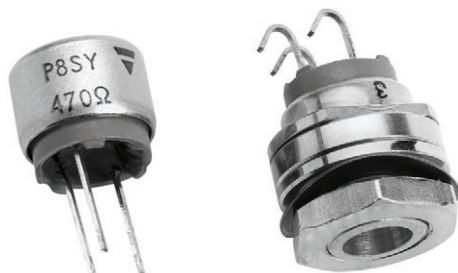


## 8.5 mm Diameter Single-Turn Fully Sealed Container Cermet Trimmer



### 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/doc299912](http://www.vishay.com/doc299912)

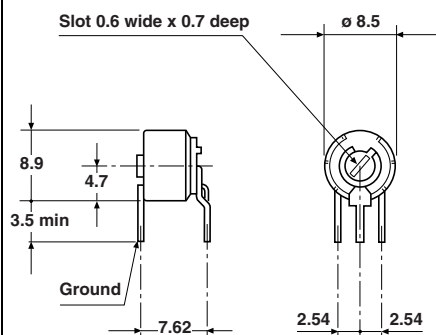

**RoHS**  
COMPLIANT

The P8S series trimmers are well adapted for all industrial applications as their maximum resistance contact variation is within 3 % of R<sub>n</sub> and as they are fully sealed.

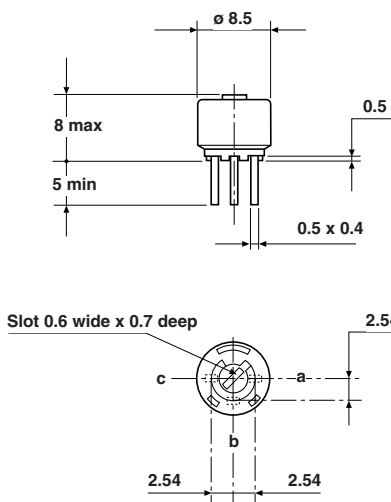
For more stringent requirements the P8P series is recommended.

### DIMENSIONS in millimeters (± 0.5 mm)

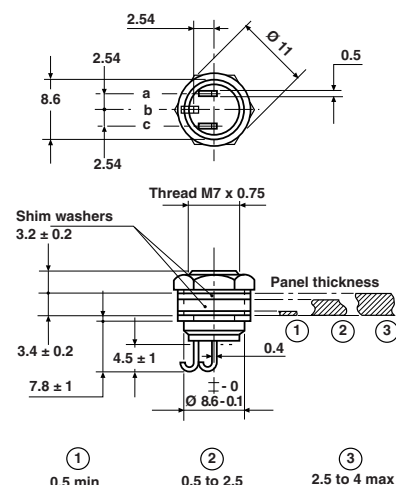
#### P8SX



#### P8SY



#### P8ST



Consult Vishay Sfernice for  
panel sealed type

**ELECTRICAL SPECIFICATIONS**

|                                              |            |                                        |
|----------------------------------------------|------------|----------------------------------------|
| 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                           |            |                                        |
| Circuit diagram                              |            |                                        |
| 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                                   |

**MECHANICAL SPECIFICATIONS**

|                             |            |                      |
|-----------------------------|------------|----------------------|
| 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) |

**ENVIRONMENTAL SPECIFICATIONS**

|                   |  |                      |
|-------------------|--|----------------------|
| Temperature range |  | -55 °C to +125 °C    |
| Climatic category |  | 55/125/56            |
| Sealing           |  | IP67<br>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<br>90'/30' - ambient temperature 70 °C                                      | $\pm 2$ %<br>Contact res. variation: < 3 % R <sub>n</sub>                                                      | $\pm 3$ %                                           |
| Climatic sequence        | Phase A dry heat 100 °C<br>Phase B damp heat<br>Phase C cold -55 °C<br>Phase D damp heat 5 cycles | $\pm 0.5$ %                                                                                                    | $\pm 1$ %                                           |
| Long term damp heat      | 56 days<br>40 °C, 93 % RH                                                                         | $\pm 1$ %<br>Dielectric strength: 1000 V <sub>RMS</sub><br>Insulation resistance: > 10 <sup>4</sup> M $\Omega$ | $\pm 2$ %                                           |
| Rapid temperature change | 5 cycles<br>-55 °C to +125 °C                                                                     | $\pm 0.5$ %                                                                                                    | $\Delta V_{1-2}/\Delta V_{1-3}$<br>$\leq \pm 1$ %   |
| Shock                    | 50 g at 11 ms<br>3 successive shocks<br>in 3 directions                                           | $\pm 0.2$ %                                                                                                    | $\pm 0.5$ %                                         |
| Vibration                | 10 Hz to 55 Hz<br>0.75 mm or 10 g during 6 h                                                      | $\pm 0.2$ %                                                                                                    | $\Delta V_{1-2}/\Delta V_{1-3}$<br>$\leq \pm 0.5$ % |
| Rotational life          | 200 cycles                                                                                        | $\pm 3$ %<br>Contact res. variation: < 3 % R <sub>n</sub>                                                      |                                                     |

**Note**

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

| STANDARD RESISTANCE ELEMENT DATA |                           |                            |                                  |                           |                            |                                  |                                  |
|----------------------------------|---------------------------|----------------------------|----------------------------------|---------------------------|----------------------------|----------------------------------|----------------------------------|
| STANDARD<br>RESISTANCE VALUES    | P8SX, P8SY                |                            |                                  | P8ST                      |                            |                                  | TYPICAL TCR<br>-55 °C to +125 °C |
|                                  | MAX.<br>POWER<br>AT 70 °C | MAX.<br>WORKING<br>VOLTAGE | MAX. CURRENT<br>THROUGH<br>WIPER | MAX.<br>POWER<br>AT 70 °C | MAX.<br>WORKING<br>VOLTAGE | MAX. CURRENT<br>THROUGH<br>WIPER |                                  |
| $\Omega$                         | 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**

- Vishay trademark
- Model
- Style
- Ohmic value (in  $\Omega$ , k $\Omega$ , M $\Omega$ )
- Tolerance (in %)
- Manufacturing date
- Marking of terminal: 3

**PACKAGING**

- In plastic box of 50 pieces, code B25 (BL50)

**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<br>SX<br>SY |   |   | From 10 $\Omega$<br>to 2.2 M $\Omega$<br>103 = 10K |   |   | K = 10 %<br>On request:<br>J = 5 % | B25 = box 50 pieces |   |   | (If applicable)<br>Given by Vishay for custom<br>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****APPLICATION NOTES**

|                                                                   |                                                                        |
|-------------------------------------------------------------------|------------------------------------------------------------------------|
| 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> |
|------------------------------------|------------------------------------------------------------------------|



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