Secondary Power Distribution Unit

DESCRIPTION

The SPDU (Secondary Power Distribution Unit) provides a compact, lightweight means to distribute 288A at 28 VDC power to 54 loads in the aircraft to save weight, space, and cost by eliminating wires, circuit breakers and utility control boxes.

The SPDU circuit protective functions and power control are software configurable so one part number can fill multiple aircraft applications.

ADVANCED LOAD MANAGEMENT

While the main purpose of the SPDU is to provide circuit and wiring protection, it also offers other advantages and advanced features for the purposes of convenience and safety. Items such as arc-fault detection, pulse width modulation, remote load power control, load power monitoring, automated load shedding, and other prognostic or diagnostic maintenance activities are all included in the SPDU.

FLEXIBLE

As the electrical load list evolves, the SPDU offers the flexibility to accommodate changes in load requirements without any redesign. The SPDU offers up to 54 configurable Solid-State Power Controllers with ratings up to 7.5A, 15A, and 30A.

REDUCED WEIGHT AND SPACE REQUIREMENTS

System level benefits over traditional power systems include an overall weight savings, the availability of more cockpit real estate through the elimination of circuit breaker panels, and the ability to control and update all of the remote boxes through a centralized display interface.

REDUNDANCY

To achieve the highest safety level, the control circuitry architecture for the SPDU provides full dual redundant communication and control for all SSPCs.

FEATURES

- ✓ *Fully qualified and certified*
- ✓ *Configurable SSPC trip settings*
- ✓ *Pulse width modulation*
- ✓ *SSPCs and RCCBs controllable via discrete inputs and digital communications*
- ✓ *Arc-fault and fail-safe protection*
- ✓ *ARINC 429 and CANBUS communications*
- ✓ *Voltage range: 10 VDC to 32 VDC*
- ✓ *RTCA DO-160G, MIL-STD-464, MIL-STD-810E, MIL-STD-461E, MIL-STD-810F*
- ✓ *RTCA DO-178 level A software*

AMETEK®
AEROSPACE & DEFENSE

Secondary Power Distribution Unit

SPECIFICATIONS

FEATURES

- Configurable SSPC trip settings
- Configurable default power up state and delay for SSPCs/RCCBs
- Pulse Width Modulation (PWM): 1 to 200 Hz 4 to 96%
- SSPCs/RCCBs controllable via discrete inputs and digital communication
- Arc-fault protection and fail-safe protection
- Control and status communication:
  Two ARINC 429 transmitters
  Four ARINC 429 receivers
  Two CAN 2.0 buses (ARINC 825 compatible)
- Up to 54 solid-state power controllers SSPC ratings: 7.5 A, 15 A and 30 A
- Four 28V/open outputs
- Four Remote Control Circuit Breakers (RCCBs) 28V/open outputs
- Two redundant health status discrete ground/open outputs
- Eight assignable discrete ground/open outputs
- Four assignable discrete 28V/open outputs
- 18 assignable discrete ground/open inputs
- Six assignable discrete 28V/open inputs
- MIL-DTL-38999 and MIL-DTL-5015 connectors
- Two Ethernet interfaces for Ground Support Equipment (GSE) maintenance functions and operational software update

ADVANTAGES

- Advanced wire and load protection
- Greater load control
- Load monitoring and prognostics
- Fully configurable protection
- Solid-state reliability
- Absorption of other system functions
- Reduced power dissipation
- Programmable trip curve

BENEFITS

- Reduced system weight (10%-25%)
- More space for other equipment
- Less cockpit panel space
- Reduced wiring
- Reduced installation labor
- Reduced part and model number count
- Reduced pilot workload

PERFORMANCE

- Up to 288 A steady-state current (144 A per channel cavity)
- DC input bus range: 10 VDC to 32 VDC
- Operating temperature range: -55ºC to +70ºC
- Electrical / environmental qualification testing: RTCA DO-160G, MIL-STD-464, MIL-STD-810E, MIL-STD-461E, MIL-STD-810F
- RTCA DO-178B level A software

PACKAGING

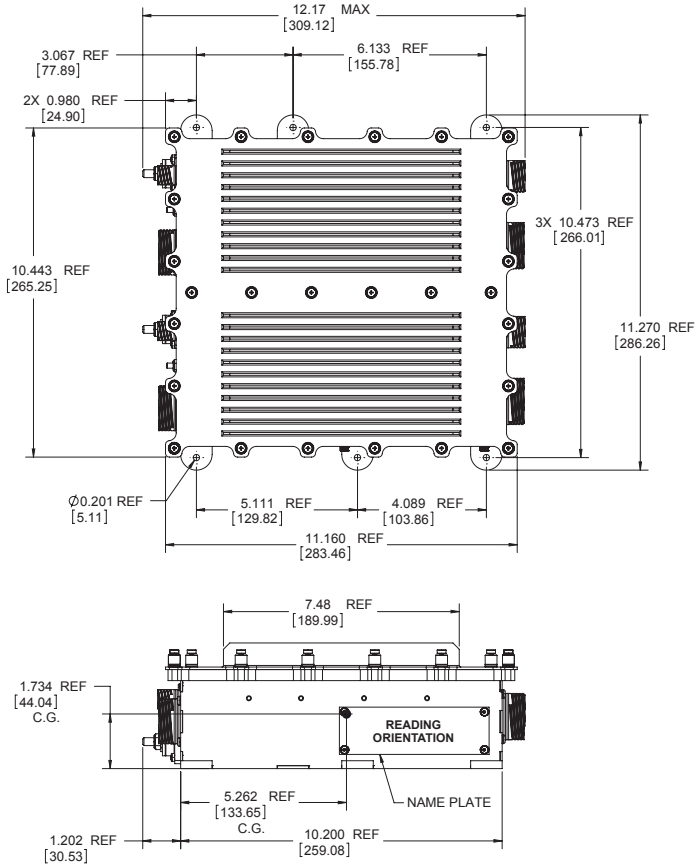
- 309.12mm x 286.51mm x 101.85mm (12.17" x 11.28" x 4.01")

WEIGHT

- 12.5 lbs typical* (13.7 lbs maximum)

**SSPC configuration dependent*

IN [MM]



DIMENSIONS

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