

POWER CONVERSION SOLUTIONS



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Plug-in version



Stand-alone version

Benefits

- Ultra-Quiet
- Power sensitive electronics without interference
- Rugged & Reliable
- Ensure years of safe and trouble free operation

Applications

- Marine / Automotive / RV
- Electric Utilities and Substations
- Telecom Power Plants
- Manufacturing Locations
- Steel Mills
- Military Applications (COTS)
- Industrial Controls
- OEM Applications
- Solar / Alternative Power Systems
- Fuel Cells

DC/AC Pure-Sine Inverters

IVS100 Series Pure Sinewave Inverter

Description

The IVS100 Series is a compact 100VA DC/AC inverter that utilizes the same established conversion topologies as Analytic Systems' higher power inverters.

The DC/DC input stage boosts the input voltage to a higher DC voltage, which feeds the DC/AC converter to generate the required AC output. This use of high frequency transformers ensures a lightweight design. Suitable for a wide range of applications, the IVS100 features full electronic protection, high efficiency and low output noise.

Features

- Input is filtered to EN 55022 Class B
- Compact size
- Modular design, light weight
- Sinusoidal wave shape
- Multiple input and output voltages available
- 100VA of output power
- Full electronic protection
- Field-proven design topology
- Plug-in or stand-alone package

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Specification

Input Voltage	24V, 36V, 48V, 125VDC +/-20% are standard Other inputs available, please consult factory
Input Protection	Thermal fuse, Inrush current limiting, Reverse polarity protection
Isolation	Input to chassis 500VDC Input to output 2250VDC Output to chassis 2250VDC
Output Voltage	115VAC/60Hz @0.87A continuous Consult factory for other voltages and frequencies
Wave Form	Sinusoidal
Total Harmonic Distortion	Less than 5% at full load
Efficiency	Min 78% at full load
Line Regulation	± 0.5% max.
Load Regulation	Max. ± 6% from 10% load to full load (± 1% option available)
Output Protection	Current limiting with short circuit protection
EMI	Meets EN 55022 Class B
Load Crest Factor	Maximum 3.0 at 90% load
Operating Temperature Range	0° C to +50° C
Humidity	5 - 95% non-condensing
Temperature Drift	0.05% per °C over operating temperature range
Dimensions	Plug-in: 3U x 160mm x 10HP (2") Stand alone: 4.2" x 7.8" x 2.0"
Connections	Plug-in module: H15 Stand-alone: screw-type terminal block for input and output Consult factory for other connectors
Weight	2lb (0.9kg)
Safety	Compliance to C22.2 No. 107.1 - 01 and UL 458

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DC/AC Pure-Sine Inverters

IVS2000 Series Pure Sinewave Inverter

Description

The IVS2000 Series is a compact 2000VA DC/AC pure sinewave inverter that uses established design techniques to ensure high reliability.

Suitable for a wide range of applications, the IVS2000 features full electronic protection, high efficiency and low output noise. The built-in fan provides sufficient airflow for operation without de-rating up to 50°C ambient temperature.

The inverter can be loaded with a fluorescent lamp load up to the full-specified output power.

Benefits

- Ultra-Quiet
- Power sensitive electronics without interference
- Rugged & Reliable
- Ensure years of safe and trouble free operation

Applications

- Marine / Automotive / RV
- Electric Utilities and Substations
- Telecom Power Plants
- Manufacturing Locations
- Steel Mills
- Military Applications (COTS)
- Industrial Controls
- OEM Applications
- Solar / Alternative Power Systems
- Fuel Cells

Features

- Input is filtered to EN 55022 Class B
- Very low 60Hz input ripple current
- Modular design, light weight
- Sinusoidal wave shape
- Multiple input and output voltages available
- 2000VA of output power
- Full electronic protection
- Field-proven design topology

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Specification

Input Voltage	24V, 32V, 36V, 48V, 125V, 270VDC +/-20% are standard Other inputs available, please consult factory
Input Protection	Thermal fuse, Inrush current limiting, Reverse polarity protection
Isolation	Input to chassis 500VDC for < 60V input, 1500VDC for > 60V input Input to output 2250VDC, Output to chassis 2250VDC
Output Voltage	115VAC / 60Hz / 17A; 230VAC/ 50Hz 9.0A continuous with grounded neutral Isolated floating output optional Consult factory for other voltages and frequencies
Wave Form	Sinusoidal
Total Harmonic Distortion	Less than 5% at full load
Efficiency	Min 78% at full load
Line Regulation	Maximum 0.5%
Load Regulation	Maximum $\pm 6\%$ from 10% load to full load ($\pm 1\%$ option available)
Output Protection	Current limiting with short circuit protection, thermal shutdown with automatic recovery in case of continuous overload or insufficient airflow
EMI	Meets EN 55022 Class B
Load Crest Factor	Maximum 3.0 at 90% load
Operating Temperature Range	0°C to +50°C Extended range available (Consult factory)
Humidity	5 - 95% non-condensing
Temperature Drift	0.05% per °C over operating temperature range
Dimensions	5.3" X 13.8" x 16.25" (H x L x W) enclosed case
Connections	Input: Compression-type terminal Output: Standard AC receptacle
Weight	30 pounds (13.64 kg)
Safety	Compliance to C22.2 No. 107.1 - 01 and UL 458
Options	Output Fail Alarm (Form C) Remote Inhibit: By connecting DC voltage (as specified) to the inhibit terminals

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AC Power Supplies

PWS120/240 Power Supply

Description

The PWS120 and PWS240 Series of power supplies provide 12 .

Volts DC at more than 120 Watts or 240 Watts of continuous .

power from a 110 or 220 Volt AC source. Their new design uses Mos Fet based Switch mode technology for high reliability, high efficiency and minimum size. Current limiting and safe operating area circuitry protect the transistors.

A crowbar circuit protects any devices powered by the unit from excessive voltage in the unlikely event of a failure.

Benefits

- Quiet Operation
- Reliable
- Economical
- Lightweight

Applications

- VHF Radios
- CB Radios
- Sound Equipment
- GPS Receivers
- Plotters
- 12 Volt Lighting Systems
- Automotive Electronics Displays
- Marine Electronics Displays
- Security Systems

Features

- Advanced switch-mode technology
- Reliable power with minimum weight and size
- Complies with FCC Part 15, Class B standards
- UL listed to both USA & Canadian safety standards
- Input voltage can be set at 120VAC or 240VAC
- 3 year parts and labour warranty

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Specification

Electrical (Input)

Nominal Vac (ip)	110 220
Actual (Vac)	100-130 200-260
Input Amps (max)	2.5A
Input Fuse (AGC)	3A 2A (PWS120) 6.3A 4A (PWS240)
Current Limit	16A (PWS120) 27A (PWS240)
Input Frequency	45 – 65 Hz
Noise on Input	< 25 mV

Mechanical Specification

Length	7.5 in / 19.1 cm
Width	8.7 in / 21.8 cm
Height	2.4 in / 5.6 cm
Clearance	1 inch (2.5 cm) all around
Material	Marine Grade Aluminium
Finish	Black Anodize / Powder Epoxy Coat
Fastenings	All 18-8 Stainless Steel
Weight	3.0 lb / 1.4 kg (PWS120) 3.5 lb / 1.6 kg (PWS240)
Connections	Two Contact Output Banana Terminals
Warranty	3 years
Safety	UL listed to both USA & Canadian safety standards

Electrical (Output)

Output Nominal (op)	12
Output Volts (DC)	13.8 ± 0.1
Output Amps	10 cont. / 14 peak (PWS120) 23 cont. / 25 peak (PWS240)
Output Ripple & Noise	< 10 mV @ 10A out (PWS120) < 15 mV @ 23A out (PWS240)
Transient Response	< 2V for 5A Surge
Regulation (Line & Load)	< +/- 0.5%
Duty Cycle	Peak 20% for 5 min max Continuous 100% for 24 hours per day
Efficiency	> 80% @ Maximum Output
EMC	Complies with FCC Part 15, Class B standards

Environmental Specification

Temperature Rise	< 40 deg C @ 14 Amps Out
Input Isolation	Input-Case & Input-Output 1500 VDC, Output-Case 500VDC

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AC Power Supplies

PWS610R Series Power Supply



Benefits

- Ultra-Quiet
- Power sensitive electronics without interference
- Rugged & Reliable
- Ensure years of safe and trouble free operation

Applications

- Telecom Power Plants
- Electric Utilities and Substations
- Marine & other rugged environments
- Base Station Power (Radio & Telecommunications)
- Industrial Controls (OEM Applications)
- Solar / Alternative Power Systems
- Emergency Power Backup (UPS)

Features

- Adjustable output voltage
- Extremely rugged and well suited for marine and other demanding environments
- Ultra-quiet low EMI operation
- Audible & visual indicators for output overload, low input voltage, low output voltage & over-temperature
- Over-temperature shutdown
- Current limiting
- Short circuit protection
- Output overvoltage crowbar
- Convection cooled
- Dry contact output fail relay
- Standard Digital Volt/Ammeter
- Optional Parallel output diodes available
- Custom output voltages available (8V to 55V)
- 3 year parts and labour warranty
- Battery Charging (Rectifier)

Description

The PWS610R Series of rack mount power supplies provides 12, 24 or 48 Volts DC at 600 Watts of continuous power from a 110 or 220 Volt AC source.

Circuit innovations reduce output ripple to levels previously available only from bulky and inefficient linear power supplies. Reliability features include an input fuse, thermal shutdown, current limiting and output short circuit protection with automatic recovery. An Output Over voltage Crowbar circuit protects any powered devices from excessive voltage in the event of a failure of the unit.

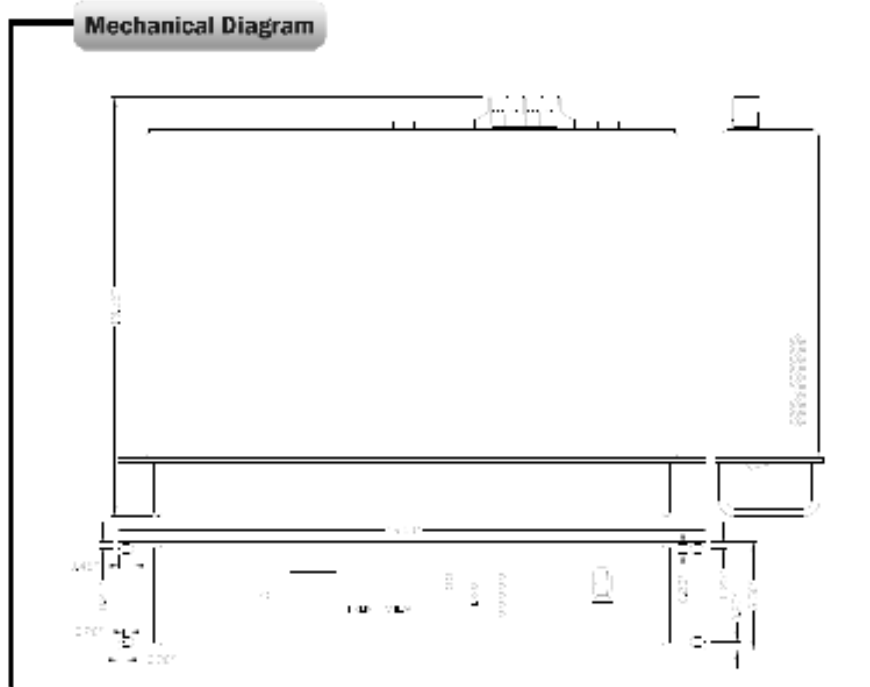
Extra features include adjustable output voltage audible and visual indicators for low input voltage, low output voltage, over temperature, overload and output on. Either 110 or 220 VAC input (Field Convertible) is available. The PWS610R also features a four contact output terminal (two positive and two negative contacts) for easy connection of devices to the supply.

All rackmount units come standard with high quality digital output meters to allow monitoring of output current and output voltage. An optional Battery Back-up is also available.

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Specification

Electrical (Input)

Nominal Vac (Ip)	110	220
Actual (Vac)	90 - 130	180 - 260
Input Amps (max)	9.8	4.9
Input Fuse (MDA)	15A	8A
Input Frequency	45-65 Hz	
Noise on Input	< 50 mV	

Environmental Specification

Operating Temp. Range	-25° to +40°C @ maximum output Derate Linearly 2.5% per °C from 40°C (Optional -40°C - +55°C wide-temp. operation avail.)
Humidity	0 - 95°C Relative Humidity (non-condensing) with optional conformal coating
Audible Noise	NONE @db @ 3 ft
Typical Service Life	> 10 yrs. (87,600 hrs)
Isolation	Input-Case & Input-Output 1500VDC Output-Case 500VDC (1500VDC @ 48V O/P)

Electrical (Output)

Output Nominal (op)	12	24	48
Output Volts (DC)	13.6 ± 0.05	27.2 ± 0.05	54.4 ± 0.10
Output Amps	40 cont. / 45 peak	20 cont. / 25 peak	10 cont. / 12.5 peak
Output Crowbar	16.0 ± 0.5V	32.0 ± 1.0V	63.9 ± 2.0V
Output Adjustment (Vdc)	± 1.0V		
Output Ripple & Noise	< 50 mV		
Transient Response	< 1V for 50% Surge		
Regulation (Line & Load)	< +/- 0.5%		
Duty Cycle	Peak 20% for 10 min maximum Continuous 100% for 24 hours per day		
Efficiency	> 80% @ Maximum Output		
EMC	Built to meet FCC Part 15		

Mechanical Specification

Depth	13.5 in/ 34.3 cm
Width	19.0 in/ 48.4 cm
Height	2u (3.5 in.)
Clearance	1 inch (2.5 cm) all around
Material	Marine Grade Aluminium
Finish	Black Anodize / Powder Epoxy Coat
Fastenings	All 18-8 Stainless Steel
Weight	12.0 lb / 5.5 kg
Connections	Four contact output terminals
Warranty	3 years
Safety	Built to meet cETLus to UL1012 & CSA22.2

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(Shown with Optional Digital Meter)



AC Power Supplies PWS1000 Series Power Supply

Description

The PWS1000 Series of power supplies provides 12, 24 or 48 Volts DC at 1000 Watts of continuous power from a 110 or 220 Volt AC source.

Analytic Systems' power supplies use Switch mode technology with powerful IGBT switching transistors for reliability and efficiency with minimum size. Circuit innovations reduce output ripple to levels previously available only from bulky and inefficient linear power supplies. Reliability features include an input fuse, thermal shutdown, current limiting and output short circuit protection with automatic recovery. An Output Over voltage Crowbar circuit protects any powered devices from excessive voltage in the event of a failure of the unit.

The newly updated single-board PWS1000 is ultra-quiet and features the latest generation of current mode PWM control. Extra features include adjustable output voltage audible and visual indicators for low input voltage, low output voltage, over temperature, overload and output on. Either 110 or 220 VAC input (Field Convertible) is available. The PWS1000 also features a four contact output terminal (two positive and two negative contacts) for easy connection of devices to the supply.

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Benefits

- Ultra-Quiet
- Power sensitive electronics without interference
- Rugged & Reliable
- Ensure years of safe and trouble free operation

Features

- Adjustable output voltage
- Extremely rugged and well suited for marine and other demanding environments
- Ultra-quiet low EMI operation
- Audible & visual indicators for output overload, low input voltage, low output voltage & over-temperature
- Over-temperature shutdown
- Current limiting
- Short circuit protection
- Output overvoltage crowbar
- Dry contact output fail relay
- Remote control option
- Digital Volt/Ammeter option
- Custom output voltages available (8V to 55V)
- 19" Rack mount Available
- 3 year parts and labour warranty
- Parallel output diodes available

Applications

- Marine & other rugged environments
- Mobile Offices (TV and Radio Vans)
- Automotive / RV
- Electric Utilities and Substations
- Base Station Power (Radio & Telecommunications)
- Industrial Controls (OEM Applications)
- Field Work / Construction Sites
- Solar / Alternative Power Systems
- Emergency Power Backup (UPS)
- Security Systems
- Product Burn-in Facilities

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Specification

Electrical (Input)

Nominal Vac (Ip)	110	220
Actual (Vac)	90 - 130	180 - 260
Input Amps (max)	13.2(12V) 17(24/32/48V)	6.6(12V) 8.5(24/32/48V)
Input Fuse (MDA)	20A(12V) 25A (24/32/48V)	10A(12V) 15A(24/32/48V)
Input Frequency	45-65 Hz	
Noise on Input	< 50 mV	

Electrical (Output)

Output Nominal (op)	12	24	48
Output Volts (DC)	13.6 ± 0.05	27.2 ± 0.05	54.4 ± 0.1
Output Amps	60 cont. / 70 peak	40 cont. / 45 peak	20 cont. / 22.5 peak
Output Crowbar	16.0 ± 0.5V	32.0 ± 1.0V	63.9 ± 2.0V
Output Adjustment	± 1.0V		
Output Ripple & Noise	< 50 mV		
Transient Response	< 1V for 50% Surge		
Regulation (Line & Load)	< +/- 0.5%		
Duty Cycle	Peak 20% for 10 min maximum Continuous 100% for 24 hours per day		
Efficiency	> 80% @ Maximum Output		

Mechanical Specification

Length	14.5 in / 36.8 cm
Width	9.9 in / 25.1 cm
Height	5.5 in / 14.0 cm
Clearance	1 inch (2.5 cm) all around
Material	Marine Grade Aluminium
Finish	Black Anodize / Powder Epoxy Coat
Fastenings	All 18-8 Stainless Steel
Weight	12.0 lb / 5.5 kg
Connections	Four contact output terminals
Warranty	3 years
Safety	Built to meet UL458 & CSA 22.2.107.1

Environmental Specification

Operating Temp. Range	-25° to +40°C @ maximum output Derate Linearly 2.5% per °C from 40°C (Optional -40°C extra wide-temp. operation avail.)
Humidity	0 - 95°C Relative Humidity (non-condensing) with optional conformal coating
Audible Noise	NONE Ødb @ 3 ft
Typical Service Life	> 10 yrs. (87,600 hrs)
Isolation	Input-Case & Input-Output 1500VDC Output-Case 500VDC (1500VDC @ 48V O/P)

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AC Battery Chargers BCA310 Battery Charger

Description

The BCA310 Battery Charger provides up to 300 watts to charge a 12, 24, 32, 48 or 72-volt battery system (1, 2 or 3 banks) from a 110 or 220VAC source. The batteries must share a common ground.



This all-new single board design incorporates state of the art switchmode technology for unmatched efficiency and ultra-quiet operation. Multiple stages of filtering reduce radiated or conducted noise to very low levels. Extra features include adjustable output voltage, audible and visual indicators for low input voltage, low output voltage, over temperature and an equalize charging cycle. Safety features include both charger and battery over-temperature shutdown, current limiting, short circuit protection with automatic recovery, input undervoltage shutdown, reverse battery hook-up protection, a dry contact alarm relay output and output overvoltage crowbar.

Optional features include a Digital Volt/Ammeter, a Remote Control Panel, and/or a second Battery Temperature Sensor. We are confident that you will get many years of reliable service from this AC Battery Charger.

Benefits

- Ultra-Quiet
- Power sensitive electronics without interference
- Rugged & Reliable
- Ensure years of safe and trouble free operation
- Fast & Accurate Charging

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Features

- Adjustable output voltage for charging standard or deep cycle lead-acid, VRLA or Gel cell type battery
- Extremely rugged and well suited for marine and other demanding environments
- High tolerance for shock and vibration
- Ultra-quiet low EMI operation
- Can be left permanently connected
- Can function as a power supply
- User selectable 2 or 3 stage charging profile
- Audible & visual indicators for output overload, low input voltage, low output voltage & over-temperature
- Over-temperature shutdown
- Temperature compensated charging
- Short circuit protection
- Output over-voltage crowbar
- Inrush Current Limiting with solid state bypass
- Dry contact output fail relay
- 3 year parts and labour warranty

Applications

- Marine & other rugged environments
- Automotive / RV
- Electric Utilities and Substations
- Base Station Power (Radio & Telecommunications)
- OEM Applications
- Field Work / Construction Sites
- Solar Power Systems
- Emergency Power Backup (UPS)
- Security Systems
- Charge any 12, 24, 32, or 48 Volt Battery System

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Specification

Electrical (Input)

Nominal (ip)	110	220
Actual (Vac)	105-125	210-250
Input Amps (max)	3.7	1.8
Input Fuse (MDA)	5A	3A
Input Frequency	45-65 Hz	
Noise on Input	< 25 mV	

Environmental Specification

Operating Temp. Range	-25° to +40°C @ maximum output Derate Linearly 2.5% per °C from 40°C (Optional -40°C extra wide temp. operation avail.)
Humidity	0 - 95°C Relative Humidity (non-condensing) with optional conformal coating
Audible Noise	NONE Ødb @ 3 ft
Typical Service Life	> 10 yrs. (87,600 hrs)
Isolation	Input-Case & Input-Output 1500VDC Output-Case 500VDC (1500VDC @ 48V O/P)

Electrical (Output)

Output Nominal (op)	12	24	32	48	72
Output Volts (DC)	13.6 ± 0.05	27.2 ± 0.05	36.3 ± 0.05	54.4 ± 0.05	81.6 ± 0.05
Absorption Voltage (Vdc)	14.4	28.8	38.4	57.6	86.4
Charging Amps	20	10	7.5	5	2.5
Absorption to Float (15%)	3.0 Amps	1.5 Amps	1.1 Amps	0.75 Amps	0.38Amps
Output Adjustment (Vdc)	± 1.0V				
Output Fuses (AGC)	25 Amp x 1	15 Amp x 1	10 Amp x 1	7 Amp x 1	6 Amp x 1
Battery Banks	1, 2 or 3 Bank				
Battery Size (Amp Hrs.)	80-120	40-60	30-45	20-30	10-15
Output Crowbar	16.0 ± 0.5V	32.0 ± 1.0V	42.7 ± 1.3V	63.9 ± 2.0V	95.4 ± 4.0V
Output Ripple & Noise	< 25 mV				
Regulation (Line & Load)	< +/- 0.5%				
Temperature Comp.	-30 mV/°C	-60 mV/°C	-80 mV/°C	-120 mV/°C	-240 mV/°C
Duty Cycle	Continuous 100% for 24 hours per day				
Efficiency	> 75% @ Maximum Output				
Stages	2 or 3 (user selectable)				

Mechanical Specification

Length	9.6 in / 24.4 cm
Width	8.2 in / 20.8 cm
Height	3.5 in / 6.4 cm
Clearance	1 inch (2.5 cm) all around
Material	Marine Grade Aluminium
Finish	Black Anodize / Powder Epoxy Coat
Fastenings	All 18-8 Stainless Steel
Weight	7.5 lb / 3.4 kg
Connections	Four contact output terminals
Warranty	3 years
Safety	Built to meet UL458 & CSA22.2.107.1 ABS 11-HS794404A-PDA

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DC Battery Equalizers

BCD301 Series Battery Equalizer

Description

The BCD301-24-12 is a Battery Equalizer that safely permits 12 Volts to be drawn of a 24V Battery bank. The unit is connected across the 24V battery bank, and its output is connected to the 12V midpoint of the battery bank. 12 Volt loads may now be connected to the lower battery, and providing the average load is less than the output capacity of the Battery Equalizer, both batteries will be maintained at the correct voltage. The BCD301-24-12 has a capacity of 25 amps. Units can be connected in parallel for even greater capacity.

The way that these units work is that the output is set to exactly $\frac{1}{2}$ of the input voltage. Then as the load on the lower battery is applied, the unit takes current from the upper battery and feeds it to the lower battery to keep each at exactly $\frac{1}{2}$ of the total voltage. The units are compatible with all 24V battery chargers and alternators.

Available options include a remote control and/or extra-wide temperature. We are confident

Benefits

- Ultra-Quiet
- Power sensitive electronics without interference
- Rugged & Reliable
- Ensure years of safe and trouble free operation

Applications

- Marine
- Heavy Equipment
- Trucking
- RV
- Military
- Equalize any 24V Battery System

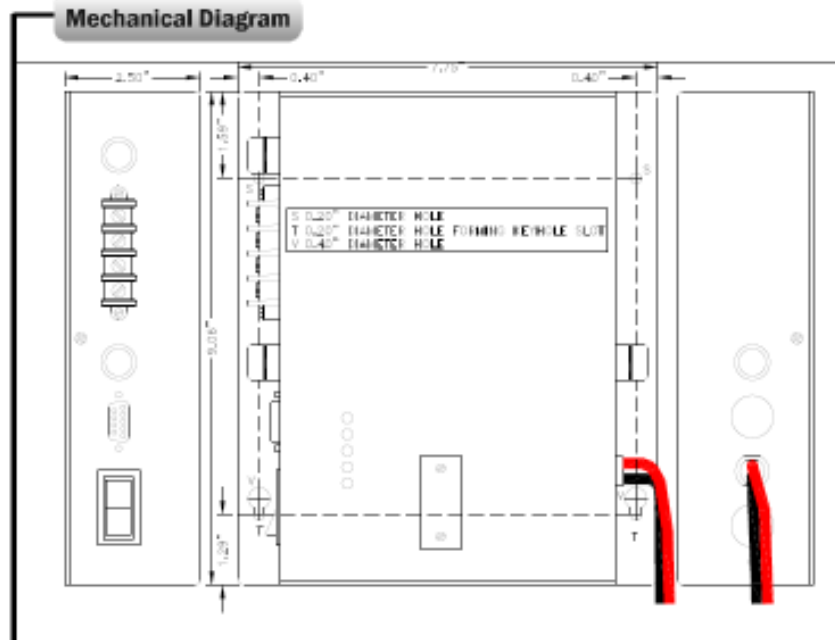
Features

- Maintains voltage across both 12V batteries in a 24 volt bank and permits 12V loads to be applied to the lower battery.
- Ultra-quiet low EMI operation
- Reverse input protection
- Current limiting
- Short circuit protection
- Output overvoltage crowbar
- Over-temperature shutdown
- Can be left permanently connected
- Dry contact output fail relay
- Remote control option
- Spark-free connection
- Wide-Temperature operation Available
- Conformal coating and/or harsh environment ruggedization available
- 3 year parts and labor warranty

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Specification

Electrical (Input)

Model Number	BCD301-24-12
Input Volts (DC)	20 – 30
Input Amps (max)	15
Input Fuse (AGC)	25A
Noise on Input	< 10 mV
Low Input Voltage Alarm	21.0 V

Environmental Specification

Operating Temp. Range	-25° to 40°C @ maximum output Derate Linearly 2.5% per °C from 40°C (Optional -40°C extra wide-temp. operation avail.)
Humidity	0 - 95°C Relative Humidity (non-condensing) with optional conformal coating
Audible Noise	NONE @db @ 3 ft
Typical Service Life	> 10 yrs. (87,600 hrs)
Isolation	Any Input or Output to Case 500 VDC Input to Output – Common Negative

Electrical (Output)

Output Nominal (op)	12
Output Volts (DC)	Input Volts / 2 ± 0.05 V
Charging Amps	25
Output Crowbar	16.0 ± 0.5V
Output Fuse (AGC)	30A x 2
Output Ripple & Noise	< 10 mV
Battery Banks	1
Stages	2
Regulation (Line & Load)	< +/- 0.5%
Duty Cycle	Continuous 100% for 24 hours per day
Efficiency	> 85% @ Maximum Output

Mechanical Specification

Length	9.1 in / 23.1 cm
Width	7.8 in / 19.8 cm
Height	2.5 in / 6.4 cm
Material	Marine Grade Aluminium
Finish	Black Anodize / Powder Epoxy Coat
Fastenings	All 18-8 Stainless Steel
Weight	4.0 lb / 1.8 kg
Connections	#12 AWG Input Wires (Positive & Negative) Four contact output terminals
Warranty	3 years
Safety	Built to meet UL458 & CSA22 2.107.1

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(Full Enclosure)



(Open Enclosure)

AC Battery Chargers

FBCS-2K Forklift Battery Charging System

Description

The FBCS-2K Forklift Battery Charging System provides up to 2000 watts to charge a 12, 24, 32, or 48 Volt battery system from a 110 or 220VAC source. The batteries must share a common ground.

This all-new single board design incorporates state-of-the-art, switchmode technology for unmatched efficiency and ultra-quiet operation. Multiple stages of filtering reduce radiated or conducted noise to very low levels. Extra features include adjustable output voltage, audible and visual indicators for low input voltage, low output voltage, over temperature and an equalize charging cycle. Safety features include both charger and battery over-temperature shutdown, current limiting, short circuit protection with automatic recovery, input undervoltage shutdown, reverse battery hook-up protection, a dry contact alarm relay output, output overvoltage crowbar, as well as added silicone and conformal spray.

All units come standard with two precision Digital Volt/Ammeters and two Battery Temperature Sensors. We are confident that you will get many years of reliable service from this AC Battery Charging System.

Features

Built for industrial plant and harsh shop environments
Factory adjusted output voltage for charging standard or deep cycle lead-acid, VRLA or Gel cell type battery
Temperature compensated charging
High tolerance for shock and vibration
Ultra-quiet, low EMI operation
Can be left permanently connected
2-stage charger
Dry contact output fail relay
Conformally Sprayed
Audible & visual indicators for output overload, low input voltage, low output voltage & over-temperature
Over-temperature shutdown
Short circuit protection
Output over-voltage crowbar
Inrush Current Limiting with solid state bypass

Benefits

- Ultra-Quiet
- Compact and Lightweight
- Rugged & Reliable
- Ensure years of safe and trouble free operation
- Provides a fast & accurate charge

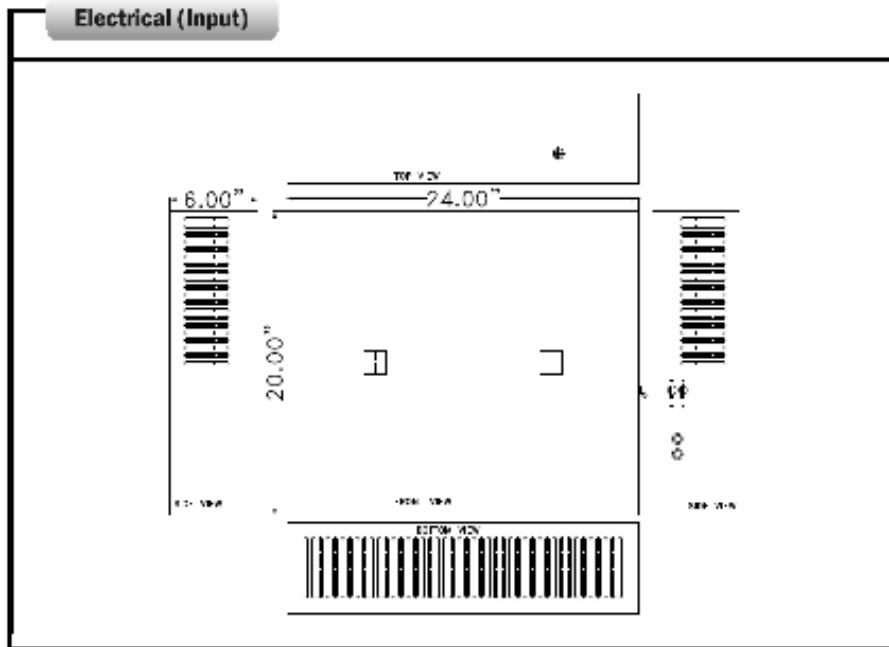
Applications

Forklift Charging Stations
Materials Handling Facilities
Electric Utilities and Manufacturing Plants
OEM Applications

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Specification

Electrical (Input)

Nominal Vac (ip)	110	208	220
Actual (Vac)	105-125	190-230	210-250
Input Amps (max)	27.6	16.0	13.8
Input Fuse (MDA)	20A x2	10A x2	10A x2
Input Frequency	45-65 Hz		
Noise on Input	< 50 mV		

Environmental Specification

Operating Temp. Range	-25° to +40°C @ maximum output Derate Linearly 2.5% per °C from 40°C (Optional -40°C extra wide temp. operation avail.)
Humidity	0 - 95°C Relative Humidity (non-condensing) with standard conformal coating
Audible Noise	NONE @3db @ 3 ft (34.5 dB when fan operating)
Typical Service Life	> 10 yrs. (87,600 hrs)
Isolation	Input-Case & Input-Output 1500VDC Output-Case 500VDC (1500VDC for 48V O/P)

Electrical (Output)

Output Nominal (op)	12	24	32	48
Output Volts (DC)	13.6	27.2	36.3	54.4
Absorption Voltage (Vdc)	14.4	28.8	38.4	57.6
Charging Amps	120	80	60	40
Output Adjustment (Vdc)	± 1.0V			
Output Fuses (ATC)	(40 x 2) x 2	(40 x 2) x 2	(40 x 2) x 2	(30 x 2) x 2
Battery Banks	1 or 2 (3 Bank Option Available)			
Output Crowbar	16.0 ± 0.5V	32.0 ± 1.0V	42.7 ± 1.3V	63.9 ± 2.0V
Battery Size (Amp Hrs.)	480 - 720	320 - 480	240 - 360	160 - 240
Output Ripple & Noise	< 50 mV			
Regulation (Line & Load)	< +/- 0.5%			
Temperature Comp.	-30 mV/°C	-60 mV/°C	-80 mV/°C	-120 mV/°C
Duty Cycle	Continuous 100% for 24 hours per day			
Efficiency	> 75% @ Maximum Output			
Stages	2			

Mechanical Specification

Length	24.0 in / 61.0 cm
Width	20.0 in / 50.8 cm
Depth	6.0 in / 15.3 cm
Clearance	1 inch (2.5 cm) all around
Material	Marine Grade Aluminium
Finish	Black Anodize / Powder Epoxy Coat
Fastenings	All 18-8 Stainless Steel
Weight	30.0 lb / 15.0 kg
Connections	Anderson Output Connectors
Warranty	3 years
Safety	Approval to CSA/UL Standard pending (Contact us for info)



DC/DC Battery Charger VMC800-(24-33)-32 Mission Critical Charger

Benefits

- ☑ Super high performance transient response
- ☑ Ultra-Quiet
- ☑ Power for sensitive electronics without interference
- ☑ Rugged & Reliable
- ☑ Ensure years of safe and trouble free operation
- ☑ Fast & Accurate Charging

Military Option

Most commercial off the shelf products manufactured by Analytic Systems like this one can be adapted for military use.

We provide four different levels of ruggedization; most often, a product in military use will use the extra-wide temperature range components to allow operation -55C to +60 degrees Celsius.

The printed circuit boards are protected against condensation and are enhanced with vibration protection. Designed to meet MIL STD810G, Method 514-6 and Cat-20(a) C.O.T.S. products are designed to meet EMC radiated and conducted emissions MIL STD 461F; RE 102, CE 102, CS 102.

All C.O.T.S. products are manufactured in accordance with IPC-A-610.

Description

This COTS Charger is designed for ultimate recharging of the SAFT Lithium-Ion Battery (LBB) used by the US Army and the US Marine Corps as well as a number of Allied militaries that use the ITAS weapons system. It is controlled using industry standard interface circuitry. It can also be used in Bypass Mode as a Stand-Alone power supply. It is designed to deliver 32.0 VDC at up to 25 amps continuously to recharge the battery. The output charges to 32 VDC at up to 25 amps when operating in Charge Mode.

The VMC800-(24-33)-32 can be powered from the HMMWV alternator or any DC source between 24 and 33 Vdc. Auto Switching at frequencies from 45 to 405 Hz. The charger is tested to MILSTD 461F for both radiated and conducted emissions. It is compliant with MILSTD 810F for shock and vibration and is designed to withstand submersion in 50cm of water for up to 5 minutes.

The unit can be operated over a temperature range of -40 to +60 degrees Celsius, and with an optional pre-heater, will operate at temperatures down to -55 degrees C. The charger is designed so that it can be modified to meet many different military and commercial applications based on user requirements and battery chemistries. We are confident that you will get many years of reliable service from this high performance DC Battery Charger.

Features

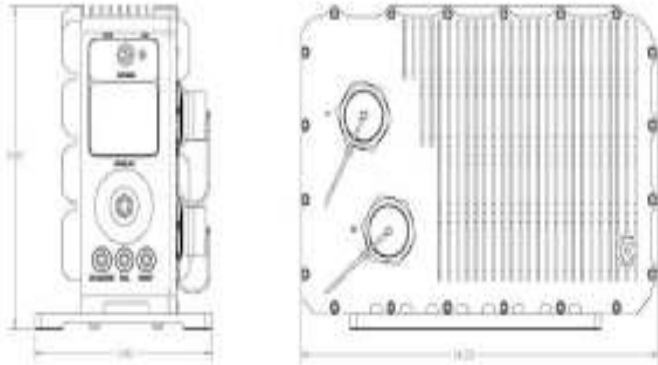
- ☑ Built as a COTS Battery Charger for Military Applications
- ☑ Military-Grade enclosure ensures a high tolerance for shock and vibration
- ☑ Ultra-quiet, low EMI operation
- ☑ Can be left permanently connected
- ☑ Can function as a power supply
- ☑ Visual indicators for output and charging
- ☑ Short circuit protection
- ☑ Output voltage protection
- ☑ Watertight
- ☑ Inrush Current Limiting
- ☑ Designed for HMMWV electrical system
- ☑ 2 year parts and labour warranty
- ☑ Designed to meet MIL STD 810G, Method 514-3, Cat-20(a) for vibration
- ☑ Built according to the ISO 9001:2008 Quality System

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Specification



Mechanical Specification

Length	14.38" max
Width	7.00" max including mounting plate
Height	9.90" max
Material	Aluminum
Finish	Black Anodize
Weight	Max 20lb
Air flow rate @ pressure	Natural convection
Connections	2 connectors D38999 Series 4
Vibration	MIL STD810G, Method 514-3 and Cat-20(a)
Warranty	2 years

Electrical (Input)

Nominal Vdc	28 Vdc	
Actual	Min 24V	Max 32V
Input Amps (max)	45A	
Input Circuit Breaker	45A	
Input Frequency	45 to 405 Hz	
Noise on Input	To MIL STD 1275	

Electrical (Output)

Output Voltage (Charging, Constant voltage mode)	10±0.5 Vdc to 31.85 ± 0" 15"
Output Voltage (Bypass Mode)	30.85 to 32.0Vdc
Charging Amps	23.0 A to 32.0 A
Output Ripple & Noise	300mVpp, 20 HHz BW
Battery Banks	Soft LBB/ can be modified for other types / chemistries
Efficiency	>88%
Over-Voltage Protection	Dual protection
Duty Cycle	100% Continuous
Battery Load when OFF	Max 5mA on LBB and 1mA on input
Stand By Current	1 MA max
EMC	MIL STD 461F RE 102, CE 102, CS 102
Visual Indicators	Charge, On, Fault (LED). Pushbutton activated

Environmental Specification

Operating Temp. Range	-32°C to +60°C
Storage Temp	-54°C to +71°C
Humidity	0-95%
Audible Noise	<45dBa at 1 metre (3 feet)
Typical Service Life	20yr
Isolation	Common Negative

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