

Aerospace Secondary Power Distribution Box



AI Overview

Aerospace Secondary Power Distribution Boxes (SPDUs) are solid-state systems that manage, protect, and control electrical loads across aircraft while reducing wiring, weight, and installation complexity.

Overview Secondary Power Distribution Units (SPDUs) are critical components in modern aircraft, helicopters, UAVs, eVTOLs, and tactical vehicles. They replace traditional centralized circuit breaker and relay panels with solid-state technology, enabling distributed, lightweight, and highly configurable power management systems. SPDUs provide protection for circuits and wiring while allowing remote control and monitoring of electrical loads.

Key Features

- Solid-State Power Controllers (SSPCs):** Each output is protected by SSPCs, which replace multiple electromechanical components, reducing wiring complexity and weight.
- Remote Load Management:** SPDUs can control loads remotely, including automated load shedding and pulse width modulation for efficient power distribution.
- Arc Fault Protection:** Advanced sensing detects intermittent arc faults caused by wire insulation failure without tripping on normal motor or lamp transients, enhancing safety and compliance with certification requirements.
- Configurable Outputs:** SPDUs allow adjustable current ratings per circuit via removable personality modules, supporting flexible installation and future aircraft modifications.
- Digital Communication:** Integration with aircraft data buses (e.g., RS485) enables monitoring, diagnostics, and prognostic maintenance activities.

Performance and Capacity

- DC SPDUs:** Typically operate at 28V or 270V, distributing up to 100A per channel for 28V systems and up to 75A per channel for 270V systems, with multiple configurable outputs per channel.
- AC and DC Compatibility:** Some SPDUs support both AC and DC loads, providing versatility for different aircraft systems.
- Weight and Space Savings:** Distributed arc...

Article Content

DC Secondary Power Distribution

Our SPDUs are available in single and dual channel versions. The 28V SPDU is capable of distributing up to 100A of DC current per channel continuously and

Development of a Secondary Power Distribution Box

A major focus on the development of efficient electrical grid structures of aircrafts is the design of the power supply of loads in the cabin. For

CN111600635A

The present invention is entitled "Secondary Power Distribution System (SEPDS) for Facilitating Aircraft Connections." The present invention discloses a secondary distribution box (SPDB), a solid state

LOW-PROFILE

AMETEK's low-profile solid-state Secondary Power Distribution Units (SPDU) replace centralized circuit breaker and relay panels to provide a more advanced, smaller, and lighter weight solution of power

Secondary Power Distribution System GENeUSGRID™

Our plug-in circuit breaker panel was developed for a broad range of aerospace applications. It offers an easy to maintain approach that offers significant weight

Power distribution

Power distribution in commercial airplanes is a complex and critical system that ensures safe and efficient operation of the aircraft. The power distribution system

Primary Power Distribution Units

Primary Power Distribution Units Control and Protect Our Aerospace specific Primary Power Distribution unit (PDU) provides primary power bus connectivity,

Understanding the Function of Secondary Power

A secondary power distribution unit in aerospace manages electrical power for non-essential systems in an aircraft, such as passenger lighting and air conditioning.

DC Secondary Power Distribution

The DC Secondary Power Distribution Unit (SPDU) is an aerospace and mil-spec electronic circuit breaker system that leverages digital communications and the

Secondary Power Distribution Unit

The SPDU (Secondary Power Distribution Unit) provides a compact, lightweight means to distribute 288A at 28 VDC power to 54 loads in the aircraft to save weight, space, and cost by eliminating

Power Distribution System | Study Aircrafts

Power distribution system in an aircraft is very essential in order for the power available at the appropriate generating sources, to be made available at the

Aircraft Power Distribution

Overview CorePower® systems from Astronics replace traditional thermal mechanical breaker systems with intelligently controlled solid state switches providing unprecedented reliability and safety.

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FIG. 1 is a schematic block diagram depicting a secondary power distribution box (SPDB) that can be utilized to implement one example embodiment of the present invention.

Power Distribution Unit – Brancaro Industries

The PDU is a dual channel, redundant, EASA CS-LURS Compliant aircraft electrical system in a single box. It embeds Primary and Secondary Power distribution

Low-Profile Secondary Power Distribution

Our rugged Low-Profile Secondary Power Distribution Units are efficient, provide maximum flexibility & are customizable for any Aerospace & Defense application

Electric Power Distribution

Honeywell's integrated electric power distribution efficiently manages and protects aircraft electrical loads, enhancing flight safety, performance, and reliability, while

TRENDS IN AEROSPACE POWER DISTRIBUTION

They also provide power to secondary distribution boxes feeding nearly every load used in flight, from in-seat power to in-flight entertainment systems. TE Connectivity is one of the world's largest

Understanding the Function of Secondary Power

Modern secondary power distribution units support the growing power distribution unit market in aerospace by using advanced technology, digital diagnostics, and

Power Distribution and Management Systems | Collins

Collins Aerospace's solid state distribution systems are the standard on numerous airplane platforms with over 2 million devices in service. Our systems are

Power Distribution and Management Systems | Collins

Our primary and secondary power distribution systems can lower weight and cost while enabling remote control of electrically powered aircraft devices.

Primary & Secondary Power Distribution Technology Overview

Power distribution capabilities as a complement to sub-system provider (power conversion, power distribution, battery solutions) Typical applications Distribution of primary and secondary power for

Secondary Power Distribution System GENeUSGRID™

This secondary distribution system is designed to power, protect and control electrical loads. It contains thermal circuit breakers but also more advanced Solid

Development of a Secondary Power Distribution Box

Development of a Secondary Power Distribution Box A major focus on the development of efficient electrical grid structures of aircrafts is the design

Contact Us

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