28V, 238A, 16-Channel SSPC Power Distribution Unit

**Product Brief**

**Model: RP-20161XXXC/D1**

DDC’s 16-channel solid state power controller (SSPC) power distribution unit controls, protects, and continuously monitors up to 238A to 16 independent electrical system loads, in a ruggedized military-grade form factor.

**Key Features**

**Performance**
- Measurement Accuracy better than 5%
- Total Module Current Capability of 238 Amps
- Nominal 28V Operation, MIL-STD-1275D, MIL-STD-704, Def Stan 61-5 Compliant
- Controlled Rise/Fall Times
- Monitoring - Load Currents - Input Voltage - Channel Output Voltages - On-board and External Temperatures
- Low Power ‘SHUTDOWN’ Mode Input

**Functionality**
- 16 Independent Load Channels
- Instant Trip and I²t Protection / Thermal Memory
- Continuous Built-In Test (BIT)
- Trip Override (Battle) Mode
- Discrete Control Options - Discrete Control Interface (DCI)
  - Trip Status Output (TSO)
  - Reset-All-Trip Input (RAT)
  - Auxiliary Channel Reset
  - Discrete Channel On/Off Control
- SAE J1939 compatible CAN Interface
  - SAE J1939 Compatible CANbus Interface (250K, 500K, 1MBaud)
- Serial RS-485 and Discrete Control Options

**Programmability**
- 8A, 10A and 25A Channels with 10:1 Programmability
- Channel Paralleling for High Current Loads

**Environmental**
- MIL-STD-810 Compliance for Shock, Vibration etc.
- MIL-STD-461 Compliance for EMI/EMC
- IP-67 Rated Ingress Protection
- Ruggedized Conduction Cooled Form Factor

**Benefits**

- **High Reliability**
  - 25x Improvement in MTBF, Compared with Mechanical Switches, Breakers, and Relays
  - Very Rapid Short Circuit Deactivation Protects Wires, Loads, and SSPCs
  - Improved Mission Safety and Longevity
- **Greater System Protection**
  - I²T Overload Protection Avoids Nuisance Trips
  - Controlled Rise/Fall Time for EMI Reduction, Reduced Inrush Currents, and Reduced Inductive Transients during Turn-Off
  - Provides Prognostics/Diagnostics Data
  - Enables Preventive and Automated Maintenance
  - Power Profiling and Analysis
- **More Efficiency**
  - 7x Improvement in Volume Density, 5x Improvement in Weight Density, Compared with Mechanical Switches, Breakers, and Relays
  - Low Power Dissipation
  - Crew Off-loading
  - Energy Savings Through Load Shedding and Load Prioritization
  - Programmability Allows for Increase in Up-time and Mission Readiness
- **Cost Savings:**
  - Weight and Integration Savings
  - Programmability Allows for Minimum Inventory
  - Minimized Maintenance and Support
  - Field Upgradability Provides Protection from Obsolescence

**Applications**
- Military Land Vehicles
- Commercial Trucks
- Industrial Controls
- Military/Commercial Ships
- Weapon Systems
- Unmanned Vehicles

For more information: www.ddc-web.com/RP-2016

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Technical Drawings

RP-20161XXxC1

ORDERING INFORMATION

RP-20161XX1X1-2C0

- Processing Requirements:
  - 0 = Standard DDC Processing
- Cooling Methods/Ruggedness:
  - C = Conduction Cooled
- Operating Temperature Range
  (at Thermal Interface):
    - 2 = Industrial, -40ºC to +85ºC
- Connector:
  - C = MIL-DTL-38999 Connectors
  - D = "D" Connectors
  - S = Stud Connectors
- Communication Interface
  - 1 = CAN Bus, 250K Baud/s, Programmable
  - 5 = RS-485 Interface, Programmable
  - F = CAN Bus, Programmable (note 1)
- Pass-Through:
  - 0 = None
  - 1 = Power Return Pass-Through
- Ingress Protection Rating:
  - 0 = None
  - 7 = IP67
- Card Stack Height:
  - 1 = 1 Card (16 Channels)
- Number of RPC Channels per Board:
  - 16 = 16 Channels
- Base Module Type:
  - RP-20 = RPC Module

Notes:
1. Legacy Command Interface, Not for New Designs
2. Contact Factory for External Temperature Sense Option

Need a Custom Solution?
DDC can customize designs for all products, ranging from simple modifications of standard products to fully customized solutions for commercial, military, aerospace, and industrial applications.

Block Diagram

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