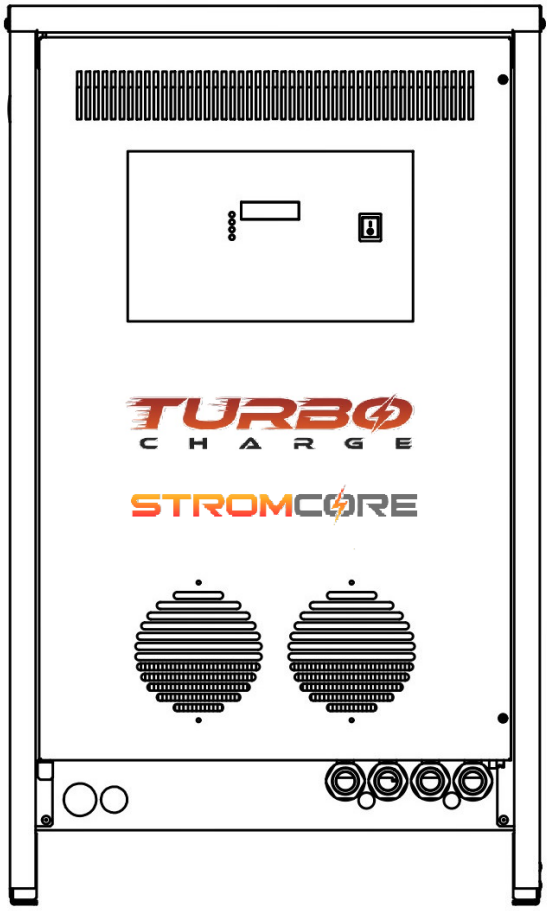
STROMCORE TURBO CHARGER USER MANUAL



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SAFETY PRECAUTIONS

Failure to comply may cause injury or damage!

Read All Instructions: Before installing, operating, or servicing a Stromcore Turbo Charger, please ensure all users have read this manual and thoroughly understand the safety procedures and precautions. It is important for the user to strictly observe all safety rules and precautionary actions. Failure to comply may increase the risk of, and/or result in, damage to other equipment, property, and/or can cause injury or death. For clarification on any section of the manual, contact your distributor or the manufacturer.

MANUFACTURER
Stromcore Energy Inc.
1-3705B Laird Rd., Mississauga, ON, L5L 0A6, Canada
289-269-0882
info@stromcore.com

It is recommended to keep this manual in good condition and always accessible to all users for the lifetime of the charger.

Use as Intended: Use the charger only for its intended purpose as specified in the manual. Do not modify the charger in any way. Stromcore Turbo Chargers can only be used with Stromcore Batteries.

Qualified Personnel: Only qualified personnel should install, operate, or service a Stromcore Turbo Charger.

Environment: Place the charger in a well-ventilated area. Do not cover the charger or block any of the ventilation slots. Do not use the charger near flammable materials or gases. Do not install the charger near any heat sources such as radiators or air ducts. The charger must be installed with proper clearance following the installation instructions of this document. Do not place the charger in an environment subject to mechanical vibration or shock. Only outdoor-rated Stromcore Turbo Chargers may be installed outdoors or subjected to excessive dust. Only heated Stromcore Turbo Chargers may be subjected to freezing temperatures, per specifications on page 5.

Handling & Transportation: Ensure the system is turned ‘OFF’, disconnected from the power source, and de-energized before beginning to service. The multimeter must read 0V to ensure the system is de-energized.

Warning: Incorrect use of the charger can cause electric shock, explosion, or fire. Use with caution.

RESPONSIBILITY DISCLAIMER
Stromcore Energy Inc. and all parties associated with it are not responsible for the use and results of this information by any party, especially those lacking sufficient skill or knowledge to perform these steps safely. Stromcore Energy Inc. will not be held liable for any hazard created by personnel performing the work without sufficient skill or knowledge.

ACKNOWLEDGEMENT
By accessing the components inside Stromcore batteries and chargers, the service provider acknowledges they understand the instructions provided and will perform the work in compliance with safety protocols, including but not limited to turning the equipment off and/or disconnecting power before commencing work. The service provider acknowledges Stromcore Energy Inc. will not be held liable for any errors resulting from unsafe actions or not reading and following the instructions relating to the specific task.

NOTE
The photos in this document are for reference only. The actual product may vary.

Equipment Warning Labels

Sharp Edge

Electricity

Heavy Object, Lift with Care

Electrical Safety & Electrical Shock Prevention

Electrical safety involves practices and guidelines aimed at preventing electrical injuries, shocks, burns, and fires. It is important to adhere to electrical safety guidelines to significantly reduce the risk associated with the use of electrical devices.

Power Supply: Ensure the charger is connected to a power supply with the correct voltage and frequency as indicated on the charger's label.

Grounding: The charger system must be properly grounded. Ensure the grounding connection is made according to local electrical codes.

De-energize the Charger for Service: Turn the charger "OFF", disconnect from the power source, and ensure the system is de-energized before beginning any service work or cleaning. Use a digital multimeter to measure the voltage across ground (Green) and all 3 phases of the AC cable (Red, Black, and White). The digital multimeter must read 0V across all lines before beginning any service work.

Protective Gear: When installing, operating, or servicing the charger, proper personal protective equipment (PPE) is required. Examples of PPE include, but are not limited to, safety shoes, safety glasses, and gloves.

Cords and Plugs: Inspect power cords and plugs before use. Do not use if damaged. Replace or repair before operating the charger.

Damaged Cord: If the power cord is damaged, it must be replaced by the manufacturer, its service agent, or a qualified person.

Connections: Make sure all connections are secure. Loose connections can cause electrical arcing and fire.

Overloading: Do not overload power outlets or extension cords. Use only adequately rated cables.

Emergency & First Aid Procedures

1. **Ensure Safety:** Do not touch the victim while they are still in contact with the electrical source. If it is safe to do so, turn off the power to the charger from the electrical source. Use a non-conductive object to separate the victim from the electrical source.
2. **Call for Help:** Dial local emergency services immediately.
3. **Check for Responsiveness:** If unresponsive, begin CPR if trained.
4. **Monitor Condition:** Keep the victim calm and monitor their breathing and pulse until medical help arrives.
5. **Prevent Shock:** Lay the victim down and elevate their legs to prevent shock.

1.0 Specifications

Cabinet	RTC	MAXI	S2
Dimensions	17.4” (D) x 19.8” (W) x 35.4” (H)	20.6” (D) x 24.6” (W) x 41.5” (H)	21.7” (D) x 25.6” (W) x 55.1” (H)
Maximum Weight	185 kg / 408 lbs	287 kg / 633 lbs	354 kg / 781lbs
Rated Input Voltage	3-Phase 600VAC (Canada) 3-Phase 480VAC (USA)		
Rated Output Voltage	48V, 80V	36V, 48V, 80V	48V, 80V
Rated Maximum Output Current	200A-250A	250A-400A	400A-600A
AC Power Frequency	60Hz		
AC Input Protection	See Section 3.2.5, Table 1		
Output Protection	Short circuit (DC output fuses), reverse polarity, anti-arcing		
Output Interface Option	Euro (Single/Dual Output), Schaltbau		
IP Rating	IP21		
Storage Temperature	-20°C - 55°C / -4°F - 131°F		
Operating Temperature	-5°C - 40°C / 23°F - 104°F		
Operating/Storage Humidity	0% – 70%		
Display	2x20 Characters, 5x8 Dot Matrix		
Language	Default: English		
User Authorization	NIL		
Charge Cable Length	3.66m / 12ft		
Installation Type	Bolted to the ground/Bolted to charger stand (sold separately) and charger stand bolted to the ground		

2.0 Charger Overview

2.1 Types of Charger Cabinets and Dimensions

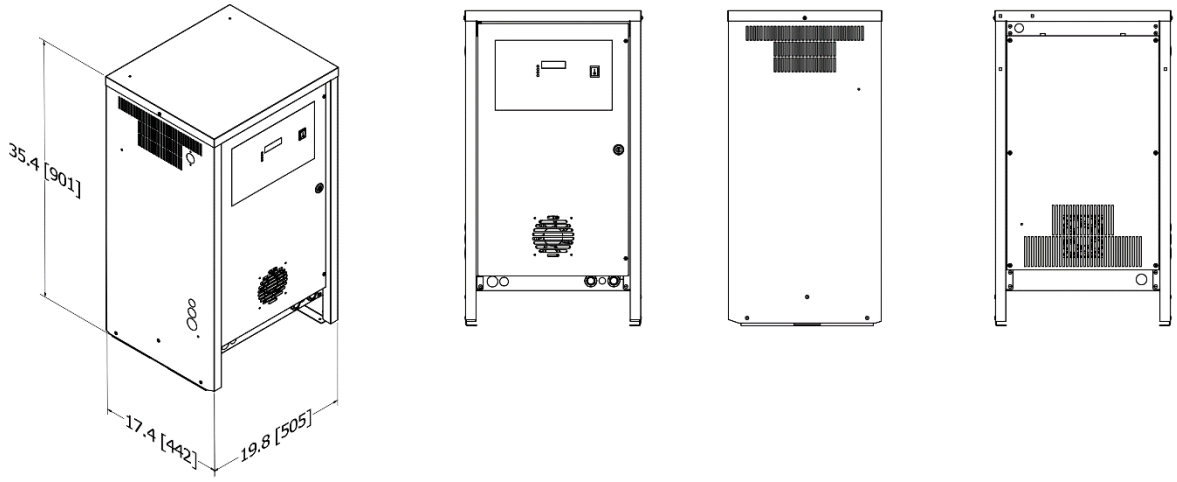

Figure 1: RTC charger

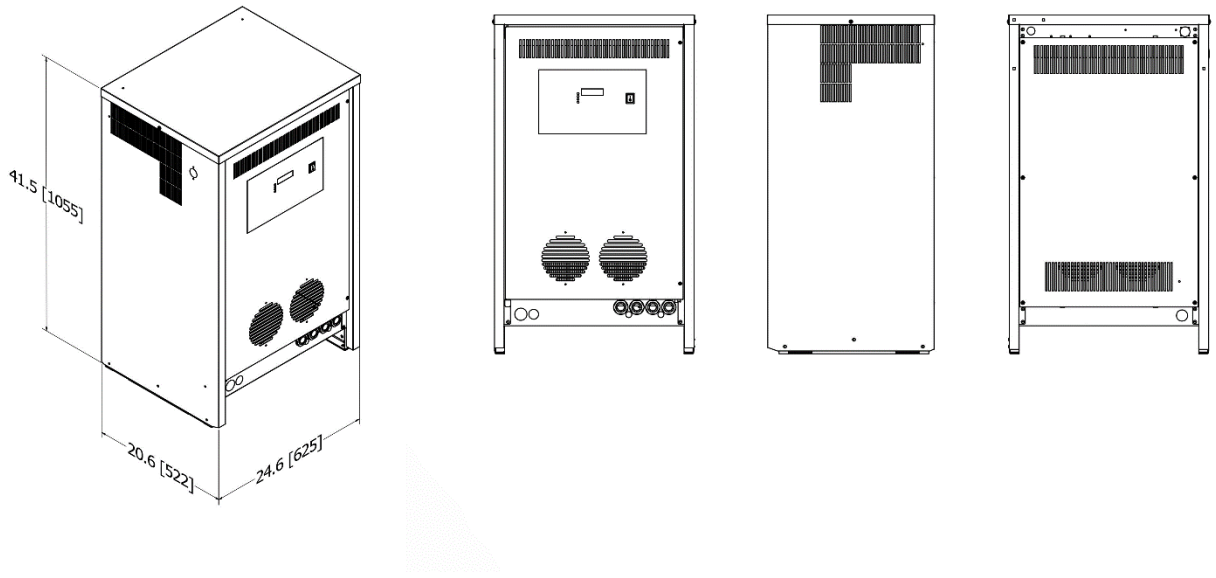

Figure 2: MAXI charger

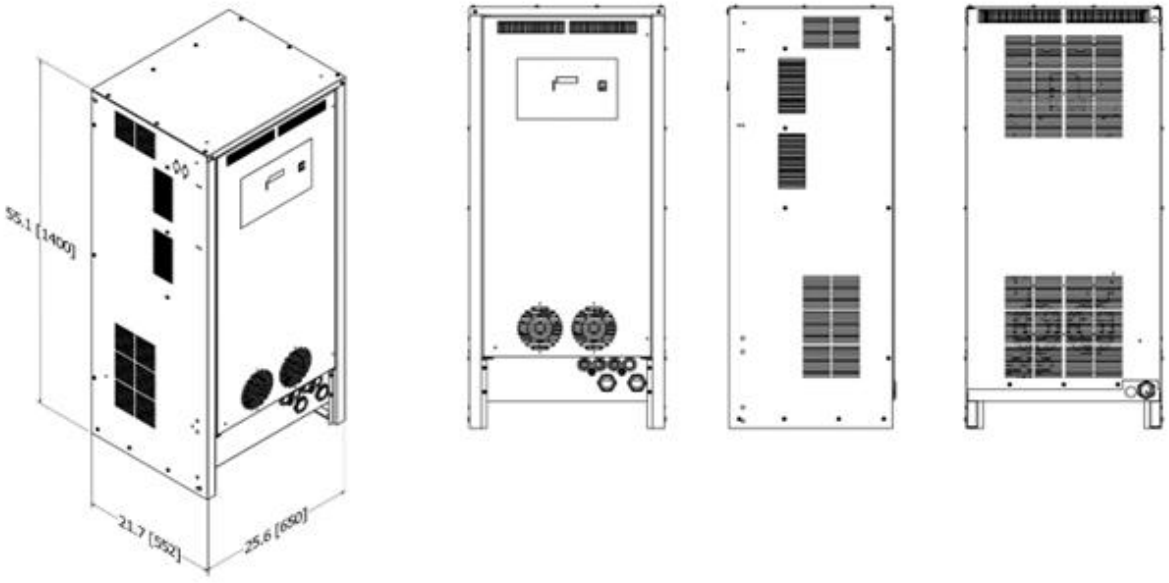

Figure 3: S2 charger

2.2 Charger Components

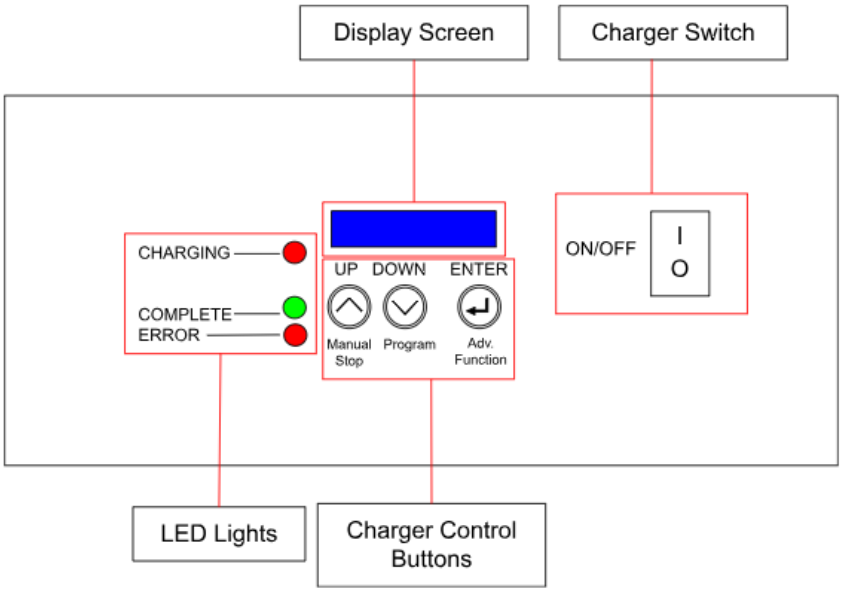

Figure 4: Charger front panel

Display Screen: Provides information about the charging process, the status of the charger, and the status of the battery.

LED Lights: One of the following lights will be lit at a time to indicate the status of the charging process:

a. **CHARGING (RED):** The battery's State of Charge (SOC) is between 0-33%.
b. **COMPLETE (GREEN):** The battery's SOC is between 67-100%.
c. **ERROR (RED):** There is an error in the system.

Charger Control Buttons:

a. **UP/Manual Stop:** Hold to stop charging.
b. **DOWN/Program:** Hold to access charger programs. User access is not available at this time. Contact Stromcore for more information.
c. **ENTER/Adv. Function:** Hold to access advance functions. User access is not available at this time. Contact Stromcore for more information.

At any moment when the charger is on, press the UP/DOWN and ENTER buttons to access more information and functions:

a. **CHARGE STATE:** Status of charger
b. **BMS VALUE:** State of Charge (SOC) of the battery in percentage (%)
c. **TEMPERATURE:** Temperature of the charger in Celsius (°C)

Charger Switch: Controls the flow of electricity from AC input to the charger.

a. **I :** When "I" is pressed down, the charger is ON.
b. **O :** When "O" is pressed down, the charger is OFF.

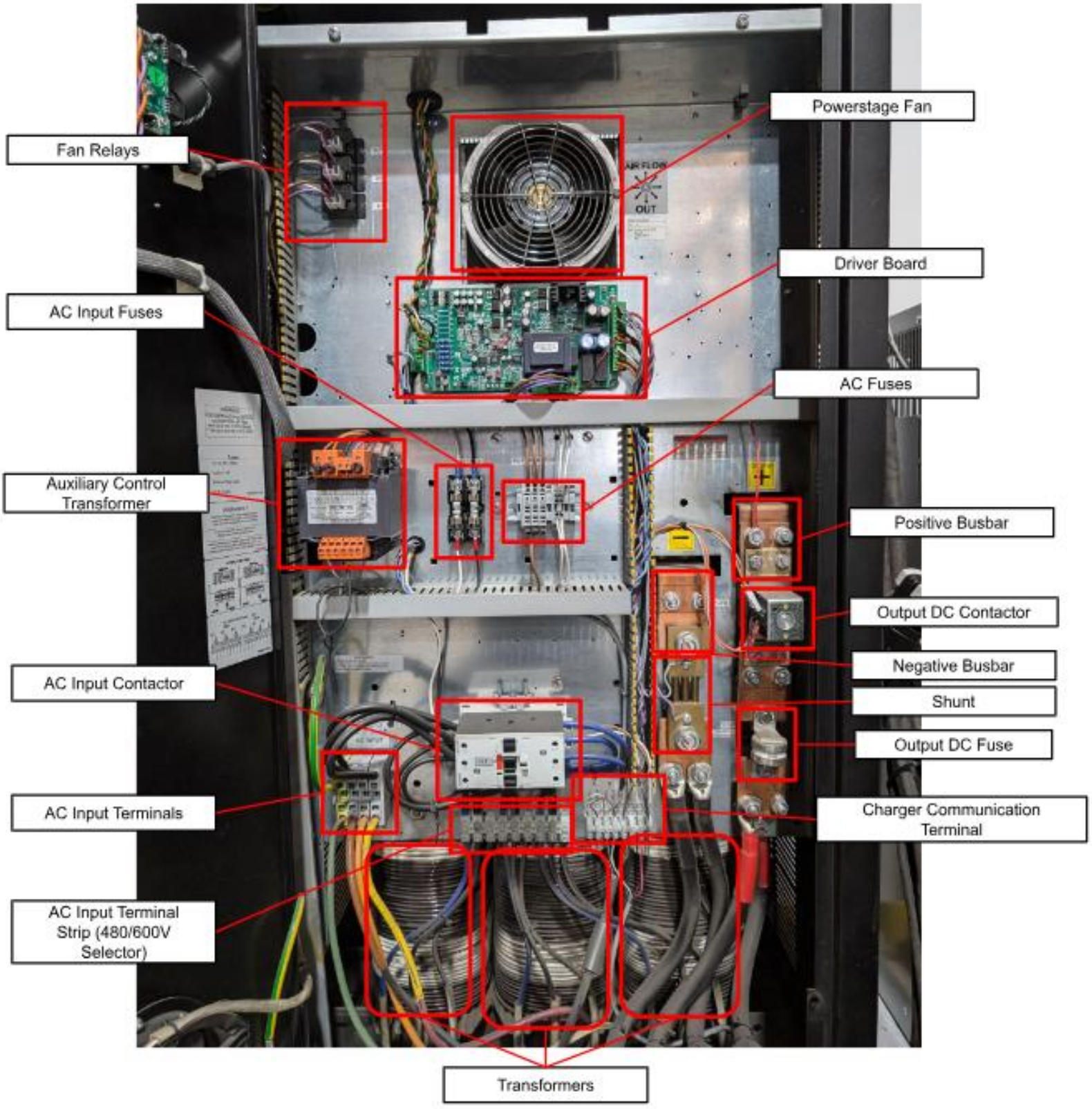

Figure 5: Image of charger with front door open and interior components.

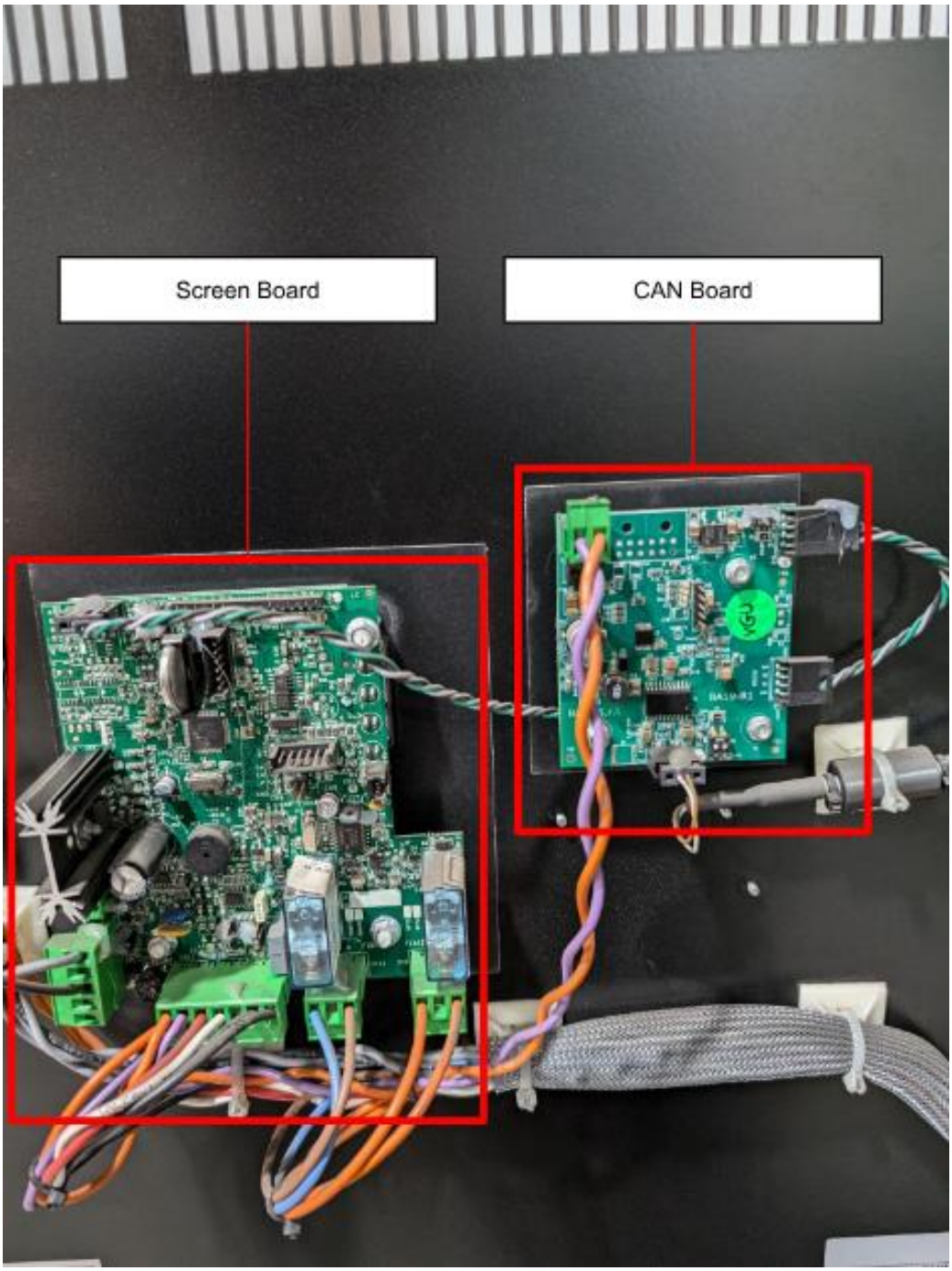

Figure 6: Image of components on charger front door, interior view (behind charger front panel).

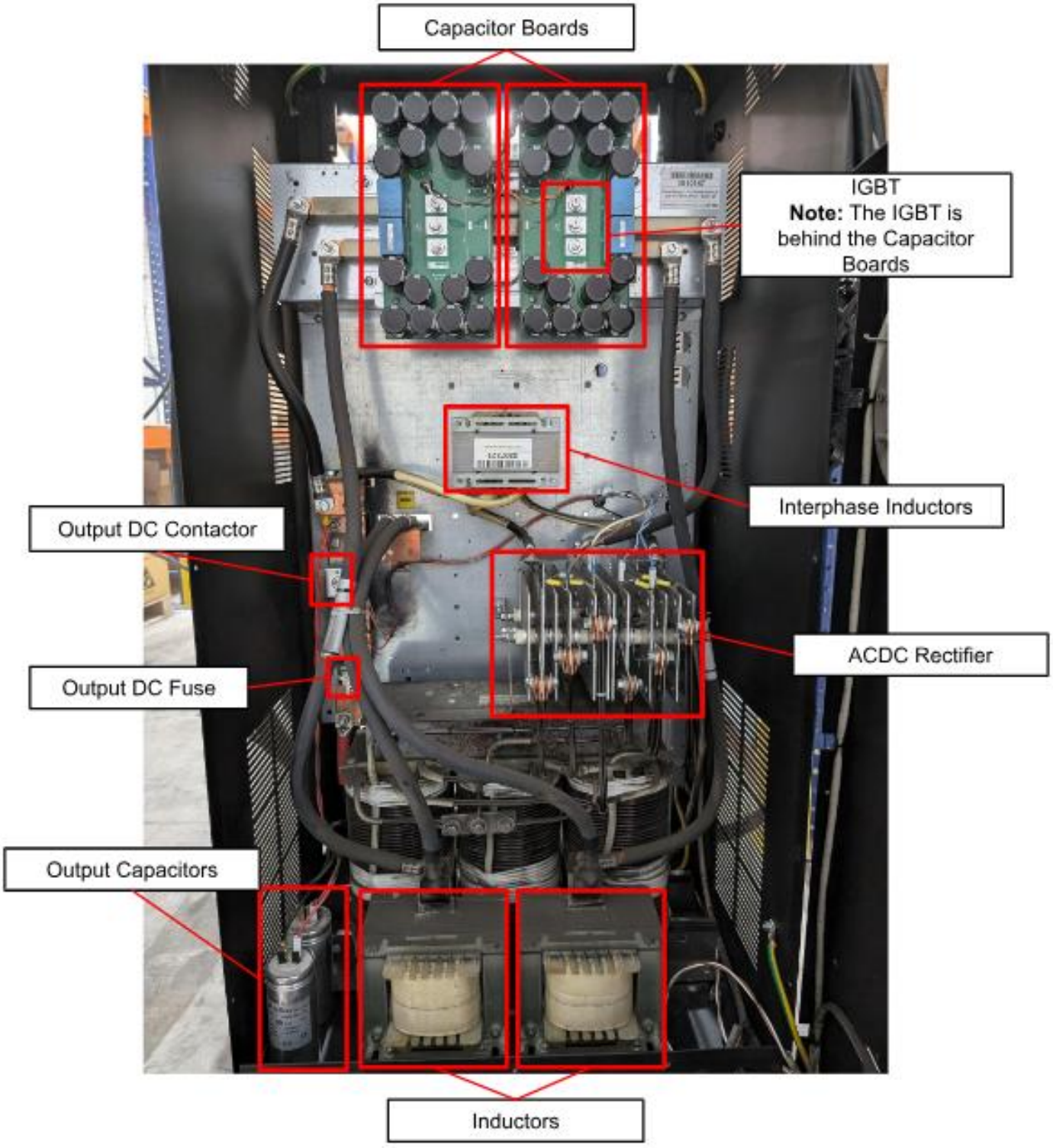

Figure 7: Image of charger with rear panel open and interior components.

3.0 Installation Procedure

CAUTION!
Only a qualified electrician can install the charger. Place the charger in a well-ventilated area. Do not cover the charger or block any of the ventilation slots. Do not use the charger near flammable materials or gases. Do not install the unit near any heat sources such as radiators or air ducts. Do not place the charger in an environment subject to direct sunlight, excessive dust, mechanical vibration or shock. Do not make any modifications to the charger or installation of the charger.

3.1 Installation Clearance and Securing the Charger

1. Select a flat and stable surface that is free from obstructions and away from flammable materials to place the charger.
2. Ensure the charger has proper clearance (Figures 8 & 9).
   a. The rear of the charger must have at least 6” clearance for air flow and 24” clearance for servicing. The 24” rear clearance is required for a technician to access the rear components of the charger.
   b. Both sides of the charger must have at least 16” clearance from a neighboring charger or adjacent wall for air flow.
   c. The front of the charger must have clearance equivalent to the width of the charger in order to open the charger for servicing, and be accessible to the user to operate.

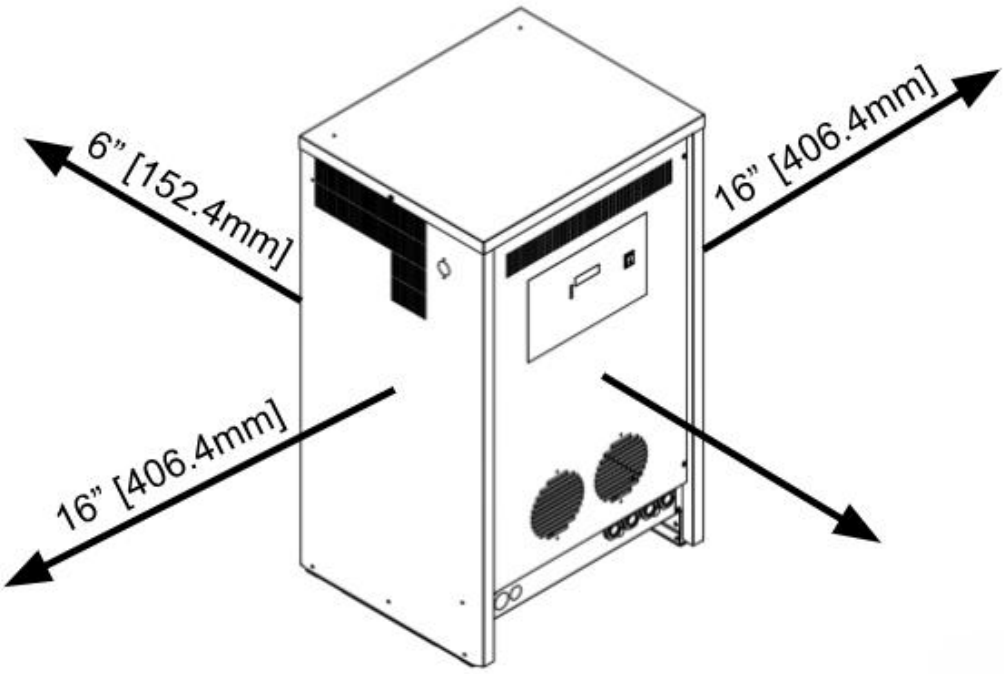

Figure 8: Reference image of required clearance on each side of the charger for air flow.

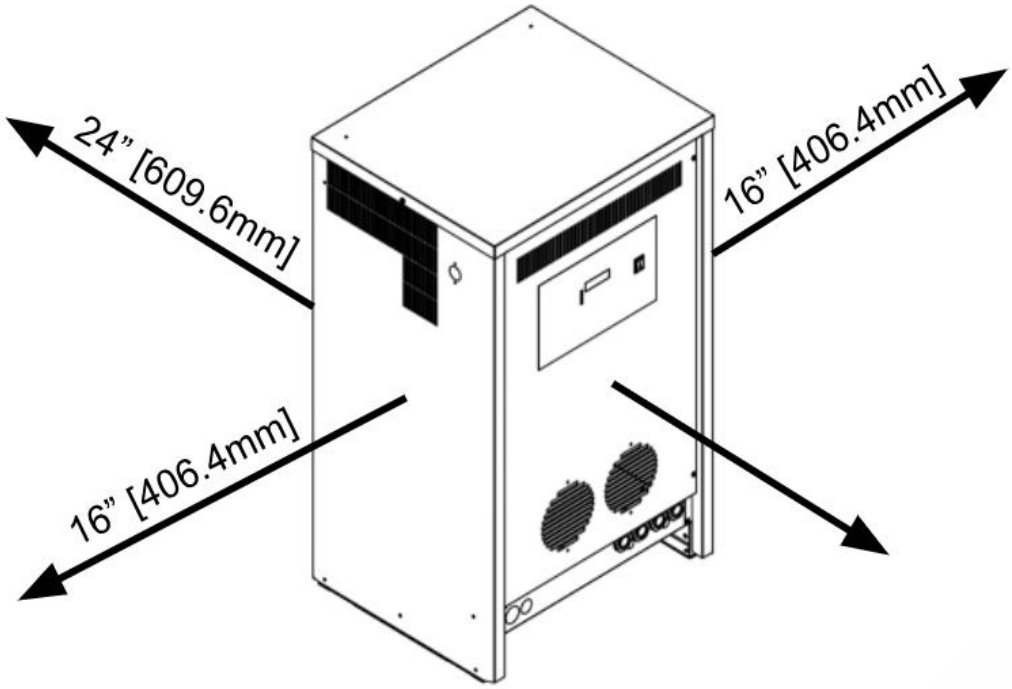

Figure 9: Reference image of required clearance on each side of the charger for servicing.

NOTE
The dimensions in Figures 8 & 9 are not proportionate. They are for reference only. Use a proper measuring tool to ensure required clearance when installing the charger.

3. Check that the ventilation slots are unobstructed and allow for proper air flow.
4. Secure the charger to the ground, or a stand that is secured to the ground.
5. After the charger is safely secured, the charger can be connected to the power source.

3.2 Verifying AC Input and Connect AC Lines to Charger

1. With a Phillips screwdriver, unscrew the 2x Phillips screws on the front door of the charger (Figure 10).

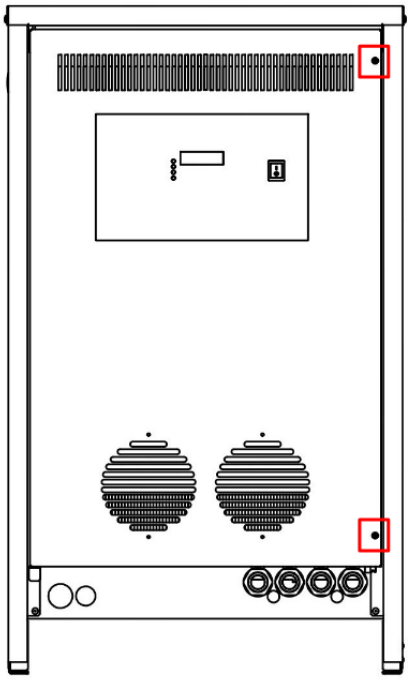

Figure 10: Reference photo of front door of the charger, unscrew the screws indicated in red.

2. Open the front door of the charger.
3. On the auxiliary control transformer, check the signal wire is plugged into the terminal identical to your AC power supply voltage (either 480V or 600V) (Figure 11).

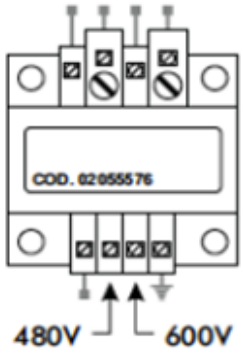

Figure 11: Image of auxiliary control transformer and arrows indicating where the signal wire will be plugged into (either 480V or 600V).

4. Check the 3 wires on the AC input terminal strip are plugged into the correct terminals identical to your AC power supply voltage (either 480V or 600V terminals) (Figure 12).

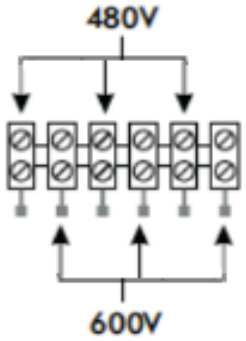

Figure 12: Image of AC input terminal strip and arrows indicating where the 3 wires will be plugged into (either 480V or 600V terminals).

5. Verify the AC fuses meet the requirements based on the charger serial plate. Charger Output and AC Amps value can be found on the charger serial plate. Refer to Table 1.

Table 1: Required AC Fuses for 480V and 600V AC Input.

	480V AC Input		600V AC Input	
Charger Output	Max AC Amps	AC Fuse	Max AC Amps	AC Fuse
36V-300A	19A	20A	15A	20A
36V-400A	26A	30A	21A	30A
48V-250A	21A	30A	17A	20A
48V-300A	25A	30A	20A	30A
48V-500A	43A	50A	34A	40A
48V-600A	51A	60A	41A	50A
80V-200A	30A	30A	24A	30A
80V-250A	37A	40A	30A	30A
80V-400A	60A	60A	48A	50A

6. Connect the ground and 3 phases of AC input cable to the respective AC input terminal, referring to Figure 13.

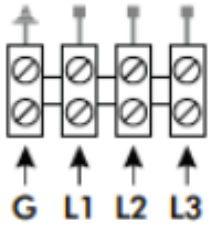

Figure 13: Image indicating location.

7. The charger is now operable.

4.0 Operating the Charger

CAUTION!
Before beginning to operate the charger, ensure the charger has been properly installed following this manual with proper clearance (Section 3.0 Installation). Only qualified personnel can operate the charger.

4.1 Preliminary Checks

1. Inspect the charger exterior for any loose screws.
2. Ensure input and output cables are not damaged.
   - Check cables for ripped insulation
3. Check that the ventilation slots are unobstructed and allow for proper air flow
4. Ensure the charger is installed as instructed in this manual and in accordance with any applicable national and/or local code(s).

4.2 Turning ON the Charger

1. Press down the “I” on the charger switch to turn on the charger (Figure 14).

Figure 14: Charger switch is ON when “I” is pressed down.

2. The display screen will show “SYSTEM READY” (Figure 15).

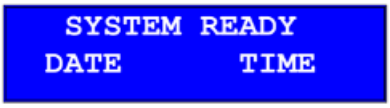

Figure 15: Image of charger display screen showing “SYSTEM READY”.

3. The charger is ready for use.

4.3 Connect the Charger to Battery & Charge the Battery

1. With the appropriate charge cable, connect the charger to the charge port of the battery.
   - Euro (Single/Dual Output) or Schaltbau
2. When the charger is securely connected to the battery, the display screen will show “BATTERY CONNECTED” (Figure 16).

Figure 16: Image of charger display screen showing “BATTERY CONNECTED”.

3. When the battery is being charged, the display screen will show the charging parameters such as voltage (V), delivered current (A), and battery SOC percentage (%) (Figure 17). The “CHARGING” LED light will light up.

Figure 17: Photo reference of display screen showing charging parameters, indicating the charger is securely connected to the battery and is charging the battery.

4. When the battery has reached 100% SOC, the “COMPLETE” GREEN LED light will light up. The display screen will show the most recent charging parameters.
5. The battery can be safely disconnected from the charger.

4.4 Disconnecting the Battery When Charge in Progress

1. Hold the UP/Manual Stop button for 3 seconds.
2. The charging parameters will reduce to zero.
3. The battery can be safely disconnected from the charger.

5.0 Troubleshooting

If the charger does not turn on or operate as intended (“ERROR” RED LED light is lit up), proceed to troubleshoot.

5.1 Preliminary Checks

1. Inspect the exterior of the charger for any loose screws.
2. Ensure input and output cables are not damaged.
   - Check cables for ripped insulation
   - Check connectors for damage or bent pins
3. Check that all ventilation slots are unobstructed and allow for proper airflow
4. Ensure the charger is installed as instructed in this manual and in accordance with any applicable national or local code(s).

5.2 Secondary Checks

1. Check the charger switch is ON by pressing down on “I” (Figure 13).
2. Check that there is no disconnect from the AC input or breaker.
3. Connect the charger with a different Stromcore Battery of the same voltage (V) and Ampere (A) to check if the same error with the charger persists.

5.3 Error & Warning Messages

Perform Section 5.1 Preliminary Checks and 5.2 Secondary Checks for the following error and warning messages:

1. Display Screen stuck on “SYSTEM READY” when battery is plugged in.
2. Display Screen shows “HIGH V ERROR”.
3. Display Screen shows “ANTI ARCING DC PLUG/SOCKET ERROR”.

5.4 Stromcore Product Support

For further troubleshooting and product support, contact:

Stromcore Product Support:

Phone:	(289) 269-0882, Press 2	| Quick Response Time
Text / SMS:	(289) 269-0882	| Quick Response Time
Email:	service@stromcore.com	| Response within the same Business day

Hour of Operation: Monday - Friday 8AM–5PM EST | Appointments available 5PM–7PM EST (Scheduled min. 24 hours out)

6.0 Inspections and Upkeep

CAUTION!
When servicing a Stromcore product, it is crucial for technicians to be aware of live voltage. Before beginning any service work, technicians must turn off the AC Input Breaker and ensure systems are de-energized. Use a digital multimeter to measure the voltage across ground (Green) and all 3 phases of the AC cable (Red, Black, and White). The digital multimeter must read 0V at each line (Figure 18).

1. Turn off the AC Input Breaker and ensure that the charger is de-energized.
2. Inspect the charger for any loose screws.
3. Ensure the input and output cables are not damaged:
   - Check cables for ripped or damaged insulation.
   - Check connectors for damage or bent pins
4. Check all ventilation slots are not obstructed and allows for proper air flow.
5. Ensure the charger is securely bolted to ground and/or mounted on a charger stand that is bolted to the ground.
6. Ensure there is no dust buildup on or inside the charger

Figure 18: Image of de-energized charger. Digital multimeter is showing 0V across the ground cable (Green) and all 3 phases of the AC cable (Red, Black White).

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