INNOVATION WITH PURPOSE

ALLEGRO microsystems

ROBUST AND EFFICIENT UPS SOLUTIONS POWERED BY ALLEGRO

Ensuring Uninterrupted Power for Critical Applications

In today's interconnected world, reliable power is paramount for businesses of all sizes. Data centers, industrial automation systems, medical equipment, and even home offices rely on Uninterruptible Power Systems (UPS) to safeguard against power outages and fluctuations that can disrupt operations, damage equipment, and lead to data loss.

Allegro's exceptionally comprehensive portfolio of advanced semiconductor solutions directly empowers UPS manufacturers by providing the foundational technology needed to confidently design and deliver cutting-edge, next-generation systems. Our innovative Integrated Circuits, including high-precision current sensors for meticulous system monitoring, enhanced battery management, and rapid fault protection, alongside robust isolated gate drivers that significantly improve the efficiency and power density of critical AC/DC and DC/AC conversion stages, are integral to achieving unparalleled operational performance, maximized energy efficiency to reduce lifetime costs, and steadfast, unwavering reliability for the most mission-critical applications.

What you can achieve with Allegro solutions

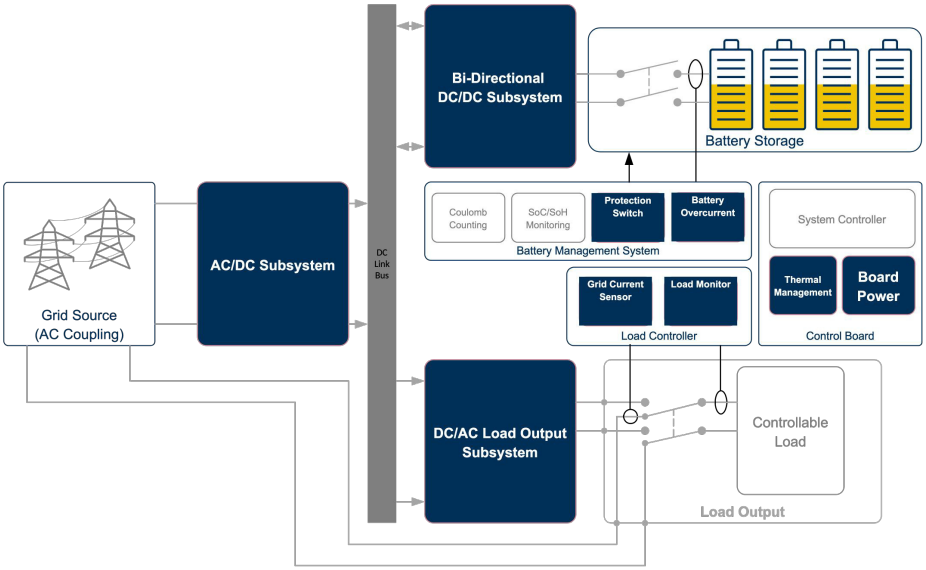
- **Power Efficiency:** Meeting stringent energy efficiency standards is crucial for reducing operational costs and environmental impact. Allegro's current sensors and gate drivers enable UPS designs with optimized power conversion and minimal energy loss.
- **System Reliability:** Downtime can be catastrophic for critical systems. Allegro's robust components and integrated protection features ensure the highest levels of reliability and uptime for your UPS.
- **Scalability and Flexibility:** Adapting to changing power demands requires a scalable and flexible UPS architecture. Allegro's fully integrated and compact ICs enable modular solutions for easy expansion and customization to meet evolving needs.
- **Advanced Control and Monitoring:** Real-time insights into UPS performance are essential for proactive maintenance and optimal operation. Allegro's sensing and control ICs enable sophisticated monitoring and management capabilities.

As businesses and critical infrastructure rely more on constant uptime, the role of Uninterruptible Power Supply (UPS) systems becomes increasingly vital.

Allegro MicroSystems' advanced current sensors, gate drivers, and battery management solutions provide the precision, efficiency, and reliability required to ensure seamless power backup and system protection in mission-critical applications.

Market-Leading Portfolios that Sense, Regulate and Drive

Block Diagram



Key Products and Solutions

Subsystem	Component	Allegro Parts	Key Differentiator
AC/DC Conversion	Input Current Sensor	ACS71010	Features 450 kHz bandwidth, tiny package with reinforced isolation, adjustable fault settings. Ideal for high-accuracy input current monitoring
	Isolated Gate Driver	AHV85110/1	Integrated isolated bias supply with Power-Thru technology, simplifying design and reducing EMI
	DC Link Current Sensor	ACS71010	Provides adjustable gain settings and high bandwidth, suitable for precise DC link current measurement with reinforced isolation in a compact package
Bi-directional DC/DC Conversion	Primary Current Sense	ACS37035	High-accuracy TMR current sensors with excellent linearity and 1 MHz bandwidth, suitable for high-voltage applications
	Secondary Current Sense	ACS37030/32	Extreme bandwidth (up to 5 MHz) current sensors for precise monitoring on the secondary side of DC/DC converters with adjustable fault capabilities
	Isolated Gate Driver	AHV85110/1	Eliminates the need for external bias supplies with Power-Thru technology, offering programmable negative gate drive and enhanced protection features
	Output Current Sensor	ACS71010	Ideal for output current monitoring with high accuracy, featuring reinforced isolation and adjustable settings in a small form factor
Battery Management	Battery Overcurrent Sensor	ACS772/3	High-current sensors with integrated conductors, providing precise overcurrent detection and reinforced isolation for battery management applications.
	Protection Switch	A4950	Full-bridge driver with integrated overcurrent, thermal protection, simple PWM control, and low standby current for efficient, reliable solenoid switching
Control Board	Fan Motor Driver	A5931	Cost-optimized three-phase BLDC motor driver suitable for high-efficiency fan control, offering integrated features in a compact package
	Board Power	APM81515	Compact and highly-efficient, ultra-low EMI and quiescent current, supports 48V power rails directly
DC/AC Output	Grid Current Sensor	ACS71010	Offers adjustable gain settings and high bandwidth, suitable for monitoring DC output currents with high accuracy and reinforced isolation
	Load Monitor	ACS37800	Integrates current and voltage sensing for real-time PFC calculation, and load monitoring into a single, compact device

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