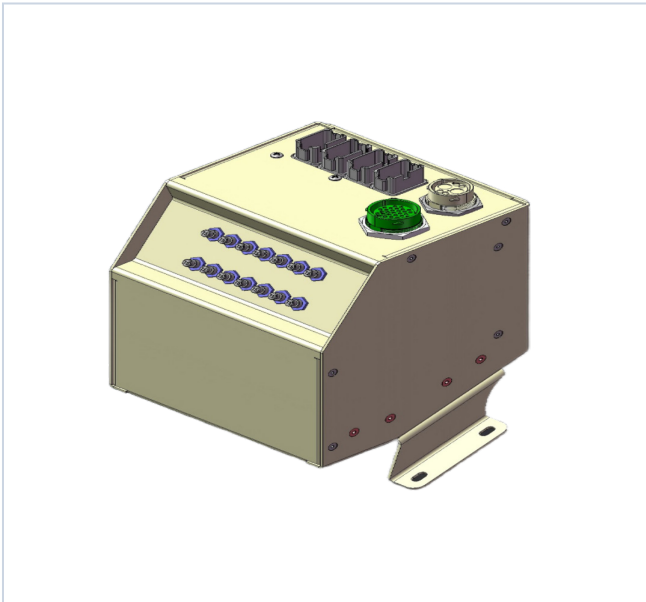


PD12V-16R | 12V PDU

Rugged 12V Intelligent Power Distribution Unit

MODEL: PD12V-16R | CATEGORY: PDU | FORM: Panel Mount / Vehicle Integration

PRODUCT OVERVIEW



Key Product Features








- 12V DC multi-channel power distribution architecture
- 16 total outputs (12 primary + 4 auxiliary circuits)
- Integrated Low Voltage Load Disconnect (LVLD) protection
- Ignition-controlled power sequencing (KEY IN interface)
- Relay-based switching for controlled load management (RE1-RE6)
- Busbar-based high-current distribution for reliability and efficiency
- Dedicated always-on (HOT) power line
- Configurable circuit breaker protection per load
- Audible alarm with manual disable capability
- MIL-grade connectors and automotive harness compatibility
- Designed for harsh, vibration-prone environments

PRODUCT DESCRIPTION

The PD12V-16R is a ruggedized 12V DC power distribution unit engineered for military and specialized vehicle platforms. It provides centralized power distribution across multiple protected circuits while integrating intelligent load management, ignition-controlled operation, and low-voltage protection.

Built on a high-current busbar architecture with circuit breakers, relays, and Low Voltage Load Disconnect (LVLD), the system ensures reliable power delivery, prioritized load control, and protection of critical subsystems under dynamic operating conditions.

Applications

- | | |
|--|--|
|  Military ground vehicles |  Mobile command systems |
|  Law enforcement and tactical vehicles |  Specialized utility and service vehicles |
|  Emergency response vehicles |  Off-road and heavy-duty vehicle platforms |
| |  Integrated vehicle electronics and auxiliary systems |

PRODUCT OVERVIEW

Key Differentiators

- Reduces wiring complexity and system integration time
- Protects critical loads under low-voltage conditions
- Enables deterministic power control in vehicle systems
- Improves system reliability in mission-critical applications
- Fully configurable to platform-specific requirements

Design Intent & Use Case

- Multi-load vehicle power distribution
- Critical system prioritization under low voltage
- Centralized replacement of distributed fuse/relay panels
- Reduced wiring complexity and improved serviceability

Safety & Compliance

- Designed to support MIL vehicle power environments
- Alignment with MIL-STD-1275 (vehicle power systems)
- Designed for MIL-STD-810 environmental conditions (shock, vibration, temperature)
- EMI/EMC design considerations aligned with MIL-STD-461
- Automotive-grade wiring and connector systems

System Architecture

- Three primary busbars:
 - ◊ +12V Battery (main distribution)
 - ◊ +12V HOT (unswitched / always-on)
 - ◊ Ground return bus
- Load segmentation:
 - ◊ Always-on loads
 - ◊ Ignition-controlled loads
- LVLD-controlled loads
- Enables prioritized power distribution and controlled load shedding

Control & Logic Behavior

- Automatic load disconnect at low voltage (10.8V)
- Audible warning prior to disconnect (11.3V)
- Automatic recovery when voltage returns to 13V
- Manual override via LVLD bypass relay
- Ignition-triggered system activation (KEY IN signal)

For quotes and customization requests, contact Digital Power sales at (877) 634-0982 or sales@digipwr.com.

ELECTRICAL SPECIFICATIONS

Parameter	Specification
Nominal Voltage	12V DC
Input Type	+12V Battery and Ignition (KEY IN)
Distribution	Busbar with circuit breakers
Number of Outputs	12 primary + 4 auxiliary
Protection	Circuit breakers + LVD
LVLVD Disconnect	10.8V
LVLVD Alarm	11.3V
LVLVD Recover	13V

Circuit Protection Configuration

Circuit ID	Function	Rating
CB1	Rear A/C Unit	20A
CB2	Beacon Light	5A
CB3	Search Light	5A
CB4	Evacuation Gas Fan	10A
CB5	Dome Light	5A
CB6	PA System	20A
CB7	Paint Removal System	5A
CB8	12V Power Socket	10A
CB9	USB Line 1	10A
CB10	USB Line 2	10A
CB11	Parking ECU	5A
CB12	Reverse Screen	5A
CB13	A/C Fan 1	10A
CB14	A/C Fan 2	10A
CB15	A/C Fan 3	10A
CB16	HOT Line (Always ON)	5A

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ELECTRICAL SPECIFICATIONS

Relay Configuration

Relay ID	Function
RE1	Key-In Relay
RE2	Rear A/C Relay
RE3	Ignition / Key Control Relay
RE4	Alternator Enable Relay
RE5	Blackout Relay
RE6	LVLB Bypass Relay

Connectors & Interfaces

Connector	Type	Description
J101	DT04-48P-B016	Dashboard harness interface
J103	HDP24-24-31ST	Secondary dashboard interface
J100	HDP24-18-6PN	Auxiliary harness
J0 / P0	DTM 2-pin	Signal interface

Customization & OEM Support

- Custom circuit configurations available
- Harness and connector customization
- Branding / panel layout options
- Engineering support from concept to deployment

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ELECTRICAL SPECIFICATIONS

Environmental & Reliability

Parameter	Specification
Operating Temperature	-40°C to +105°C (Automotive-grade wiring rated)
Vibration Resistance	High (vehicle-grade)
Connector Sealing	Sealed with gaskets and sealing pins
Construction	Robust for harsh environments

Compliance & Standards

Category	Standard
Military Power	MIL-STD-1275
EMI/EMC	MIL-STD-461
Environmental	MIL-STD-810
Connectors	MIL-DTL-5015
Wiring Standards	UL1015, VW-1
Components	MIL-grade relays and protection devices

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