

STANDARD FEATURES



- 5 Year Product Warranty
- Universal main control board operates in any AT Series charger
- Alarm assembly with local LEDs and summary relay contact for AC Failure, DC Failure, High Vdc, Low Vdc, Positive(+) and Negative(-) ground fault
- High DC voltage shutdown
- Forced load share during parallel operation
- Float/equalize selector switch with indicating lights
- Manual equalize timer (0-255 hr.) with indicating lights
- AC line failure automatic equalize timer (0-255 hr.) with indicating light
- AC On indicating light
- 1% Digital LED meter for Vdc, Adc, timer hours and alarm settings
- AC input and DC output circuit breakers

- Membrane front panel
- Front panel controls can be disabled for security
- A redundant analog circuit for LDCV alarm, independent of the microprocessor
- Redundant control loops for higher reliability
- Local or remote voltage sense with redundancy to protect against remote sense failure
- Self-diagnostics
- Input & output MOV surge suppressors
- Reverse polarity protection via free wheeling diodes
- CU-AL I/O compression lugs
- Switchboard wire, UL VW-1
- Enclosure pre-treated using a 5-stage iron phosphate process with baked epoxy powder coating in ANSI 61 gray

Safety and Acceptance

- Meets NEMA PE 5-1996, PE 5-1997 (R2003) specification
- NEMA-1/IP20 type standard enclosure
- Third party agency approvals:



CSA C22.2 - NRTL/C · UL 1012/UL 1564 compliant
Seismic qualified
ABS · CE certification available upon request

- Made in USA 

Environmental

- Operating Ambient Temperature 0°F to 122°F (-18°C to 50°C) w/o derating
- Operating Altitude 10,000 feet (3,000 meters) above sea level w/o 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

SPECIFICATIONS

AC Input

- **Group 1 (6-25 Adc) Voltage:**
120/208/240Vac (multi-tap) 60Hz
480Vac 60Hz
220Vac, 380/416Vac 50/60Hz
550-600 Vac 60Hz
- **Group 2 (30-100 Adc) Voltage:**
120, 208, 240 or 480Vac 60Hz
220Vac, 380 or 416Vac 50/60Hz
550-600 Vac 60Hz
- **Input Voltage Tolerance:**
+10%, -12%
- **Input Frequency Tolerance:**
±5%
- **Efficiency:**
85-90% typical for 130Vdc at 50-100% load

DC Output

- **Voltage Ratings:**
12, 24, 48, or 130Vdc nominal
- **Current Ratings:**
GROUP 1: 6, 12, 16, 20, 25Adc
GROUP 2: 30, 40, 50, 75, 100Adc
- **Continuous Rating:**
110% rated current at maximum equalize voltage at 50°C
- **Current Limit Adjustment Range:**
50% to 110% rated output
- **Voltage Regulation:**
±0.25% for line, load and temp. variations
*Regulation at max. equalize voltages may not meet ±0.25%
- **Electrical Noise:**
32dBrc
- **Ripple:**
12/24/48Vdc
 - Unfiltered on battery 1% Vrms
 - Filtered on battery 30mVrms
 - Filtered off battery 1% Vrms
 - Battery Eliminator 30mVrms
- 130Vdc
 - Unfiltered on battery 2% Vrms
 - Filtered on battery 100mVrms
 - Filtered off battery 2% Vrms
 - Battery Eliminator 100mVrms
- **Surge Withstand Capability:**
Meets IEEE-472, ANSI C37.90a



Cabinet Style 586



Cabinet Style 594



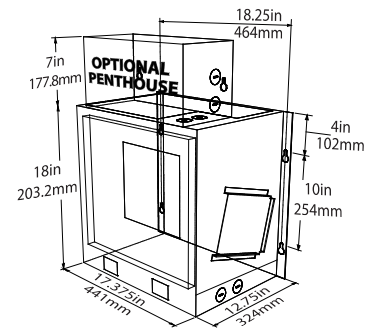
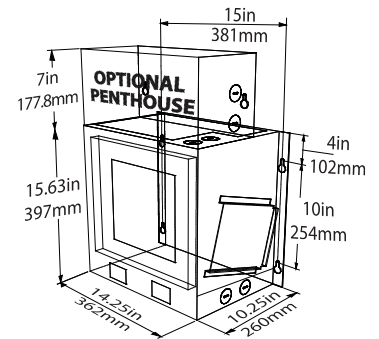
Cabinet Style 5017



Cabinet Style 5018

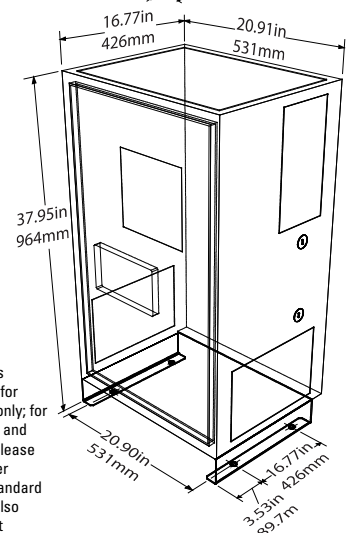
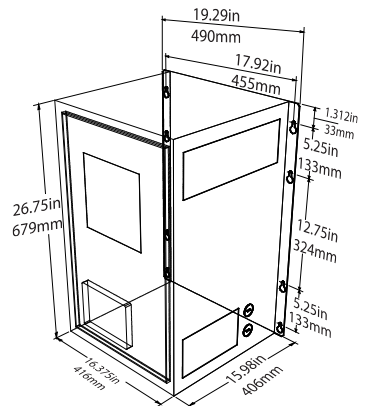
GROUP 1

6-25Adc



GROUP 2

30-100Adc



*NOTE:
Dimensions shown are for reference only; for installation and mounting please refer to user manual. Standard drawings also available at www.atseries.net

SPECIFICATION CHART

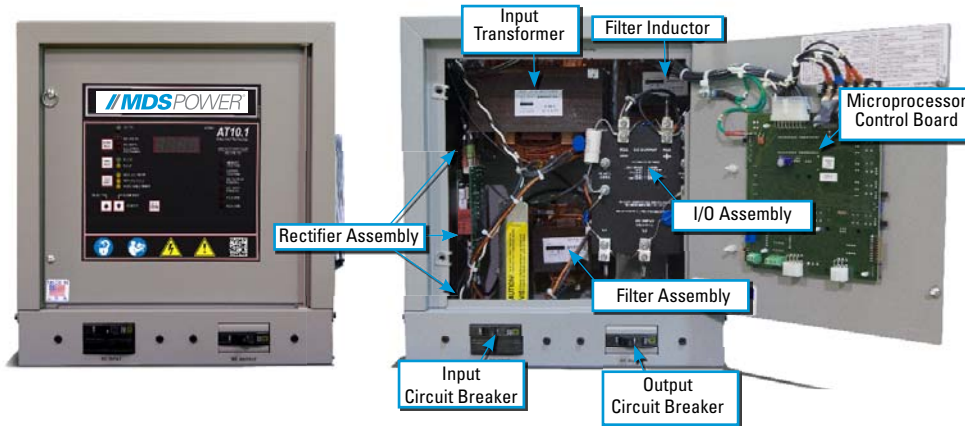
	DC Output Rating		AC Input Ampere Rating <small>Based on maximum rms value of the input current delivered to the charger under all operating conditions within manufacturer's specifications</small>								Battery Charger AC Circuit Breaker Ampere Rating <small>(standard AIC breakers)</small>								DC Circuit Breaker Rating	Cabinet Style	Approx. Shipping Weights lbs.(kg)	Heat Loss Watts (BTU/hr)
	Volts	Amps	120	208	220	240	380	416	480	600	120	208	220	240	380	416	480	600				
			Vac	Vac	Vac	Vac	Vac	Vac	Vac	Vac	Vac	Vac	Vac	Vac	Vac	Vac	Vac	Vac				
Float Adjust 11.0- 14.5Vdc Equalize Adjust 11.7- 15.5.0Vdc Extended Equalize to 16Vdc*	12Vdc GROUP 1	6	3	2	2	1	1	1	1	1	10	10	10	10	2	2	2	15	10	586	83 (38)	31 (105)
		12	3	2	2	2	2	2	1	1	10	10	10	10	4	4	2	15	20	586	87 (40)	58 (199)
		16	4	2	3	2	2	2	1	1	10	10	10	10	4	4	2	15	25	586	92 (42)	77 (262)
		20	6	3	3	3	2	2	2	2	10	10	10	10	4	4	3	15	30	586	118 (54)	95 (326)
		25	7	4	4	4	3	2	2	2	10	10	10	10	5	5	4	15	40	586	100 (46)	119 (404)
	12Vdc GROUP 2	30	9	6	5	5	3	3	3	2	15	10	10	10	5	5	5	15	50	5017	184 (84)	142 (483)
		40	11	7	6	6	4	3	3	3	20	10	10	10	5	5	5	15	60	5017	189 (86)	188 (641)
		50	14	8	8	7	5	4	4	3	20	15	15	15	10	10	5	15	80	5017	194 (88)	234 (798)
		75	21	13	12	11	7	6	6	5	35	20	20	20	10	10	10	15	100	5018	199 (91)	350 (1192)
		100	28	16	15	13	10	8	8	8	40	25	20	25	15	15	15	15	150	5018	225 (103)	465 (1587)
Float Adjust 22.0- 29.5Vdc Equalize Adjust 23.4- 31.0Vdc Extended Equalize to 32Vdc*	24Vdc GROUP 1	6	5	3	3	3	2	1	1	1	10	10	10	10	3	3	3	15	10	586	99 (45)	40 (136)
		12	8	5	4	4	3	2	2	1	10	10	10	10	4	4	3	15	20	586	109 (50)	75 (255)
		16	9	6	5	5	4	3	3	2	15	15	15	15	6	6	4	15	25	586	115 (53)	98 (334)
		20	11	7	6	6	5	4	4	3	15	15	15	15	8	8	6	15	30	586	119 (54)	121 (413)
		25	14	9	8	7	6	4	4	4	20	20	20	20	8	8	6	15	40	586	136 (62)	150 (512)
	24Vdc GROUP 2	30	16	8	8	8	5	5	4	4	20	10	10	10	10	10	5	15	50	5017	259 (118)	179 (612)
		40	20	12	12	11	8	7	6	5	25	15	15	15	10	10	10	15	60	5017	267 (122)	237 (810)
		50	26	15	15	14	8	8	7	6	35	20	20	20	10	10	10	15	80	5017	342 (156)	295 (1008)
		75	42	26	23	22	14	13	11	10	70	35	30	35	20	20	15	15	100	5018	355 (162)	441 (1503)
		100	51	25	24	22	14	12	11	11	80	35	30	35	25	25	20	15	150	5018	360 (164)	586 (1999)
Float Adjust 44.0- 58.0Vdc Equalize Adjust 46.8- 59.0Vdc Extended Equalize to 61Vdc*	48Vdc GROUP 1	6	9	5	5	5	4	3	3	2	15	15	15	15	6	6	4	15	10	586	105 (48)	60 (203)
		12	15	9	9	8	5	4	4	3	20	20	20	20	8	8	6	15	20	586	120 (55)	107 (365)
		16	18	12	11	10	7	5	5	4	25	25	25	25	10	10	8	15	25	594	155 (71)	139 (4-73)
		20	23	13	13	12	9	6	6	5	30	30	30	30	13	13	8	15	30	594	170 (78)	170 (581)
		25	29	17	17	16	12	8	8	7	40	40	40	40	15	15	10	15	40	594	180 (82)	210 (717)
	48Vdc GROUP 2	30	28	16	16	15	8	8	7	6	35	20	20	20	15	15	15	15	50	5017	217 (99)	250 (852)
		40	38	22	19	19	12	11	9	8	50	30	25	30	15	15	15	15	60	5017	225 (103)	329 (1122)
		50	52	28	28	26	16	15	12	11	70	35	35	35	20	20	15	15	80	5017	250 (114)	408 (1392)
		75	79	48	43	39	25	22	19	17	100	60	60	60	35	35	25	25	100	5018	433 (197)	606 (2068)
		100	88	50	48	44	28	25	22	19	125	70	60	70	40	40	35	25	150	5018	450 (205)	804 (2743)
Float Adjust 110.0- 140.0Vdc Equalize Adjust 117.0- 143.0Vdc Extended Equalize to 149Vdc*	130Vdc GROUP 1	6	15	9	8	8	5	5	4	4	20	20	20	20	8	8	8	15	10	586	130 (59)	99 (337)
		12	32	18	16	15	10	9	8	7	40	40	40	40	13	13	13	15	20	594	155 (71)	167 (571)
		16	34	20	18	17	11	10	9	8	50	50	50	50	13	13	13	15	25	594	215 (98)	213 (727)
		20	40	24	23	23	15	14	12	11	60	60	60	60	20	20	20	15	30	594	225 (103)	259 (883)
		25	50	30	28	27	18	16	14	12	70	70	70	70	25	25	20	15	40	594	265 (120)	316 (1078)
	130Vdc GROUP 2	30	75	44	42	40	23	22	20	16	100	60	60	60	35	35	25	20	50	5017	285 (130)	373 (1273)
		40	100	59	57	53	35	32	28	17	125	80	80	80	60	60	35	30	60	5018	340 (155)	484 (1664)
		50	N/A	72	68	63	40	36	32	28	N/A	100	100	100	50	50	40	35	80	5018	375 (171)	602 (2054)
		75	N/A	100	83	81	52	47	40	36	N/A	125	125	125	70	70	50	50	100	5018	482 (219)	888 (3030)

*Regulation at max. equalize voltages may not meet ±0.25%

CONFIGURATION

GROUP 1

6-25Adc



Circuit Breaker
AC & DC Ratings

STANDARD

Input: 10kAIC - 240Vac
10kAIC - 480Vac
Output: 10kAIC - 125Vdc*

MEDIUM

Input: 25kAIC - 240Vac
18kAIC - 480Vac
18kAIC - 600Vac
Output: 10kAIC - 250Vdc

HIGH

Input: 65kAIC - 240Vac
25kAIC - 480Vac
18kAIC - 600Vac
Output: 20kAIC - 250Vdc

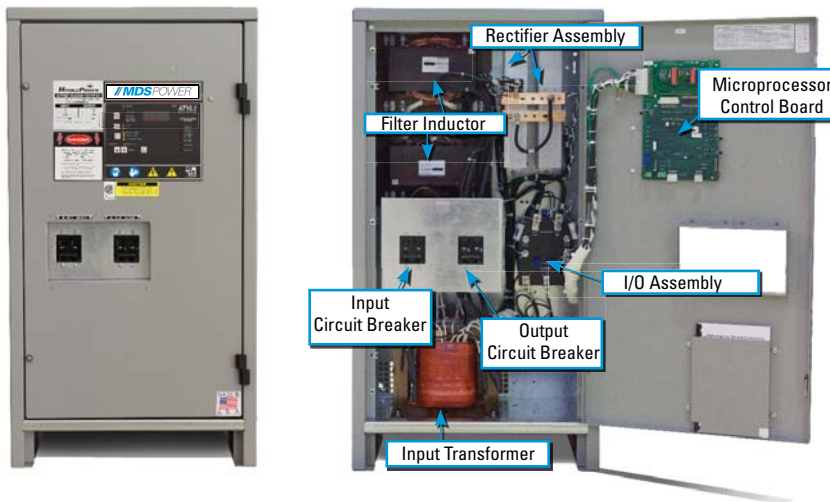
*For chargers 16Adc and larger; consult factory for other ratings.

GROUP 1 (6-25 Adc) - SPECIFICATION TABLE

MODEL#	Output voltage	Output current	Filtr	Input Voltage	Factory configurations & options
AT10					Contact us for configuration

GROUP 2

30-100Adc



Circuit Breaker
AC & DC Ratings

STANDARD

Input: 5kAIC - 120/208/240/480Vac
Output: 5kAIC - 125Vdc

MEDIUM

Input: 25kAIC - 120/208/240/480Vac
18kAIC - 600Vac
Output: 10kAIC - 250Vdc

HIGH

Input: 65kAIC - 120/208/240/480Vac
25kAIC - 600Vac
Output: 20kAIC - 250Vdc

GROUP 2 (30-100 Adc) - SPECIFICATION TABLE

MODEL#	Output voltage	Output current	Filtr	Input Voltage	Factory configurations & options
AT10					Contact us for configuration

CUSTOMIZE YOUR AT10.1

Summary of options

- DC output filtering: per NEMA PE5 1996, standard and battery eliminator
- Medium & High AIC Breakers
- Auxiliary alarm relay board
- Copper ground bus
- AC lightning arrestor
- Fungus proofing (tropicalization)
- Static proofing
- Communications module: DNP3 Level 2 or MODBUS protocols
- Battery temperature compensation
- Fan control contactor
- Mechanical lock for front door
- Custom Paint
- NEMA 4 (12) type enclosure w/fan
- Rack mounting
- Wall mounting
- Floor mounting stand
- NEMA Type 2 Drip Shield
- Barrier type alarm terminal block
- Forced load share cable
- End of discharge alarm
- Battery discharge alarm
- Zero-center ground detection meter
- Analog AC voltmeter
- Analog AC ammeter
- Cabinet heater assembly
- CE marking upon request
- ABS certification upon request
- Custom drawing package w/ optional DWG and PDF files

Filtering - Standard

Output filtering is essential whenever there is need for low ac ripple and low noise on the dc bus for critical loads. The standard dc output filtering limits ripple to no more than 30mV RMS on 12, 24 & 48Vdc units, and 100mV RMS on 130Vdc units, measured at the battery terminals. This feature meets the specifications of NEMA standard PE5-1996, and is recommended for installations using VRLA or gelled electrolyte batteries.



Filtering - Battery Eliminator

An additional "battery eliminator" feature is also available, meeting the specifications of NEMA standard PE5-1996 with no battery connected, measured at the dc output terminals. This feature is recommended for sites where the battery may occasionally be disconnected from the dc bus for maintenance. Additional filtering is essential to limit ac ripple and noise for critical dc loads.

Medium & High AIC Breaker

This feature provides thermal-magnetic circuit breakers with higher Ampere Interrupting Capacity ratings than the standard. See the tables on Page 10 and 11 for Group 1 and Group 2 medium and high AIC breaker ratings. For AT10.1 Group 1, ac and dc breakers ratings must be ordered together, and are supplied in a separate penthouse enclosure. For Group 2, ac and dc breakers can be specified separately and are supplied in the standard cabinet.



Copper Ground Bus

This option provides a convenient means to tie the AT10.1 to the site building ground. A copper ground bus bar is provided at the I/O terminal, with an extra CU-AL compression box lug.



Auxiliary Alarm Relay Board

The AT10.1 features several industry-standard alarms, with individual LED indicators on the front instrument panel, and are accessible to the user via one (1) Summary Alarm contact on the Main Control PC Board. This feature provides a separate user-accessed pc board, featuring discreet two (2) form-C relay contacts for all six (6) alarms. In AT10.1 Group 1 ratings, the board is supplied in an additional penthouse enclosure. In AT10.1 Group 2 ratings, it is supplied within the standard enclosure.



Communications

This option allows full remote monitoring of the AT10.1 and control of the front panel features, using MODBUS or DNP3 Level 2 protocols. Standard serial connections are provided for use with local SCADA systems.

Additional Ethernet and Fiber Optics Modem interfaces are also available for use with the AT Communications option. Contact factory for part number.



CUSTOMIZE YOUR AT10.1 - PAGE 2

AC Lightning Arrestor



This options features an industrial-grade surge arrester in polycarbonate housing, rated for 20,000 Amperes. It is recommended for installations with risk of frequent ac surges, such as high elevations or severe weather.

Temperature Compensation



Supplied in a kit, this option adjusts the AT10.1 dc output voltage up or down, in response to battery temperature fluctuations. Temperature is measured by an epoxy-enclosed thermistor. This probe is mounted on or near the battery, and connected by a cable to the Main Control PC Board. It is compatible with both lead-acid and nickel-cadmium batteries, and recommended for VRLA batteries. Cable lengths of 25, 50, 100, and 200 ft are available.

NEMA Type 4 Cabinet



With this accessory, a fully assembled standard AT10.1 NEMA-1 vented enclosure is installed within another gasketed, sealed cabinet. The combined assembly meets the NEMA Type 4 (and therefore Type 12 and 13) enclosure specification. All ratings feature forced cooling, with user-supplied 120Vac for the fan.

NEMA Type 2 Drip Shield



Standard AT10.1 battery chargers are supplied in NEMA Type 1 vented enclosures. The optional drip shield prevents overhead water and small falling particles from entering the top vented panels, protecting internal equipment from damage. The combined standard enclosure and drip shield meets the NEMA Type 2 specification.

Rack Mounting Brackets



These accessories are provided when the AT10.1 enclosure is to be installed into a standard EIA relay rack. Smaller AT10.1 models may be installed into 19in racks, and all AT10.1s may be installed into 23in or 24in relay racks. All hardware is included for assembling the brackets to the AT10.1. Relay rack mounting hardware is user-supplied.

Floor Stand



This accessory is provided with smaller wall-mounted AT10.1 chargers when a vertical surface is not desired. The assembly mounts the AT10.1 approximately 44in / 1.12m from the floor. The kit features mounting brackets, assembly hardware to secure the AT10.1 to the brackets, and user instructions with a drilling pattern. Floor mounting anchor bolts are still user-supplied.

AT-DC Distribution Panel



This product augments AT10.1 with a customized dc distribution panel for user-specified loads. The AT-DC is configurable to various combinations of main and branch breakers. The AT-DC panel is optimally supplied from the factory, mounted to the AT10.1 and pre-wired to the charger's dc output terminals. For additional product details, including applicable 3rd party agency approvals, refer to the AT-DC literature (JF5032-00).

Fan Control Contactor



Lead-acid batteries produce hydrogen gas. This small wall-mounted external accessory provides a relay contactor to activate a battery installation vent or exhaust fan. Available in 10A or 20A models, the accessory is factory-set to provide relay closure when the AT10.1 enters into Equalize mode.