INNOVATION WITH PURPOSE
ALLEGRO microsystems

SOLAR ENERGY HARVESTING

High accuracy, high bandwidth, low noise

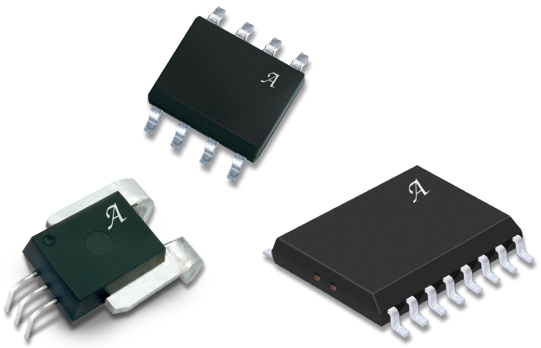
Sustainable power generation technologies like solar energy harvesting are playing an important role in the need for environmentally friendly energy production. These technologies lower dependence on fossil fuels that are the source of pollution and carbon emissions related to global climate change.

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.

These sensors meet the requirements to measure, control, and protect direct (DC) and alternating (AC) currents found in several applications throughout the various types of solar systems.

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.



Features and Benefits

- High accuracy measurement of DC and AC currents (1% total error)
- High bandwidth, low noise analog outputs – up to 1 MHz
- High galvanic isolation – up to 4.8 kV Isolation voltage
- Power-efficient using low ohmic resistance on the primary conductor – 0.1 mΩ to 1.0 mΩ
- Dedicated overcurrent fault pin available on selected devices
- Integrated shield that provides high immunity against voltage transients and spikes
- Differential sensing that highly mitigate the effect of stray fields
- Small footprint and cost-effective solutions
- Coreless/Lossless available solutions for high current/ high voltage subsystems

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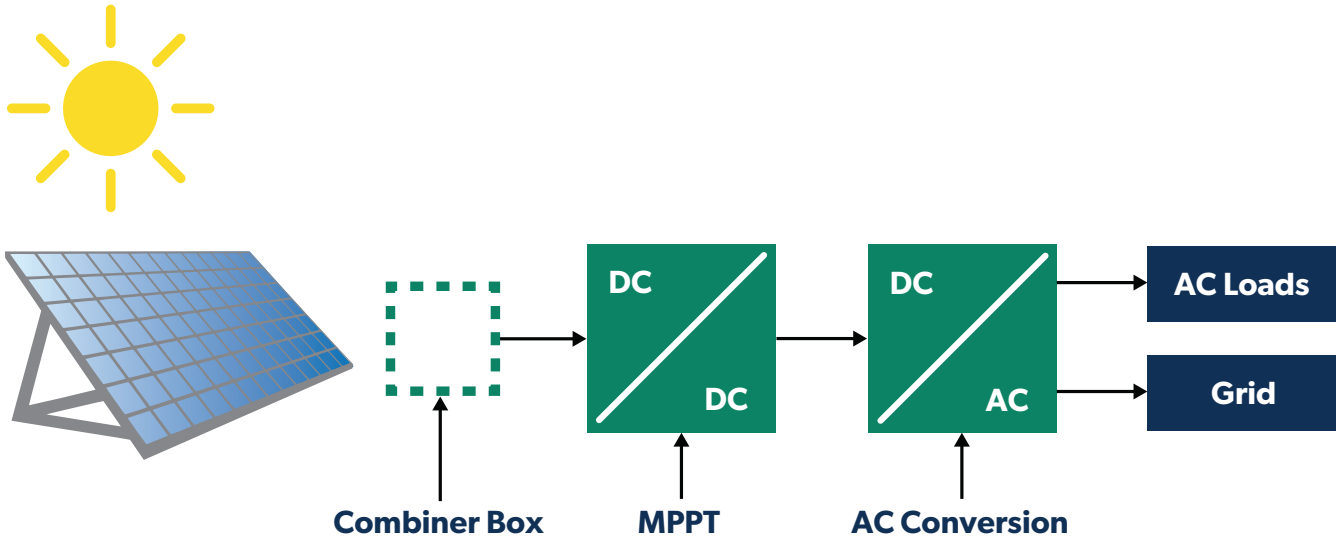

Integrated Conductor DC/DC, Combiner Box, PV

Part Number	Current Detection (A) / Typ. Accuracy	Basic DC Working Voltage (V)	BW (kHz)	Conductor Resistance (mΩ)	Package	Applicable Subsystem
ACS720	±80 / 0.8%	870	120	1.2	SOIC16W (LA)	PV DC/DC
ACS724/5	±65 / 1%	Up to 1097	120	0.85	SOIC8 (LC), SOIC16W (LA, MA)	PV DC/DC
ACS772/3	±400 / 0.9%	990	200	0.1	Custom, CB	PV DC/DC
ACS37002	>±100 / 0.5%	Up to 1097	400	0.35 – 1.0	SOIC16W (LA, MA, MC)	PV DC/DC
ACS37800	± 90 / 2%	1097	1	0.85	SOIC16W (MA)	I/V for PV, DC/DC

Coreless / Lossless AC Conversion

Part Number	Current Detection (A) / Typ. Accuracy	Basic DC Working Voltage (V)	BW (kHz)	Conductor Resistance (mΩ)	Package	Applicable Subsystem
ACS3761x	5 to 30 mV/G / 1%	-	250	Lossless	TSSOP8	DC/AC

Core-based Magnetic Field Sensors, Combiner Box

Part Number	Current Detection (A) / Typ. Accuracy	Basic DC Working Voltage (V)	BW (kHz)	Conductor Resistance (mΩ)	Package	Applicable Subsystem
ACS73369	±9 to 13.5 mV/G / 2%	-	7	-	SIP4 (KT)	Combiner Box

Allegro's extensive product portfolio of magnetic sensor products as well as motor driver, regulator, and lighting ICs provides further innovative solutions to solving the challenges of next generation renewable energy systems.
To learn more visit www.allegromicro.com.

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