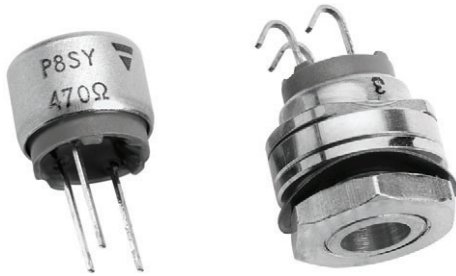


## 8.5 mm Diameter Single-Turn Fully Sealed Container Cermet Trimmer



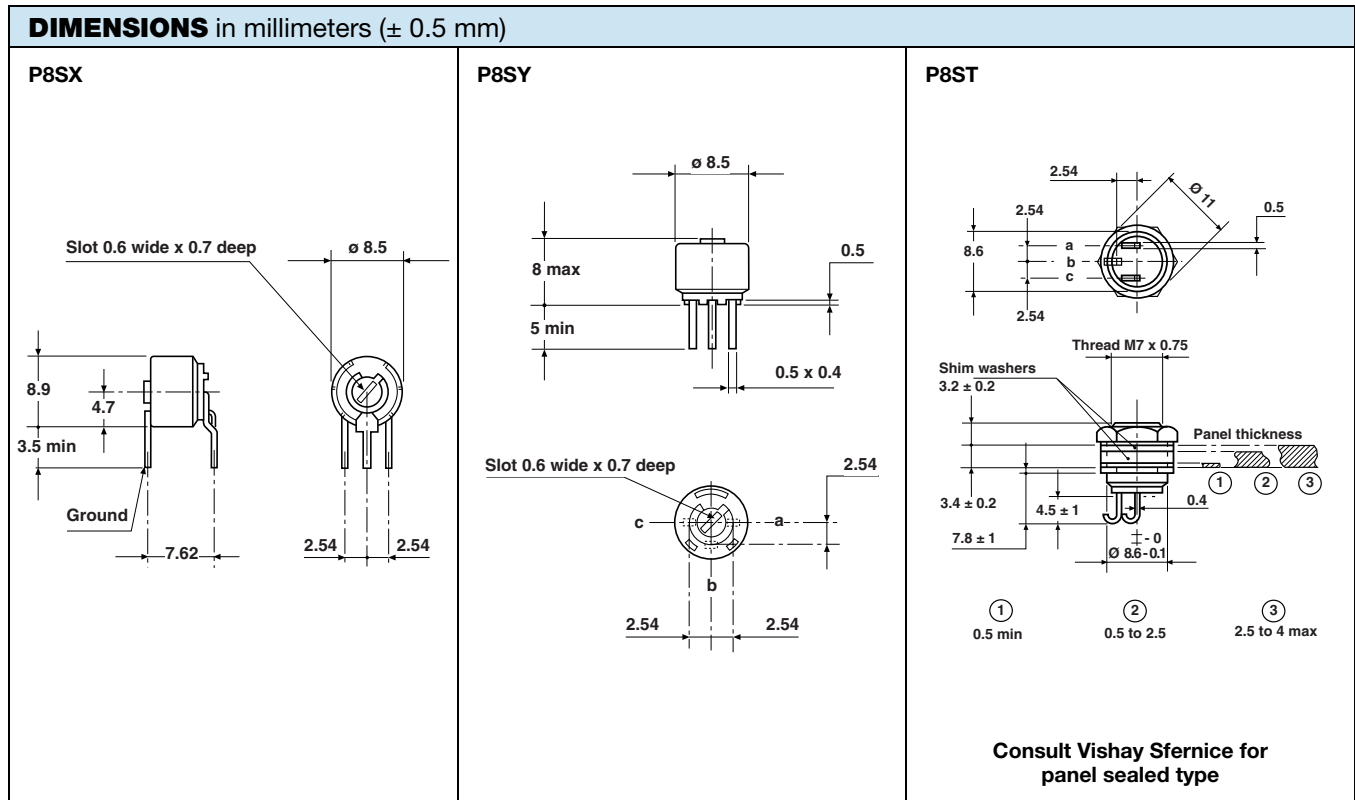
### FEATURES

- Industrial grade
- High quality cermet resistive track:
  - 1 W at 70 °C, P8ST
  - 0.5 W at 70 °C, P8SX and P8SY
- Test according to CECC 41000 or IEC 60393-1
- Wide resistance range (10 Ω to 2.2 MΩ)
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)


**RoHS**  
COMPLIANT

The P8S series trimmers are well adapted for all industrial applications as their maximum resistance contact variation is within 3 % of  $R_n$  and as they are fully sealed.

For more stringent requirements the P8P series is recommended.



<b>ELECTRICAL SPECIFICATIONS</b>		
Resistive element	Cermet	
Electrical travel	270° ± 15°	
Resistance range	10 Ω to 2.2 MΩ	
Standard series E3	1 - 2.2 - 4.7 and on request 1 - 2 - 5	
Tolerance	standard	± 10 %
	on request	± 5 %
Power rating	P8SX, P8SY	0.5 W at 70 °C
	P8ST	1 W at 70 °C
Power rating chart	<p>The chart shows the power rating in Watts versus ambient temperature in degrees Celsius. The P8ST series (top line) has a constant power rating of 1.0 W up to 70 °C, then decreases linearly to 0 W at 125 °C. The P8SX - P8SY series (bottom line) has a constant power rating of 0.5 W up to 70 °C, then decreases linearly to 0 W at 125 °C.</p>	
Circuit diagram	<p>The diagram shows a resistor with three terminals: 'a' (1) on the left, 'b' (2) in the middle, and 'c' (3) on the right. An arrow labeled 'cw' points to the right from terminal 'b', indicating clockwise rotation.</p>	
Temperature coefficient	See Standard Resistance Element Table	
Limiting element voltage (linear law)	250 V	
Contact resistance variation	3 % R <sub>n</sub> or 3 Ω	
End resistance (typical)	1 Ω	
Dielectric strength (RMS)	1000 V	
Insulation resistance (500 V <sub>DC</sub> )	1 GΩ	

<b>MECHANICAL SPECIFICATIONS</b>		
Mechanical travel	300° ± 5°	
Operating torque (max. Ncm)	3	
End stop torque (max. Ncm)	6	
Unit weight (max. g)	P8SX, P8SY	1.1
	P8ST	3.6
Terminals	SnAg alloy (code e2)	

<b>ENVIRONMENTAL SPECIFICATIONS</b>	
Temperature range	-55 °C to +125 °C
Climatic category	55/125/56
Sealing	IP67 Fully sealed



PERFORMANCES			
TESTS	CONDITIONS	TYPICAL VALUES AND DRIFTS	
		$\Delta R_T/R_T$ (%)	$\Delta R_{1-2}/R_{1-2}$ (%)
Load life	1000 h at rated power 90'/30' - ambient temperature 70 °C	$\pm 2$ % Contact res. variation: < 3 % Rn	$\pm 3$ %
Climatic sequence	Phase A dry heat 100 °C Phase B damp heat Phase C cold -55 °C Phase D damp heat 5 cycles	$\pm 0.5$ %	$\pm 1$ %
Long term damp heat	56 days 40 °C, 93 % RH	$\pm 1$ % Dielectric strength: 1000 V <sub>RMS</sub> Insulation resistance: > 10 <sup>4</sup> MΩ	$\pm 2$ %
Rapid temperature change	5 cycles -55 °C to +125 °C	$\pm 0.5$ %	$\Delta V_{1-2}/\Delta V_{1-3}$ $\leq \pm 1$ %
Shock	50 g at 11 ms 3 successive shocks in 3 directions	$\pm 0.2$ %	$\pm 0.5$ %
Vibration	10 Hz to 55 Hz 0.75 mm or 10 g during 6 h	$\pm 0.2$ %	$\Delta V_{1-2}/\Delta V_{1-3}$ $\leq \pm 0.5$ %
Rotational life	200 cycles	$\pm 3$ % Contact res. variation: < 3 % Rn	

**Note**

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

STANDARD RESISTANCE ELEMENT DATA							
STANDARD RESISTANCE VALUES	P8SX, P8SY			P8ST			TYPICAL TCR -55 °C to +125 °C
	MAX. POWER AT 70 °C	MAX. WORKING VOLTAGE	MAX. CURRENT THROUGH WIPER	MAX. POWER AT 70 °C	MAX. WORKING VOLTAGE	MAX. CURRENT THROUGH WIPER	
Ω	W	V	mA	W	V	mA	ppm/°C
10	0.5	2.2	224	1	3.16	316	$\pm 100$
22	0.5	3.3	150	1	4.69	213	
47	0.5	4.8	103	1	6.86	146	
100	0.5	7.0	70	1	10.0	100	
220	0.5	10.5	47	1	14.8	67	
470	0.5	15.3	32	1	21.7	46	
1K	0.5	22.4	22	1	31.6	32	
2.2K	0.5	33.2	15	1	46.9	21	
4.7K	0.5	48.5	10	1	68.6	15	
10K	0.5	70.7	7.0	1	100	10	
22K	0.5	105	4.8	1	148	6.7	
47K	0.5	153	3.2	1	217	4.6	
100K	0.5	224	2.2	0.63	250	2.5	
220K	0.28	250	1.1	0.28	250	1.1	
470K	0.13	250	0.53	0.13	250	0.53	
1M	0.06	250	0.25	0.06	250	0.25	
2.2M	0.028	250	0.11	0.03	250	0.11	



MARKING
<ul style="list-style-type: none"> <li>• Vishay trademark</li> <li>• Model</li> <li>• Style</li> <li>• Ohmic value (in <math>\Omega</math>, k<math>\Omega</math>, M<math>\Omega</math>)</li> <li>• Tolerance (in %)</li> <li>• Manufacturing date</li> <li>• Marking of terminal: 3</li> </ul>

PACKAGING
<ul style="list-style-type: none"> <li>• In plastic box of 50 pieces, code B25 (BL50)</li> </ul>

ORDERING INFORMATION (part number)														
P	8	S	X	1	0	4	K	B	2	5				
MODEL	STYLE		OHMIC VALUE			TOLERANCE		PACKAGING CODE		SPECIAL NUMBER				
P8	ST SX SY		From 10 $\Omega$ to 2.2 M $\Omega$ 103 = 10K			K = 10 % On request: J = 5 %		B25 = box 50 pieces		(If applicable) Given by Vishay for custom design				

PART NUMBER DESCRIPTION (for information only)							
P8	S	X	100K	10 %		BL	e2
MODEL	STYLE	STYLE	VALUE	TOLERANCE	SPECIAL	PACKAGING	LEAD FINISH

RELATED DOCUMENTS	
<b>APPLICATION NOTES</b>	
Potentiometers and Trimmers	<a href="http://www.vishay.com/doc?51001">www.vishay.com/doc?51001</a>
Guidelines for Vishay Sfernice Resistive and Inductive Components	<a href="http://www.vishay.com/doc?52029">www.vishay.com/doc?52029</a>

ACCESSORIES	
Screwdrivers (to order separately)	<a href="http://www.vishay.com/doc?57015">www.vishay.com/doc?57015</a>



## Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Hyperlinks included in this datasheet may direct users to third-party websites. These links are provided as a convenience and for informational purposes only. Inclusion of these hyperlinks does not constitute an endorsement or an approval by Vishay of any of the products, services or opinions of the corporation, organization or individual associated with the third-party website. Vishay disclaims any and all liability and bears no responsibility for the accuracy, legality or content of the third-party website or for that of subsequent links.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.