

INTELLIGENT POWER DISTRIBUTION SOLUTIONS FOR MODERN SERVERS

Maximize uptime, efficiency, and scalability with innovative solutions

In today's demanding data center environments, efficient and reliable power distribution is critical. Server racks face increasing power density demands, requiring intelligent PDUs that can scale, adapt, and provide real-time monitoring and control.

A range of innovative products provides comprehensive solutions to meet the challenges inherent in modern server PDU design, focusing on maximizing uptime, enhancing energy efficiency, and ensuring seamless scalability. Our portfolio includes precise current sensors for detailed monitoring of both grid input and individual PDU outlets, enabling proactive fault detection and efficient load management in a tiny footprint. These advanced ICs are key to creating PDUs that offer enhanced server availability through precise real-time monitoring, optimized energy usage contributing to greener data centers, and streamlined, scalable designs for rapid deployment and reuse.

What you can achieve with Allegro solutions

- **Enhanced Reliability and Uptime:** Ensure server availability with precise, real-time outlet monitoring to prevent overloads. Our solutions enable efficient power delivery, minimizing downtime.
- **Optimized Energy Efficiency:** Cut power waste and lower operating costs with advanced power management, contributing to a greener data center.
- **Streamlined Design and Scalability:** Simplify PDU development with highly integrated ICs. Speed time-to-market with compact, modular designs that scale easily and support rapid reuse.

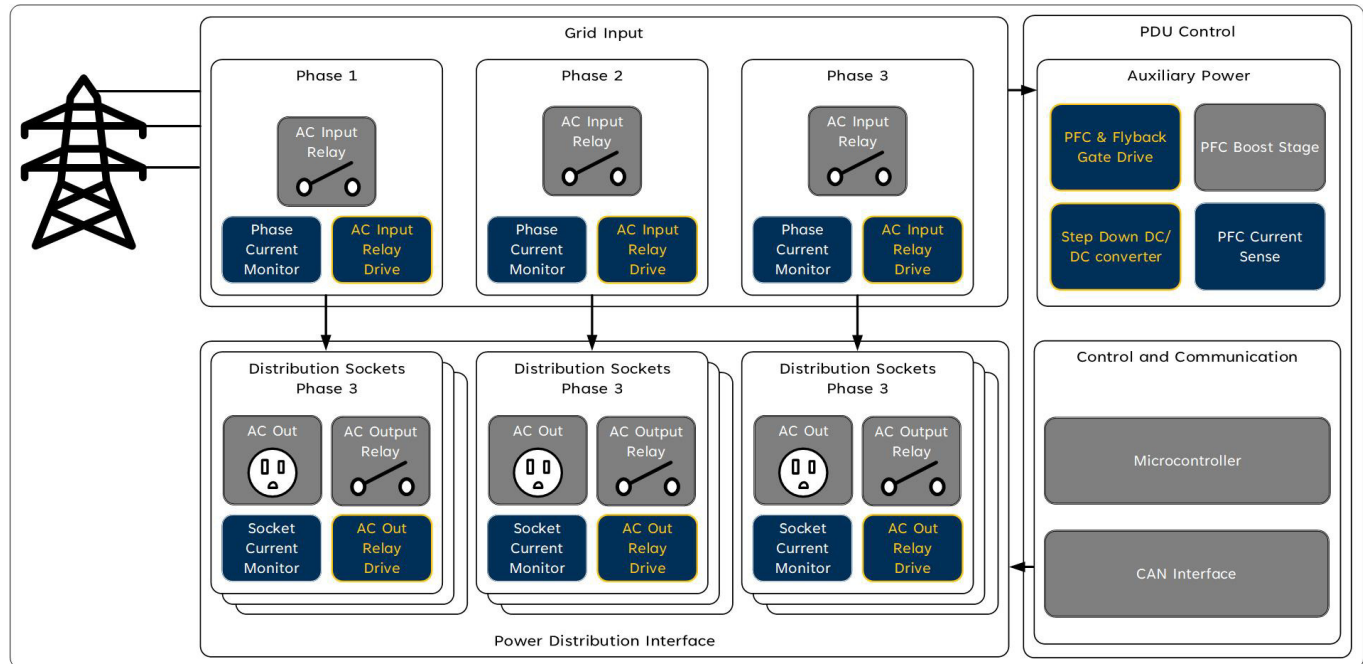


As cloud infrastructure continues to expand and data centers push for greater efficiency and reliability, the power supply units (PSUs) that drive them become increasingly critical.

Allegro MicroSystems' advanced current sensors, gate drivers, and thermal management solutions provide the precision, efficiency, and robustness required to optimize power delivery and ensure uninterrupted operation in modern data centers.

Market-Leading Portfolios that Sense, Regulate and Drive

Block Diagram



Key Products and Solutions

Subsystem	Component	Allegro Parts	Key Differentiator
Grid Input	Phase Current Monitor	ACS37800	Single-chip AC/DC power monitoring (active, reactive, apparent, Vrms, Irms) with isolation and fault protection for comprehensive grid input analysis
	AC Input Relay Drive	A4950	Integrated full-bridge DMOS driver simplifies AC input relay control in PDUs, with built-in protection for enhanced reliability
Power Distribution Interface	Socket Current Monitor	ACS71010	High-accuracy 400kHz current sensor with reinforced isolation and fast fault output enables precise monitoring and protection of PDU AC outputs
	AC Output Relay Drive	A4950	Compact, reliable full-bridge DMOS driver for PDU socket relay control, featuring integrated protection
Auxiliary Power	Step-Down DC/DC Converter	APM81815	Highly integrated synchronous buck regulator module simplifies PDU auxiliary power design with low EMI and selectable output voltage
	PFC Current Sense	ACS37800	Isolated AC/DC current and comprehensive power measurement IC with fault protection, optimizing PDU auxiliary PFC stages
	PFC & Flyback Gate Drive	A89505	Robust 50V full-bridge PWM gate driver with integrated current control and protection simplifies driving MOSFETs in PDU auxiliary PFC/Flyback converters



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