RIPEENERGY
The Power Conversion Company

PSBCDI-Mil 1200 Dual Input 36V POWER SUPPLY / CHARGER

The PSBCDI-Mil 1200 Dual Input is a PSBCDI-Mil 1200 Dual Input DC power supply and battery charger with dual inputs, switching seamlessly between an AC and a DC power source, all while maintaining a stable DC voltage at the output.

The AC input current is power factor corrected and designed for optimum utilization of weak power sources such as portable generators.

The DC input enables the unit to operate from the vehicle power. When powered from the AC source, the PSBCDI-Mil 1200 Dual Input will charge any battery connected to DC output as well as the vehicle battery connected to the DC input, preventing self-discharge.

The RS-485 bus can be used for control, monitoring and setup. Detailed status and statistics can be retrieved. The bus is also used for interconnecting multiple units in a redundant or parallel system.

The signal connectors provide alarm relay outputs and inputs for individual battery temperature sensors (battery both at the DC input and the DC output) in addition to the RS-485 bus.

Temperature compensated charging ensures full battery capacity over the entire temperature range. The PSBCDI-Mil 1200 Dual Input can be configured to charge different battery technologies, including custom specification.

The firmware is user upgradeable for future battery technologies.

The PSBCDI-Mil 1200 Dual Input is protected from overvoltage, overcurrent, short circuit, reversed polarity (at both DC input and DC output) and over temperature.

FUNCTIONS

Input circuit breaker
The input circuit breaker is for failure protection and is also used as ON/OFF switch. When switched "OFF", the power supply will switch to the DC source.

Alarms
Status signals are fed to separate potential free outputs, and are indicated in separate LEDs.
LEDs in the AC input section:
Power OK, Error, Current limit
LEDs in the DC input section:
Power OK, Error, Charge

Display
The display can be toggled between output voltage, output current and alarm/error codes.

AC and DC Input voltage
When the AC voltage drops below the safe operating range, the power supply will switch to the DC source. When the AC input voltage returns to a safe level, the power supply will switch back to the AC input.

Grounding
Available in the front and back

Acoustic noise
At ambient temperatures below 45°C the acoustic noise is 45 dBA.

Cooling
Forced air by temperature controlled fan

FEATURES

- PFC
- RS-485 bus
- Active load sharing
- Battery temperature compensated charging
- Seamless switching between the AC input and the DC input
- Alarm relay outputs
- IP67
- RoHS compliant

SPECIFICATIONS

Electrical data	
AC Input	
Input voltage	99 - 276 VAC / 45 - 430 Hz
Power Factor (PF) Load: 100%, Vin: 50/60 Hz	Typical 0.99
Input current Load: 1315 W* Vin: 50/60 Hz	≤ 15.5 A @ 99 VAC ≤ 13 A @ 120 VAC ≤ 7 A @ 230 VAC
Total Harmonic Distortion (THD) @ 28 VDC 40 A, Vin: 115/230 VAC, 50/60 Hz	≤ 12%
Efficiency Load: 28 VDC, 40 A	≥ 88% @ 120 VAC ≥ 90% @ 230 VAC
DC Input	
Input voltage Operational Maximum (Shutdown above 52VDC)	27.0-52.0 VDC 63.0 VDC
Charging	2.7 A, 3 Stage
Input current Load: 1200 W	≤ 43 A @ 33.0VDC ≤ 37 A @ 37.0 VDC
Efficiency Load: 28 VDC, 40 A	≥ 82 % @ 26 VDC
DC Output	
Nominal output voltage	28 VDC
Adjustable output voltage	5.0 - 30.0 VDC
Overvoltage protection (OVP)	36.5 V
Nominal output current	42 A
Adjustable current limit	5 - 42 Amps
Short circuit current	≤ setting of current limiter +1 A
Output voltage ripple and noise	≤ 100 mV p-p, 20 MHz bandwidth
Load regulation	Typical: 50 mV
Line regulation	Negligible

*The load is 30 VDC, 40 A at the main DC output and 36 VDC, 2.7 A at the DC input

Standards	
Electromagnetic Interference	The power supply meets the requirements of MIL-STD-461E and F; Ground Army; CE101, CE102, RE101, RE102, RS103, CS101, CS114, CS115 and CS116
Electrical systems in vehicles	The power supply meets the requirements MIL-STD-1275D for: Imported voltage surge 40 V and 100 V and ripple 14 V
Electrostatic discharge	The power supply meets the requirements of EN 61000-4-2 for ESD
Safety	CE marked

Environmental	
High temperature	Operation MIL-STD-810G: Method 501.5, Procedure II, +60°C Storage MIL-STD-810G: Method 501.5, Procedure I, +71°C
Low temperature	Operation MIL-STD-810G: Method 502.5, Procedure II, -40°C Storage MIL-STD-810G: Method 502.5, Procedure I, -51°C
Temperature shock	MIL-STD-810G: Method 503.5, -51°C - +71°C non-operational
Humidity	MIL-STD-810G: Method 507.5, Procedure II, operational
Vibration	MIL-STD-810G, Method 514.6C Table 514.6C-VI. Composite wheeled vehicle vibration exposures figure 514.6C-3 . MIL-STD-810G: Method 514.6D, Category 20, Ground Vehicles, Wheeled/Tracked/Trailer, Procedure I
Shock	MIL-STD-810G, Method 516.6, Procedure I, functional Shock, 40g 11ms
Fungus	MIL-HDBK-454: Analysis of the degree of inertness to fungus growth of the components
Salt Fog	MIL-STD 810G: Method 509.5, 24 h spray, 24 h dry, 2 times
Altitude	Operational MIL-STD-810G: Method 500.5, Procedure II, 4572 m (15000 ft) at 57.2 kPa Storage MIL-STD-810G: Method 500.5, Procedure I, 12192 m (40000 ft) at 18.8 kPa
Encapsulation	The power supply is designed to meet the requirements of IP67 and has been tested by immersion in 1 m water for 30 minutes.

Dimensions, Weight and Connectors	
W x D x H Weight	220 x 420 x 133 mm 17 kg
Mounting	Any direction
AC input DC input pos. DC input neg. NTC Alarm	97B-3102E-16-10P or equivalent. Bayonet, RoHS MG02R202PSQF36123LT003ERT. Bayonet, RoHS MG02R202PSQF36126LT003ERT. Bayonet, RoHS Binder 09-0416-30-05 Binder 09-0412-30-04
DC output Alarm 1 Alarm 2 NTC / COM	97B-3102E-22-22S or equivalent. Bayonet, RoHS Binder 09-0404-30-02 Binder 09-0412-30-04 2 pieces Binder 09-0416-30-05

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RIPEnergy AG
Wägitalstrasse 24
CH-8854 Siebnen
Switzerland

Phone +41 43 818 53 85
www.ripenergy.ch