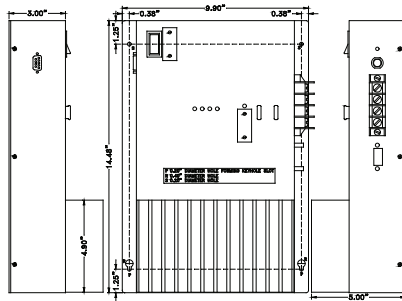


# ANALYTIC SYSTEMS

Power Conversion Solutions

## AC BATTERY CHARGERS

### MODEL BCA1000MS C.O.T.S. SERIES



### Description

The BCA1000 battery charger provides up to 1000 watts to charge a 12, 24, 28, or 48 Volt battery system (1 or 2 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 switch-mode 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, 3-Bank Charging, 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

### Design Features

- Ideal as Global Marine Distress Safety System (GMDSS) power supply when equipped with optional voltmeter and ammeter.
- Adjustable 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
- Can function as a power supply
- Dry contact output fail relay
- Field switchable between 110VAC and 220VAC
- User selectable 2 or 3 stage charging profile
- 3 Bank Option Available
- 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
- Thermostatically controlled fan
- 2 year parts and labour warranty

### Military Features

Most of the products manufactured by Analytic Systems can be adapted for military use (Commercial Off The Shelf).

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 to -55 degrees Celsius.

The printed circuit boards are also protected against condensation and are enhanced with vibration protection that meets or exceeds MIL-STD810F, Method 514-3 and Cat-1 Proc 1.

C.O.T.S. products are designed to meet various levels of EMC radiated and conducted emissions MIL-STD 461F

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

# AC BATTERY CHARGERS

# MODEL BCA1000MS C.O.T.S. SERIES

| Electrical (Input)        |  |                           |             |             |
|---------------------------|--|---------------------------|-------------|-------------|
| Nominal Vac (ip)          | 110  |                           | 220         |             |
| Actual (Vac)              | 90-130   |                           | 180-260     |             |
| Input Amps (max)          | 14.6   |                           | 7.3         |             |
| Input Fuse (MDA)          | 20A(15A-12V)   |                           | 10A(8A-12V) |             |
| Input Frequency           | 45-65 Hz   |                           |             |             |
| Noise on Input            | < 50 mV  |                           |             |             |
| Electrical (Output)       |  |                           |             |             |
| Output Nominal (op)       | 12   | 24                        | 28          | 48          |
| Output Volts (DC)         | 13.6   | 27.2 (24.0 Avail)         | 28.0        | 54.4        |
| Absorption Voltage (Vdc)  | 14.4   | 28.8                      | 29.6        | 57.6        |
| Charging Amps             | 60   | 40                        | 40          | 20          |
| Absorption to Float (15%) | 9 Amps   | 6 Amps                    | 6 Amps      | 3.0 Amps    |
| Output Adjustment (Vdc)   | ± 1.0V   |                           |             |             |
| Output Fuses (ATC)        | 40 x 2   | 40 x 2                    | 40 x 2      | 25 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.)   | 240 – 360  | 160 – 240                 | 120 – 180   | 80 – 120    |
| 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                | -120 mV/°C   |                           |             |             |
| Efficiency                | > 75% @ Maximum Output   |                           |             |             |
| Stages                    | 2 or 3 (user selectable)   |                           |             |             |
| EMC                       | Designed to meet MIL-STD 461F  |                           |             |             |
| Environment Specification |  |                           |             |             |
| Operating Temp. Range     | -55° to +50°C @ maximum output Derate Linearly 2.5% per °C from 50°C       |                           |             |             |
| Humidity                  | 0 - 95% Relative Humidity (non-condensing) with standard 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)   |                           |             |             |
| 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  |                           |             |             |
| Vibration                 | Designed to meet MIL-STD810DF, Method 514-3 and Cat-1 Proc 1               |                           |             |             |
| Interconnect              | IPC-A-610  |                           |             |             |
| Warranty                  | 2 years  |                           |             |             |

Note: Specifications are subject to change without notice.



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An ISO9001 and AS9100 Registered Company Battery Chargers • Inverters • Power Supplies • Voltage Converters

8128 River Way, Delta B.C. V4G 1K5 Canada T. 604.946.9981 F. 604.946.9983 TF. 800.668.3884 (US/CANADA)

www.analyticsystems.com