INNOVATION WITH PURPOSE
ALLEGRO microsystems

SOLAR ENERGY HARVESTING

Innovating a Brighter Future: Efficiently Transforming Sunlight into Sustainable Power

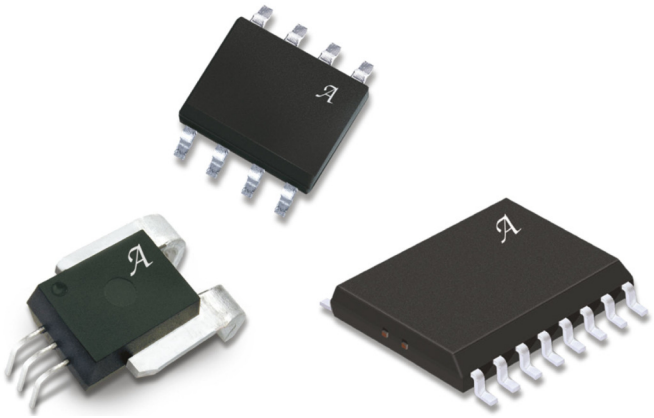
Sustainable power generation technologies like solar energy harvesting are playing an important role in the need for environmentally friendly energy production. These technologies lower dependence on fossil fuels that are the source of pollution and carbon emissions related to global climate change.

Allegro's current sensor ICs are ideal for use with solar applications, which include electronic subsystems like solar combiner boxes, DC/DC converters for maximum power point tracking (MPPT), and DC-AC inverters. Allegro's current sensors offer easy-to-use, turnkey solutions packaged in small standard and custom footprints. These sensors deliver accuracy and high voltage isolation up to 4.8 kV without the need for external components.

This results in increased design-in flexibility for customers while also optimizing the size and performance of their printed circuit board (PCB) design.

Our products can precisely sense both direct (DC) and alternating (AC) currents up to 5 MHz of bandwidth without any bulky components such as transformers.

With wide current measurement options ranging from 0 to ±400 A, there is an Allegro sensor to meet the application need in any power-rated solar system. Sensor options are available in 1% total error with optional integrated features that include overcurrent alerts.

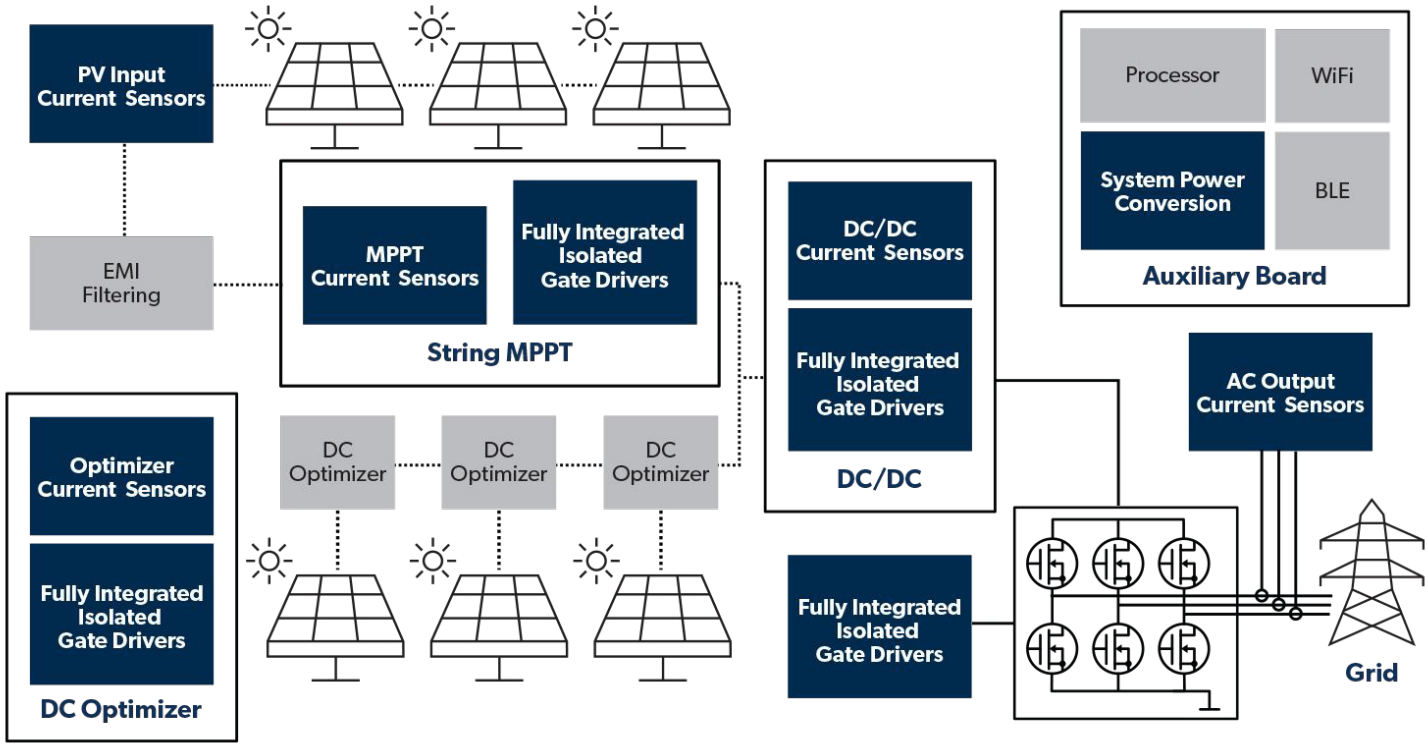


What you can achieve with Allegro solutions

- **Unmatched precision:** Allegro Microsystems current sensors offer superior performance and widest bandwidth from 0 to 5 MHz on the market
- **Designed to be robust:** automotive grade quality ensure our products can withstand the harshest environmental conditions and electrical disturbances
- **Integrated safety:** built-in voltage and ultra fast overcurrent detection safeguard both the system and users
- **Enhanced efficiency:** low power losses enable better thermal performance and higher system efficiency
- **Compact form factor:** our products offer all of the performance and none of the bulk in a compact IC package

Market-Leading Portfolios That Sense, Regulate, and Drive

Block Diagram



Key Products and Solutions

Subsystem	Component	Allegro Parts	Key Differentiator
PV Input	Current Sensor	ACS37002	Module alternative, high-power density current sensor that maximizes energy extraction, lowers ohmic losses and optimizes protection
String MPPT	Current Sensor	ACS37010	Module alternative, high-power density current sensor that maximizes energy extraction, lowers ohmic losses and optimizes protection
	Gate Drivers	AHV85110/1	Highly-integrated GaN drivers that maximize efficiency, simplifies designs and minimizes footprint
DC Optimizer	Optimizer Current Sensor	ACS37002	Module alternative, high-power density current sensor that maximizes energy extraction, lowers ohmic losses and optimizes protection
DC/DC	Current Sensor	ACS37030	CT and shunt alternative current sensor for WBG current control to maximize energy conversion
		CT43x/42x	Cost-optimized current sensors with high resolution and superior linearity for energy conversion systems
	Gate Driver	AHV85110/1	Highly-integrated GaN drivers that maximize efficiency, simplifies designs and minimizes footprint
AC Output	Current Sensor	ACS37010	Shunt alternative, performance leading current sensor with stable operation of temperature and life
		CT43x/42x	Cost-optimized current sensors with high resolution and superior linearity for energy conversion systems
	Gate Driver	AHV85110/1	Highly-integrated GaN drivers that maximize efficiency, simplifies designs and minimizes footprint

To learn more about the Allegro family of products and to explore available design resources, visit allegromicro.com