



# HINDLEPOWER

Quality & Integrity, Our Passion

## ATevo SERIES BATTERY CHARGER



HINDLE HEAL+H SYSTEM

PRODUCT

PATENT PENDING

hindlepowerinc.com | 610-330-9000

JF5054-00 Rev7 1-19



# ATevo Series Battery Charger designed with **YOU** in mind.

**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:




## 3 GOALS DRIVING THE DESIGN

- 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.

Standard Feature	Why purchase ATevo ?	
	AT10.1/ AT30	
Single Phase	✓	✓
Three Phase	✓	coming soon
Indicator LEDs For Common Alarms	✓	✓
Soft Start Feature	✓	✓
Universal Main Control Board	✓	✓
5 Year Product Warranty	✓	✓
High DC Voltage Shutdown	✓	✓
Data/Event Logging	-	✓
<b>HINDLE HEAL+H™ SYSTEM</b>	-	✓
<b>Hindle Health Monitor</b>	-	✓
<b>Hindle Health Button</b>	-	✓
<b>Hindle Health Diagnostics</b>	-	✓
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	-	✓



HINDLE HEAL+H® SYSTEM



# HINDLE HEAL+H SYSTEM

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.



## PEACE OF MIND...



HINDLE HEAL+H® SYSTEM

## ... IN REAL TIME



### 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

## FEATURES & OPTIONS

### 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
- Hindle Health System, intelligent self diagnostics
- Standard output filter per NEMA PE 5

### ATevo SERIES SUMMARY OF OPTIONS:

- Battery eliminator DC output filtering:
- Medium & high AIC breakers
- Auxiliary alarm relay board
- Copper ground bus
- AC lightning arrestor
- 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

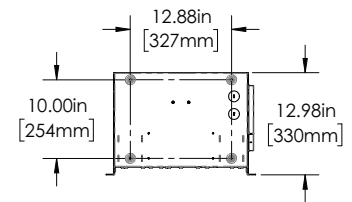
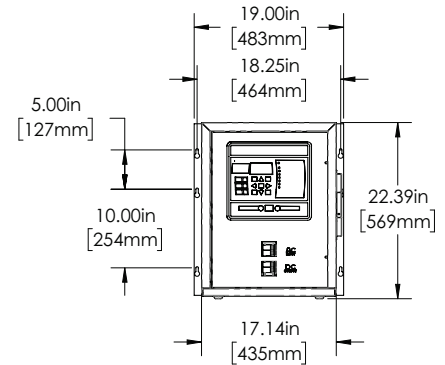
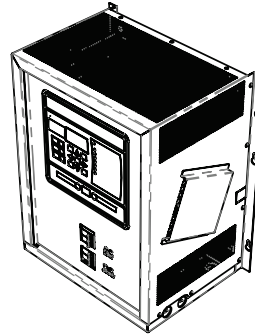
	DC Output Rating		AC Input Circuit Breaker Ampere Rating Based on maximum rms value of the input current delivered into the charger								Battery Charger AC Circuit Breaker Ampere Rating (standard AIC breakers)							
	Volts	Amps	120 Vac	208 Vac	220 Vac	240 Vac	380 Vac	416 Vac	480 Vac	600 Vac	120 Vac	208 Vac	220 Vac	240 Vac	380 Vac	416 Vac	480 Vac	600 Vac
Float 22.0-29.5Vdc  Equalize 23.4-31Vdc  Ext. Equalize to 32Vdc*	24Vdc	6	5	3	3	3	3	3	3	3	15	15	15	15	15	15	15	15
		12	7	5	5	4	4	4	3	3	15	15	15	15	15	15	15	15
		16	9	5	6	5	4	4	4	4	15	15	15	15	15	15	15	15
		20	11	6	6	6	5	4	4	4	15	15	15	15	15	15	15	15
		25	13	7	7	7	5	5	4	4	20	15	15	15	15	15	15	15
		30	15	9	9	8	6	5	5	4	20	15	15	15	15	15	15	15
		40	20	12	11	10	7	7	6	5	25	15	15	15	15	15	15	15
		50	25	15	14	13	9	8	7	5	40	20	20	20	15	15	15	15
		75	39	21	22	18	13	12	10	9	50	30	30	30	20	20	15	15
		100	53	31	30	27	18	16	14	11	70	40	40	40	25	25	20	20
Float 44-58Vdc  Equalize 46.8 - 59Vdc  Ext. Equalize to 61Vdc*	48Vdc	6	9	6	6	5	4	4	4	5	15	15	15	15	15	15	15	15
		12	16	10	10	8	6	6	5	5	20	15	15	15	15	15	15	15
		16	20	12	12	10	8	7	6	6	25	15	15	15	15	15	15	15
		20	23	14	13	12	9	8	7	7	30	20	20	20	15	15	15	15
		25	27	16	15	14	10	9	8	7	40	20	20	20	15	15	15	15
		30	27	16	15	14	10	9	8	7	40	20	20	20	15	15	15	15
		40	36	21	20	18	12	11	10	8	50	30	25	30	15	15	15	15
		50	45	26	25	23	15	14	12	10	60	35	35	35	20	20	15	15
		75	66	38	37	36	22	20	17	14	90	50	50	50	30	30	25	20
		100	91	54	52	47	30	28	24	19	125	70	70	70	40	40	30	30
Float 110 - 140Vdc  Equalize 117 - 143Vdc  Ext. Equalize to 149Vdc*	130Vdc	6	14	8	8	7	6	5	5	6	20	15	15	15	15	15	15	15
		12	33	20	20	17	12	11	10	8	50	25	30	25	15	15	15	15
		16	39	23	23	20	14	13	11	10	50	30	30	30	20	20	15	15
		20	45	27	27	23	15	15	12	10	63	40	40	40	20	20	15	15
		25	50	32	32	28	17	17	14	12	63	40	40	40	25	25	20	20
		30	62	36	35	31	21	19	16	15	80	50	45	50	30	30	20	20
		40	86	47	44	41	26	24	21	17	N/A	60	60	60	35	35	30	25
		50	N/A	58	52	51	32	30	26	21	N/A	80	70	80	40	40	35	30
		75	N/A	89	84	78	50	45	39	31	N/A	125	125	125	65	65	50	50
Float 220 - 282Vdc  Equalize 234 - 298Vdc	260Vdc	6	28	18	19	15	12	11	9	8	40	25	25	25	15	15	15	15
		12	63	36	33	32	20	19	17	14	80	50	50	50	25	25	25	20
		ALL SPECIFICATIONS SUBJECT TO CHANGE																

\*Regulation at max. equalize voltages may not meet  $\pm 0.25\%$

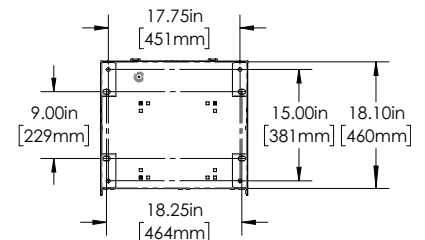
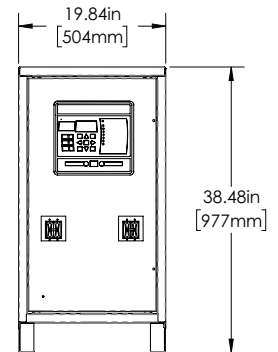
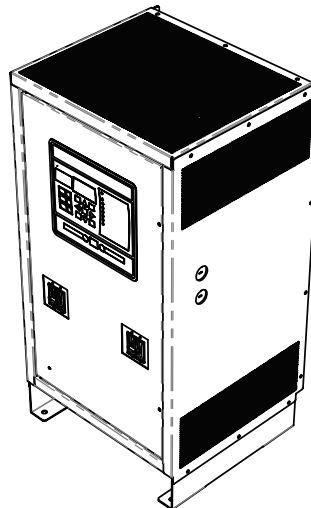
# ATevo Specifications

DC Circuit Breaker Rating	Approx. Shipping Weight (lbs.(kg))	Heat Loss watts (BTU/hr)	Cabinet Styles
10	121 (55)	33 (111)	5054
20	121 (55)	60 (204)	
25	132 (60)	78 (265)	
30	138 (62)	96 (327)	
40	138 (62)	118 (404)	
50	147 (66)	141 (481)	
63	149 (67)	186 (635)	
80	177 (80)	231 (789)	
125	282 (128)	344(1174)	5070
150	317 (143)	457(1558)	
10	121 (55)	42 (144)	5054
20	135 (61)	79 (269)	
25	157 (71)	103 (352)	
30	175 (79)	128 (436)	
40	175 (79)	158 (548)	
50	181 (82)	189 (644)	
63	198 (90)	250 (852)	
80	204 (92)	311(1061)	
125	321 (146)	463 (1582)	5070
150	393 (178)	616 (2103)	
10	146 (67)	71 (243)	5054
20	186 (84)	137 (467)	
25	211 (96)	181 (617)	
30	235 (107)	224 (766)	
40	235 (107)	279 (953)	
50	241 (109)	334 (1140)	
60	341 (155)	443 (1513)	5070
80	384 (174)	553 (1887)	
125	422 (192)	826 (2821)	
10	199 (90)	120 (411)	5054
20	227 (103)	235 (803)	

**5054**



**5070**



**HOW TO SIZE YOUR BATTERY CHARGER**  
(Simplified Formula)

$$\left( \frac{Ah \times 1.R}{t} \right) + L = \text{Continuous Charger Output Rating}$$

*Ah* = Ampere hours removed  
*R* = Recharge factor (1 = Pb) or (3 = NiCd)  
*L* = Additional standing load  
*t* = Recharge time in hours

# ATevo Odering Code

SAMPLE															
	1	130	025	E	240	S	S	I	I	X	X	X	X	G	I
	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R
										*	*	*			

CODE

Description		Code	Feature
<b>A</b>		<b>ATEV</b>	
<b>B</b>		1	Single Phase
<b>C</b>	<b>Nominal DC Output Voltage</b>	024	24 Vdc
		048	48 Vdc
		130	130 Vdc
		260	260 Vdc **
<b>D</b>	<b>Nominal DC Output Current</b>	006	6 Adc
		012	12 Adc
		016	16 Adc
		020	20 Adc
		025	25 Adc
		030	30 Adc
		040	40 Adc
		050	50 Adc
		075	75 Adc
		100	100 Adc****
<b>E</b>	<b>DC Output Filtering</b>	F	Standard Filter
		E	Eliminator Filter
		S	Super Eliminator
<b>F</b>	<b>AC Input Supply Voltage</b>	120	120 V 60 Hz*****
		208	208V 60 Hz
		240	240 60 Hz
		480	480 60 Hz
		600	600 60 Hz
		220	220V 50/60 Hz
		380	380 V 50/60 Hz
		416	416V 50/60 Hz
		MT1	120/208/240 60Hz ***
		MT2	120/208/240 50/60Hz ***

\* For future use

\*\* 260V output onlt 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 Odering Code

Description		Code		Feature
<b>G</b>	<b>AC Input Protection</b>	<b>S</b>	Standard Aic	
		<b>M</b>	Medium AIC	
		<b>H</b>	High AIC	
<b>H</b>	<b>DC Output Protection</b>	<b>F</b>	High AIC Fuses w/ Standard Breaker *	
		<b>S</b>	Standard AIC	
		<b>M</b>	Medium AIC	
<b>J</b>	<b>Auxiliary I/O PC Boards</b>	<b>H</b>	High AIC	
		<b>X</b>	No Aux I/O Board Supplied	
		<b>1</b>	One Aux I/O Board	
		<b>2</b>	Two Aux I/O Board	
		<b>3</b>	Three Aux I/O Board	
		<b>4</b>	Four Aux I/O Board	
		<b>A</b>	One Aux I/O Board w/ Barrier Terminal Blocks	
		<b>B</b>	Two Aux I/O Board w Barrier Terminal Blocks	
		<b>C</b>	Three Aux I/O Board w/ Barrier Terminal Blocks	
<b>K</b>	<b>Remote Communications</b>	<b>D</b>	Four Aux I/O Board Board w/ Barrier Terminal Blocks	
		<b>X</b>	No Remote Communications Supplied	
		<b>1</b>	One RS-232/RS-485 Serial Communications Module	
		<b>2</b>	Two RS-232/RS-485 Serial Communications Module	
		<b>3</b>	Three RS-232/RS-485 Serial Communications Module	
		<b>4</b>	Ethernet Communication Module	
		<b>5</b>	One Ethernet Comm. Module & One RS-232/RS-485 Serial Comm. Module	
		<b>6</b>	One Ethernet Comm. Module & Two RS-232/RS-485 Serial Comm. Module	
<b>P</b>	<b>Battery Current Monitoring</b>	<b>7</b>	One Ethernet Comm. Module & Three RS-232/RS-485 Serial Comm. Module	
		<b>X</b>	No Remote Monitoring Supplied	
		<b>S</b>	Discharge Current Metering and Alarm	
		<b>F</b>	Remote Accessory for Float Current Battery Monitoring Supplied	
<b>Q</b>	<b>Site Wiring Protection</b>	<b>B</b>	Both Battery Shunt (S) and Float Current Accessory (F) Supplied	
		<b>X</b>	Standard Internal CU-AL Compression Box Lug Supplied	
		<b>G</b>	Copper Ground Bus Bar Supplied	
		<b>L</b>	AC Input Lightning Arrestor Supplied	
<b>R</b>	<b>Enclosure Type</b>	<b>B</b>	Both Ground Bus (G) and Lightning Arrestor (L) Supplied	
		<b>1</b>	NEMA Type 1 (Standard)	
		<b>2</b>	NEMA Type 2 Drip Shield Mounted to Standard NEMA Type 1 Enclosure	
		<b>4</b>	Special NEMA Type 4 (12) Water-Proof Cabinet (Vented & Fan Cooled)	

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

# ATevo SERIES

## SPECIFICATIONS

### AC INPUT

**Input Voltage:**

120, 208, 240, 480  
120/208/240, 550/600 (multi-tap) @ 60Hz  
220, 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 PE5
- Third party agency approvals:



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

### DC OUTPUT

**Voltage Ratings:**

24, 48, 130 or 260\*Vdc nominal

**Current Ratings:**

6, 12, 16, 20, 25, 30, 40, 50, 75, 100 Adc

\*260Vdc - 6, 12 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:**

32dBnc

**Ripple:**

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



For patent information visit:

[hindlepowerinc.com/ip](http://hindlepowerinc.com/ip)



MADE IN THE U.S.A.