FC/FCA Battery Charger

Accurate, Completely Automatic Charging for All Battery Types.

- **Automatic 2-rate charging**– offers fastest battery charging and lowest water consumption.
- **Temperature compensation**– eliminates the No. 1 cause of premature battery failure.
- **Compact housing sizes**– saves space and money.
- **Comprehensive alarm system**– provides status on charger and battery (FCA only).
- **Rugged aluminum housing**– gives modern appearance and corrosion protection.
- **Proven SENS quality**– means years of trouble-free service.

**Product Highlights**

SENS FC and FCA battery chargers offer accurate, automatic charging of lead-acid and nickel-cadmium batteries. Unlike unregulated “battery boilers” or poorly regulated ferro-resonant chargers, the output voltage automatically adjusts to changing input, load, battery and ambient conditions. This prevents battery over-charging and consequent loss of battery electrolyte.

SENS FC/FCA chargers are ideal for either lead-acid or nickel-cadmium batteries.

Standard FC features include AC line compensation, precision voltage regulation, current limiting, automatic 2-rate charging, voltmeter and ammeter, temperature compensation and UL listing in most sizes.

The FCA offers, in addition, a comprehensive alarm system that meets NFPA requirements.
Specifications

Input Frequency & Voltage Range
60 Hz standard; 50 Hz optional, ±5%.
120 volt standard; 100, 208, 230, 277, 380, 480 volt optional, ±10%.

Output Voltage
• 12, 24, or 32 volts nominal.
• Float voltage adjustable from 100% to 120% of nominal.
• Equalize voltage adjusts to 15% above float voltage.

Output Voltage Regulation
±1% of the correct temperature compensated value from no load to full load with simultaneous variations in input voltage of 10% and frequency of 5%.

AutoBoost
(See Figure 1)
After battery discharge or AC failure, the charger operates in the high-rate constant current mode until the battery voltage rises to the pre-set BOOST (EQUALIZE) level. The charger will operate in this constant voltage BOOST mode until the battery’s current acceptance falls to 70% of the charger’s rating. At this point, the charger reverts to the lower FLOAT voltage, where it remains until another battery discharge or AC failure.

Temperature Compensation
(See Figure 2)
All batteries have a negative temperature coefficient. SENS FC/FCA is equipped with the appropriate temperature compensation (-0.2% per deg. C) to assure correct charging in all conditions. Remote sensing of battery temperature is optional.

Current Limiting & Overload Protection
• Soft start – ensures smooth start-up.
• Electronically current limited at 110% of rated output.
• AC & DC fuses (6 & 10 A units).
• AC & DC breakers (20 & 25 A units).

Controls & Adjustments
• Separate internal adjustment for float & boost voltages.
• Separate internal adjustment for low and high DC alarms.

Indicators
DC voltmeter: 2.5" scale (63mm).
DC ammeter: 2.5" scale (63mm).
Alarm indicators and remote contacts optional.
(See Alarm Systems Table)

Ambient
Operating temperature:
-10°C to +50°C.
Humidity: 5% to 95% non-condensing.
Alarm System Code
0: No alarm system
1: One-pole AC fuse, one-pole DC fuse
2: Two-pole AC fuse, one-pole DC fuse
3: One-pole AC breaker, one-pole DC breaker
4: Alarms #2 plus:
   - AC fail Form C contact
   - High battery Form C contact

Fuses/ Breakers

Blank: No alarms
A: Alarms

*Only available in 6A & 10A units.

Examples:
24 volt, 10 amp with 120 volt, 60 Hz input, no alarm
24 volt, 10 amp with 120 volt, 60 Hz input, alarms 2
24 volt, 10 amp with 230 volt, 50 Hz input, alarms 4

NOTE: Not all configurations are available on all models. Contact the factory for information.

Model Number Breakout

FCA 24-10 -

Model | Alarm Config. | Output Voltage | Output Current | Input Volts |
--- | --- | --- | --- | --- |
Blank | No alarms | A: Alarms |

Fuses/ Breakers

0: Single rate
1: "Autoboost" automatic 2-rate
6: Equalize timer 0-24 hour
7: Equalize timer 0-72 hour

Float/ Equalize Control

Housing Dimensions Table

<table>
<thead>
<tr>
<th>Housing</th>
<th>Width</th>
<th>Depth</th>
<th>Height</th>
</tr>
</thead>
<tbody>
<tr>
<td>FC-1</td>
<td>11.00” (275mm)</td>
<td>5.00” (125mm)</td>
<td>11.00” (275mm)</td>
</tr>
<tr>
<td>FC-1.5</td>
<td>15.00” (375mm)</td>
<td>6.00” (150mm)</td>
<td>13.00” (325mm)</td>
</tr>
</tbody>
</table>

Mechanical

Housing: Clear anodized aluminum, wall mounting.
Optional Features

- Alarms (see Model Number Breakout).
- Non-standard input voltage.
- Export packaging.
- Fungus proofing of circuit boards.
- NEMA 3R housing.
- Remote temperature sensing.

How To Order

1. Determine standard charger model number. Refer to the Ordering Information Table and Model Number Breakout.
2. If non-standard input, alarm system or float/equalize control are required, please contact the factory to verify the correct part number.
3. Specify options as line items (e.g. remote temperature sensing).

<table>
<thead>
<tr>
<th>Output Volts</th>
<th>Amps</th>
<th>Model Number</th>
<th>Housing Size</th>
<th>Weight Lbs</th>
<th>KG</th>
<th>Certification</th>
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<td>15</td>
<td>7</td>
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</tbody>
</table>

(A) indicates alarms; X specifies alarm configuration (see Model Number Breakout to specify alarm configuration).

*120 VAC input only.

NOTE: Generic chargers are shown. Refer to the Model Number Breakout diagram for how to specify alarms, input voltage and options.