

Cleanroom power distribution box



Overview

Cleanroom Power Distribution Units: A Simpler Method Terra's Cleanroom Control Panels and Power Distribution Modules (PDMs) are specifically designed to CI.

Key Takeaways

A cleanroom-type power distribution box is a specialized, hygienic electrical module designed to safely distribute power to cleanroom equipment while maintaining strict contamination control and compliance with ISO and GMP standards. Key Features

Hygienic Construction: Cleanroom power distribution boxes are typically made from 304 or 316 stainless steel with electropolished surfaces to resist corrosion and enable thorough decontamination, preventing microbial harborage and particle accumulation (). **Environmental Protection:** These boxes often carry IP66 ratings, ensuring protection against dust, high-pressure water jets, and steam, making them suitable for washdown areas and chemical cleaning (). **Modular and Scalable Design:** Modern cleanroom power distribution systems, such as Power Distribution Modules (PDMs), allow modular connections for fan filter units (FFUs), LED lighting, and other equipment. They use 3-pin or 4-pin quick-connect fittings, enabling rapid installation, relocation, or expansion without extensive hardwiring (). **Compliance and Safety:** All components are designed to meet ISO 14644 and GMP standards, with flush-mounted outlets, rounded edges, and sealed conduits to minimize particle generation and contamination risk (). **Operational Monitoring:** Many PDMs include status indicators for connected devices, providing visual confirmation of operation and simplifying troubleshooting in complex cleanroom environments ().

Applications

- Pharmaceutical manufacturing
- Medical device production
- Food and beverage processing
- Semiconductor and electronics cleanrooms These boxes are essential for powering HVAC systems, HEPA filtration units, lighting, and IoT-connected devices while maintaining environmental stability and preventing contamination ().

Advantages

- Reduced installation time and labor compared to hand-wiring each device individually ().
- Minimized human error due to fewer electrical touchpoints.
- Ease of maintenance and expansion, supporting rapid cleanroom reconfiguration.
- Durable and chemical-resistant, suitable for frequent cleaning and sanitization. In summary, a cleanroom-type power distribution box is a robust, modular, and hygienic solution that ensures reliable power delivery while supporting strict contamination control, operational flexibility, and regulatory compliance in controlled environments ().

Article Content

Cleanroom Accessories and Components | Terra Universal

Power Distribution Module for Modular Cleanroom Terra's Power Distribution Modules (PDMs) drastically simplify connection of

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This document is for preliminary research. Verify specifications against current standards, product documentation and project requirements.

