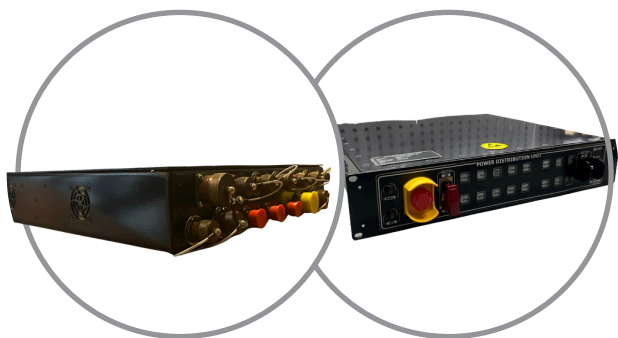


PowerGuard PDU-R2D4 Power Distribution Unit

Uninterrupted Power, Total Control





PowerGuard

Power Distribution Unit

PowerGuard PDU-R2D4 is a high-reliability and rugged Power Distribution Unit designed for military and industrial systems operating in harsh environmental conditions. With its compact 2U rack-type form factor, it facilitates seamless system integration while supporting both grid and UPS inputs for uninterrupted and secure power distribution.

Thanks to its remotely manageable architecture, all input/output lines, temperature, humidity, and system status parameters can be monitored and managed in real time. Through the Windows 10-compatible interface, the user can switch outputs on/off individually or in groups, reboot channels, and perform ping operations. The unit is equipped with advanced hardware including military-grade connectors, EMI/EMC filtering, overvoltage, overcurrent, and overtemperature protection circuits, surge protection (SPD), AC/DC converters, and emergency stop and bypass control. Illuminated buttons on the front panel provide the operator with immediate visual feedback.

Manufactured in compliance with international quality and environmental durability standards such as ISO 9001, IPC-A-610 Class 3, and MIL-STD-810G, the PDU-R2D4 offers the flexibility to be flawlessly integrated across a wide range of platforms – from military vehicles to fixed operation points.

ADVANCED FEATURES

1. INTELLIGENT POWER INPUT AND OUTPUT MANAGEMENT

- **Input Voltage:** 180–240 VAC, 50 Hz, Single Phase
- **Dual Input Support:** Grid and UPS
- **Output Lines:**
 - 8 AC outputs
 - 2 DC outputs
- **Output Control:** Configurable via software-based operational scenarios
- **Front Panel:** Illuminated output control buttons

2. Compliance with Military and Industrial Standards

- **MIL-STD-810G:** Environmental durability compliance
- **ISO 9001:** Quality management standard
- **IPC-A-610 Class 3:** High-reliability electronic assembly standard
- **J-STD-001B:** Professional soldering quality standard
- **IPC/WHMA-A-620:** Cable and harness assembly compliance

3. Advanced Protection Systems

- Overvoltage/undervoltage protection on input lines
- Overcurrent protection on output lines
- Thermal protection for internal components
- Integrated surge protector with LED status indicator
- Emergency stop button located on the front panel

4. Integrated Communication and Monitoring

- 100 Mbps Ethernet & RS-422 communication support
- Remote control software compatible with Windows 10
- Real-time monitoring: Voltage, current, temperature, humidity
- System health tracking and ping functionality
- Outputs can be switched individually, in groups, or in sequence

5. Mechanical and Environmental Durability

- Chassis: 2U, 19" rack-mount compatible frame
- Weight: 10 kg
- Enclosure: EMI/EMC shielded aluminum housing with sealing structure
- Transport: Military-grade hard case carrying solution
- Designed for harsh environments (vibration, impact, EMI, temperature)

Application Areas

Defense Industry

- **Military Electronic Systems:** Provides uninterrupted and stable power for radar, command & control, and weapon systems.
- **Aerial Platforms:** Manages power for mission computers and communication systems in aircraft, helicopters, and UAVs.
- **Land Platforms:** Ensures reliable power distribution for armored vehicles, tactical wheeled vehicles, and mobile systems.
- **Naval Platforms:** Meets the power requirements of sonar, radar, and communication systems on ships and submarines.

Industrial Applications

- **Test and Calibration Systems:** Delivers stable power for devices with precision voltage/current requirements.
- **Production Lines:** Provides a secure power infrastructure for critical manufacturing machinery.
- **Automation and Motor Control:** Operates in harmony with industrial robotics and motor drive systems.

Technical Specifications

Electrical Characteristics

- **Input Voltage and Frequency:** 180–240 VAC, 50 Hz, Single Phase
- **Input Type:** 1 x Grid + 1 x UPS input (via separate connectors)
- **Output Configuration:** 8 AC outputs, 2 DC outputs
- **Output Voltage and Current:** Configurable per project; typically 24VDC / 220VAC
- **Efficiency:** $\geq 85\%$

Safety and Protection

- **Protection Mechanisms:** Overvoltage, undervoltage, overcurrent, short circuit, thermal protection, phase sequence protection
- **Surge Protection (SPD):** Integrated on input line; status indicated via LED
- **AC/DC Converters:** Minimum 2 DC converters with independent protection and distribution
- **Emergency Stop & Bypass:** Physical buttons on the front panel; mandatory for operational safety

Control and Communication

- **Output Control:** Individual or grouped control via front panel and software interface
- **Output Status Indicators:** LED indicators for each output channel
- **Remote Management Software:** Windows 10 compatible GUI for output control, system health monitoring, temperature/humidity display, and ping function
- **Communication Interfaces:** Ethernet (100 Mbps) and RS-422
- **Temperature and Humidity Sensors:** Integrated inside the unit; data viewable through software

Mechanical and Environmental Durability

- **Operating Temperature:** -30°C to $+50^{\circ}\text{C}$
- **Operating Humidity Range:** 5% – 95% RH, non-condensing
- **EMI/EMC Protection:** Provided through filtering and sealed gaskets
- **Enclosure Structure:** 2U height, 19" rack-mount, electrostatically coated aluminum chassis
- **Weight:** ≤ 10 kg
- **Transport and Protection:** Supplied with a military-grade transport case suitable for field conditions
- **Compliance Standards:** ISO 9001, IPC-A-610 Class 3, J-STD-001B, MIL-STD-810G

Dimensions

