Type SR Precision Current Sense Resistors

Non-inductive Design - Compact Footprint Minimizes Circuit Board Space Kelvin Terminals (Four Wire) - Resistance Values 0.005Ω to 1.00Ω

Type SR Current Sense Resistors utilize Caddock's Micronox® resistance films to achieve a low cost resistor with Non-inductive Performance. This compact construction makes this sense resistor ideal for many current monitoring or control applications.

The special performance features of these Type SR Current Sense Resistors include:

- Available in Standard Resistances down to 5 milliohm.
- Non-Inductive Design.
- · Terminals are constructed for Kelvin connections to the circuit board.
- · Compact footprint.

| Model No. | Resistance | | Power Rating at | Voltage Rating | Terminal Material |
|-----------|------------|--------|-----------------|----------------|-------------------|
| | Min. | Max. | 70°C* | | reminal material |
| SR10 | 0.008 Ω | 1.00 Ω | 1.0 Watt | Power Limited | Solderable |
| SR20 | 0.005 Ω | 1.00 Ω | 2.0 Watts | Power Limited | Solderable |





Measurement note: For purposes of these specifications, resistance measurement shall be made using Kelvin connections (four wire) with appropriate current and sense connections to the device terminals.

C = Current connection S = Sense connection

Circuit Board Layout: The circuit board traces connecting to the current terminals must be sized appropriately for the current flowing through the trace. For example; 0.005Ω operated at 2.0 Watts would have 20 amps flowing through the circuit board traces into the current terminals.

Applications Engineering 17271 North Umpqua Hwy. Roseburg, Oregon 97470-9422 Phone: (541) 496-0700 Fax: (541) 496-0408

Type SR Current Sense



SR10 Standard Resistance Values:

| 0.008 Ω 0.010 Ω 0.012 Ω 0.015 Ω | 0.020 Ω 0.025 Ω 0.030 Ω 0.033 Ω | 0.040 Ω 0.050 Ω 0.075 Ω 0.10 Ω | 0.15 Ω 0.20 Ω 0.25 Ω 0.30 Ω | 0.40 Ω 0.50 Ω 0.75 Ω 1.00 Ω |
|--|--|---|--------------------------------------|--------------------------------------|
| SR20 S | Standard | Resista | ance Va | alues: |
| | | | | |
| 0.005 Ω | 0.020 Ω | 0.040 Ω | 0.15 Ω | 0.40 Ω |
| 0.005 Ω 0.008 Ω | 0.020 Ω 0.025 Ω | 0.040 Ω 0.050 Ω | 0.15 Ω 0.20 Ω | 0.40 Ω 0.50 Ω |
| | | | | |

Custom resistance values can be manufactured for high quantity applications. Please contact Caddock Applications Engineering.

Specifications:

Resistance Tolerance: ±1.0%

Temperature Coefficient: TC referenced to +25°C, ΔR taken at -15°C and +105°C.

| 0.081 to 1.00 ohm | -50 to +100 ppm/°C |
|--------------------|--------------------|
| 0.025 to 0.080 ohm | 0 to +150 ppm/°C |
| 0.008 to 0.024 ohm | 0 to +200 ppm/°C |
| 0.005 to 0.007 ohm | 0 to +300 ppm/°C |

Load Life: 1000 hours at rated power at +70°C, $\Delta R \pm (0.2 \text{ percent} + 0.00001 \text{ ohm}) \text{ max.}$

Thermal Shock: Mil-Std-202, Method 107, Cond. A, $\Delta R \pm (0.2 \text{ percent} + 0.00001 \text{ ohm}) \text{ max}.$

Moisture Resistance: Mil-Std-202, Method 106,

 $\Delta R \pm (0.2 \text{ percent} + 0.00001 \text{ ohm}) \text{ max.}$

Encapsulation: Polymer over resistance element.

Power Derating Curve:



Ordering Information:

ELECTRONICS, INC.

e-mail: caddock@caddock.com · web: www.caddock.com

For Caddock Distributors listed by country see caddock.com/contact/dist.html



Sales and Corporate Office 1717 Chicago Avenue Riverside, California 92507-2364 Phone: (951) 788-1700 Fax: (951) 369-1151

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