RMS)		2000 V
Insulation Resistance (500 VDC)		10 ⁶ MΩ

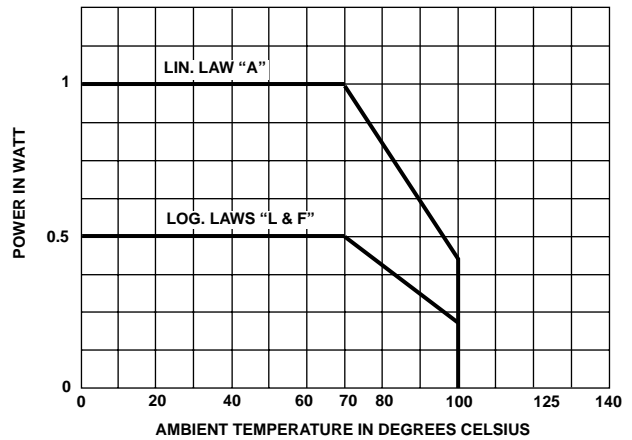
MECHANICAL SPECIFICATIONS

Mechanical Travel 300° ± 5°
 Operating Torque (max. Ncm) 2 typical
 End Stop Torque (max. Ncm) style H: 15 - T.Q.: 35
 Tightening Torque (max. Ncm) 150
 Unit Weight (max. g) 7.6 to 10

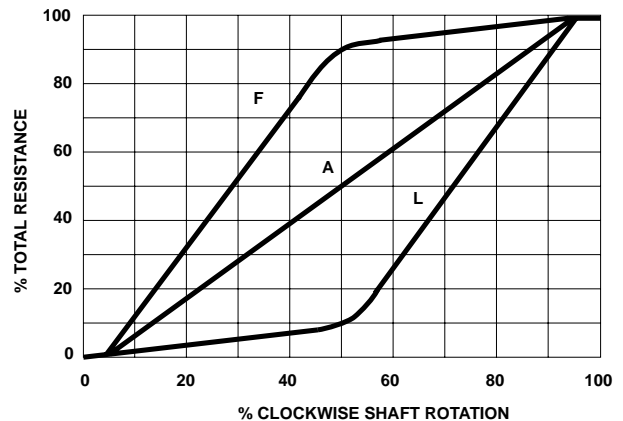
ENVIRONMENTAL SPECIFICATIONS

Temperature Range - 55 °C to + 125 °C
 Climatic Category 55/100/56
 Sealing fully sealed container IP67

POWER RATING CHART



RESISTANCE LAWS



Fully Sealed Container Cermet Potentiometers
Military and Professional Grade

PERFORMANCE			
TESTS	CONDITIONS	TYPICAL VALUES AND DRIFTS	
		$\frac{\Delta RT}{RT}$ (%)	$\frac{\Delta R_{1-2}}{R_{1-2}}$ (%)
Load Life	1000 hours 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 %
Long Term Damp Heat	56 days 40 °C 93 % RH	± 0.5 %	± 1 %
Rapid Temperature Change	5 cycles - 55 °C at + 125 °C	± 0.5 %	
Shock	50 g at 11 ms 3 successive shocks in 3 directions	± 0.1 %	± 0.2 %
Vibration	10 - 55 Hz 0.75 mm or 10 g during 6 hours	± 0.1 %	$\frac{\Delta V_{1-2}}{V_{1-3}} \leq \pm 0.2 \%$
Rotational Life	25 000 cycles	± 3 % Contact res. variation: < 2 % Rn	

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. WIPER CUR.	MAX. POWER AT 70 °C	MAX. WORKING VOLTAGE	MAX. WIPER CUR.	
Ω	W	V	mA	W	V	mA	ppm/°C
22	1	4.69	213.2				0
47		6.85	145.8				+ 200
100		10	100				
220		14.8	67.4				
470		21.6	46.1				
1K		31.6	31.6	0.5	22.4	22.4	
2.2K		46.9	21.3		33.2	15.1	
4.7K		63.5	14.5		48.5	10.3	
10K		100	10		79.7	7.07	
22K		148.3	6.7		105	4.77	
47K		216.7	4.6		153	3.26	± 100
100K	1	316.2	3.16		224	2.24	
220K	0.56	350	1.59	0.5	332	1.51	
470K	0.26	350	0.75	0.26	350	0.74	
1M	0.12	350	0.35	0.12	350	0.35	
2.2M	0.05	350	0.16	0.05	350	0.16	
4.7M	0.02	350	0.07				
10M	0.01	350	0.01				

MARKING

- Printed:
- VISHAY trademark
 - series
 - ohmic value (in Ω)
 - tolerance (in %)
 - manufacturing date
 - marking of terminals 1 or a

SPECIAL FEATURES SHAFTS

Lengths are measured from the mounting surface to the free end of shaft. Shaft slot is aligned with the wiper within ± 10°. Special shafts are available, in accordance with drawings supplied by customers. We recommend customers not to machine shafts, in order to avoid damage. Bending or torsion of terminal should be avoided.

SHAFT AND PANEL SEALING HARDWARE

The type P12T with R or M shaft can be provided with an optional "DE" sealing hardware which ensures sealing of both the shaft and the mounting panel. "DE" sealing hardware can be supplied in a separate envelope.

SHAFT LOCKING

- The shaft locking bushing is available only with P12H potentiometers. Torque applied to locking nuts should not exceed 15 Ncm.

P12



Vishay Sfernice

Doc. CC-0017

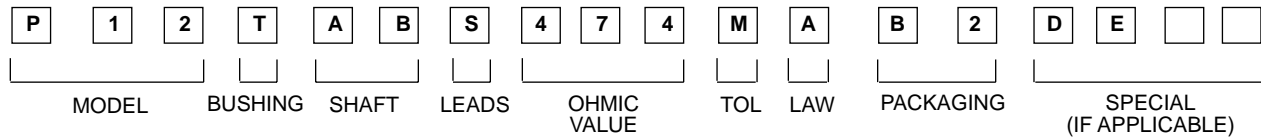
Fully Sealed Container Cermet Potentiometers
Military and Professional Grade



ORDERING INFORMATION

P12 OR P12H	T	M	470 kΩ	20 %	A	DE	BO
SERIES OR SHAFT LOCKING	STYLE	SHAFT	OHMIC VALUE	TOLERANCE	RESISTANCE LAW	PANEL SEALING DEVICE	PACKAGING

SAP PART NUMBERING GUIDELINES



See the end of this data book for conversion tables