



Bourns Releases Current Sense Resistor Modules, Delivering Up to 36 W Continuous Power for High-Current Measurement Applications

New module-style current sense resistors combine resistance values as low as 25 $\mu\Omega$ with an integrated 10 k Ω NTC thermistor that provides local temperature feedback for battery and industrial power systems

RIVERSIDE, Calif., October 20, 2026 - Bourns today announced the [CSI2F-6918](#), [CSI2F-7036](#), [CSI2F-8518](#) and [CSI2F-8536](#) Series Current Sense Resistor Modules. These module-style current sense resistors provide ultra-low resistance values from 25 to 200 $\mu\Omega$, an integrated 10 k Ω NTC thermistor, continuous power ratings up to 36 W at a terminal temperature of 125 °C and operating temperatures from 40 °C to +125 °C.

Every CSI2F module features dedicated voltage-sense connections for this thermistor. The thermistor provides local temperature feedback that designers can use to compensate for temperature-related changes in shunt resistance when calculating current. This can help maintain consistent current measurement as operating conditions change in battery management systems (BMS) and industrial power systems.

The four series are offered in two widths and three lengths, with each part number indicating module size in millimeters. The 36 mm-wide CSI2F-7036 and CSI2F-8536 Series offer the lowest resistance values, down to 25 $\mu\Omega$, while the 18 mm-wide CSI2F-6918 and CSI2F-8518 Series cover 50 to 200 $\mu\Omega$. Because the power dissipated in a shunt rises with its resistance, lower values waste less energy at a given current, helping designers improve efficiency in high-current paths.

As power conversion systems, battery platforms and industrial equipment continue to require accurate current measurement at higher current levels, designers face challenges related to power dissipation, thermal performance and installation flexibility. The CSI2F Series addresses these challenges with a high pulse power rating, horizontal or vertical connector options and a choice of terminal finishes. Bare copper terminals are available on all resistance values, and tinned terminals are available on the lower resistance values in each series. Resistance tolerance is specified at $\pm 5\%$.

"Engineers need accurate current data as operating temperatures change," said Walter Garcia, Product Line Manager, Resistors. "By integrating an NTC thermistor alongside dedicated voltage-sense connections, the Bourns® CSI2F Series gives designers the temperature feedback they need to compensate in their own systems, in footprints that offer resistance values as low as 25 $\mu\Omega$ to minimize power losses."

Design Features

- **Integrated 10 k Ω NTC thermistor:** provides local shunt temperature feedback the system can use to compensate for temperature-related resistance changes

- **Dedicated voltage-sense connections:** enable voltage measurement directly across the resistive element through separate V1/V2 sense pins
- **Resistance values as low as 25 $\mu\Omega$:** minimize power losses in high-current paths
- **Up to 36 W continuous power:** supports demanding current measurement requirements at terminal temperatures up to 125 °C
- **High pulse power rating:** helps accommodate transient current conditions common in power electronics systems
- **Horizontal or vertical connector options:** provide layout flexibility for different mechanical and electrical architectures
- **Bare copper or tinned terminals:** offer bare copper on all resistance values and tinned on the lower values in each series
- **Maximum fastening torque of 10 Nm:** supports secure mechanical attachment in high-current assemblies
- **RoHS compliant* and lead free:** supports environmental compliance requirements

Electrical Specifications

Parameter	CSI2F-6918	CSI2F-7036	CSI2F-8518	CSI2F-8536
Module Size, L x W (mm)	69 x 18	70 x 36	85 x 18	85 x 36
Mounting Hole Diameter (mm)	6.6	8.5	8.3	10.0
Resistance Values ($\mu\Omega$)	50, 100, 200	25, 50, 100	50, 100, 200	25, 50, 100
Values Available with Tinned Terminals ($\mu\Omega$)	50, 100	25, 50	50, 100	25, 50
Integrated NTC Thermistor (k Ω)	10	10	10	10
Power Rating at 125 °C Terminal Temperature (W)	36	36	36	36
Operating Temperature Range (°C)	-40 to +125	-40 to +125	-40 to +125	-40 to +125
TCR on Test Points, +20 °C to +125 °C (ppm/°C)	± 150	± 150	± 150	± 150
Resistive-Alloy TCR (ppm/°C) ¹	<50	<50	<50	<50
Resistance Tolerance (%)	± 5	± 5	± 5	± 5

¹ For the full resistive-alloy TCR range, refer to the TCR curve in the applicable data sheet.

Target Applications

- BMS for monitoring battery charge and discharge currents
- Current sensing in bus bars for high-current power distribution systems
- Current sensing in welding equipment where accurate monitoring of high currents is required
- Frequency converters used in motor drives and power conversion equipment
- Industrial power equipment and control systems requiring high-current measurement capability

Availability

The [CSI2F Series modules](#) are available now through Bourns authorized distribution partners. Product details, inventory information and sample requests are available at bourns.com/products/resistors/current-sense-resistors. Engineers may also contact [Bourns Customer Service or Inside Sales](#) for application support and ordering information.

About Bourns

Bourns is the global electronic components partner for design engineers whose systems must keep working—in vehicles, aircraft, defense and navigation systems, medical devices†, data centers, satellites, consumer electronics, energy systems, and the networks that connect them. Across power, protection, sensing, timing, and thermal management, Bourns builds solutions for the demanding requirements those systems create. The family that founded Bourns in 1947 still governs the company—a stewardship that lets Bourns commit to its people, technologies, and customers for decades rather than quarters. For more information, visit bourns.com.

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*RoHS Directive 2015/863, Mar 31, 2015 and Annex.

**Bourns considers a product to be "halogen free" if (a) the Bromine (Br) content is 900 ppm or less; (b) the Chlorine (Cl) content is 900 ppm or less; and (c) the total Bromine (Br) and Chlorine (Cl) content is 1500 ppm or less.

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