ComPact 1200 36V Dual Input

Power Supply and Battery Charger

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Input 1: AC, 120/230 VAC, 50/60/400 Hz
Input 2: DC, 27-52 VDC
Output: 5-30 VDC, 40 A, 1200 W
Part number: P600440

ComPact Dual Input family summary

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

Description

The ComPact Dual Input is a compact 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 ComPact 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 ComPact can be configured to charge different battery technologies, including custom specification. The firmware is user upgradeable for future battery technologies. The ComPact 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 ComPact Dual Input 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 ComPact will switch to the DC source. When the AC input voltage returns to a safe level, the ComPact will switch back to the AC input.
Connectors	AC input: Bayonet, 97B-3102E-16-10P-PCC-622 Amphenol or similar DC input: Positive: Bayonet, Allied Electronics Corporation MGR 02R 20-2P SQF 36 123 LT 101E RT Negative: Bayonet, Allied Electronics Corporation MGR 02R 20-2P SQF 36 126 LT 101E RT NTC: Binder 09-0416-30-05 Alarm: Binder 09-0412-30-04 DC output: Bayonet, 97B-3102E-22-22S-622 Amphenol or similar Alarm 1: Binder 09-0404-30-02 Alarm 2: Binder 09-0412-30-04 NTC/COM: 2 pieces. Binder 09-0416-30-05
Grounding	Available in the front and back
Acoustic noise	At ambient temperature below 45°C the acoustic noise is 45 dBA.
Frequency	45-430 Hz
Cooling	Forced air by temperature controlled fan

Patented

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Specifications

Electrical data

AC input		
Input voltage		99—276 VAC
Power Factor -load: 100 %, Vin: 50/60 Hz		Typical: 0.99
Input current -Load: 1315 W* -Vin: 50/60 Hz	Vin: 99 VAC Vin: 120 VAC Vin: 230 VAC	≤ 15.5 A ≤ 13 A ≤ 7 A
Total Harmonic Distortion -Load: 28 VDC, 40 A -Vin: 115/230 VAC, 50/60 Hz		≤ 12 %
Efficiency -Load: 28 VDC, 40 A	Vin: 120 VAC Vin: 230 VAC	≥ 88% ≥ 90%
DC Input		
Input voltage	Operational Maximum	27.0—52.0 VDC 63.0 VDC
Charging		2.7 A, 3 stage
Input current -Load 1200 W	Vin: 33.0 VDC Vin: 40.0 VDC	≤ 43 A ≤ 37 A
Efficiency -Load: 28 VDC, 40 A	Vin: 26 VDC	≥ 82 %
DC Output		
Default output voltage		28.0 VDC
Adjustable output voltage		5—30 VDC
Overvoltage protection (OVP)		36.5 V
Default output current limit		42 A
Adjustable current limit		5—42 A
Short circuit current		≤ setting of current limiter +1 A
Output voltage ripple and noise -Bandwidth: 20MHz		≤ 100 mVp-p
Load regulation		Typical: 50 mV
Line regulation		Negligible
Safety		CE marked

*The load is 30 VDC, 40 A at the main DC output and 28 VDC, 2.7 A at the DC input

Standards

Electromagnetic Interference
The power is designed to meet the requirements of MIL-STD-461E and F: CE101, CE102, RE101, RE102, RS103, CS101, CS114, CS115 and CS116

Electrical systems in vehicles
The power supply is designed to meet the requirements MIL-STD-1275D for: Imported voltage surge 40 V and 100 V and ripple 14 V.

Electrostatic discharge
The power supply is designed to meet the requirements of EN 61000-4-2 for ESD.

Environmental

High temperature
Operational
MIL-STD-810G: Method 501.5, Procedure II, +60 °C
Storage
MIL-STD-810G: Method 501.5, Procedure I, +71 °C

Low temperature
Operational
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—+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-801G: Method 514.6D, Category 20, Ground Vehicles, Wheeled/Tracked/Trailer, Procedure I

Shock
MIL-STD-810G: Method 516.6, Procedure I, functional Shock, 40 g, 11 ms

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, 4750 m (15000 ft) at 57.2 kPa
Storage
MIL-STD-810G: Method 500.5, Procedure I, 12195 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 .

Weight and Dimensions

Width	220 mm, 8.66“
Depth in rack	390 mm, 15.35“
Depth total	420 mm, 16.54“
Height	133 mm, 5.25“ (3U)
Weight	17 kg, (37 lbs)

Patent Pending