AT10.1 Series
Float Battery Chargers

UL-1564 CSA-C22.2 Seismic Zone 4 Qualification NRTL

saft

November 2005

AT10.1

APPLICATIONS

Utility & communications
- Power Generation
- Substations
- Microwave relay sites
- Switchgear

Manufacturing
- Emergency DC power
- DC operated breakers
- Alarm systems

Commercial
- Alarm systems
- Uninterruptible power systems
- DC control systems

Transportation
- Signal systems
- Switchgear
- Alarm systems

DESIGN FEATURES

Modular construction
- Rectifier, microprocessor control, input/output, power transformer, filter and alarm assemblies are all modular and easily replaceable.

Thirty-year life
- All units are engineered for a greater than 30-year life with an MTBF of 100,000 hours.

Field service less than 60 minutes
- For fast service, enclosure and instrument panel are easily removable without disturbing chassis or installed conduit. Schematic and diagnostic information plates are mounted on enclosure. Modular construction and self-diagnostics result in an MTTR of less than 60 minutes.

Install on wall, stand or rack
- Units are easily wall mounted, with the exception of larger units which are floor mounted. Floor stands or rack-mounting provisions are optional.

Fast, online adjustment
- Control, alarm and operating level set points are adjusted digitally from the front panel while online, without the need to vary loads or external conditions.

Engineered for safety and acceptance
- NEMA compliant
- UL-1564 NRTL
- CSA C22.2 certified
- CE/IEC compliant
- Meets FCC requirements for part 15 subpart J class A
- Seismic zone 4 analyzed/qualified

A combination of advanced technology microprocessor control and performance-engineered modular construction make AT10.1 Series chargers and rectifiers easy to set up, easy to operate, and easy to maintain.

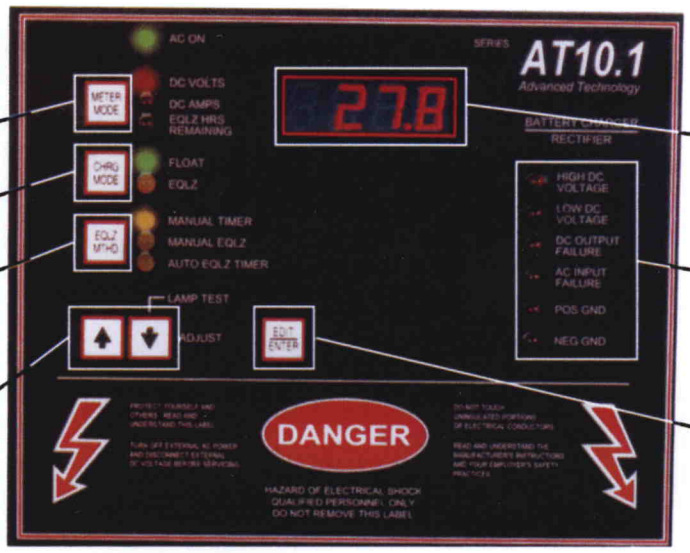
Microprocessor circuits control virtually all functions and settings through front panel switches.

Press to choose digital display of Volts/Amps/Equalize hours remaining.

Press to select float or equalize mode.

Choose from three equalize methods: continuous, timed, or automatically timed after AC interrupt.

Press to adjust voltage settings or timer hours when in EDIT mode. Press to test LED lamps when in normal mode.



1% digital meter shows voltage, amperage and hours. Also displays self-diagnostics error codes.

LED lamps indicate abnormal conditions. A summary relay contact or optional individual relay contacts provide remote indication.

Press to switch to EDIT mode and to ENTER voltage settings and timer hours.

All controls can be disabled for tamper-free operation. Operational conditions remain displayed.

AT10.1

GROUP I

The classic model
- with output ratings to 25 Amperes -
now with more features!

Cabinet Style 586

Cabinet Style 594

AT10.1 Group I: Input, Output, Heat Loss, Cabinet Style & Shipping Weight

Ampere Rating	6A	12A	16A	20A	25A
AC Input Voltage	120 208 240 480	120 208 240 480	120 208 240 480	120 208 240 480	120 208 240 480
Output Voltage: 12Vdc		Float Adjust: 11.5-14.5Vdc		Equalize Adjust: 12-15.5Vdc	
AC Input Amperes (Nominal)	1.4 - 0.9 - 0.8 - 0.4	2.6 - 1.5 - 1.4 - 0.7	3.6 - 2.1 - 1.8 0.9	4.2- 2.4 - 2.1 - 1.1	5.3 - 3.1 - 2.7 - 1.4
AC Input Circuit Breaker (120V)	10A	10A	10A	10A	10A
DC Output Circuit Breaker	15A	20A	25A	30A	40A
Heat Loss - Watts (BTU/hr.)	43 (146)	77 (264)	100 (341)	123 (420)	151 (517)
Cabinet Style	586	586	586	586	586
Shipping Weight, lb. (kg)	44 (20)	44 (20)	67 (30)	67 (30)	67 (30)
Output Voltage: 24Vdc		Float Adjust: 23 - 29.5Vdc		Equalize Adjust: 24 - 31Vdc	
AC Input Amperes (Nominal)	3.2 - 1.8 - 1.6 - 0.8	6.0 - 3.5 - 3.0 - 1.5	7.8 - 4.5 - 3.9 - 2.0	9.6 - 5.5 - 4.8 - 2.4	12 - 6.9- 6.0 - 3.0
AC Input Circuit Breaker (120V)	10A	10A	15A	15A	15A
DC Output Circuit Breaker	15A	20A	25A	30A	40A
Heat Loss - Watts (BTU/hr.)	56 (190)	94 (321)	120 (409)	146 (497)	178 (609)
Cabinet Style	586	586	586	586	586
Shipping Weight, lb. (kg)	44 (20)	58 (26.3)	75 (34)	75 (34)	75 (34)
Output Voltage: 48Vdc		Float Adjust: 46 -58Vdc		Equalize Adjust: 48 - 61Vdc	
AC Input Amperes (Nominal)	6.5 - 3.8 - 3.3 - 1.7	12 - 6.9 - 6.0 - 3.0	16 - 9.2 - 8.0 - 4.0	20 - 12 - 10 - 5.0	25 - 14 - 13 - 6.3
AC Input Circuit Breaker (120V)	10A	20A	20A	25A	30A
DC Output Circuit Breaker	15A	20A	25A	30A	40A
Heat Loss - Watts (BTU/hr.)	80 (274)	127 (433)	158 (538)	188 (643)	229 (781)
Cabinet Style	586	586	594	594	594
Shipping Weight, lb. (kg)	58 (26)	75 (34)	110 (50)	110 (50)	110 (50)
Output Voltage: 130Vdc		Float Adjust: 115 - 140Vdc		Equalize Adjust: 124 - 143Vdc	
AC Input Amperes (Nominal)	12 - 6.9 - 6.0 - 3.0	26 - 15 - 13 - 6.5	28 - 16 - 14 - 7.0	34 - 20 - 17 - 8.5	43 - 25 - 22 - 11
AC Input Circuit Breaker (120V)	20A	35A	50A	60A	60A
DC Output Circuit Breaker	15A	20A	25A	30A	40A
Heat Loss - Watts (BTU/hr.)	145 (494)	210 (716)	255 (871)	300 (1023)	351 (1199)
Cabinet Style	586	594	594	594	594
Shipping Weight, lb. (kg)	80 (36)	147 (67)	193 (88)	193 (88)	193 (88)

Models with higher ratings: AT 10.1 Group 2 models with single phase ac input ratings, and dc output ratings to 100Adc, described in this brochure; also SCR/SCRF Series models with dc output ratings to 800Adc at 12 through 260Vdc

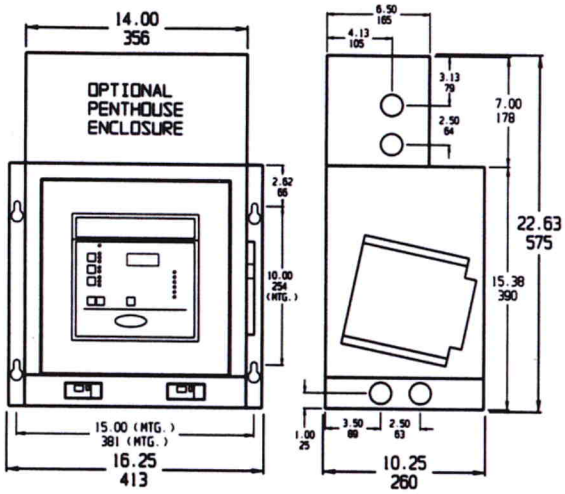
Specifications subject to change.

GROUP I

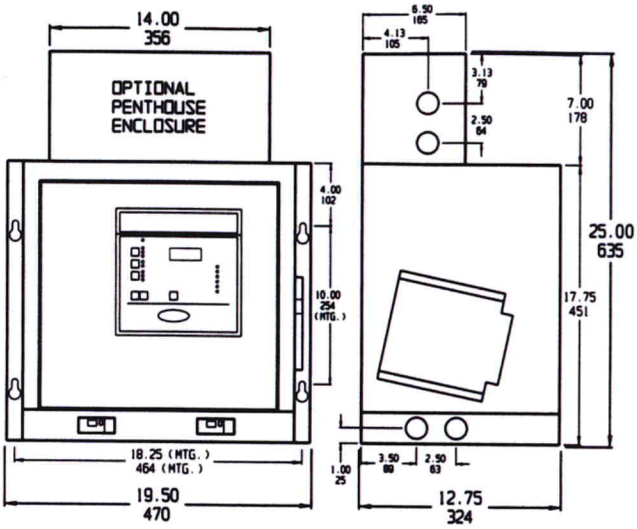
Sample

A	B			C			D	E	F	G	H	J	K
AT10	0	1	2	0	0	6	0	1	1	2	0	0	3

	Description	Code	Feature
A		**AT10**	**AT10 Series**
B	Nominal DC Output Current	012 024 048 130	12Vdc 24Vdc 48Vdc 130Vdc
C	Nominal DC Output Current	006 012 016 020 025	6Adc 12Adc 16Adc 20Adc 25Adc
D	Single Phase Input Voltage	0 1	120/208/240 480
E	Circuit Breaker A/C Rating (AC & DC)	1 2 3	STANDARD - 10KAIC 240Vac; 10KAIC/125Vdc* MEDIUM - 25KAIC/240Vac; 18KAIC/480Vac; 10KAIC/250Vdc HIGH - 65KAIC/240Vac; 25KAIC/480Vac; 25KAIC/250Vdc
F	Filtering	0 1 2	Unfiltered Filtered Eliminator
G	Alarms	2 3 4	Primary Alarm Board Aux. Relay Board, Std. Bkrs Aux. Relay Board, Med/High AIC Bk
H	Lighting Arrestor	0 1	Not Supplied Included
J	Ground Pad	0 1	Not Supplied Included
K	Special Treatments	0 1 2 3	Nothing Fungus Proofing Static Proofing Fungus and Static Proofing



Cabinet Style 586



Cabinet Style 594

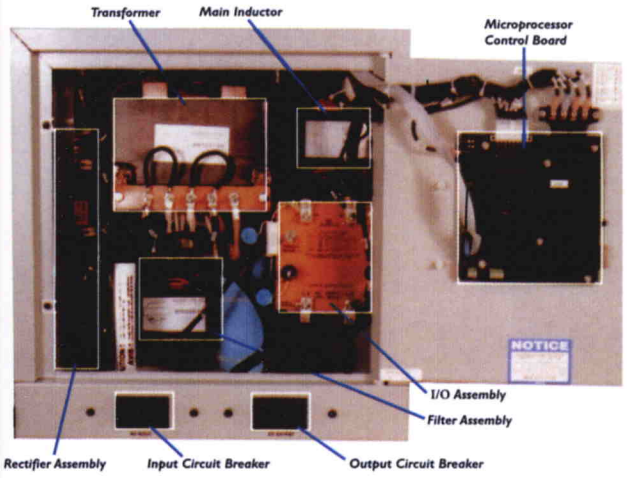
Circuit Breaker AC & DC Ratings:

STANDARD - 10KAIC/240Vac; 10KAIC/125Vdc* (Not for 480Vac)
MEDIUM - 25KAIC/240Vac; 18KAIC/480Vac; 10KAIC/250Vdc
HIGH - 65KAIC/240Vac; 25KAIC/480Vac; 25KAIC/250Vdc
*For chargers 16Adc and larger; consult factory for other ratings.

also

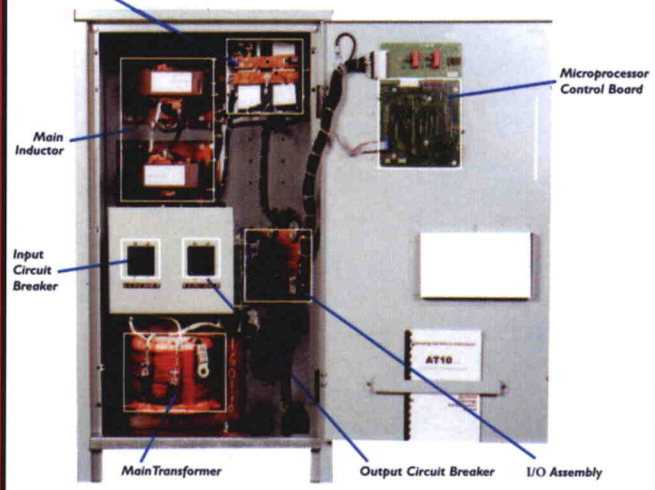
AT10.1

GROUP 1
(up to 25 Amps output)



Typical AT10 Series Internal Construction

GROUP 2
(30 Amps output and above)



Typical AT10 Series Internal Construction

SPECIFICATIONS

AC Input

Voltage:
- 120, 208, 240 Volts 60Hz
- 480Vac 60Hz
- 220Vac 50/60Hz (special order)
- 380/416Vac 50/60Hz (special order)

Input Voltage Tolerance:
- + 10%, -12%

Input Frequency Tolerance:
- ±5%

Power Factor:
- 0.80 typical full load

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

DC Input

Voltage Ratings:
- 12, 24, 48, or 130Vdc nominal

Current Ratings:
- 6, 12, 16, 20, 25, 30, 40, 50, 75, 100Adc

Continuous Rating:
- 110% rated current at maximum equalize voltage at 50°C (122°F)

Voltage Regulation:
- ±0.25% for line, load and temperature variations

Electrical Noise:
- 30mVrms/32dBrnC weighted maximum on filtered units

Surge Withstand Capability:
- Meets IEEE-472/ANSI C 37.90a

STANDARD FEATURES

- 1% Digital LED meter for Vdc, Adc, timer hours and alarm settings
- AC On indicating light
- AC input and dc output circuit breakers
- 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
- Self-diagnostics
- Local or remote voltage sense with redundancy to protect against remote sense failure
- High dc voltage shutdown
- Reverse polarity protection
- Front panel controls can be disabled for security
- MOV surge suppressors, input and output
- I/O compression lugs
- Switchboard wire, UL VW-1
- Membrane front panel
- ANSI 61 gray finish, baked epoxy powder
- Alarm assembly with local LEDs and summary relay contact for ac failure, dc failure, high Vdc, low Vdc, positive and negative ground fault
- Redundant control loops for higher reliability
- A redundant analog circuit for LVDC alarm, totally independent of the microprocessor

OPTIONS/ ACCESSORIES

- Output filter for 30mVrms ripple with battery
- Battery eliminator filter
- Static Proofing
- Individual alarm contacts for each of the alarms
- Input lightning arrestor
- Medium or high AIC circuit breakers
- Temperature compensation via remote probe
- Ground pad with #4 AWG lug
- Fungus proofing (tropicalization)
- Floor stand
- Relay rack mounting
- Drip shield
- Cabinet heater
- NEMA 4 or NEMA 12 enclosures
- Provision for locking front panel
- Communications module utilizing DNP 3 or MODBUS

AT10.1

GROUP 2

Cabinet Style 5017

Expanded output ratings - now to 100 Amperes.

Same great features as Group I!

Cabinet Style 5018

AT10.1 Group 2: Input, Output, Heat Loss, Cabinet Style & Shipping Weight

Ampere Rating	30A	40A	50A	75A	100A
AC Input Voltage	120 208 240 480	120 208 240 480	120 208 240 480	120 208 240 480	120 208 240 480
Output Voltage: 12Vdc		Float Adjust: 11.5-14.5Vdc		Equalize Adjust: 12-15.5Vdc	
AC Input Amperes (Nominal)	7.2 - 4.1 - 3.6 - 1.8	9.6 - 5.5 - 4.8 - 2.4	12 - 6.9 - 6.0 - 3.0	18 - 10 - 8.9 - 4.5	24 - 14 - 12 - 6.0
AC Input Circuit Breaker (120V)	10A	15A	15A	25A	35A
DC Output Circuit Breaker	50A	60A	80A	100A	150A
Heat Loss - Watts (BTU/hr.)	131 (448)	173 (589)	213 (728)	316 (1078)	418 (1428)
Cabinet Style	5017	5017	5017	5018	5018
Shipping Weight, lb. (kg)	130 (59)	145 (66)	160 (73)	205 (93)	280 (127)
Output Voltage: 24Vdc		Float Adjust: 23 - 29.5Vdc		Equalize Adjust: 24 - 31Vdc	
AC Input Amperes (Nominal)	13 - 7.3 - 6.3 - 3.2	17 - 9.7 - 8.4 - 4.2	21 - 12 - 10.5 - 5.3	32 - 18 - 16 - 7.9	42 - 24 - 21 - 10.5
AC Input Circuit Breaker (120V)	20A	25A	35A	40A	70A
DC Output Circuit Breaker	50A	60A	80A	100A	150A
Heat Loss - Watts (BTU/hr.)	162 (554)	209 (714)	259 (885)	379 (1293)	501 (1709)
Cabinet Style	5017	5017	5017	5018	5018
Shipping Weight, lb. (kg)	150 (68)	180 (82)	190 (86)	245 (111)	320 (145)
Output Voltage: 48Vdc		Float Adjust: 46 -58Vdc		Equalize Adjust: 48 - 61Vdc	
AC Input Amperes (Nominal)	23 - 13 - 11 - 5.6	30 -17 - 15 - 7.5	38 - 22 - 19 - 9.4	56 - 33 - 28 - 14.1	75 - 43 - 38 - 19
AC Input Circuit Breaker (120V)	35A	40A	50A	70A	100A
DC Output Circuit Breaker	50A	60A	80A	100A	150A
Heat Loss - Watts (BTU/hr.)	219 (747)	282 (962)	344 (1174)	498 (1699)	656 (2238)
Cabinet Style	5017	5017	5017	5018	5018
Shipping Weight, lb. (kg)	190 (86)	220 (100)	245 (111)	330 (150)	440 (200)
Output Voltage: 130Vdc		Float Adjust: 115 - 140Vdc		Equalize Adjust: 124 - 143Vdc	
AC Input Amperes (Nominal)	53 - 31 - 26.5 - 13.3	71 - 41 - 35 - 18	89 - 51 - 44 - 22	133 - 77 - 66 - 33	
AC Input Circuit Breaker (120V)	70A	100A	Note I	Note I	
DC Output Circuit Breaker	50A	60A	80A	100A	
Heat Loss - Watts (BTU/hr.)	366 (1250)	459 (1567)	556 (1897)	793 (2708)	
Cabinet Style	5017	5018	5018	5018	
Shipping Weight, lb. (kg)	250 (113)	352 (160)	440 (200)	660 (300)	

Models with higher ratings: SCR/SCRF Series models are available with dc output ratings to 800Adc at 12 through 260Vdc.
NOTES: 1. 120Vac input available only on special order. 2. Shipping weights are approximate.

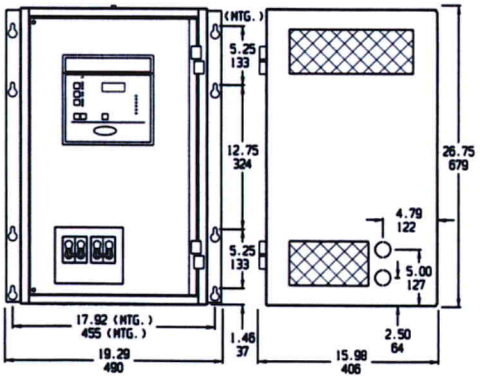
Specifications subject to change.

GROUP 2

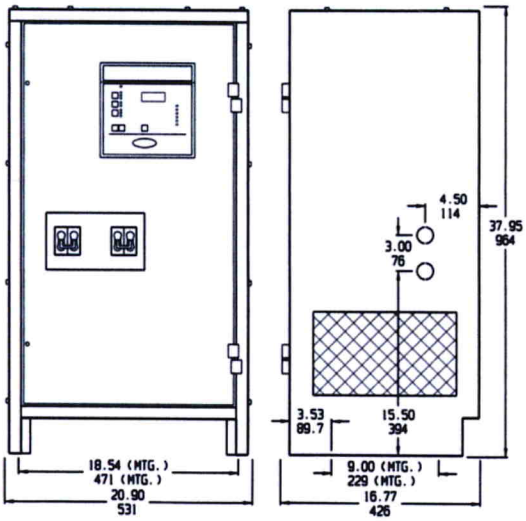
	A	B			C			D			E	F	G	H	J	K	L	M	N	P
Sample	AT10	1	3	0	0	5	0	4	8	0	2	1	0	1	0	3	1	0	0	0

	Description	Code	Feature
A		AT10	AT10 Series
B	Nominal DC Output Current	012 024 048 130	12Vdc 24Vdc 48Vdc 130Vdc
C	Nominal DC Output Current	030 040 050 075 100	30Adc 40Adc 50Adc 75Adc 100Adc
D	AC Input Single Phase Voltage	120 208 240 480 220 380 416	120V 60Hz 208V 60Hz 240V 60Hz 480V 60Hz 220V 50/60Hz 380V 50/60Hz 416V 50/60Hz
E	Filtering	0 1 2	Unfiltered Filtered Eliminator
F	AC Circuit Breaker	1 2 3 0	Standard AIC Medium AIC High AIC No Breaker
G	AC Input Fuses	1 0	Installed Not Supplied
H	DC Circuit Breaker	1 2 3 0	Standard AIC Medium AIC High AIC No Breaker
J	DC Fuses	1 0	Installed Not Supplied
K	Alarm	2 3	Primary Alarm Board Auxiliary Relay Board
L	Ground Pad	1 0	Installed Not Supplied
M	Lightning Arrestor	1 0	Installed Not Supplied
N	Fungus Proofing	1 0	Installed Not Supplied
P	Static Proofing	1 0	Installed Not Supplied

This ordering code is unique for AT10.1 chargers rated 30-100A output.



Cabinet Style 5017



Cabinet Style 5018

Circuit Breaker AC & DC Ratings:

STANDARD - 5KAIC 120/240/480Vac; 5KAIC 125Vdc
MEDIUM - 25KAIC 120/240/480Vac; 10KAIC 250Vdc
HIGH - 65KAIC 120/240/480Vac; 25KAIC 250Vdc

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Doc N° 27004-2-0105
Edition: November 2005

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