

# PWR300 Series

## DC/DC Converter with Integrated Power Distribution

Designed strictly as a DC/DC power conversion and regulation platform for mobile vehicle subsystems. It is the ideal fit for tactical vehicles and mobile edge platforms—such as armored personnel carriers, command vehicles, or remote communication rigs—where stable DC outputs, transient protection, and dedicated platform hardening are required to ensure continuous operational availability under extreme voltage fluctuations.

### Key Features

#### Primary Power Role Power Distribution

Vehicle & Platform DC/DC Power Conditioning Layer  
Multiple fused DC outputs for medium to high-density deployments

#### Wide Input Range

Stabilizes variable vehicle power to regulated tactical voltage

#### Transient Protection

Military-grade filtering against surges and load dumps

#### Expansion Ready

Supports downstream power distribution modules

#### Chassis Form Factor

Scalable 1U to 2U form factor for harsh vehicle environments

# Capabilities

The PWR300 Series is a vehicle-hardened DC/DC power conversion and distribution platform designed to stabilize dirty platform power. Operating directly off vehicle alternators and battery banks, it scrubs severe voltage drops during engine startup, ensuring continuous operation of radios, mission computers, and tactical displays.

The platform emphasizes pure hardware-based circuit protection and input-to-output isolation. It supports physical modular expansion and features an optional remote load disconnect for rapid power isolation in tactical vehicle architectures.

The capabilities of the PWR300 series include:

- **Engine Cranking Immunity:** Eliminates subsystems reboots by stabilizing voltage drops during heavy engine starts.
- **Load Dump Suppression:** Absorbs and clips massive voltage surges caused by sudden disconnection of heavy vehicle inductive loads.
- **Multi-Device Fused Distribution:** Protects connected loads individually, ensuring a single component failure does not short the main bus.
- **Daisy-Chain Expansion:** Allows operators to mechanically link and expand the distribution network without adding primary power lines.
- **Conduction-Cooled Reliability:** Utilizes an armored, fanless enclosure that survives severe combat vibrations and off-road shock profiles.
- **Physical Loop Severing:** Direct mechanical-over-bus disconnect to sanitize vehicle electronics in field emergencies.

## Form factors

The PWR300 series offers different form factors depending on best fit for a particular use case.

| Standard 19"/2 form factor                                                                                                         | Customized form factor                                                               |
|------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|       |  |
| <ul style="list-style-type: none"> <li>▪ Form, fit and function over multiple generations</li> <li>▪ Long-term roadmaps</li> </ul> | <ul style="list-style-type: none"> <li>▪ Project driven form factor</li> </ul>       |

### MilDef 19"/2 modular design

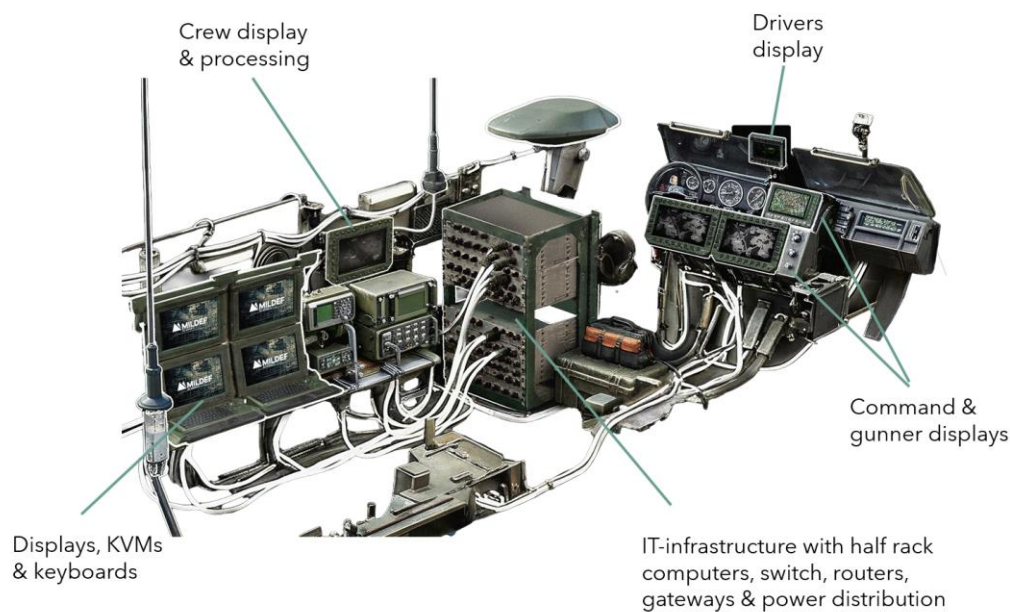
The MilDef 19"/2® addresses the requirements for small, high performance IT hardware. The modular design and broad product offering (computer, network, power and peripherals) enables the use of 19"/2® units as building blocks for creating built to purpose solution. Same form factor over multiple generations enable reuse of cable, mounting solution etc for midlife upgrades along the system life cycle.

# Solution provider

MilDef offers solution and integration delivering seamless, end-to-end solutions by integrating hardware and software into complete systems that meet customer requirements. Managing integration projects/programs to ensure alignment with mission objectives/business strategy and technological capabilities.

## Hardware ECO-system

Our hardware offering including all the building blocks for complete IT infrastructure for the tactical edge, such as displays, network products, power products, docking stations, mounting solutions etc.



## Use case

The PWR300 series is a core component of many tactical platform designs. Some use case examples are:

- **Armored Personnel Carriers (APCs):** Converts erratic 24V vehicle power into a stable DC supply for tactical computers, GPS units, and intercom systems.
- **Mobile Command & Control Vehicles:** Protects tactical displays and mission computers from damaging voltage spikes caused by alternators and engine starts.
- **Tactical Communication Vehicles:** Reduces alternator noise and conditions power for HF and VHF combat radios.
- **Naval Interceptor & Patrol Craft:** Stabilizes onboard DC power against heavy bilge pump and engine starter loads, keeping mission radar operational.



# Specifications

| System & Interfaces                                               |                                                                                     |                              |                                                                       |
|-------------------------------------------------------------------|-------------------------------------------------------------------------------------|------------------------------|-----------------------------------------------------------------------|
| Platform Positioning & Architecture Type                          | DC/DC Converter Platform with Integrated Power Distribution                         | Primary Input Type           | DC Vehicle / Battery Power                                            |
| Distribution Capacity                                             | Medium-to-High Density Power Distribution                                           | Input Voltage Range          | Wide-Range DC Input                                                   |
| Power Class & Performance                                         | High Current DC Passthrough                                                         | Power Function               | DC/DC Conversion & Distribution                                       |
| Chassis Form Factor                                               | Typically 1U or 2U                                                                  | Power Outputs                | Up to 6 x DC Outputs                                                  |
| Core Capabilities                                                 |                                                                                     |                              |                                                                       |
| Power Conversion Capability                                       | DC/DC conversion with regulated tactical power distribution                         | Peak Power Handling          | Supports vehicle and communications equipment startup loads           |
| UPS Topology                                                      | Not Applicable                                                                      | Power Transition Performance | Continuous DC Power Conditioning without transfer events              |
| Energy Storage (UPS)                                              | Not Supported                                                                       | Zeroization                  | Not Applicable                                                        |
| Hold-Up Capability                                                | Input filtering and transient protection                                            | Expansion Capability         | Daisy-Chain Power Distribution Support                                |
| Tactical & Mission Services                                       |                                                                                     |                              |                                                                       |
| Power Protection                                                  | DC Input Protection, Voltage Regulation, and Circuit Protection                     | Typical Load Types           | Routers, Switches, Radios, Mission Computers, and Vehicle electronics |
| Power Resilience Features                                         | Stable operation during vehicle voltage fluctuations and transients                 |                              |                                                                       |
| Deployment & Architecture                                         |                                                                                     |                              |                                                                       |
| Primary Mission Use Case                                          | Vehicle and Platform Power Conversion and Distribution                              | Cooling Concept              | Passive Conduction and Convection Cooling                             |
| Typical Deployment                                                | Tactical Vehicles, Mobile Command Posts, Edge Platforms, and Communications Systems | Network Position             | Platform Power Layer                                                  |
| Environmental                                                     |                                                                                     |                              |                                                                       |
| MIL-STD-810                                                       |                                                                                     |                              |                                                                       |
| Shock operating                                                   | Functional Shock. 40G/11ms                                                          | Noise level                  | Max noise level of 40 dB SPL 1 m (3.3 ft)                             |
| Temp. operating                                                   | -40 to 65°C (-40 to 149 °F)*                                                        | Salt fog                     | 5 ± 1%                                                                |
| Temp. storage                                                     | -40 to 71°C (-40 to 160 °F)*                                                        | Temp. shock                  | 55 °C (131 °F) / -40 °C (-40 °F)*                                     |
| Humidity                                                          | Aggravated, 95 ± 4% RH                                                              | Vibration                    | Rotary wing aircraft - helicopter                                     |
| IP Class                                                          | IP65*                                                                               |                              | Truck/trailer - loose cargo                                           |
| Low air pressure                                                  | Rapid Decompression 8000 ft / 40000 ft Operation/Air Carriage 15,000 ft             |                              | Ground vehicles - ground mobile tracked                               |
|                                                                   |                                                                                     |                              | Ground vehicles - ground mobile wheeled                               |
| Optional standards                                                |                                                                                     |                              |                                                                       |
| RTCA/D0160, VG, DEFSTAN, MIL-STD, etc can be included on request. |                                                                                     |                              |                                                                       |
| EMC                                                               |                                                                                     |                              |                                                                       |
| MIL-STD-461                                                       |                                                                                     |                              |                                                                       |
| EMI/EMS                                                           | Ground Army                                                                         | ESD                          | CS118                                                                 |
| Optional standards                                                |                                                                                     |                              |                                                                       |
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| Power                                                             |                                                                                     |                              |                                                                       |
| Vehicle Power                                                     | MIL-STD-1275                                                                        |                              |                                                                       |
| Optional standards                                                |                                                                                     |                              |                                                                       |
| VG, DEFSTAN, MIL-STD, etc can be included on request.             |                                                                                     |                              |                                                                       |

\*Higher available on request