

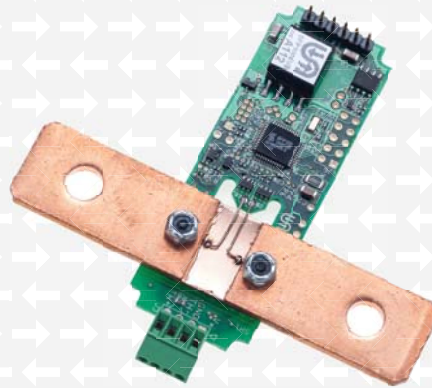
Description

The Sendyne SFP100EVB is a module that simultaneously measures bi-directional DC current through a 100- $\mu\Omega$ resistive shunt, voltage, as well as temperature at four points. Rated for the automotive temperature range of $-40\text{ }^{\circ}\text{C}$ to $+125\text{ }^{\circ}\text{C}$, the module is capable of resolving currents from 3 mA to 513 A within a single continuous measurement range (without sub-ranging or gain switching), with uniform resolution of 61 μA , and performs automatic charge accumulation for built-in precision Coulomb counting.

The module communicates internally digitized values to a host via a simple LIN-like serial interface.

The SFP100EVB implements several of Sendyne's patented and patent pending technologies in order to achieve precision current measurements for field use comparable to the precision of metrology grade lab instruments. From $+10\text{ }^{\circ}\text{C}$ to $+50\text{ }^{\circ}\text{C}$, the module typically achieves an accuracy of $\pm 0.05\%$ for both current and voltage measurements; at the extremes of the full operating temperature range, the module achieves an accuracy of $\pm 0.4\%$ for current measurement and $\pm 0.6\%$ for voltage measurement. Accuracy is defined as the cumulative effect of all possible sources of error, including offset, gain and stability of the built-in precision voltage reference.

A complete evaluation kit for SFP100EVB is available that includes the module, a Serial-to-USB cable, as well as Windows'-based control software. The software provides visual indication of all measured values, both in digital-meter and real time chart formats, as well as automatic saving of all data in files (data logging), with unlimited duration, for off-line review and export in an ASCII format. Furthermore, it allows assessment and control of all internal registers and settings for the SFP100 IC utilized by the module.



Features

- Turnkey solution for use in the field
- Typically achieves $\pm 0.05\%$ accuracy of current measurement
- Accurate voltage measurement ($\pm 0.05\%$ typ.) with flexible range
- Accurate temperature measurements at 4 points
- Resolves currents from 3 mA to 513A
- Simple LIN-like communication interface
- Automotive temperature range of $-40\text{ }^{\circ}\text{C}$ to $+125\text{ }^{\circ}\text{C}$
- Low power consumption
- Isolated front end for “high” or “low” side current sensing and attenuation of system-induced noise

Applications

- Battery monitoring for industrial, automotive, railroad and utility scale storage
- Photovoltaic arrays
- Uninterruptible power supplies
- Precision current flow measurements
- Drive controls

Sendyne®

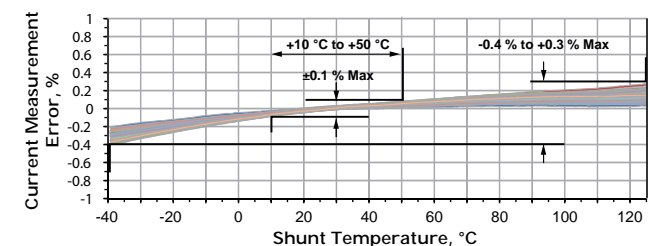
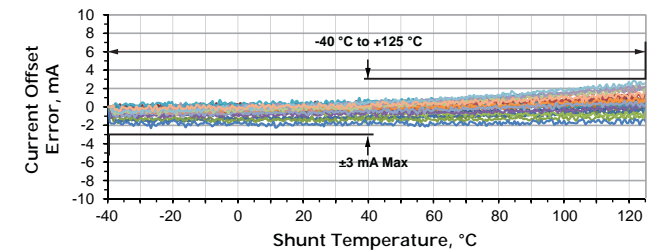
Sendyne® Sensing Family

SFP100EVB

Turnkey module for precision measurement of current, voltage and temperature, operating in the automotive temperature range of $-40\text{ }^{\circ}\text{C}$ to $+125\text{ }^{\circ}\text{C}$

Sendyne® SFP100EVB

Sample of Measured Performance Data



Ordering Information

SFP100	— Base Part
SFP100EVB	— Module
SFP100EVB-KIT	— Evaluation Kit
SFP100EVB-CBL	— Evaluation Kit Cable
SFP100EVB-SFT	— Evaluation Kit Software

Product Documentation

SFP100EVB Datasheet

Detailed description of board functionality, measured performance data, theory of operations, schematics, communication protocols and usage guidelines, as well as operating instructions for evaluation kit control software.

SFP100 Datasheet

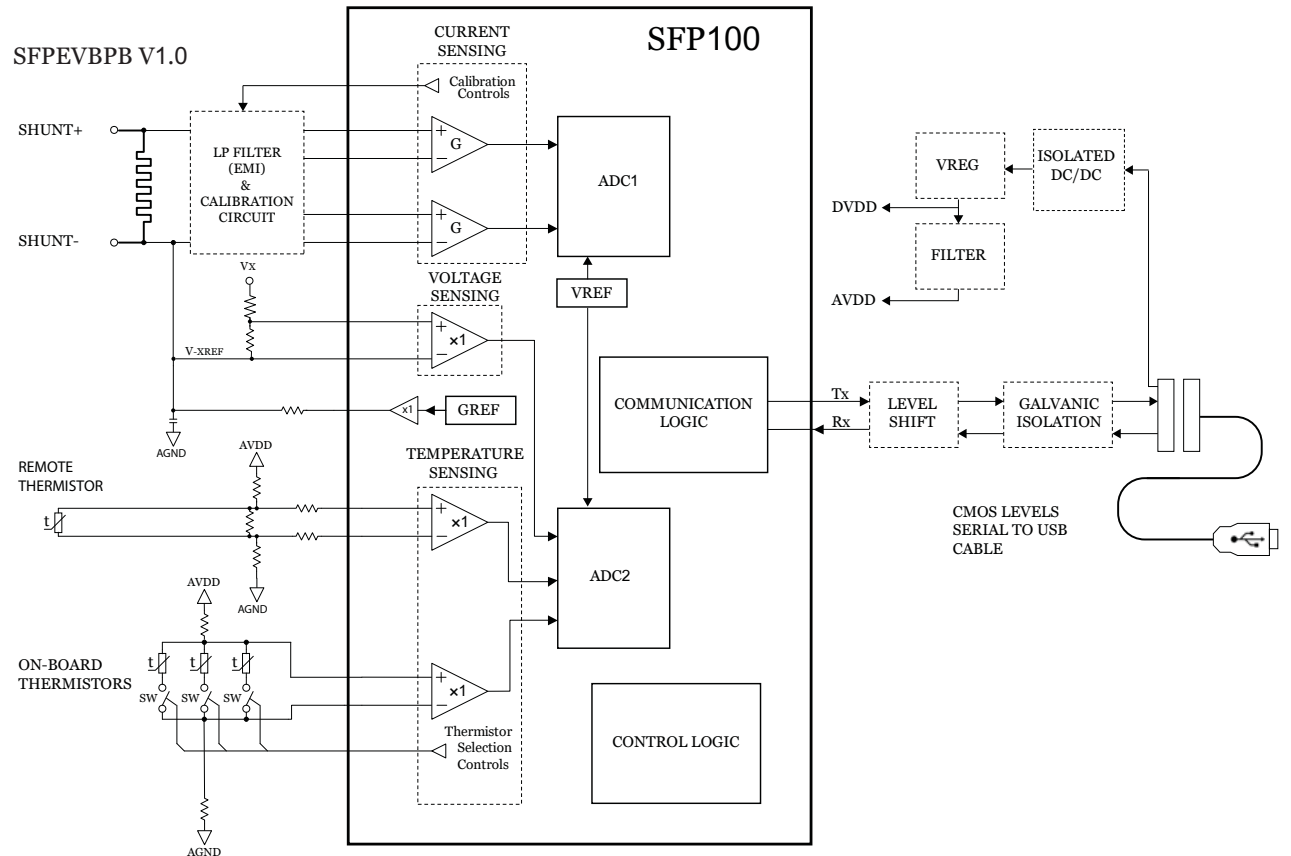
Detailed description of SFP100 IC functionality, electrical and timing specifications, communications protocol, registers, pin descriptions and package description.

Packaging

Assembled circuit board module

www.sendyne.com

Sendyne SFP100EVB Block Diagram



The circuit and its operation are patented and patent pending

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