



HindlePower Inc.
 1075 Saint John Street
 Easton, PA 18042
 www.hindlepowerinc.com
 610.330.9000



*“Introducing **ATevo...***

*the premiere choice for all stationary
 battery charger specifications,
 ensuring your DC system reliability”*



AT PRODUCT SERIES BROCHURE

ATevo Battery Charger

#JF5054-00 R010

Specifications

DC OUTPUT

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

Current Ratings:
 6, 12, 16, 20, 25, 30, 40, 50, 75, 100, 125, 150,
 200, 250, 300, 400, 500, 600, 800, 1000 Adc

1ph units available from 6-100A (130V only up to 75A)
 3ph units available from 25A-1000A
 (24 and 48V start at 50A)
 (refer to page 3 available charger output ratings)

Continuous Rating:
 110% rated current at maximum equalize
 voltage at -18 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:
 26dBrc

- 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 on battery 30mVrms
- 260Vdc
- Battery Eliminator 200mVrms

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

AC INPUT

Input Voltage:

120	120V 60 Hz*
208	208V 60 Hz
240	240V 60 Hz
480	480V 60 Hz
600	600V 60 Hz
220	220V 50/60 Hz
380	380V 50/60 Hz
416	416V 50/60 Hz
MT1	120/208/240 60 Hz*

*120 Vac and multi-tap inputs not available for certain
 single phase units and all three-phase units

Input Voltage Tolerance:
 +10%, -12%

Input Frequency Tolerance:
 +5%

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

ENVIRONMENTAL

- Operating ambient temperature -10 °C to 50 °C w/o derating
- Operating altitude 3300 feet (1000m) above sea level w/o derating
- Relative humidity 0% to 95% (w/o condensation)
- Audible noise less than 65 dBA at any point 5 feet (1.5m) from any vertical surface of enclosure

SAFETY & ACCEPTANCE

- Meets NEMA PE5
- Third party agency approvals:  

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



INTRODUCTION



“Much more than a Stationary Battery Charger”

HindlePower’s AT Series Battery Chargers have been the industry standard in stationary utility applications for over 40 years. As the demand for full system reliability increases, our products have evolved to include powerful diagnostics to better assess the health of your charging system. ATevo is the next generation of the legacy AT Series product line. It is designed and manufactured with the same high quality and reliability you’ve come to expect from HindlePower.

Not only is ATevo equipped with the same standard AT Series Charger features, it is loaded with a host of alarms and diagnostics designed to better identify both potential dc threats and real-time dc issues. ATevo’s built-in HindleHealth System acts as both a configuration verification and self-diagnostic tool to ensure your dc system reliability.

Equipped with an easy to use interface with graphical, back-lit LCD display, the ATevo offers a more elegant and intuitive user experience. Packed with a host of powerful features and options, ATevo is the clear choice for all utility battery charger applications.

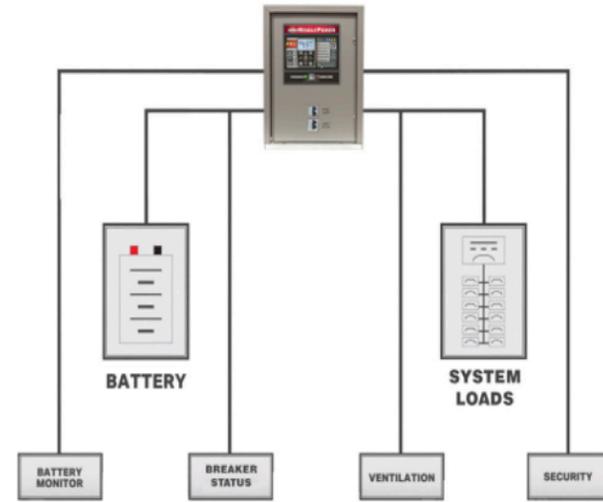


TABLE OF CONTENTS

- 1 Specifications
- 2 HindleHealth System
- 3 Available Models & Standard Enclosures
- 4 Standard Features
- 5 Advanced Options
- 6 Additional Accessories & Enclosure Options
- 7 ATevo Ordering Codes



HindleHealth System gives you unparalleled insight into the reliability of your DC system.

**SIMPLE.
INTUITIVE.
EASY.**

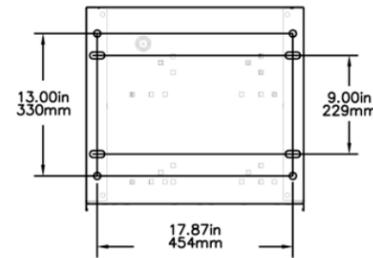
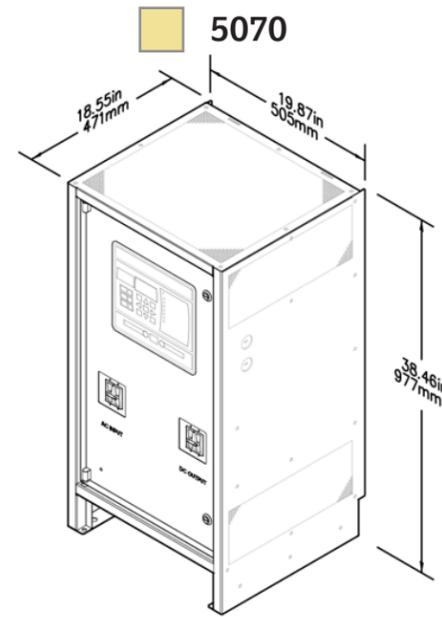
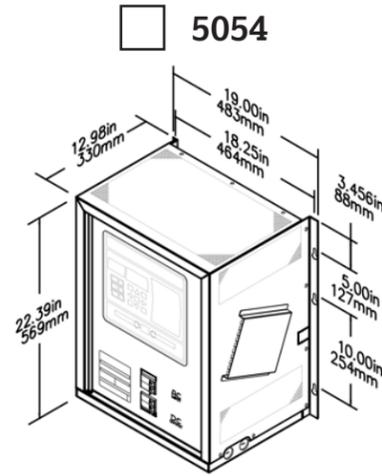
“You can’t put a price on peace of mind”

- 1 SETUP MADE EASY**
 With its built in setup wizard, the HindleHealth System will walk you through all charger settings and ensure they are set to your requirements.
- 2 24/7 SUPERVISION & ALARM VERIFICATION**
 At any moment, if a dc system or battery charger abnormality occurs, the HindleHealth System will identify the issue and alert the operator via the HMI Screen and LED indicator lamps. Every feature of the battery charger will be alarmed by the HindleHealth System, plus any third part device connected through the auxiliary board.
- 3 INSIGHT AT A GLANCE**
 Know your system’s condition instantly with the HindleHealth System status lights. Green, you are good to go. Solid Red, some maintenance is required. Blinking Red, immediate action is required.
- 4 SYSTEM COMPATIBILITY**
 The ATevo HindleHealth System was designed to work independently with the battery charger or in tandem with any new HindlePower products. When paired with an EPIC Series Console, or EPIC Battery House, the HindleHealth System will act as a supervisory device, overseeing the entire system.



AVAILABLE MODELS & STANDARD ENCLOSURES (Single Phase Inputs)

DC OUTPUT RATINGS		Cabinet Style	Approx. Shipping Weights (lbs.(kg))	Heat Loss watts (BTU/hr)
VOLTS	AMPS			
24Vdc	6	5054	121 (55)	33 (111)
	12	5054	121 (55)	60 (204)
	16	5054	132 (60)	78 (265)
	20	5054	138 (62)	96 (327)
	25	5054	138 (62)	118 (404)
	30	5054	147 (66)	141 (481)
	40	5054	149 (67)	186 (635)
	50	5054	177 (80)	231 (789)
	75	5070	282 (128)	344 (1174)
	100	5070	317 (143)	457 (1558)
48Vdc	6	5054	121 (55)	42 (144)
	12	5054	135 (61)	79 (268)
	16	5054	157 (71)	103 (352)
	20	5054	175 (79)	128 (436)
	25	5054	175 (79)	158 (548)
	30	5054	181 (82)	189 (644)
	40	5054	198 (90)	250 (852)
	50	5054	204 (92)	311 (1061)
	75	5070	321 (146)	463 (1582)
	100	5070	398 (178)	616 (2103)
130Vdc	6	5054	146 (67)	71 (243)
	12	5054	186 (84)	137 (467)
	16	5054	211 (96)	181 (617)
	20	5054	235 (107)	224 (766)
	25	5054	235 (107)	279 (953)
	30	5054	241 (109)	334 (1140)
	40	5070	341 (155)	443 (1513)
	50	5070	384 (174)	553 (1887)
260Vdc	6	5054	199 (90)	120 (411)
	12	5054	227 (103)	235 (803)
	16	5070	380 (172)	312 (1064)
	25	5070	420 (190)	484 (1652)

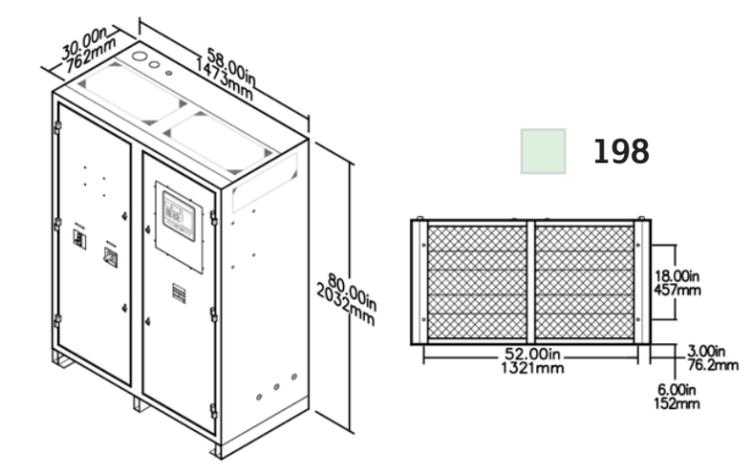
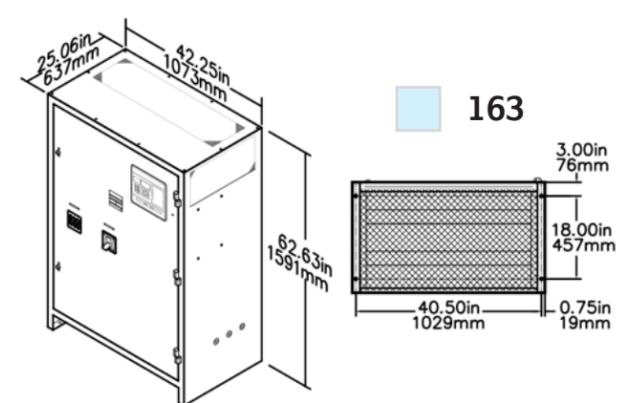
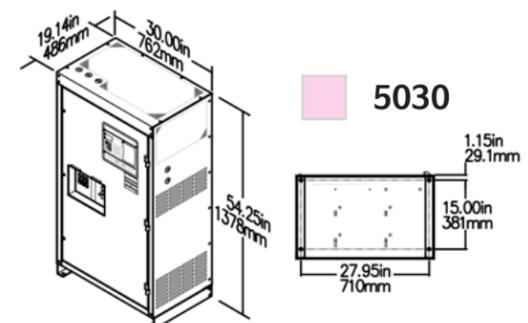
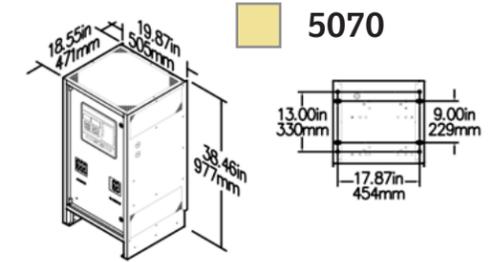


Ah = Ampere hours removed
 R = Recharge factor (1 = Pb) or (3 = NiCd)
 L = Additional standing load
 t = Recharge time in hours

AVAILABLE MODELS & STANDARD ENCLOSURES (Three Phase Inputs)



DC OUTPUT RATINGS		Cabinet Style	Approx. Shipping Weights (lbs.(kg))	Heat Loss watts (BTU/hr)
VOLTS	AMPS			
24Vdc	50	5070	232 (105)	231 (789)
	75	5070	251 (114)	344 (1174)
	100	5070	269 (122)	457 (1558)
	125	5030	392 (178)	569 (1943)
	150	5030	413 (187)	682 (2328)
	200	5030	479 (217)	908 (3098)
	250	5030	658 (298)	1133 (3868)
	300	5030	670 (304)	1359 (4638)
	400	163	1150 (522)	1810 (6178)
	500	163	1300 (590)	2261 (7717)
48Vdc	600	163	1530 (694)	2712 (9257)
	800	198	2020 (916)	3614 (12336)
	1000	198	2440 (1107)	4516 (15416)
	50	5070	257 (117)	311 (1061)
	75	5070	305 (138)	463 (1582)
	100	5070	327 (148)	616 (2103)
	125	5030	461 (209)	769 (2624)
	150	5030	471 (214)	921 (3145)
	200	5030	535 (243)	1227 (4187)
	250	5030	750 (340)	1532 (5229)
130Vdc	300	5030	816 (370)	1837 (6272)
	400	163	1100 (499)	2448 (8356)
	500	163	1350 (612)	3058 (10440)
	600	198	1600 (726)	3669 (12524)
	800	198	2020 (916)	4890 (16693)
	1000	198	2400 (1089)	6111 (20861)
	25	5070	261 (118)	279 (953)
	30	5070	261 (118)	334 (1140)
	40	5070	300 (136)	443 (1513)
	50	5070	333 (151)	553 (1887)
260Vdc	75	5070	407 (184)	826 (2821)
	100	5030	629 (285)	1100 (3755)
	125	5030	661 (300)	1376 (4690)
	150	5030	663 (301)	1647 (5624)
	200	5030	746 (338)	2195 (7492)
	250	163	1130 (513)	2742 (9360)
	300	163	1330 (603)	3289 (11229)
	400	163	1580 (717)	4384 (14965)
	500	198	2150 (975)	5478 (18702)
	600	198	2650 (1202)	6573 (22439)
5070	800	198	3250 (1474)	8762 (29912)
	16	5070	344 (156)	312 (1064)
	25	5070	372 (168)	484 (1652)
	50	5030	683 (309)	963 (3286)
	75	5030	725 (329)	1441 (4920)
	100	5030	819 (371)	1920 (6553)
	150	163	1319 (598)	2877 (9820)
	200	163	1502 (681)	3834 (13088)
5030	300	198	2323 (1053)	5748 (19622)
	400	198	2428 (1101)	7662 (26156)



HOW TO SIZE YOUR BATTERY CHARGER (Simplified Formula)

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

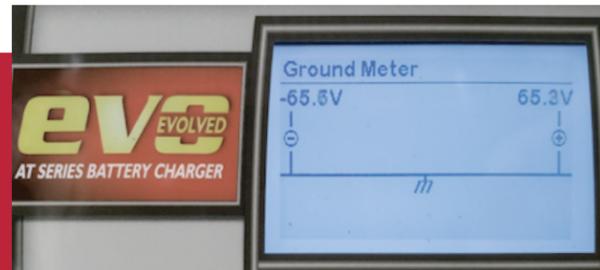
STANDARD FEATURES



“What’s
in the
box?”

ATevo comes with a host of standard features and software capabilities.

Explore what these features will do for you.



ALARMING (DIAGNOSTIC) CAPABILITY

ATevo provides you with advanced alarming capability right out of the box that will meet most utility specifications and requirements. An LED indicator light comes standard with HVDC, LVDC, dc output failure, ac input failure, and (+)/(-) ground fault.

- High DC Voltage
- Low DC Voltage
- DC Output Failure
- AC Input Failure
- Ground Fault
- Summary
- High Level Detect
- Low Level Detect
- SCR Failure
- Rectifier
- Over-temp
- AC Ripple
- Relay Failure
- Open Breaker
- Open External and Internal Feedback
- End of Discharge
- Battery Open Alarm
- Current Limit

The ATevo allows users to aggregate alarms by high priority alarm and low priority alarm. This allows users to customize alarm groupings based on their interpretation of priority requiring attention.

EVENT LOGGING

Don't miss a thing! ATevo can log up to 1024 events such as alarms and/or parameter changes.

GRAPHICAL LED DISPLAY

ATevo's easy to use interface gives you all the information you need with no guess-work.

GROUND FAULT METERING

Standard, digital, zero-center voltmeter alerts users of any imbalance on the DC bus.

SECURITY

Three levels of password protected security prevents unauthorized users from changing any settings on the ATevo charger.

LOCAL & REMOTE VOLTAGE SENSE

Allows the charger to read the battery terminal voltage.

BATTERY OPEN ALARM

Ensures battery continuity and alerts you should the charger not be connected to a battery.

DYNAMIC CURRENT LIMIT

Prevents rectifier components from failing in ambient temperatures above 50°C. Note: not available on 30 to 100 amp chargers.

UNIVERSAL CONTROL BOARD

No more overstocked boards. The main control board is not voltage specific and can operate for any ATevo charger.

STANDARD FILTERING

Definitions are consistent with current NEMA PE5 standards. The standard DC output filter reduces the output ripple voltage to less than 30mVrms through 48 Vdc, less than 100mVrms for 130Vdc batteries, when measured at the battery terminals with a battery connected.

ELIMINATOR (OPTIONAL)

30mV without battery for 24Vdc and 48Vdc chargers.
100mV without battery for 130Vdc chargers.
200mV without battery for 260Vdc chargers.

* 260Vdc chargers only available with eliminator filtering.

SUPER FILTERING (OPTIONAL)

30mV on battery only for 130Vdc chargers.

CIRCUIT BREAKER PROTECTION

ATevo comes factory equipped with thermal magnetic or hydraulic magnetic breakers for both the AC input and DC output. Optimal Ampere Interrupting Capacity (AIC) ratings that are higher than standard are available.

Refer to circuit breaker table document [JF5072-00](#) for a full list of AIC ratings. Please note that certain size chargers do not offer optimal AIC ratings.

ADVANCED OPTIONS

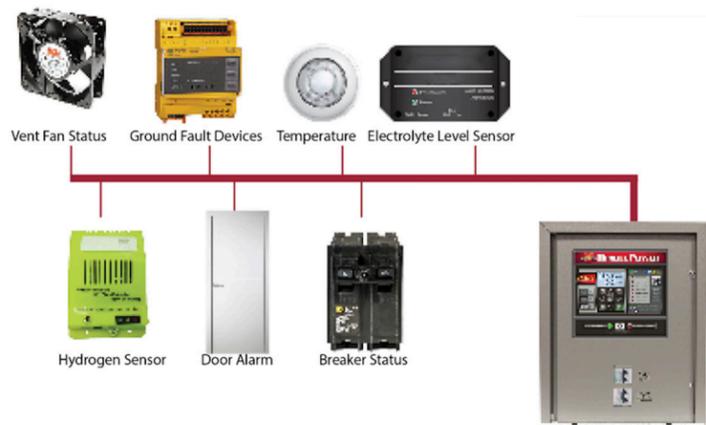


AUXILIARY INPUT/OUTPUT (I/O) BOARD

ATevo now becomes the central point of your DC system. The optional Auxiliary I/O Board (A4) gives users the ability to monitor status of third party equipment. It is equipped with:

- (6) programmable alarm relays
- (4) programmable generic binary inputs
- (4) programmable generic analog inputs

Up to 2 auxiliary input/output boards may be installed in an ATevo charger.



EJ5301-##

PROGRAMMABLE ALARM RELAYS

- *Relays are rated for 0.5A @ 125Vac/Vdc
- Change states based on any alarm condition or status point
- Can be configured to be latching or non-latching
- Adjustable time delay

PROGRAMMABLE GENERIC BINARY INPUTS

- The four (4) binary inputs are optically isolated from ATevo and each other
- Input can be user configured for 12, 24, 48, or 130Vdc thresholds
- Can be configured to be active high or active low, and generate alarms and controls such as charger shut-down
- Typical uses include remote shut-down, electrolyte level, ventilation fan failure, & more...

PROGRAMMABLE GENERIC ANALOG INPUTS

- The four (4) analog inputs are rated for 0-10Vdc and are referenced to ATevo DC (-)
- Analog inputs can be scaled to report and alarm in primary values.
- Uses may include: AC voltage, AC current, and temperature transducer inputs

BATTERY TYPE ALARM TERMINAL BLOCK

Features a separate molded phenolic terminal block, wired directly to the Auxiliary Alarm Relay PC Board. It allows the user to connect remote alarm wiring with ring or fork type lugs. The terminals accept wire sizes #16 to #14 AWG.

EJ5130-##

COMMUNICATIONS

ATevo communication options allow users to remotely observe any status or perform any function that is accessible at the charger's front panel display. Multiple communication options are available as follows:

SERIAL COMMUNICATIONS ADAPTER

- Allows connections to either RS-232 or RS-485 networks
- Supports DNP3 Level 2 and Modbus Protocols

EN5034-##

ETHERNET COMMUNICATIONS ADAPTER

- Supports standard RJ45 10/100 Mbps copper Ethernet connections
- ATevo can support one (1) Ethernet Communication Adapter
- Supports DNP3 Level 2 and Modbus Protocols simultaneously

EN5035-##

IEC 61850 COMMUNICATIONS ADAPTER

- IEC 61850 communications capability, an international standard defining communication protocols for intelligent devices used in electrical substations

EJ5701-##

HINDLEHEALTH PLUS

Much more than just a battery charger. **HindleHealth Plus** gives you all the benefits of the HindleHealth System, and now extends it to your battery. This optional feature will give you the ability to:

- Accurately measure float current
- Measure battery charge and discharge current
- Measure ripple voltage and current
- Measure battery and ambient temperature



UPCOMING FEATURE

These features allow for better visibility on the health of your battery ensuring it will respond when needed.

* Higher current rating available upon request.

Note: -## indicates additional part numbers specific to model ranges. Consult factory for additional information.

ADDITIONAL ACCESSORIES & ENCLOSURE OPTIONS



<p>AC LIGHTING ARRESTOR Recommended for installations with risk of frequent AC surges, such as high elevations or severe weather. Is in accordance with IEEE 472 requirements.</p>	EJ5308-##						
<p>TEMPERATURE COMPENSATION & BATTERY TEMPERATURE/ALARM Adjusts the dc output in response to battery temperature fluctuations. Consists of an external temperature probe mounted on or near the battery. Useful for all battery types with available probe lengths of 25, 50, 100 and 200 ft. Displays battery temperature on charger LCD display and can trigger alarm.</p>	EJ5304-##						
<p>FORCED LOAD SHARE Provides for equal load sharing of 2 identical chargers in parallel, allowing for system redundancy.</p>	EJ5306-##						
<p>AC/DC CIRCUIT BREAKER AUXILIARY CONTACTS Allows for remote indication of breaker position.</p>	EJ1075-##						
<p>SD MEMORY CARD Allows user to copy data from event log and used for firmware updates.</p>	PM5020-##						
<p>HEAT SHRINK WIRE MARKERS Provides the additional durability of heat shrink wire markers on the ends of each wire and corresponds to the schematic.</p>	EJ1076-##						
<p>AC METERING Displays AC voltage, current, and frequency on the charger's existing digital LCD display.</p>	EJ5303-##						
<p>FAN CONTROLLER Mounted in a separate NEMA 1 enclosure, this option provides a contactor that will close once the charger is in equalize or a adjustable bus voltage threshold has been surpassed.</p>	10A EJ5017-2# 20A EJ5017-3#						
<p>TRANSDUCERS Capability to transmit analog outputs as selected for either 4-20 mA, 0-5VDC, 0-10VDC for each of these measurements:</p>	<table border="1"> <tr> <td>AC Voltage</td> <td>DC Voltage</td> </tr> <tr> <td>EJ5316-##</td> <td>EJ5318-##</td> </tr> <tr> <td>EJ5317-##</td> <td>EJ5319-##</td> </tr> </table>	AC Voltage	DC Voltage	EJ5316-##	EJ5318-##	EJ5317-##	EJ5319-##
AC Voltage	DC Voltage						
EJ5316-##	EJ5318-##						
EJ5317-##	EJ5319-##						

<p>NEMA 2 DRIP SHIELD Provides a drip shield on the enclosure to protect it from falling dirt and/or dripping water.</p>	E10191-##						
<p>NEMA 4 ENCLOSURES All-weather enclosures. Will also accommodate NEMA 12 and 13.</p>	CONSULT FACTORY						
<p>RELAY RACK MOUNTING Available for 5054 and 5070 enclosures. These mounting devices are useful for 23"/24" relay racks.</p>	E10193-##						
<p>FLOOR STANDS Allows for floor mounting of smaller, typically wall-mounted enclosures. These stands universally allow for the base of the charger to be approximately 44 inches/1.2m from the base or floor.</p>	E10192-##						
<p>WALL MOUNTING BRACKETS Allow for wall mounting of typically floor mounted enclosures. These brackets are limited to 5070 enclosures.</p>	E15008-##						
<p>LOCKING PROVISIONS Extra security by physically locking the front door.</p>	<table border="1"> <tr> <td>Padlock</td> <td>Keylock</td> </tr> <tr> <td>E10215-05</td> <td>E10215-16</td> </tr> </table>	Padlock	Keylock	E10215-05	E10215-16		
Padlock	Keylock						
E10215-05	E10215-16						
<p>CUSTOM COLORS & TOUCH UP PAINT All ATevo enclosures feature an ANSI 61 gray epoxy powdercoat finish. Custom color options are available upon request. Please provide either ANSI, PMS, or RAL color desired.</p>	CONSULT FACTORY						
<p>CABINET HEATERS Provide for anti-condensation heating of the battery charger cabinet.</p>	EJ5156-##						
<p>INSECT/RODENT/SNAKE SCREENING Provides an added protective screen device that inhibits the entrance of insects, reptiles, and small animals in a NEMA 1 or NEMA 2 enclosure.</p>	EJ1076-##						
<p>CIRCUIT BREAKER INTERLOCKS An added measure of protection that allows the operator to open the battery charger door only when the AC and DC breakers are open.</p>	EJ5311-##						
<p>COPPER GROUND BUS Offers a convenient means to tie the ATevo to the building's ground.</p>	E15098-##						
<p>INTERNAL COATINGS Fungus proofing, anti-static, and conformal.</p>	<table border="1"> <tr> <td>Fungus Proofing</td> <td>Anti-Static</td> <td>Conformal</td> </tr> <tr> <td>EJ1076-00</td> <td>EJ1076-01</td> <td>EJ1076-03</td> </tr> </table>	Fungus Proofing	Anti-Static	Conformal	EJ1076-00	EJ1076-01	EJ1076-03
Fungus Proofing	Anti-Static	Conformal					
EJ1076-00	EJ1076-01	EJ1076-03					

ATEVO ORDERING CODE



SAMPLE CODE															
A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R
A	ATEV														
B	Number of input phases	1	Single Phase												
		3	Three Phase												
C	Nominal DC Output Voltage	024	24 Vdc												
		048	48 Vdc												
		130	130 Vdc												
		260	260 Vdc												
D	Nominal DC Output Current (refer to page 3)	006	6 Adc	125	125 Adc										
		012	12 Adc	150	150 Adc										
		016	16 Adc	200	200 Adc										
		020	20 Adc	250	250 Adc										
		025	25 Adc	300	300 Adc										
		030	30 Adc	400	400 Adc										
		040	40 Adc	500	500 Adc										
		050	50 Adc	600	600 Adc										
		075	75 Adc	800	800 Adc										
		100	100 Adc	1k0	1000 Adc										
E	DC Output Filtering	F	Standard Filter												
		E	Eliminator Filter*												
		S	Super Eliminator												
F	AC Input Supply Voltage	120	120V 60 Hz**												
		208	208V 60 Hz												
		240	240 60 Hz												
		480	480 60 Hz												
		600	600 60 Hz												
		220	220V 50/60 Hz												
		380	380V 50/60 Hz												
		416	416V 50/60 Hz												
		MT1	120/208/240 60 Hz***												

*260Vdc only available with eliminator filter
 **120Vac not available on 130Vdc for 30A, 50A, and 75A units
 ***Multi-tap input only available on single-phase units 25A or less

DESCRIPTION	CODE	FEATURE	
G	AC Input Protection ****	S	Standard AIC
		M	Medium AIC
		H	High AIC
		U	Ultimate AIC
H	DC Output Protection ****	S	Standard AIC
		M	Medium AIC
		H	High AIC
		U	Ultimate AIC
J	Auxiliary I/O PC Boards (refer	X	No Aux I/O Board Supplied
		1	One Aux I/O Board
		2	Two Aux I/O Board
		3	Three Aux I/O Board (Consult Factory)
		4	Four Aux I/O Board (Consult Factory)
		A	One Aux I/O Board w/ Barrier Terminal Blocks
		B	Two Aux I/O Board w/ Barrier Terminal Blocks
		C	Three Aux I/O Board w/ Barrier Terminal Blocks (Consult Factory)
		D	Four Aux I/O Board w/ Barrier Terminal Blocks (Consult Factory)
K	Remote Communications	X	No Remote Communications Supplied
		1	Serial Communications Module
		2	Ethernet Communications Module
		3	Both Serial & Ethernet Communications Module
		4	IEC 61850 Communications Module
		5	Custom Communications (Consult Factory)
L,M,N	For Future Use		
P	HindleHealth Plus	X	No Hindle Health Plus Supplied
		****	Hindle Health Plus Supplied
Q	Site Wiring Protection	X	Standard Internal CU-AL Compression Box Lug Supplied
		G	Copper Ground Bus Bar Supplied
		L	AC Input Lightning Arrestor Supplied
		B	Both Ground Bus (G) and Lightning Arrestor (L) Supplied
R	Enclosure Type	1	NEMA Type 1 (Standard)
		2	NEMA Type 2 Drip Shield Mounted to Standard NEMA Type 1 Enclosure
		4	Special NEMA Type 4 (12) Water-Proof Cabinet (Vented & Fan Cooled)

**** AC and DC breakers must match for chargers in a 5054 enclosure
 ***** For future use