ATevo SERIES BATTERY CHARGER

Storage Battery Systems LLC
N56 W16665 Ridgewood Drive
Menomonee Falls, WI 53051

www.sbsbattery.com  800-554-2243  sbs@sbsbattery.com
**ATEvo Series Battery Charger** is HindlePower’s next generation SCR-based utility battery charger. The innovative design and operation enhancements were developed and tested to exceed your expectations. **ATEvo Series Battery Charger** was conceived, designed, and manufactured with three uncompromising goals in mind:

- A battery charger that makes your job easier
- To retain the quality and integrity of the original AT series battery charger design
- To satisfy your NERC and utility industry requirements in an ever-changing world

Driven by these goals and keeping in mind the simplicity and intuitive nature of the original AT series has resulted in an intelligent design that is still the world’s easiest to use.

The **ATEvo Series Battery Charger**’s open architecture design offers you flexible operation to meet your ever evolving DC power requirements. These new features are paired with the **Hindle Health® System** to make your job quicker and easier than ever before.
<table>
<thead>
<tr>
<th>Standard Feature</th>
<th>AT10.1/AT30</th>
<th>evo EVOLVED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single Phase</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Three Phase</td>
<td>✔</td>
<td>coming soon</td>
</tr>
<tr>
<td>Indicator LEDs For Common Alarms</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Soft Start Feature</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Universal Main Control Board</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>5 Year Product Warranty</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>High DC Voltage Shutdown</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Data/Event Logging</td>
<td>-</td>
<td>✔</td>
</tr>
</tbody>
</table>

**Hindle Health System**

| Hindle Health Monitor | - | ✔ |
| Hindle Health Button | - | ✔ |
| Hindle Health Diagnostics | - | ✔ |

| Interactive LCD Display | - | ✔ |
| DC circuit breaker status via LCD display | - | ✔ |
| AC Ripple Alarm | - | ✔ |
| Field Upgradable Firmware | - | ✔ |
| User Configured Alarm Relays | - | ✔ |
| Adjustable Time-Delay On Alarm Contacts | - | ✔ |
| Generic Binary Inputs | - | ✔ |
| Generic Analog Inputs | - | ✔ |
The *Hindle Health System* offers you peace of mind via real-time status notification that your charger is “healthy” and operating properly. Continuous self-diagnostics ensure trouble-free operation. In the event an issue is detected, the *Hindle Health System* alerts you of the problem.

The *Hindle Health Button* initiates a systematic diagnosis of all parameters and internal components to confirm your charger is operating properly.

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**Hindle Health Status Lights:**
An indicator light to let you know your charger is functioning correctly. See green? You know all is well.

**Hindle Health Button:**
A simple, step by step system check that easily allows the user to verify the internal components are working and operating per the user’s set points.

**Hindle Health Diagnostics:**
A powerful diagnostic program alerting you of potential issues as they occur.
### ATevo SERIES STANDARD FEATURES:
- Universal main control board operates in any ATevo Series Battery Charger
- Standard alarm suite with LED indicators (AC failure, low DC voltage, high DC voltage, DC output failure, positive ground fault, negative ground fault)
- Common alarm LED indicator (for all alarms including: low AC voltage, high AC Voltage, end of discharge, low DC current)
- Programmable summary relay contact that can be configured to indicate any or all alarm conditions
- Redundant analog circuit for high DC voltage detection, independent of microprocessor control
- Microprocessor and analog high DC voltage detection methods can be enabled to shut down charger
- Float and multiple equalize charging modes with LCD display indication
- Manual equalize timer (0-999 hr.)
- AC line automatic failure equalize timer (0-255 hr.)
- AC on indicator
- 0.5% Digital metering for Vdc and Adc measurements
- Graphical LCD display with LED backlight
- AC input and DC output circuit breakers
- Password protection for security
- A redundant analog circuit for low level detect alarm, independent of the microprocessor
- Multiple processor design for exceptional reliability
- Local or remote voltage sense with redundancy in the event of remote sense failure
- Input & output MOV surge suppressors
- Battery open alarm
- Reverse polarity protection diode
- Switchboard wire, UL VW-1
- NEMA 1 enclosure pre-treated using a 5-stage iron phosphate process with baked epoxy powder coating in ANSI 61 gray
- Plug-in socket for removable memory card used for event logging and firmware upgrades
- Battery backed up real time clock for date and time stamping events
- Kindle Health System, intelligent self diagnostics
- Standard output filter per NEMA PE 5

### ATevo SERIES SUMMARY OF OPTIONS:
- Battery eliminator DC output filtering:
- Medium & high AC breakers
- Auxiliary alarm relay board
- Copper ground bus
- AC lightning arrester
- Fungus proofing (tropicalization)
- Static Proofing
- Serial communications modules
- Ethernet communications module
- Modbus and DNP3.0
- Battery temperature compensation
- Fan control contactor
- Custom paint
- NEMA 4/12 type enclosure w/fan
- Rack mounting
- Floor mounting stand
- NEMA type 2 drip shield
- Barrier type alarm terminal block
- Forced load share
- Zero-center ground detection meter
- AC voltmeter
- AC ammeter
- Cabinet heater assembly
- ABS certification upon request
- Custom drawing package w/ optional CAD or PDF Files
- Remote shutdown
- Remote battery shunt
- Generic binary inputs
- Generic analog inputs
- Battery discharge alarm
- SD Card
## ATevo Specifications

<table>
<thead>
<tr>
<th>DC Output Rating</th>
<th>AC Input Circuit Breaker Ampere Rating</th>
<th>Battery Charger AC Circuit Breaker Ampere Rating (standard AIC breakers)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Based on maximum rms value of the input current delivered into the charger</td>
<td></td>
</tr>
<tr>
<td><strong>Volts</strong></td>
<td><strong>Amps</strong></td>
<td></td>
</tr>
<tr>
<td>~220 VDC</td>
<td>6</td>
<td>15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15</td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15</td>
</tr>
<tr>
<td></td>
<td>16</td>
<td>15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15</td>
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<tr>
<td></td>
<td>20</td>
<td>15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15</td>
</tr>
<tr>
<td></td>
<td>25</td>
<td>15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15</td>
</tr>
<tr>
<td></td>
<td>30</td>
<td>15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15</td>
</tr>
<tr>
<td></td>
<td>40</td>
<td>15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15</td>
</tr>
<tr>
<td></td>
<td>50</td>
<td>15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15</td>
</tr>
<tr>
<td></td>
<td>75</td>
<td>15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15</td>
</tr>
<tr>
<td></td>
<td>100</td>
<td>15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15</td>
</tr>
</tbody>
</table>

*Regulation at max. equalize voltages may not meet +0.25%*
## ATevo Specifications

<table>
<thead>
<tr>
<th>DC Circuit Breaker Rating</th>
<th>Approx. Shipping Weight (lbs. (kg))</th>
<th>Heat Loss watts (BTU/hr)</th>
<th>Cabinet Styles</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>121 (55)</td>
<td>33 (111)</td>
<td>5054</td>
</tr>
<tr>
<td>20</td>
<td>121 (55)</td>
<td>60 (204)</td>
<td>5054</td>
</tr>
<tr>
<td>25</td>
<td>132 (60)</td>
<td>78 (265)</td>
<td>5070</td>
</tr>
<tr>
<td>30</td>
<td>138 (62)</td>
<td>96 (327)</td>
<td>5070</td>
</tr>
<tr>
<td>40</td>
<td>138 (62)</td>
<td>118 (404)</td>
<td>5054</td>
</tr>
<tr>
<td>50</td>
<td>147 (66)</td>
<td>141 (481)</td>
<td>5054</td>
</tr>
<tr>
<td>63</td>
<td>149 (67)</td>
<td>186 (635)</td>
<td>5070</td>
</tr>
<tr>
<td>80</td>
<td>177 (80)</td>
<td>231 (789)</td>
<td>5070</td>
</tr>
<tr>
<td>125</td>
<td>282 (128)</td>
<td>344 (1174)</td>
<td>5070</td>
</tr>
<tr>
<td>150</td>
<td>317 (143)</td>
<td>457 (1558)</td>
<td>5070</td>
</tr>
</tbody>
</table>

### HOW TO SIZE YOUR BATTERY CHARGER

(Simplified Formula)

\[
\text{Continuous Charger Output Rating} = \left( \frac{Ah \times 1.0}{t} \right) + L
\]

- \(Ah\) = Ampere hours removed
- \(R\) = Recharge factor (1 = FS or 3 = NICd)
- \(L\) = Additional standing load
- \(t\) = Recharge time in hours

[Diagram of 5054 and 5070 models]
# ATevo Ordering Code

<table>
<thead>
<tr>
<th>Description</th>
<th>Code</th>
<th>Feature</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>ATEV</td>
<td>Single Phase</td>
</tr>
<tr>
<td>B</td>
<td>1</td>
<td>24 Vdc</td>
</tr>
<tr>
<td>C</td>
<td>024</td>
<td>48 Vdc</td>
</tr>
<tr>
<td>C</td>
<td>048</td>
<td>130 Vdc</td>
</tr>
<tr>
<td>C</td>
<td>130</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>260</td>
<td>260 Vdc **</td>
</tr>
<tr>
<td>D</td>
<td>006</td>
<td>6 Adc</td>
</tr>
<tr>
<td>D</td>
<td>012</td>
<td>12 Adc</td>
</tr>
<tr>
<td>D</td>
<td>016</td>
<td>16 Adc</td>
</tr>
<tr>
<td>D</td>
<td>020</td>
<td>20 Adc</td>
</tr>
<tr>
<td>D</td>
<td>025</td>
<td>25 Adc</td>
</tr>
<tr>
<td>D</td>
<td>030</td>
<td>30 Adc</td>
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<tr>
<td>D</td>
<td>040</td>
<td>40 Adc</td>
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<tr>
<td>D</td>
<td>050</td>
<td>50 Adc</td>
</tr>
<tr>
<td>D</td>
<td>075</td>
<td>75 Adc</td>
</tr>
<tr>
<td>D</td>
<td>100</td>
<td>100 Adc****</td>
</tr>
<tr>
<td>E</td>
<td>F</td>
<td>Standard Filter</td>
</tr>
<tr>
<td>E</td>
<td>E</td>
<td>Eliminator Filter</td>
</tr>
<tr>
<td>E</td>
<td>S</td>
<td>Super Eliminator</td>
</tr>
<tr>
<td>F</td>
<td>120</td>
<td>120 V 60 Hz*****</td>
</tr>
<tr>
<td>F</td>
<td>208</td>
<td>208 V 60 Hz</td>
</tr>
<tr>
<td>F</td>
<td>240</td>
<td>240 V 60 Hz</td>
</tr>
<tr>
<td>F</td>
<td>480</td>
<td>480 V 60 Hz</td>
</tr>
<tr>
<td>F</td>
<td>600</td>
<td>600 V 60 Hz</td>
</tr>
<tr>
<td>F</td>
<td>220</td>
<td>220 V 50/60 Hz</td>
</tr>
<tr>
<td>F</td>
<td>380</td>
<td>380 V 50/60 Hz</td>
</tr>
<tr>
<td>F</td>
<td>416</td>
<td>416 V 50/60 Hz</td>
</tr>
<tr>
<td>F</td>
<td>MT1</td>
<td>120/208/240 60Hz***</td>
</tr>
<tr>
<td>F</td>
<td>MT2</td>
<td>120/208/240 50/60Hz***</td>
</tr>
</tbody>
</table>

* For future use
** 260V output only available up to 12A DC
*** Multi-tap input is only available on units 25A or less.
**** 100A output not available on 130Vdc units
***** 120 Vac not available on 130Vdc, 50A, and 75A
### ATevo Ordering Code

<table>
<thead>
<tr>
<th>Description</th>
<th>Code</th>
<th>Feature</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>G</strong> AC Input Protection</td>
<td>S</td>
<td>Standard AIC</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>Medium AIC</td>
</tr>
<tr>
<td></td>
<td>H</td>
<td>High AIC</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>High AIC Fuses w/ Standard Breaker *</td>
</tr>
<tr>
<td><strong>H</strong> DC Output Protection</td>
<td>S</td>
<td>Standard AIC</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>Medium AIC</td>
</tr>
<tr>
<td></td>
<td>H</td>
<td>High AIC</td>
</tr>
<tr>
<td><strong>J</strong> Auxiliary I/O PC Boards</td>
<td>X</td>
<td>No Aux I/O Board Supplied</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>One Aux I/O Board</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Two Aux I/O Board</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Three Aux I/O Board</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>Four Aux I/O Board</td>
</tr>
<tr>
<td></td>
<td>A</td>
<td>One Aux I/O Board w/ Barrier Terminal Blocks</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>Two Aux I/O Board w/ Barrier Terminal Blocks</td>
</tr>
<tr>
<td></td>
<td>C</td>
<td>Three Aux I/O Board w/ Barrier Terminal Blocks</td>
</tr>
<tr>
<td></td>
<td>D</td>
<td>Four Aux I/O Board w/ Barrier Terminal Blocks</td>
</tr>
<tr>
<td><strong>K</strong> Remote Communications</td>
<td>X</td>
<td>No Remote Communications Supplied</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>One RS-232/RS-485 Serial Communications Module</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Two RS-232/RS-485 Serial Communications Module</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Three RS-232/RS-485 Serial Communications Module</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>Ethernet Communication Module</td>
</tr>
<tr>
<td><strong>P</strong> Battery Current Monitoring</td>
<td>X</td>
<td>No Remote Monitoring Supplied</td>
</tr>
<tr>
<td></td>
<td>S</td>
<td>Discharge Current Metering and Alarm</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>Remote accessory for monitoring float current and discharge current</td>
</tr>
<tr>
<td><strong>Q</strong> Site Wiring Protection</td>
<td>X</td>
<td>Standard Internal CU-AL Compression Box Lug Supplied</td>
</tr>
<tr>
<td></td>
<td>G</td>
<td>Copper Ground Bus Bar Supplied</td>
</tr>
<tr>
<td></td>
<td>L</td>
<td>AC Input Lightning Arrestor Supplied</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>Both Ground Bus (G) and Lightning Arrestor (L) Supplied</td>
</tr>
<tr>
<td><strong>R</strong> Enclosure Type</td>
<td>1</td>
<td>NEMA Type 1 (Standard)</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>NEMA Type 2 Drip Shield Mounted to Standard NEMA Type 1 Enclosure</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>Special NEMA Type 4 (12) Water-Proof Cabinet (Vented &amp; Fan Cooled)</td>
</tr>
</tbody>
</table>

* AC Fuses not available in chargers in 5054 style cabinet
AC INPUT

Input Voltage:
120, 208, 240, 480
120/208/240, 550/600 (multi-tap) @ 60Hz
2.20, 380/416 @ 50-60Hz

Input Voltage Tolerance:
+10%, -12%

Input Frequency Tolerance:
±5%

Efficiency:
85-90% typical for 130Vdc at 50-100% load

Safety & Acceptance

- Meets NEMA PES
- Third party agency approvals:

![CE, UL, FCC logos]

Seismic qualified IEEE 693/IBC CBC
ABS or CE certification available upon request.

DC OUTPUT

Voltage Ratings:
24, 48, 130 or 260Vdc nominal

Current Ratings:
6, 12, 16, 20, 25, 30, 40, 50, 75, 100 Acdc
*260Vdc - 612 Adc only
**100A not available for 130V units

Continuous Rating:
110% rated current at maximum equalize voltage at -10 to +50°C

Transient Rating:
Per NEMA PE-5

Current Limit Adjustment Range:
50% to 110% rated output

Voltage Regulation:
±0.25% for line, load and temp. variations
*Regulation at max. extended equalize voltages may not meet ±0.25%

Electrical Noise:

Ripple:
32dBm
24/48Vdc
- Filtered on battery 30mVrms
- Filtered off battery 1% Vrms
- Battery Eliminator 30mVrms

130Vdc
- Filtered on battery 100mVrms
- Filtered off battery 2% Vrms
- Battery Eliminator 100mVrms
- Super Eliminator 30mVrms

260Vdc
- Filtered on battery 200mVrms
- Filtered off battery 2% Vrms
- Battery Eliminator 200mVrms

Surge Withstand Capability:
Designed to meet IEEE-472, ANSI C37.90a

Environmental

- Operating Ambient Temperature 5°F to 122°F
  (-10°C to 50°C) w/o derating
- Operating Altitude 3300 feet (1000 meters) above sea level without derating
- Relative Humidity 0% to 95%
  (without condensation)
- Audible Noise Less than 65 dBA at any point 5ft
  (1.5m) from any vertical surface of enclosure