

# AC Power Distribution Unit



## Introduction

- Spectrum Control Inc is introducing a new best in class AC & DC PDU product line. High performance, a full feature set and a ruggedized design combined with a focus on manufacturability and component availability deliver excellent value to our customers.
- Additionally, the product series was developed as a platform to facilitate minor hardware customizations such as input and output connectors & cables and flexible configuration and operation via software.
- The high-performance Microchip controller, with 10-15 year availability, ensures support for modern interfaces and security protocols.

## Value Proposition

- For Aerospace, Defense and Industrial customers that need to manage and protect high value assets in harsh environments.
- Spectrum Control's best in class AC & DC Power Distribution Units provide secure control and reliable protection unlike most COTS vendors who trade off reliability & ruggedness for cost.
- We do this by building a ruggedized product with a full-featured modern controller supporting the latest security and interfaces combined with current, voltage and temperature monitoring on a per port basis.
- Reliability and performance are demonstrated by our MIL-STD-810H and MIL-STD-461G qualification testing.

## Features

### General Operation

- Secure remote access and control.
- Front panel status display (OLED & LEDs).
- Common control across AC/DC PDU's and RF/Microwave Systems.
  - Enables common UI (user interface) and single connection
- Support logical interfaces including SSH, Telnet and Serial interfaces using proprietary ASCII based command line interface (CLI).
- Supports SNMPv1/2c/3.
- DHCP or Static IPv4 addressing over a Gigabit Ethernet physical layer.

### Flexible configuration

- Remote Monitoring and control of each outlet individually.
- Configurable UP and DOWN Sequencing.
  - Configurable Channel Groups
  - Configurable soft breaker settings including configurable recover retries.
- Configurable over and under alarm settings for voltage, current and temperature.
- Auto Up Sequence, Group Enable or Individual Channel Enable following special events (power on, EPO).
- 4 Modes of control for each channel based on external sensor.
  - Turn ON if the temperature increases above a set threshold (cooling)
  - Turn ON if the temperature decreases below a set threshold (heating)
  - Turn ON if the temperature is within an upper and lower test point (Safe Operating Range), or
  - Turn ON if the temperature is outside an upper and lower test point (Alarm Mode)

---

## Hardware

- 1 RU 19" rack mount package.
- Designed for manufacturability, automated production test, emphasis on parts availability.
- Front panel indicators for mains, channel, local / remote status.
- OLED display for addressing, hour meter and additional status.
- Ethernet (GigE) nickel-plated-shielded RJ45 and USB 2.0 type-C interfaces.
- Input and output monitoring voltage / current / protection / EMI filtering.
- Internal and external temperature sensors.
- Hardware watchdog timer shuts down unit if control is non-responsive.
- Ruggedized design, wide temperature range / low smoke wiring.
- Conservatively rated for high MTBF and cool operation.
- Operator Safeguards – Emergency Power Off (EPO) functionality.

## Specifications

### Input Characteristics:

- Voltage: 85-132 / 170-250 VAC
- Frequency: 60 / 50 Hz +/- 3Hz
- Line Current capacity: 30A
- Input Voltage and Current Monitoring
  - Voltage measurement +/- 1%
  - Current measurement +/- 2.7%
- Overload Protection: 1P/20A or 1P/30A UL489 circuit breaker.
- Attached Power Cord: 4ft NEMA 5-20P
- Transient / Surge Protection:
  - UL 1449 MOVs, Line-to-Neutral, Line-to-Ground, Neutral-to-Ground
  - Thermal protection
  - Transient Energy (2mS): 100J
  - Peak Surge Current (8/20uS): 10kA single pulse
  - Maximum Clamping Voltage (8/20uS): 340V @ 100A pk (120V variant)
  - Maximum Clamping Voltage (8/20uS): 710V @ 100A pk (240V variant)
- EMI Filtering
  - Power Line Filter (FHSA series) on input
  - 30dB CM / 26dB DM @ 1MHz
  - 55dB CM / 64dB DM @ 10MHz
  - 45dB CM / 35dB DM @ 30MHz
- No Output Load Power Consumption: 30W

### Output Characteristics

- Voltage 85-132 / 170-250 VAC
- Current: 20A Maximum per Outlet, 30A Maximum Total Combined Load
- Outlets: (8) NEMA 5-20R

- Output Voltage and Current Monitoring on each Outlet
  - Voltage measurement +/- 1%
  - Current measurement +/- 2.7%

### Mechanical Characteristics

- Material: Aluminum
- Finish: Powder Coat, Black, Fine Texture
- Lettering: Silk Screen, White
- Mounting: Brackets accommodate Front or Mid Mount
- Weight: 5kg.

### Communication

- USB Type C connector
- 10/100/1000 Base-T (MIL-C-26482 RJ-45 Connector)

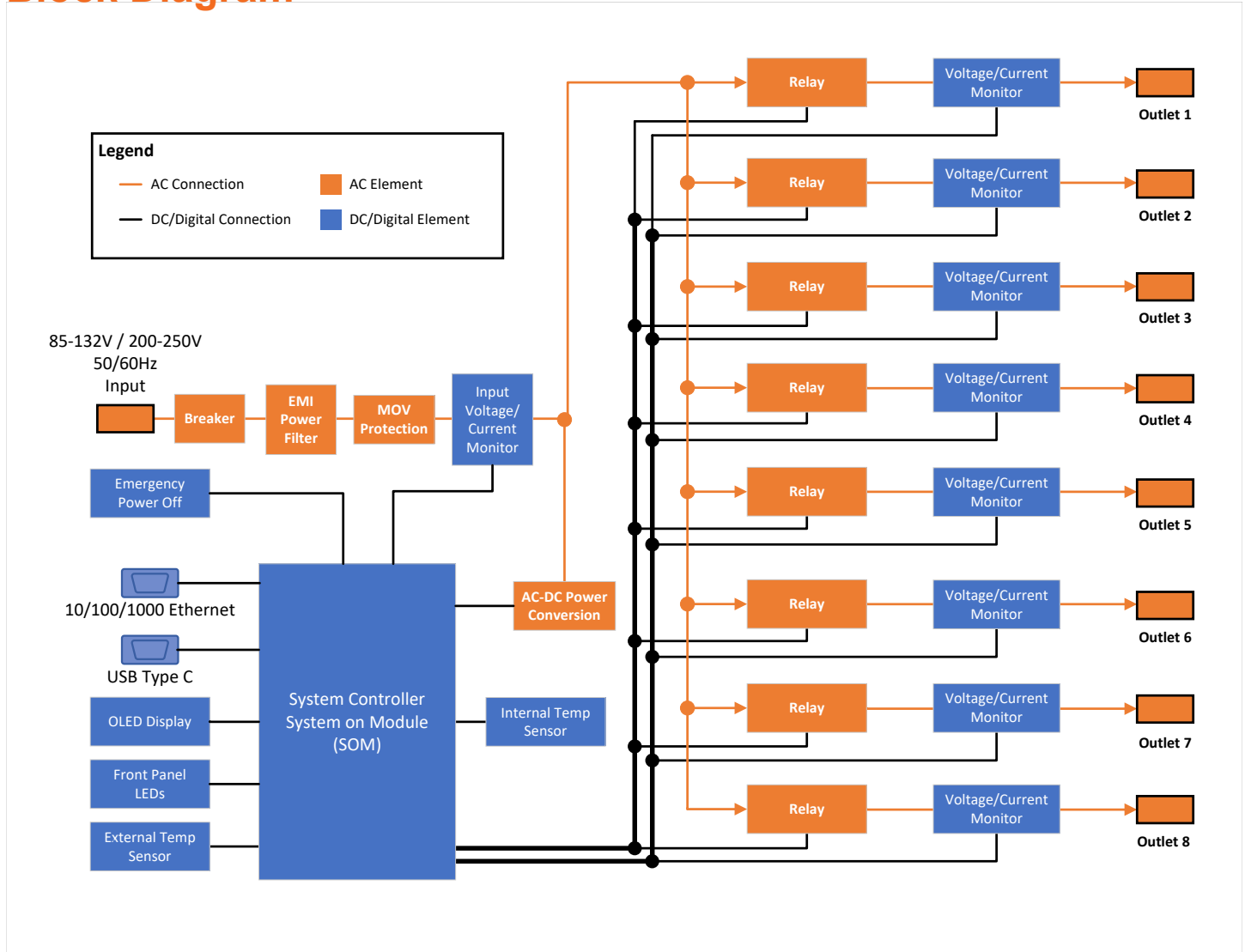
### Operation Environment

- Operating Temperature: -40C to +50C
- Storage Temperature: -40C to +80C
- Relative Humidity: 0 – 95% (non-Condensing)
- Elevation: 0 – 3,050 meters
- Internal and External Temperature Sensing

### Environmental

- MIL-STD-810H
  - 501.7 Procedure II
  - 507.6 Procedure II
  - 514.8 Procedure I
  - 516.8 Procedures IV & V
- MIL-STD-461G

# Block Diagram



## Dimensional Drawing

