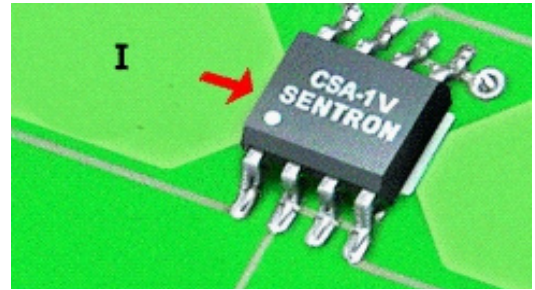
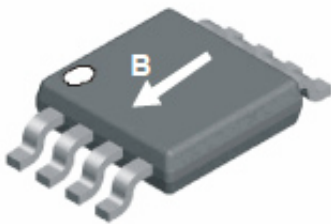


Sentron's CSA-1VG is a single-axis integrated magnetic field sensor based on the Hall Effect. The circuit is fabricated using a conventional CMOS technology with an additional ferromagnetic layer. The ferromagnetic layer is used as a magnetic flux concentrator providing a high magnetic gain. Therefore, the circuit features very high magnetic sensitivity, low offset, and low noise. The CSA-1VG is packaged in a standard SOIC-8 full plastic package. This package provides high voltage isolation to the current conductor on the PCB (up to 600V) .



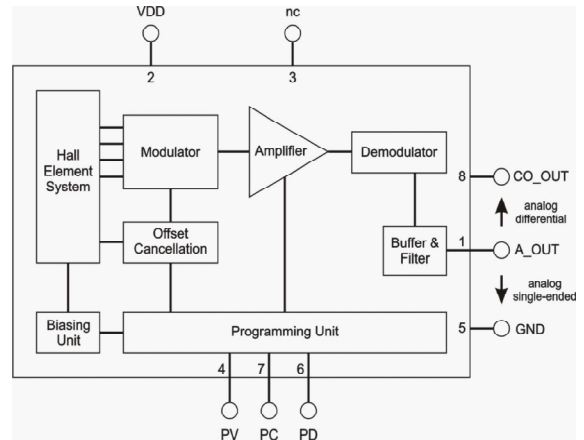
FEATURES

- Sensitive to a magnetic field parallel to the chip surface
- Very high sensitivity
- Linear output voltage proportional to a magnetic field
- Wide-band: DC to 100kHz
- Very low offset and offset-drift
- Very low noise
- Isolated from current conductor
- Surface mount SOIC-8 package
- Single +5 Volt Supply



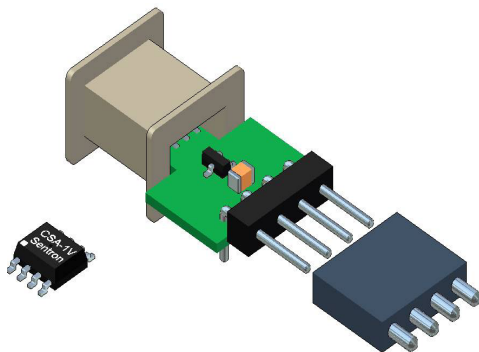
- 1 A_OUT, analog sensor output
- 2 VDD pos. supply voltage
- 3 Not connected
- 4 PV, programming voltage 1)
- 5 GND, supply common
- 6 PD, programming data 1)
- 7 PC, programming clock 1)
- 8 CO_OUT, common output

Note 1: Used for factory programming



ENGINEERING EVALUATION KITS

GMW offers 13 different engineering evaluation kits to assist our customers to quickly evaluate the CSA-1VG at various current ranges and packaging arrangements. Current ranges from milliamps up to 1000's of amps can be sensed by the CSA-1VG when properly configured.



AN_115KIT

This kit is ideal for evaluating low current and high voltage isolation applications. Sensitivity depends on the number of turns of magnet wire on the bobbin (approximately 30mV/amp-turn).

Features

- Low Current - mA to 1A rms
- Bi-directional
- High Dielectric Isolation

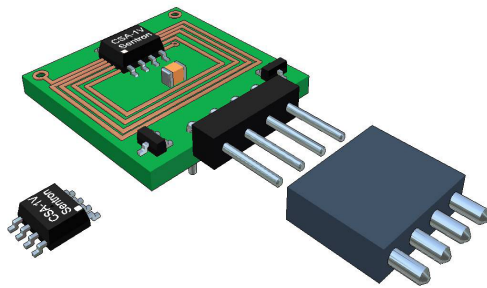
Kit Includes

- PCB assembly with CSA-1V (PCB size: 0.5" x 0.75" x 0.06")
- Nylon Bobbin
- Mating connector
- Extra CSA-1VG-SO
- Instruction sheet

Revision Date: 2 FEB 2009

North American Distributor:

GMW Associates • 955 Industrial Road • San Carlos, CA 94070 • USA
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AN_116KIT

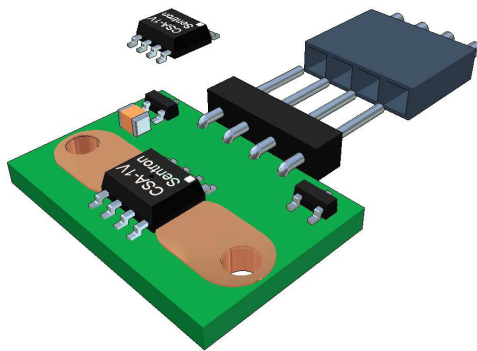
This kit is useful in evaluating the sensing of low currents on PCB's. The kit has a CSA-1V on top and another one directly under it on the other side board. The differential output is measured between the two IC's. Common mode magnetic fields are cancelled out.

Features

- Low current - Less than 1A rms
- Peak Current – 5A for < 1 sec
- Sensitivity ≈ 460 mV/A
- Large differential output voltage - +/- 5 Volts
- High immunity to stray fields

Kit includes

- PCB assembly with two CSA-1V's (PCB size: 0.5" x 0.75" x 0.06")
- Mating connector
- Extra CSA-1VG-SO
- Instruction sheet



AN_120KIT

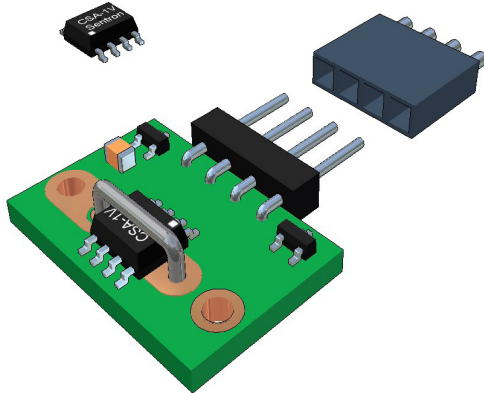
This kit is useful in evaluating the sensing of current in traces directly under the IC for mid range currents. Current is limited by the trace width and copper thickness.

Features

- Mid current range - 0 to 8A rms
- Peak current, 50A for < 1 sec
- Bi-directional
- Sensitivity ≈ 38 mV/A

Kit includes

- PCB assembly with CSA-1V. (PCB size: 0.5" x 0.75" x 0.06")
- Mating connector
- Extra CSA-1VG-SO
- Instruction Sheet



AN_118KIT

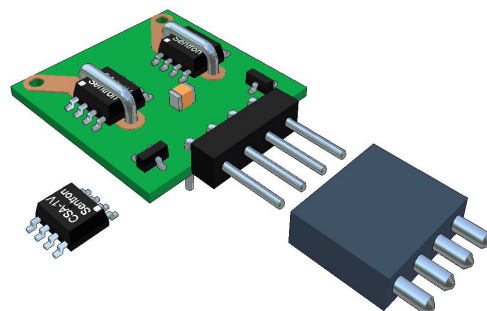
This kit has more sensitivity than the standard AN_120 and is the preferred configuration for this current range if installing a "thru-hole" jumper is an acceptable assembly process.

Features

- Mid current range -- 0 to 8A rms
- Peak current – 22A < 1 sec
- Bi-directional
- Sensitivity ≈ 110 mV/A

Kit includes

- PCB assembly with CSA-1V. (PCB size: 0.5" x 0.75" x 0.06")
- Mating connector
- Extra CSA-1VG-SO
- Instruction sheet



AN_128KIT

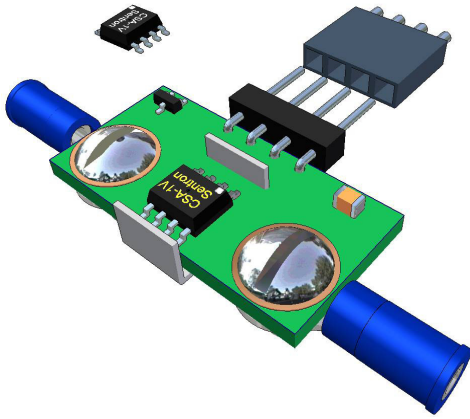
This kit is useful for evaluation a sensing configuration where high sensitivity and high immunity to stray fields is desired. The output is a differential output and can provide a large voltage swing of +/- 5 volts for bi-directional current or 0-5 volts for DC currents

Features

- Mid current range 0 to 8 amps rms
- Peak current – 22A < 1 sec
- High sensitivity ≈ 220 mV/A
- Large differential output voltage - ± 5 Volts
- High Immunity to stray fields

Kit includes

- PCB assembly with CSA-1V. (PCB size: 0.5" x 0.75" x 0.06")
- Mating connector
- Extra CSA-1VG-SO
- Instruction sheet



AN_117KIT

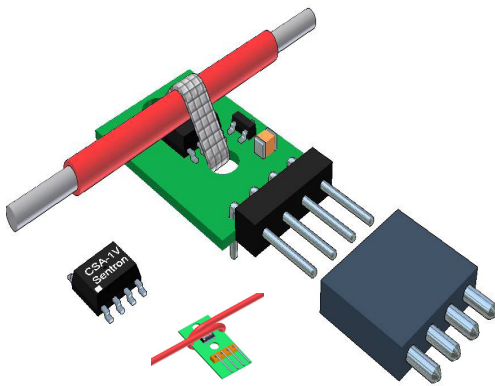
This kit is a four layer PCB with a wide current trace on the three bottom layers to allow for higher currents on the PCB. The optional magnetic concentrator increases the sensitivity and the immunity to stray fields.

Features

- Moderately High Currents - 0 to 40A rms
- Peak current – 100A < 1 sec
- Bi-directional
- Sensitivity without concentrator ≈ 15 mV/amp
- Sensitivity with concentrator ≈ 30 mV/amp

Kit includes

- PCB assembly with CSA-1V. (PCB size: 0.5" x 0.75" x 0.06")
- Mating connector
- Terminating hardware and optional magnetic concentrator
- Extra CSA-1V-GSO
- Instruction sheet



AN_119KIT

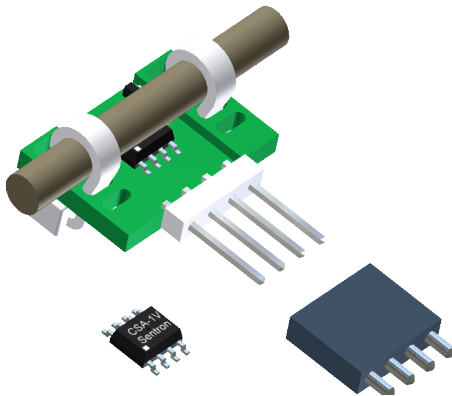
This kit is ideal for sensing currents in wires. The sensitivity is dependant on the diameter of the wire and thickness of the insulation. Any wire size can be used in this application. Sensitivity can be increased by making a wrap around the sensor.

Features

- External wire current sensing- No limit on current
- Bi-directional
- Sensitivity ≈ 56 mV/(d+0.3)A, where d=distance "center of wire and top surface of IC" in mm.

Kit includes

- PCB assembly with CSA-1V. (PCB size: 0.5" x 0.75" x 0.06")
- Nylon tie wrap
- Mating connector
- Extra CSA-1V-GSO
- Instruction sheet



AN_119BKIT

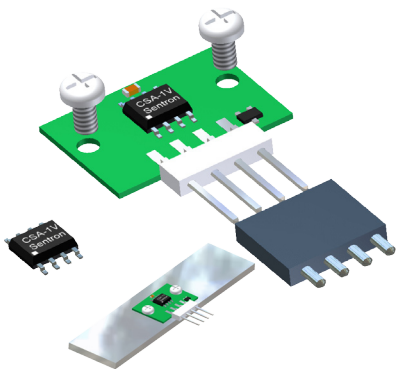
This kit is ideal for sensing currents in wires. The sensitivity is dependant on the diameter of the wire and thickness of the insulation. Any wire size can be used in this application. This configuration provides for secure wire attachment

Features

- External wire current sensing- No limit on current
- Bi-directional
- Sensitivity ≈ 56 mV/(d+0.3)A, where d=distance "center of wire and top surface of IC" in mm.

Kit includes

- PCB assembly with CSA-1V. (PCB size: 0.5" x 0.75" x 0.06")
- Two each Nylon tie wraps
- Mating connector
- Extra CSA-1V-GSO
- Instruction sheet



AN_121BKIT

This kit is useful in sensing currents in bus bars and flat conductors. Sensitivity depends on the width and thickness of the conductor. Increasing the width and thickness decreases the sensitivity. Currents in the range of 100's of amps to thousands of amps can be sensed.

Features

- Very High Current in Bus Bar and Flat conductors
- Bi-directional
- High Isolation Voltage

Kit Includes

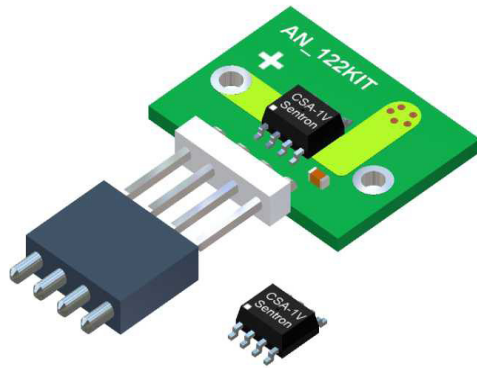
- PCB assembly with CSA-1V. (PCB size: 0.5" x 0.75" x 0.032")
- 2ea #2-56 Nylon Screws
- Mating connector
- Extra CSA-1V-GSO
- Instruction sheet

Revision Date: 2 FEB 2009

North American Distributor:

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AN_122KIT

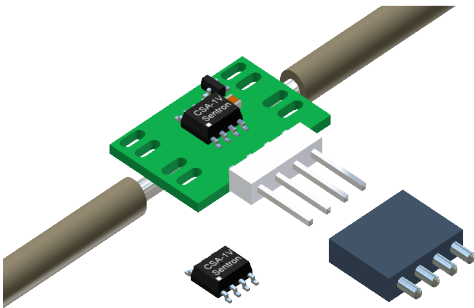
The AN_122KIT provides a easy method of evaluating the Sentron CSA-1VG current sensor in a PCB layout configuration that greatly improves the signal to noise ratio for a medium current range measurement. Signal is increased by providing a loop and a Ferrite Concentrator.

Features

- 15Arms with 35A peak
- High Sensitivity Multi-loop with Ferrite Concentrator on Back Side
- Bi-directional
- Sensitivity $\approx 65\text{mV/A}$,

Kit includes

- PCB assembly with CSA-1VG. (PCB size: 0.5" x 0.75" x 0.04")
- Mating connector
- Extra CSA-1VG-SO
- Instruction sheet



AN_124KIT

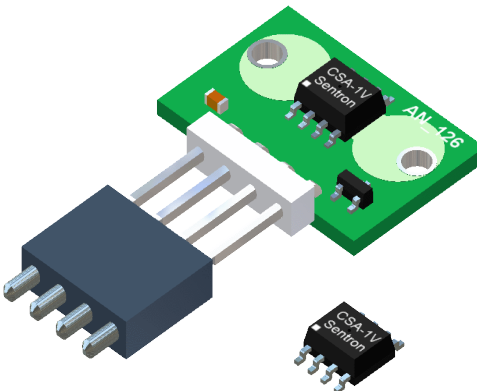
The AN_124KIT provides a easy method of evaluating the Sentron CSA-1VG current sensor IC in a configuration that provides a high dielectric voltage isolation between the primary conductor and the sensor circuitry that may be required for UL applications.

Features

- High Voltage Isolation Configuration
- 20Arms with short peaks to 75A
- Bi-directional
- Sensitivity $\approx 35\text{mV/A}$

Kit includes

- PCB assembly with CSA-1V. (PCB size: 0.5" x 0.75" x 0.04")
- Mating connector
- Extra CSA-1VG-SO
- Instruction sheet



AN_126KIT

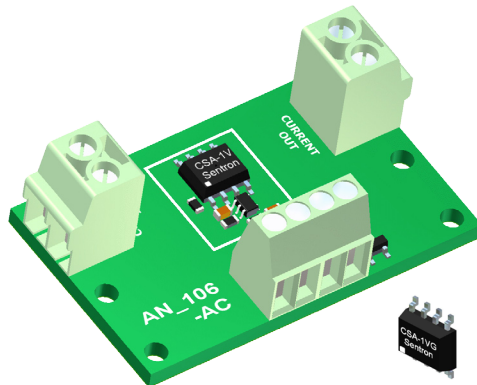
The AN_126KIT provides a easy method of evaluating the Sentron CSA-1VG current sensor in a PCB layout configuration that utilizes top and bottom PCB traces for medium current range measurement. This arrangement will produce a nominal sensitivity of 35mV/A thereby generating a full scale output at +/- 60A of primary current.

Features

- 20Arms with short peaks to 60A
- Bi-directional
- Sensitivity $\approx 35\text{mV/A}$

Kit includes

- PCB assembly with CSA-1V. (PCB size: 0.5" x 0.75" x 0.04")
- Mating connector
- Extra CSA-1VG-SO
- Instruction sheet



AN_106-AC KIT and AN_106-DC KIT Reference Design

The AN_106 is a development kit that provides a reference design using the CSA-1VG-SO IC and a scaling amplifier that will measure AC and DC currents from 0 to 20A continuous. This reference design provides a high dielectric voltage isolation between the primary conductor and the sensor circuitry that may be required for applications requiring UL approval.

Features

- 20Arms with short peaks to 50A
- High Voltage Isolation between Primary and Secondary
- Bi-directional DC Version and AC only Version
- Sensitivity $\approx 50\text{mV/A}$

Kit includes

- PCB assembly with CSA-1V. (PCB size: 0.5" x 0.75" x 0.06")
- Extra CSA-1VG-SO
- Instruction sheet