IOTA

POWERING YOUR WAY®

SolidDC

POWER SUPPLIES AND BATTERY CHARGERS

DURABLE • DEPENDABLE • PROVEN

Solid-DC

DURABLE

IOTA introduces the Solid-DC Series Power Supply and Battery Charger, engineered for rugged and durable performance and capable of handling the roughest AC power conditions. With integral protection against the dangers of unpredictable line voltage, the IOTA Solid-DC Series keeps your DC loads operating perfectly with clean, safe DC power.

DEPENDABLE

The Solid-DC Series is designed to IOTA's rigorous quality control standards and UL specifications, and manufactured with tried and tested components and material for confident operation. Every IOTA Solid-DC converter/charger undergoes careful testing throughout the manufacturing process, and every Solid-DC unit is backed by IOTA with a full Three-Year Warranty.

PROVEN

IOTA Power Supplies and Battery Chargers are built on a tradition of quality performance, and have been the AC/DC power solution of choice by professionals throughout several industries. Our selection of Solid-DC models, design features, and performance capability make IOTA Power Products ideal for a versatile range of AC/DC applications.

SOLID PERFORMANCE FOR A WORLD OF AC/DC DEMANDS...

- PHOTO-VOLTAICS AND ALTERNATIVE ENERGY
- SPECIALTY VEHICLE DESIGNS
- RECREATIONAL VEHICLES
- TELECOMMUNICATIONS
- MATERIAL HANDLING
- SECURITY SYSTEMS
- SIGNAL EQUIPMENT

...AND MORE!

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SOLID PERFORMANCE

FROM THE COMPANY THAT KNOWS POWER...

Your application demands solid performance, and you don't expect anything less from an IOTA power supply and battery charger. The IOTA Solid-DC Series is built to handle the roughest AC/DC power conditions and deliver superior results for your batteries and DC loads. With amperage levels from 15 to 90 amps, built-in protection features, and our AmpLife control option for exceptional battery maintenance, Solid-DC products give you everything you need to meet your power system requirements.

SDC1 Solid-DC SERIES

The IOTA SDC1 is a compact yet powerful switch-mode power supply and battery charger, delivering clean, steady DC power for 12VDC and 24VDC applications with 120VAC input. The IOTA SDC1 Series features 15 to 90 amp designs and is engineered with built-in protection features against AC power spikes or brown-outs for confident load handling. For superior battery life maintenance and four-stage charging, the SDC1 is also available with IOTA's AmpLife charge control module.

AMP LIFE CHARGE CONTROL

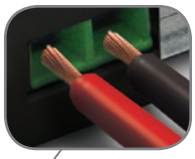
Keep your batteries in peak condition with the AmpLife AL1 Charge Control Module. The AmpLife programming enables the Solid-DC Charger to deliver four-stage charging, keeping batteries fully charged, decreasing charge times, and exercising batteries to prevent premature failure caused by stratification and sulfation of the battery's plates. The Amplife AL1 is designed for simple, secure installation and features an LED indicator for displaying the current charge mode of the SDC1.

DURABLE • DEPENDABLE • PROVEN

The SDC1 Series combines IOTA's proven battery charging and power conversion designs with enhanced engineered features to provide confident, superior power solutions for your AC/DC application...

COMPACT HEIGHT

The minimal profile design of the SDC1 allows for simpler installation in applications with limited compartment space.

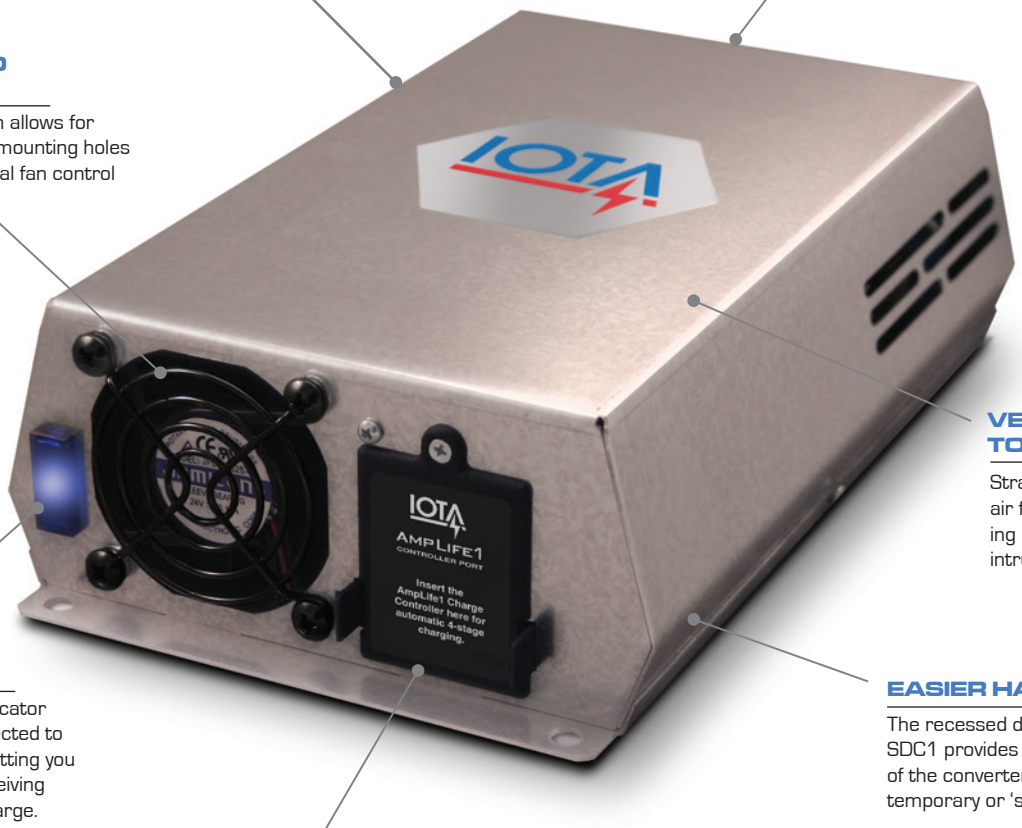


INCREASED TERMINAL SIZE

SDC1 Series features larger terminal block connections to accommodate size 2 to 16 wire gauges.

INTERNALIZED COOLING FAN

The internal fan design allows for convenient access to mounting holes and utilizes proportional fan control for quiet operation.



VENT-FREE TOP SURFACE

Strategic venting maximizes air flow cooling while protecting interior components from intrusion of dust or debris.

AC POWER INDICATOR

The blue AC Power Indicator illuminates when connected to the AC power supply, letting you know your SDC1 is receiving power and ready to charge.

EASIER HANDLING

The recessed design of the SDC1 provides for easier handling of the converter when re-locating for temporary or 'shop' applications.

MODULAR CHARGE CONTROLLER

The SDC1 Accessory Port allows for simple, snap-in installation of the AL1 AmpLife smart-charge control module. The AmpLife controller optimizes battery life and performance with automatic Bulk, Absorption, Float, and Equalization charging.

c UL US LISTED

3 THREE-YEAR WARRANTY
REPAIR • REPLACEMENT

IOTA 12-Volt and 24-volt SDC1 Battery Charger/Power Converters are designed, manufactured and tested to UL 458 standards for use in both the United States and Canada. While additional modified or custom IOTA SDC1 designs may not fall under the scope of UL 458, they are still manufactured and tested to the same criteria specifications for performance and safety.

IOTA's Solid-DC products receive 100% quality inspection before shipment to insure proper and satisfactory operation. IOTA warranties all power products in the continental United States and Canada from defects in materials or workmanship under normal use for three years from date of retail purchase and will repair or replace any Solid-DC product found to be defective in materials or workmanship free of charge.

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SDC1 FOR 120VAC / 12VDC

The IOTA Solid-DC SDC1 Series delivers solid and dependable performance for a variety of demanding applications. The SDC1 provides clean DC output for safe operation of DC equipment, efficient battery charging, and built-in protection features against AC voltage spikes, brown-out conditions, and incorrect output polarity connections. IOTA SDC1 offers amperage models from 15 to 90 amps for 120-volt AC input and 12-volt DC output.

AMPLIFE CONTROL

Available with the AmpLife 4-Stage Charge Control Module for exceptional battery charging and maintenance. See Page 10 for details.

UL and CUL 458 Listed

Clean, steady DC output operates your loads the way they were intended, avoiding potential damage to systems from errant DC voltage.

Built-in protection features guard the unit against erratic line voltage that can occur from shore power or generator supplies.

2-Gauge max. connection capability decreases voltage drop for better battery charging and increased installation distance.

Reverse Polarity Protection with simplified fuse removal protects the unit against damage from incorrect battery hook-up.

The compact design of the Solid-DC features a reduced height and internal fan for less space restriction.

Proportional fan control starts and stops slowly and operates at speeds directly proportional to unit temperature for whisper-quiet operation.

Backed by IOTA with a full Three-Year Warranty.

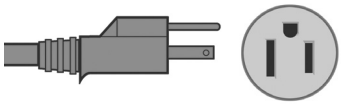
Optional AmpLife charge control module for exceptional charging and battery life. To include the AmpLife Charge Control Module with any SDC1, add the -AL1 suffix to the model number.

INPUT CONNECTION

The SDC1 utilizes a 30-inch NEMA cord with three-prong polarized plug for connection to the AC supply. Plug type is determined by the power specifications for the particular SDC1 model.

NEMA 5-15 for 15A Receptacle

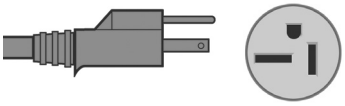
SDC1-120-12-15
SDC1-120-12-30
SDC1-120-12-45
SDC1-120-12-55



*Non-UL version

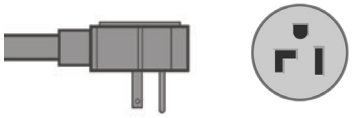
NEMA 5-20 for 20A Receptacle

SDC1-120-12-75

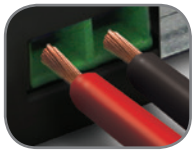


NEMA 5-30 for 30A Receptacle

SDC1-120-12-90



OUTPUT CONNECTION



The SDC1 features increased-size block terminals for connection to the DC load and accommodates size 2 to 16 wire gauges. Refer to the wire manufacturer's specifications for proper torque ratings for the wire gauge you are using.

The SDC1 output also features Reverse Polarity Protection with removable fuses to guard against incorrect battery connection. The unit uses typical blade-type fuses that are easily replaceable. Fuse ratings vary depending on the amperage of the SDC1 model. Refer to the Fuse Rating Chart for details.

FUSE RATING CHART

SDC1 Model	Fuse Rating	Fuse Quantity
SDC1-120-12-15	7.5A	2
SDC1-120-12-30	15A	2
SDC1-120-12-45	25A	2
SDC1-120-12-55	20A	3
SDC1-120-12-75	25A	3
SDC1-120-12-90	30A	3

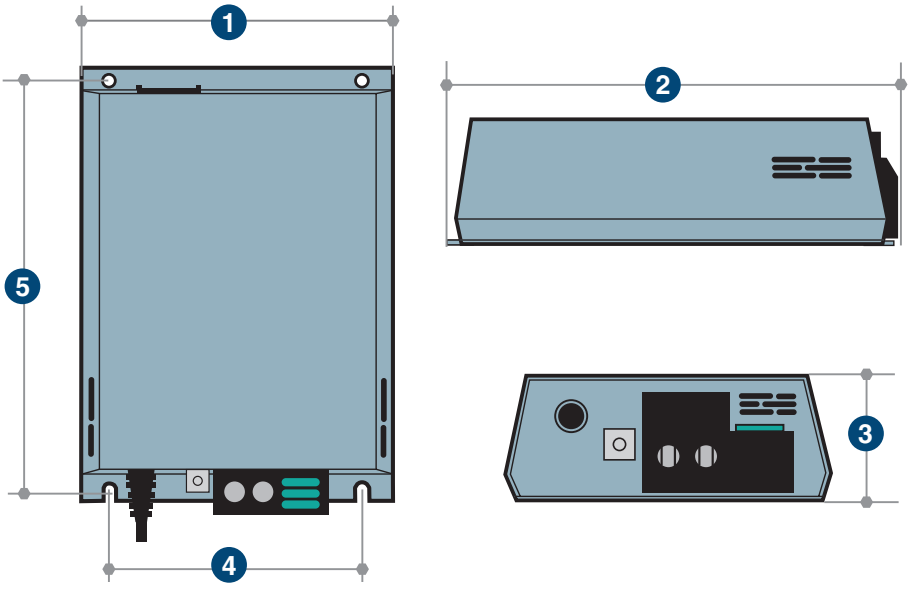
SPECIFICATIONS

	SDC1-120-12-15	SDC1-120-12-30	SDC1-120-12-45	SDC1-120-12-55	SDC1-120-12-75	SDC1-120-12-90
DC Output Voltage*	13.4-14.8 VDC	13.4-14.8 VDC	13.4-14.8 VDC	13.4-14.8 VDC	13.4-14.8 VDC	13.4-14.8 VDC
Output Voltage Tolerance (No Load)	± 0.7%	± 0.7%	± 0.7%	± 0.7%	± 0.7%	± 0.7%
Output Amperage, Max Continuous	15 Amps	30 Amps	45 Amps	55 Amps	75 Amps	90 Amps
Maximum Power Output, Continuous	200 Watts	450 Watts	650 Watts	800 Watts	1125 Watts	1350 Watts
Ripple and Noise	<50 mV rms	<50 mV rms	<50 mV rms	<50 mV rms	<50 mV rms	<50 mV rms
Input Voltage Range	108 - 132 VAC	108 - 132 VAC	108 - 132 VAC	108 - 132 VAC	108 - 132 VAC	108 - 132 VAC
Input Voltage Frequency	47-63	47-63	47-63	47-63	47-63	47-63
Maximum AC Current (@108Vac)	3.7 Amps	7.3 Amps	11 Amps	13.4 Amps	18.2 Amps	21.8 Amps
Typical Efficiency	>80%	>80%	>80%	>80%	>80%	>80%
Max Inrush Current, Single Cycle	30 Amps	30 Amps	30 Amps	30 Amps	40 Amps	40 Amps
Short Circuit Protection	Yes	Yes	Yes	Yes	Yes	Yes
Overload Protection	>100%	>100%	>100%	>100%	>100%	>100%
Line Regulation	100 mV rms	100 mV rms	100 mV rms	100 mV rms	100 mV rms	100 mV rms
Load Regulation	<1%	<1%	<1%	<1.5%	<1.5%	<1.5%
Thermal Protection	YES	YES	YES	YES	YES	YES
Working Temperature Range	0° - 40° C	0° - 40° C	0° - 40° C	0° - 40° C	0° - 40° C	0° - 40° C
Storage Temperature	-20° to 80° C	-20° to 80° C	-20° to 80° C	-20° to 80° C	-20° to 80° C	-20° to 80° C
Withstand Voltage (VDC)	1700/1700/500	1700/1700/500	1700/1700/500	1700/1700/500	1700/1700/500	1700/1700/500

Primary to Chassis/Primary to Secondary/
Secondary to Chassis

*Output voltage shown reflects voltage range capability provided by an SDC1 charger equipped with an Amplife AL1 charge controller. Voltage range for non-AmpLife units is 13.4 to 13.6 Vdc.

DIMENSIONS



Model	Model
SDC1-120-12-15	SDC1-120-12-75
SDC1-120-12-30	SDC1-120-12-90
SDC1-120-12-45	
SDC1-120-12-55	

Dimensions also apply to models with AmpLife module. To include the AL1, add the -AL1 suffix to the model number.

Dimensions

1	6.0 in. (152.8 mm)	7.75 in. (196.9 mm)
2	10.3 in. (260.4 mm)	12.5 in. (317.5 mm)
3	2.7 in (68.8 mm)	2.75 in (70 mm)
4	4.7 in (120.5 mm)	6.7 in (170.9 mm)
5	9.2 in (234.5 mm)	12.02 in (305.4 mm)
	Weight: 4 lbs.	**Weight:** 7 lbs.

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SDC1 FOR 120VAC / 24VDC

The IOTA Solid-DC SDC1 Series delivers solid and dependable performance for a variety of demanding applications. The SDC1 provides clean DC output for safe operation of DC equipment, efficient battery charging, and built-in protection features against AC voltage spikes, brown-out conditions, and incorrect output polarity connections. IOTA SDC1 offers amperage models from 15 to 40 amps for 120-volt AC input and 24-volt DC output.

AMPLIFE CONTROL

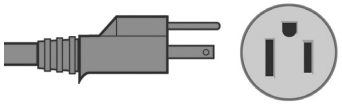
Available with the AmpLife 4-Stage Charge Control Module for exceptional battery charging and maintenance. See Page 10 for details.

INPUT CONNECTION

The SDC1 utilizes a 30-inch NEMA cord with three-prong polarized plug for connection to the AC supply. Plug type is determined by the power specifications for the particular SDC1 model.

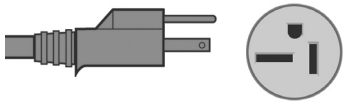
NEMA 5-15 for 15A Receptacle

SDC1-120-24-15
SDC1-120-24-25

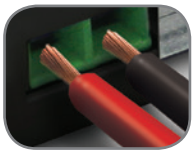


NEMA 5-20 for 20A Receptacle

SDC1-120-24-40



OUTPUT CONNECTION



The SDC1 features increased-size block terminals for connection to the DC load and accommodates size 2 to 16 wire gauges. Refer to the wire manufacturer's specifications for proper torque ratings for the wire gauge you are using.

The SDC1 output also features Reverse Polarity Protection with removable fuses to guard against incorrect battery connection. The unit uses typical blade-type fuses that are easily replaceable. Fuse ratings vary depending on the amperage of the SDC1 model. Refer to the Fuse Rating Chart for details.

FUSE RATING CHART

SDC1 Model	Fuse Rating	Fuse Quantity
SDC1-120-24-15	7.5A	2
SDC1-120-24-25	15A	2
SDC1-120-24-40	20A	2

c UL us — UL and CUL 458 Listed

Clean, steady DC output operates your loads the way they were intended, avoiding potential damage to systems from errant DC voltage.

Built-in protection features guard the unit against erratic line voltage that can occur from shore power or generator supplies.

2-Gauge max. connection capability decreases voltage drop for better battery charging and increased installation distance.

Reverse Polarity Protection with simplified fuse removal protects the unit against damage from incorrect battery hook-up.

The compact design of the Solid-DC features a reduced height and internal fan for less space restriction.

Proportional fan control starts and stops slowly and operates at speeds directly proportional to unit temperature for whisper-quiet operation.

3 THREE-YEAR WARRANTY — Backed by IOTA with a full Three-Year Warranty.

Optional AmpLife charge control module for exceptional charging and battery life. To include the AmpLife Charge Control Module with any SDC1, add the -AL1 suffix to the model number.

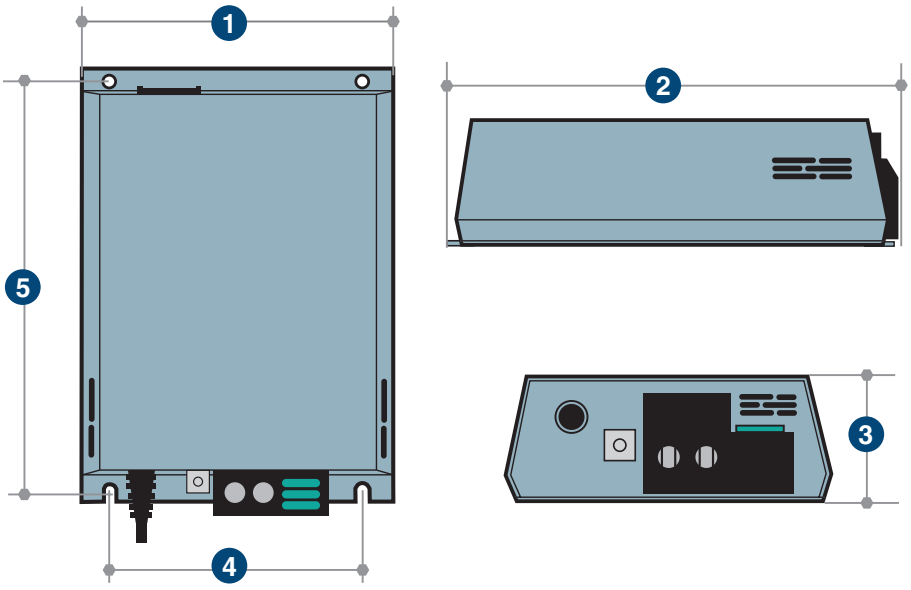
SPECIFICATIONS

	SDC1-120-24-15	SDC1-120-24-25	SDC1-120-24-40
DC Output Voltage*	26.8-29.6 VDC	26.8-29.6 VDC	26.8-29.6 VDC
Output Voltage Tolerance (No Load)	± 0.5%	± 0.5%	± 0.5%
Output Amperage, Max Continuous	15 Amps	25 Amps	40 Amps
Maximum Power Output, Continuous	450 Watts	750 Watts	1200 Watts
Ripple and Noise	<50 mV rms	<100 mV rms	<100 mV rms
Input Voltage Range	108 - 132 AC	108 - 132 AC	108 - 132 AC
Input Voltage Frequency	47-63	47-63	47-63
Maximum AC Current (@108Vac)	7.3 Amps	12.2 Amps	19.5 Amps
Typical Efficiency	>80%	>80%	>80%
Max Inrush Current, Single Cycle	30 Amps	30 Amps	40 Amps
Short Circuit Protection	Yes	Yes	Yes
Overload Protection	>100%	>100%	>100%
Line Regulation	100 mV rms	100 mV rms	100 mV rms
Load Regulation	<1%	<1%	<1%
Thermal Protection	YES	YES	YES
Working Temperature Range	0° - 40° C	0° - 40° C	0° - 40° C
Storage Temperature	-20° to 80° C	-20° to 80° C	-20° to 80° C
Withstand Voltage (VDC)	1700/1700/500	1700/1700/500	1700/1700/500

Primary to Chassis/Primary to Secondary/
Secondary to Chassis

*Output voltage shown reflects voltage range capability provided by an SDC1 charger equipped with an AmpLife AL1 charge controller. Voltage range for non-AmpLife units is 26.8 to 27.2 Vdc.

DIMENSIONS



Model	Model
SDC1-120-24-15 SDC1-120-24-25	SDC1-120-24-40

Dimensions also apply to models with AmpLife module. To include the AL1, add the -AL1 suffix to the model number.

Dimensions

1	6.0 in. (152.8 mm)	7.75 in. (196.9 mm)
2	10.3 in. (260.4 mm)	12.5 in. (317.5 mm)
3	2.7 in (68.8 mm)	2.75 in (70 mm)
4	4.7 in (120.5 mm)	6.7 in (170.9 mm)
5	9.2 in (234.5 mm)	12.02 in (305.4 mm)
Weight:	4 lbs.	**Weight:** 7 lbs.

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AMP LIFE CHARGE CONTROL MODULE FOR SOLID-DC CHARGERS

The AmpLife AL1 Charge Control Module is the easiest, safest way to keep your batteries fully charged and in peak operating condition while maximizing useful life. By utilizing the AmpLife programming, IOTA SDC1 chargers automatically deliver a four-stage charge cycle to your battery system. Whether you need frequently-cycled batteries charged quickly and efficiently, or are maintaining stored batteries in top condition, AmpLife charge control provides the assurance that your batteries will perform when you need them to.

1

BULK CHARGE

Batteries are charged up to the full-rated output of the SDC1 battery charger, reducing the time needed to charge the battery.

2

ABSORPTION

The voltage drops and the batteries are then held for a controlled period at the absorption phase to insure a full and complete charge.

3

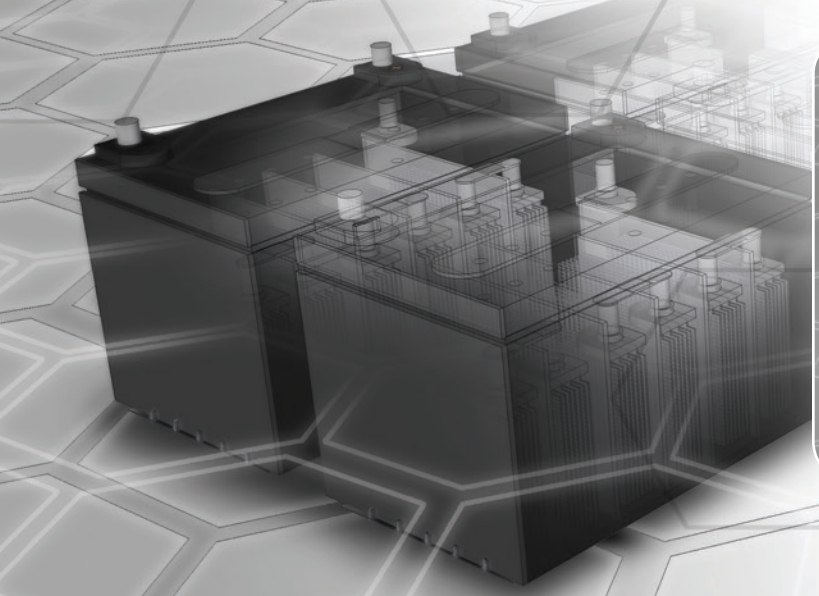
FLOAT CHARGE

The battery charger delivers a 'trickle' charge, maintaining the battery's full charge and avoiding "gassing" caused by over-charging.

4

EQUALIZATION

If the battery remains in the 'Float' state for seven days, the AmpLife delivers a Smart Charge cycle to dissolve sulfate layers and to avoid stratification.



SIMPLE INSTALLATION

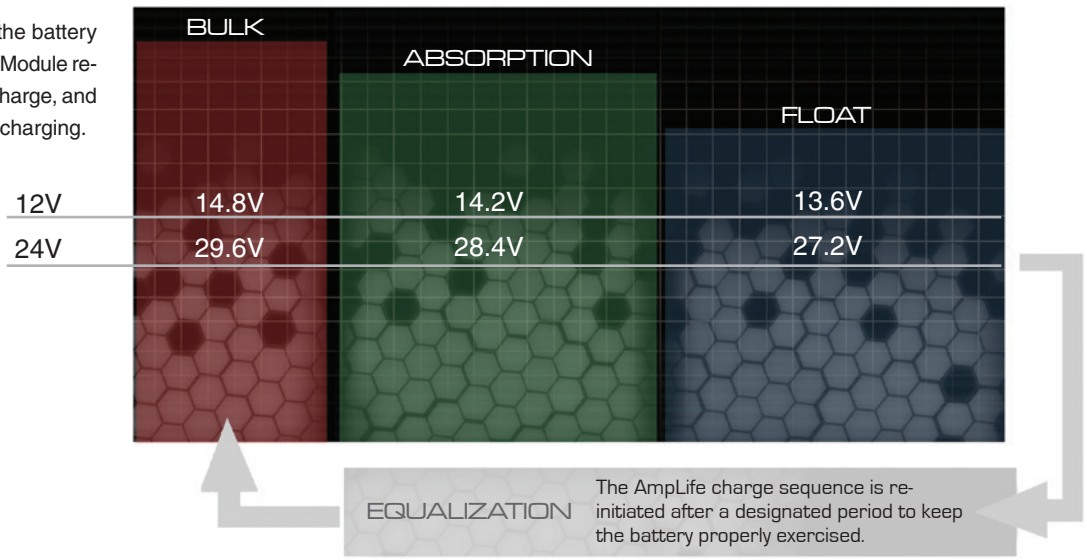
The AmpLife Charge Control Module installs easily into the IOTA Solid-DC Battery Charger. Simply remove the accessory port faceplate on the end of the charger and firmly snap the AmpLife module in place. The four-stage charging circuitry is then automatically engaged.

FUNCTION

By applying appropriate voltage to the battery system, the AmpLife Charge Control Module reduces charge time, maintains a full charge, and avoids the hazards of over or undercharging.

BATTERY VOLTAGE

The charging voltage for the different stages varies depending on the voltage of the battery and charger system. Duration of the different stages will vary depending on the battery capacity, discharge level, and charger size.



LED INDICATOR

The LED indicator on the AL1 informs the user of the SDC1 charging state and the battery charge status. When first activated, the AL1 will read the number of cells in the battery and indicate the voltage of the battery through a series of flashes. Refer to the chart on the right for LED code indications.

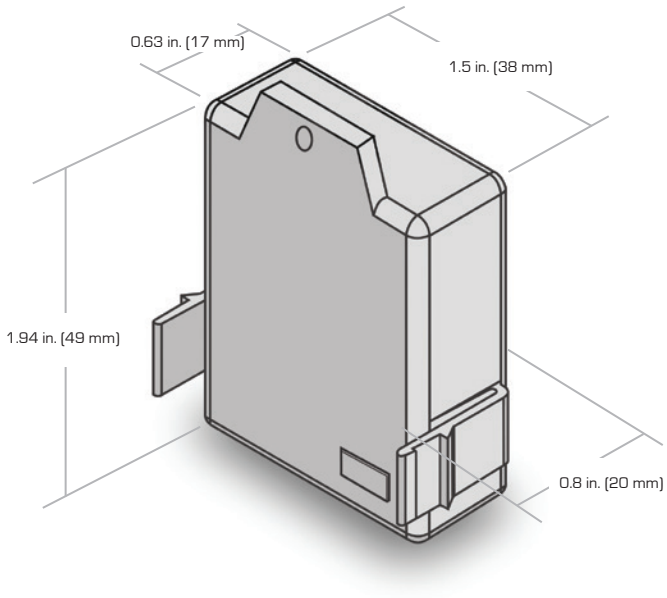
After reading the battery, the AL1 will initiate either a Bulk Charge phase or Float Charge phase depending on the battery's charge status. When the AL1 is in the Bulk Charge mode, the green LED indicator will flash rapidly (approx. 2 flashes per second). When the Bulk Charge is complete, the AL1 begins the Absorption Charge and the LED indicator will flash at a slower rate (approx. 1 flash per second). If, when first activated, the battery is not in need of charging, the AL1 will enter the Float Charge phase and the LED will remain lit (no flashing).

LED CODE TABLE

CELL INDICATION	
6 Flashes	12-Volt Battery (6 cells)
12 Flashes	24-Volt Battery (12 cells)

CHARGE PHASE	LED STATUS	VOLTAGE RATE
FLOAT	ON	2.266 per Cell
ABSORPTION	SLOW FLASHING	2.366 per Cell
BULK	RAPID FLASHING	2.466 per Cell

DIMENSIONS



The AmpLife AL1 Smart Charge Control Module can be added to an existing SDC1 battery charger or can be included at the time of order. SDC1 units without an AL1 installed will have a faceplate cover protecting the modular connection. The port faceplate and AmpLife control module are slightly similar in appearance. You can recognize the AmpLife Charge Control Module by the presence of the LED indicator on the face.

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IOTA Engineering is dedicated to providing products that meet the standards our customers demand as well as the superior service they deserve.

All IOTA Solid-DC products receive 100% quality inspection before shipment to insure proper and satisfactory operation. IOTA warranties all power products in the continental United States and Canada from defects in materials or workmanship under normal use for three years from date of retail purchase and will repair or replace any IOTA Solid-DC product found to be defective in materials or workmanship free of charge.

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Learn more about batteries on our website.