



**La MARCHÉ**®

La Marche Manufacturing Company

[www.lamarchemfg.com](http://www.lamarchemfg.com)

**A39DS**

Universal Filtered Battery Charger



## Installation and Operation Manual

This manual is subject to change without notice. You may obtain the newest version of the manual at [www.lamarchemfg.com](http://www.lamarchemfg.com)



## Important Safety Instructions

Before using this equipment read all manuals and other documents related to this charger and other equipment connected to this charger. Always have a copy of a charger's manual on file nearby in a safe place; if a replacement copy of a manual is needed, it can be found at [www.lamarchemfg.com](http://www.lamarchemfg.com).

### Electrical Safety



**WARNING:** Hazardous Voltages are present at the input of power systems. The output from chargers and from batteries may be low in voltage, but can have a very high current capacity that may cause severe or even fatal injury.

When working with any live battery or power system, follow these precautions:

- Never work alone on any live power system; someone should always be close enough to come to your aid.
- Remove personal metal items such as rings, bracelets, necklaces, and watches.
- Wear complete eye protection (with side shields) and clothing protection.
- Always wear gloves and use insulated hand tools.



**WARNING:** Lethal Voltages are present within the power system. Parts inside the charger may still be energized even when the charger has been disconnected from the AC input power. Check with a meter before proceeding. Do not touch any uninsulated parts.

- A licensed electrician should be used in the installation of any charger.
- Always disconnect the charger from the supply, batteries, and loads before performing maintenance, replacing parts, or cleaning.
- Always assume that an electrical connection is live and check the connection relative to ground.
- Be sure that neither liquids nor any wet material come in contact with any internal components.
- Do not operate this charger outside the input and output ratings listed on the charger nameplate.
- Do not use this charger for any purpose not described in the operation manual.

### Mechanical Safety

- This charger or parts of the charger may get very hot during normal operation, use care when working nearby.
- Do not expose equipment to rain or snow. Always install in a clean, dry location.
- Do not operate equipment if it has received a sharp blow, been dropped, or otherwise damaged in any way.
- Do not disassemble this charger. Incorrect re-assembly may result in a risk of electric shock or fire.

### Battery Safety



**WARNING:** Follow all of the battery manufacturer's safety recommendations when working with or around battery systems. DO NOT smoke or introduce a spark or open flame in the vicinity of a battery. Some batteries generate explosive gases during normal battery operation.

- To reduce risk of arc, connect and disconnect the battery only when the charger is off.
- If it is necessary to remove battery connections, always remove the grounded terminal from the battery first.
- Remove personal metal items such as rings, bracelets, necklaces, and watches.
- Always wear rubber gloves, safety glasses, and a rubber lined vest/apron when working near a battery.
- Have plenty of fresh water and soap nearby in enclosure the battery electrolyte contacts skin, clothing, or eyes.
- If the battery electrolyte contacts skin or clothing, wash immediately with soap and water.
- If the electrolyte enters the eye, immediately flood the eye with running cold water for at least ten (10) minutes and seek medical attention immediately.
- Do not drop or place any materials on a battery. A spark or short-circuit could cause an explosion.

## Charger Location

- Allow at least 6 inches of free air on all vented surfaces for proper cooling
- Allow sufficient clearance to open the front panel for servicing.
- Do not operate this charger in a closed-in area or restrict ventilation in any way.
- Do not place charger below battery.
- Never allow battery electrolyte to drip on this charger when reading the specific gravity or filling the battery.
- Never place this charger directly above a standard flooded battery. Gases from the battery will corrode and damage equipment.
- A sealed maintenance free or valve regulated lead acid (VRLA) battery may be placed below this equipment.

## Check for Damages

Prior to unpacking the product, note any damage to the shipping container and take pictures. Unpack the product and inspect the exterior and interior of product for damage. If any damage is observed, take pictures and contact the carrier immediately to file a damage claim. Contact La Marche for a Return Material Authorization number to have the charger sent back for evaluation and repair.



**CAUTION:** Failure to properly file a claim for shipping damages, or provide a copy of the claim to La Marche, may void warranty service for any physical damages reported for repair.

## Returns for Service

Save the original shipping container. If the product needs to be returned for service, it should be packaged in its original shipping container. If the original container is damaged/unavailable, make sure the product is packed with at least three inches of shock-absorbing material to prevent shipping damage. *La Marche is not responsible for damage caused by improper packaging of returned products.*

## Inspection Checklist

- Enclosure exterior and interior is not marred or dented.
- There are no visibly damaged components.
- All internal components are secure.
- Printed circuit boards are firmly seated.
- All hardware and connections are tight.
- All wire terminations are secure.
- All items on packing list have been included.

## Handling

Equipment can be very heavy with uneven distribution of weight. Use adequate manpower or equipment for handling. Until the equipment is securely mounted, care must be used to prevent equipment from being accidentally tipped over or dropped.

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## Model Scope/General Description

The La Marche model A39DS "Universal Charger" is a microprocessor-controlled SCR battery charger which has adjustable output voltage, adjustable output current limit, and an adjustable charge timer.

The output voltage, output current, the elapsed time, and alarms are displayed on the LCD display. The DC voltage has a wide range adjustment after battery detection. The DC current limit adjusts from 5% to 100% of the rated output. This provides the flexibility to charge a wide range of different types of batteries. The charge timer range adjusts between 1 hour to 99 hours in 1-hour increments.

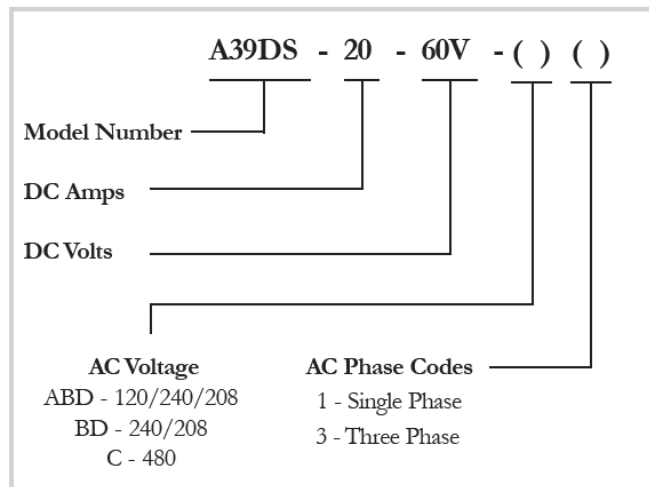
"Enter / Quick Set" button allows adjusting the output DC voltage, output DC current limit & the elapsed time. Quick set is active while charging only.

The initial voltage setting is derived from the actual battery voltage when the battery is connected. The current limit automatically defaults to 10% of the rated output and the charger timer defaults to 8 hours on start-up.

The A39DS will "Auto" start upon connection of the battery and "Auto" stop when the charge cycle is terminated or a normal charge is complete.

## Understanding the Model Number

The A39DS model number is coded to describe the options that are included. Find the model number on the nomenclature nameplate of the charger. Then follow the chart to determine the configuration of your battery charger.



## Optional Accessories Included in the Charger

This charger may have been outfitted with a number of optional accessories or option packages. To determine the options included (if any), refer to the cover page of the manual package. If the manual package that is included with the charger is no longer available, contact La Marche and provide the model or serial number of the charger to receive a list of the included accessories.





## **La Marche A39DS Battery Charger: Getting Started**

**WARNING: Please read the Important Safety Instructions before proceeding. Make sure to check for any shipping damages before getting started.**

### **1 – Connect Proper AC Voltage**

Confirm & connect proper AC voltage against charger nameplate. If charger is multi-tap, refer to AC Input Voltage Tap Configuration table inside the charger or on charger schematic. Close AC breaker.

### **2 – Adjust Charger DC Output & Alarms**

To access the Settings Menu, press the MENU button, select "Settings Menu", and press the ENTER button. Once in the Settings Menu, the user can navigate the submenus with the up and down arrows. To enter a submenu, use the ENTER button. The BACK button returns to the previous menu. When selecting, the ENTER button will store the value and step back. The BACK button will not save the change and will go a step back. At any point, the settings menu can be exited, with or without saving the settings.

#### Output Settings

- DC Voltage
- DC Current Limit
- Elapsed Time

#### Alarm Settings

- Low DC Current

#### Advanced Settings

- Shutoff Enable
  - Low Current Turn Off
- AC Volts Scale
- Security
  - Password Enable
- Firmware Menu
  - Firmware Version

- Bootloader Version
- Update Firmware
- LCD Settings
  - LCD Backlight
- Serial Number
- Set Clock
  - Set Date and Time
- Set to Default
- Logs and Files
  - Enable Event Log
  - Log Interval
  - Initialize
  - Files Menu

#### Basic Defaults

- Reset to default Settings

### **3 – Connect Batteries**

Observe proper polarity when making battery connections. Close the DC breaker, if applicable.

# 1 Equipment Handling

## 1.1 Storing the A39DS

If the A39DS is to be stored for more than a few days after delivery, it should be stored within its shipping container. The location chosen for storage should be within an ambient temperature of -40 to 185° F (-40 to 85° C) with a non-condensing relative humidity of 0 to 95%.

**NOTE:** Storage should not exceed 2 years due to the limited shelf life of the DC filter capacitors when they are not in service.

## 1.2 Moving the A39DS

After careful inspection and upon verification that the A39DS is undamaged, identify the enclosure style and weight of the A39DS charger. Refer to the tables below.

Output Voltage	Frequency	Ampere Rating			
		20 ADC	30 ADC	40 ADC	60 ADC
30 VDC	60 Hz				6 Case 175 lbs. (79.4 kg)
60 VDC		6 Case 130 lbs. (59 kg)		6 Case 190 lbs. (86.2 kg)	
90 VDC					6 Case 300 lbs. (136.1 kg)
150 VDC			6 Case 300 lbs. (136.1 kg)		

Table 1 – Case Type and Weight (Single Phase, 20-60 ADC)

Output Voltage	Frequency	Ampere Rating			
		50 ADC	100 ADC	150 ADC	200 ADC
60 VDC	60 Hz		8A Case 325 lbs. (147.4 kg)	8A Case 350 lbs. (158.8 kg)	72 Case 450 lbs. (204.1 kg)
90 VDC			8A Case 350 lbs. (158.8 kg)	8A Case 565 lbs. (256.3 kg)	72 Case 637 lbs. (288.9 kg)
150 VDC		8A Case 345 lbs. (156.5 kg)	8A Case 600 lbs. (272.2 kg)	27 Case 640 lbs. (290.3 kg)	27 Case 690 lbs. (313 kg)

Table 2 – Case Type and Weight (Three Phase, 50-200 ADC)

## 2 Installation

### 2.1 Mounting the A39DS

When mounting the A39DS in any configuration, consider the size and weight of the charger. The wall, and/or floor must be able to support the weight of the charger as well as an additional safety factor. Verify the method of mounting and the weight of the A39DS, using Tables 1, 2, and 3. The following considerations should be taken:

- The location chosen for the charger should be within an ambient temperature range of 32 to 122°F (0 to 50°C) with a non-condensing relative humidity no higher than 95%.
- The A39DS should be mounted in an area free of explosive materials and away from drips and splatter.
- The A39DS utilizes convection cooling, so a clearance of at least 6in (152mm) of free air must be maintained on the top, bottom, and both sides for cooling air.
- Maintain 36in (914mm) or more of clearance at the front of the charger to allow for operation and maintenance.
- The bolts or screws used to secure the charger should be sufficient length to assure a vibration-free mounting.
- The preferred fastener is a machine bolt backed with a flat washer, lock washer, and nut. All hardware should be corrosion resistant.

**NOTE:** Please refer to the specific enclosure drawing provided with unit manual for greater detail.

Enclosure Number	Cable Entry		Mounting
	AC Input	DC Output	
6	Right/Top Bottom	Left/Top Bottom	Wall / Floor
8A	Right/Top Bottom/Side	Left/Top Bottom/Side	Floor
27	Top	Top	Floor
72	Right/Bottom	Bottom	Floor

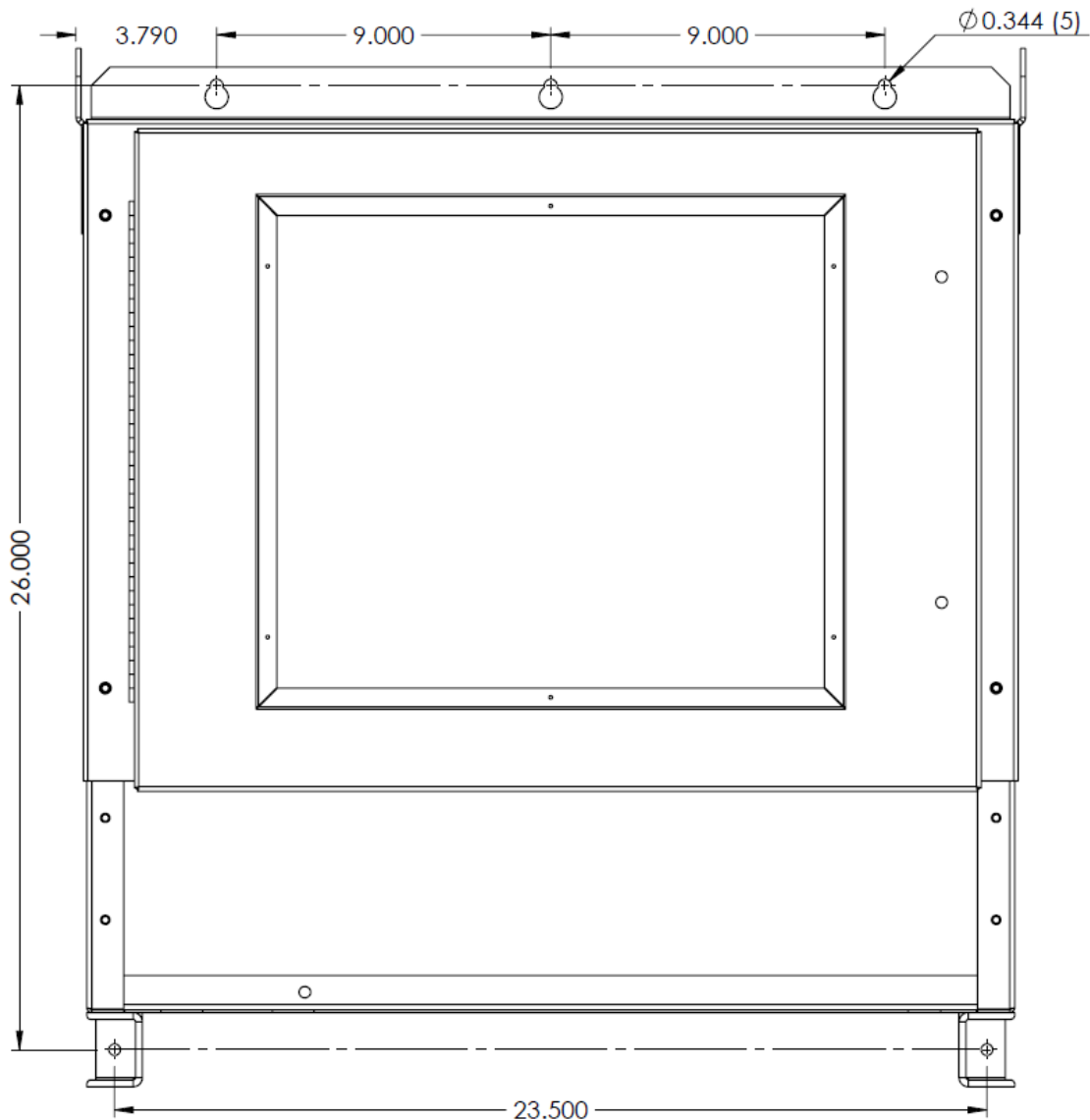
*Table 3 – Available Mounting Methods*

## 2.1.1 Wall-Mounting the A39DS (#6 Enclosure Only)

### Wall-Mount Procedure

To wall-mount the A39DS, install five 5/16 in (8 mm) bolts on the wall rated to support the charger weight plus a safety factor of at least two times. Secure the charger on bolts, add appropriate mounting hardware, and tighten securely. Refer to the figures below for mounting dimensions and specifications.

**NOTE:** All below dimensions are in inches. For further A39DS enclosure information, see the outline drawings for the corresponding enclosures online at <http://www.lamarchemfg.com/info/enclosure-drawings.html>



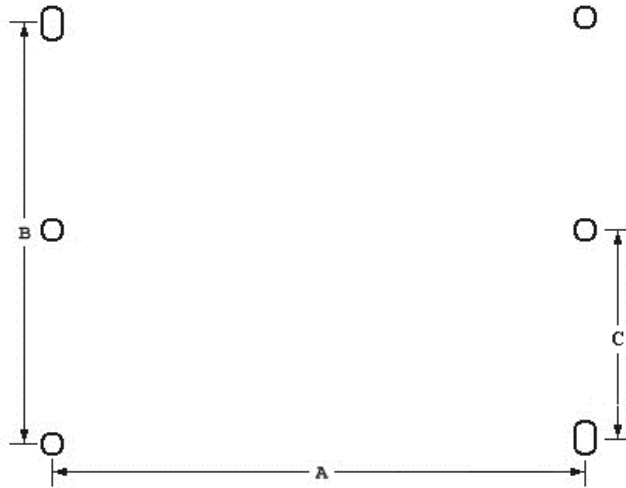
**Figure 1 - #6 Enclosure Wall mounting Bolt Pattern**

### 2.1.2 Floor-Mounting the A39DS (All Enclosures)

Floor-mounting the **8A, 27 & 70** enclosures is standard. If it is desired to floor mount a charger with the **6** enclosure, the floor-mount bracket is provided.

#### Floor-Mounting Procedure

To floor-mount the A39DS, install four to six bolts into the floor. Place the charger on the bolts, add appropriate mounting hardware onto the floor-mounting anchor bolts, and tighten securely. Refer to Figure 2 for hardware specifications and floor-mounting dimensions.



Case Size	A	B	C	Hole Dia.	Bolt Size
<b>6</b>	23.5" (597mm)	8.875" (225mm)	X	0.328" (8.33mm)	5/16" (8mm)
<b>8A</b>	25.5" (648mm)	10.875" (276mm)	X	0.406" (10.31mm)	3/8" (10mm)
<b>72</b>	25.75" (654mm)	17.5" (445mm)	X	0.313" (7.95mm)	5/16" (8mm)
<b>27</b>	29.25" (743mm)	20" (508mm)	10" (254mm)	0.406" (10.31mm)	3/8" (10mm)

**Figure 2 – A39DS Enclosure Footprint**

## 2.2 AC Input Connections

Before beginning any work inside the charger, ensure the following:

- Verify all incoming AC supply is de-energized.
- Verify that no voltage is present inside the case by using a voltmeter at all input and output terminals.
- Check that the source voltage and frequency match the charger front nameplate specifications.
- Confirm if charger is multi or single input by referring to charger nameplate.
- If charger is confirmed to be a multi-input charger, refer to corresponding charger schematic or AC input wiring chart inside charger for transformer tap settings.

Select wire size using the table below. This is based on an overload **current of 110-115%** of the input current listed on the charger nameplate.

**NOTE:** Feeder breaker should be sized to match the size of the AC protection used in charger. If multi-tap charger is set for 120VAC input configuration, feeder breaker should be double the size of the AC protection. 120VAC configured multi-tap chargers use both breaker poles in parallel.

Breaker Size/ Fuse Size - Amps	AWG Minimum Wire Size Requirement for Customer Connection	AWG Minimum Wire Size for Equipment Grounding
3	#14	#14
5	#14	#14
10	#14	#14
15	#14	#14
20	#12	#12
25	#10	#12
30	#10	#10
40	#8	#10
50	#8	#10
60	#6	#10
70	#6	#8
80	#4	#8
90	#4	#8
100	#4	#8
125	#2	#6
150	#1	#6
175	#1/0	#6
200	#2/0	#6
250	#4/0	#4
300	250 MCM	#4
400	400 MCM	#2
500	600 MCM	#2

**Table 4 – AC/DC & Ground Wire Size Minimum Requirements  
(All wires specified in the table are rated at 90 °C or 194 °F)**

**NOTE:** These are recommended sizes per La Marche Standards. The National Electrical Code (NEC) and Local Wiring Codes must be followed.

### AC Connection Procedure

First, connect an adequate earth ground lead (use table above for sizing) to the terminal marked ground. Install the input AC cables to the AC input terminals of the charger. Refer to the schematic diagram for AC input connections.

### 2.3 DC Output Connections

Before making any of DC output connections, make sure you have read and fully understand the DC Connection Procedure below. Select proper size for the DC wiring from the wire size table on the previous page. If the distance between the charger's DC output and the DC load exceeds 10 feet, use the Power Cable Guide below to minimize the voltage drop across the wire distance.

**NOTE:** It is recommended to use a battery disconnect breaker between charger and battery bank; helpful during battery or charger maintenance.

#### Power Cabling Guide

Use the following formulas and table to determine proper wire size for minimal voltage drop.

#### Table of Conventions

- CMA = Cross section of wire in circular MIL area
- A = Ultimate drain in amperes
- LF = Conductor loop feet
- MaxAmp = Maximum allowable amperes for given voltage drop
- AVD = Allowable voltage drop
- K = 11.1 for commercial (TW) copper wire (KS5482-01)  
= 17.4 for aluminum (KS20189)

#### Calculating Wire Size Requirements

$$CMA = \frac{A \times LF \times K}{AVD}$$

#### Calculating Current Carrying Capacity of Wire

$$MaxAmp = \frac{CMA \times AVD}{LF \times K}$$

SIZE (AWG)	AREA CIR.MILS	SIZE (MCM)	AREA CIR.MILS
18	1620	250	250000
16	2580	300	300000
14	4110	350	350000
12	6530	400	400000
10	10380	500	500000
8	16510	600	600000
6	26240	700	700000
4	41740	750	750000
3	52620	800	800000
2	66360	900	900000
1	83690	1000	1000000
0	105600	1250	1250000
00	133100	1500	1500000
000	167800	1750	1750000
0000	211600	2000	2000000

Table 5 – Wire Size/Area Table

**NOTE:** These are recommended sizes per La Marche Standards. The National Electrical Code (NEC) and Local Wiring Codes must be followed.

#### DC Connection Procedure

To prevent the DC circuit breaker from tripping when connecting the battery, connections should be done in the following order.

1. Make sure that the incoming voltage to the charger is turned off.
2. Turn off/open the charger's AC and DC circuit breakers.
3. Connect the battery cables to the charger's DC output terminals. **OBSERVE PROPER POLARITY.**
4. Energize the charger by supplying AC voltage and turning on/closing the charger's AC breaker. This will charge the capacitors inside the charger.
5. After 30 seconds, turn on/close the DC breaker.

## 2.4 Alarms

As a standard feature of the A39DS, there are multiple alarms available that will be displayed on the LCD during an event. A "Failure" LED is illuminated if any the following alarms occur:

- AC Failure
- Low AC Input Voltage
- High AC Input Voltage
- High DC Voltage
- Low DC Current

### 2.4.1 Understanding the Alarms & Statuses

**AC FAIL ALARM** will trigger, and the red "FAILURE" LED will turn on if the AC power to the charger is lost for longer than 20 seconds. The alarm will automatically reset when AC power is restored to the charger. When AC power is lost, the front panel display and indicators will remain powered by the connected batteries.

**LOW ACV ALARM** will trigger, and the red "FAILURE" LED will turn on if the AC input falls 12% below the nominal input for longer than 20 seconds. The alarm will automatically reset when AC input returns to normal state. When AC power is lost, the front panel display and indicators will remain powered by the connected batteries.

**HIGH ACV ALARM** will trigger, and the red "FAILURE" LED will turn on if the AC input rises 12% above the nominal input for longer than 20 seconds. The alarm will automatically reset when AC input returns to normal state.

**HIGH DC VOLTAGE ALARM** will trigger, and the red "FAILURE" LED will turn on if the DC voltage rises above the charger's maximum output voltage setting for longer than 5 seconds. See below:

- The 30V model has a maximum output voltage setting of 30V.
- The 60V model has a maximum output voltage setting of 60V.
- The 90V model has a maximum output voltage setting of 90V.
- The 150V model has a maximum output voltage setting of 150V.

**NOTE:** All alarms automatically reset when the alarm condition is corrected.

**LOW DC CURRENT ALARM** will trigger and the red "FAILURE" LED will turn on if the output DC current of the charger falls below the alarm threshold for longer than 5 seconds. This can be caused by the battery being disconnected or if the battery has reached a full charge. This could also be the result of mis-adjustments of the output voltage settings. This alarm can be disabled if considered a nuisance alarm.

**CURRENT LIMIT** will trigger and the amber "CURRENT LIMIT" LED will turn on when the charger is in current limit, i.e. charging the battery at the current limit set point.

**80%** will trigger and the green "80% / COMPLETE" LED will flash when the charger is in constant voltage mode, i.e. charging the battery at the output voltage set point.

**COMPLETE** will trigger and the green "80% / COMPLETE" LED will turn on solid when the charger has finished charging the battery. Charger output will automatically shut off.

**CHARGING** will trigger and the green "CHARGING" LED will turn on solid when the charger is charging the battery. Charger output will be present.

## 2.5 Additional Option Connections

The A39DS charger may have been outfitted with several optional accessories or option packages. To determine the options included (if any) and the suggested connections, refer to the cover page of the manual package and the option instructions included with the A39DS charger instruction manual.



## 3 Operation

### 3.1 Starting the A39DS

All equipment is shipped from the factory fully checked and adjusted based on the model number.

#### 3.1.1 Checking the Installation

Before attempting to start up the A39DS, check and verify the following:

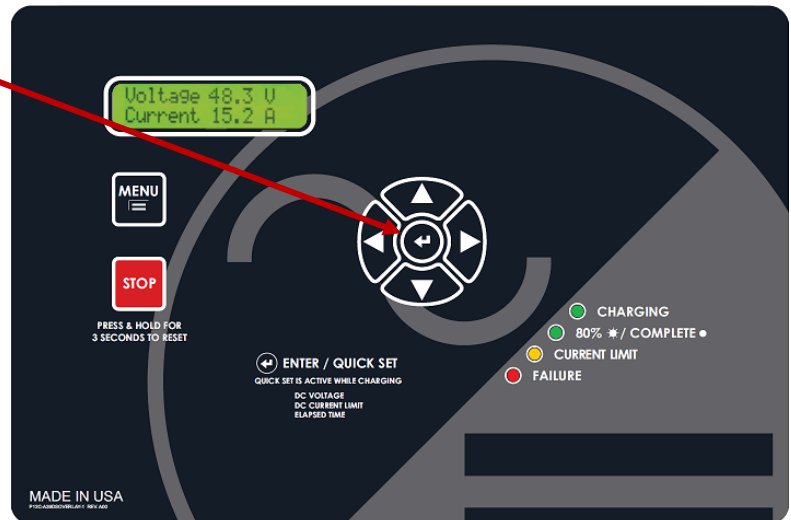
- Verify all connections are correct.
- Check that all terminations and contacts are tightened securely
- Check for any loose connection or unsecured components in the charger
- Check that the transformer is set for the correct input voltage and that the input frequency matches the nameplate or the charger
- Check that the battery voltage does not exceed the DC output voltage on the nameplate of the charger
- Verify AC feeder breaker matches charger input protection rating.

#### 3.1.2 Start-Up Sequence

- Close the AC breaker. The charger LEDs should flash and firmware version should show on the display for approximately 3 seconds. Then "Checking for Battery..." will be displayed on the LCD.
- Close the DC breaker to connect the battery.
- The charger will check the battery voltage & adjust the output 10% above the reading. The current limit will be set to 10% as the default.
- The charger will slowly ramp-up to the target voltage (this can take up to 10 seconds). "Charging" LED will be lit.

#### 3.1.3 Setting the DC Voltage, DC Current Limit & Elapsed Time

- While charging, "Quick Set" feature is active.
- Press the "Enter / Quick Set" button. Quick Set feature will be shown on the LCD display.
- The first setting is the DC Voltage. Use the Up & Down arrows to adjust the output DC Voltage to the desired setting.
- Press "Enter / Quick Set" button to confirm the setting & advance to the next parameter.
- The second setting is DC Current Limit. Use the Up & Down arrows to adjust the output DC Current Limit to the desired setting.
- Press "Enter / Quick Set" button to confirm the setting & advance to the next parameter.
- The last setting is Elapsed Time: use the Up & Down arrows to adjust the charging time to the desired setting.
- Press "Enter / Quick Set" button to exit.



**NOTE:** To cancel the adjustment, use the "Back / Left Arrow" button.

#### 3.1.4 Stopping the Charge

- To terminate the charge, press the "STOP" button.

#### 3.1.5 Restarting the Battery Charger

- After the charge is complete or terminated, restart the charger by disconnecting the battery, or by pressing & holding the "STOP" button for 3 seconds.

### 3.2 Digital Control Board

The standard A39DS comes with an LCD digital control board. The digital control board is a more attractive and user-friendly option, with many additional features.

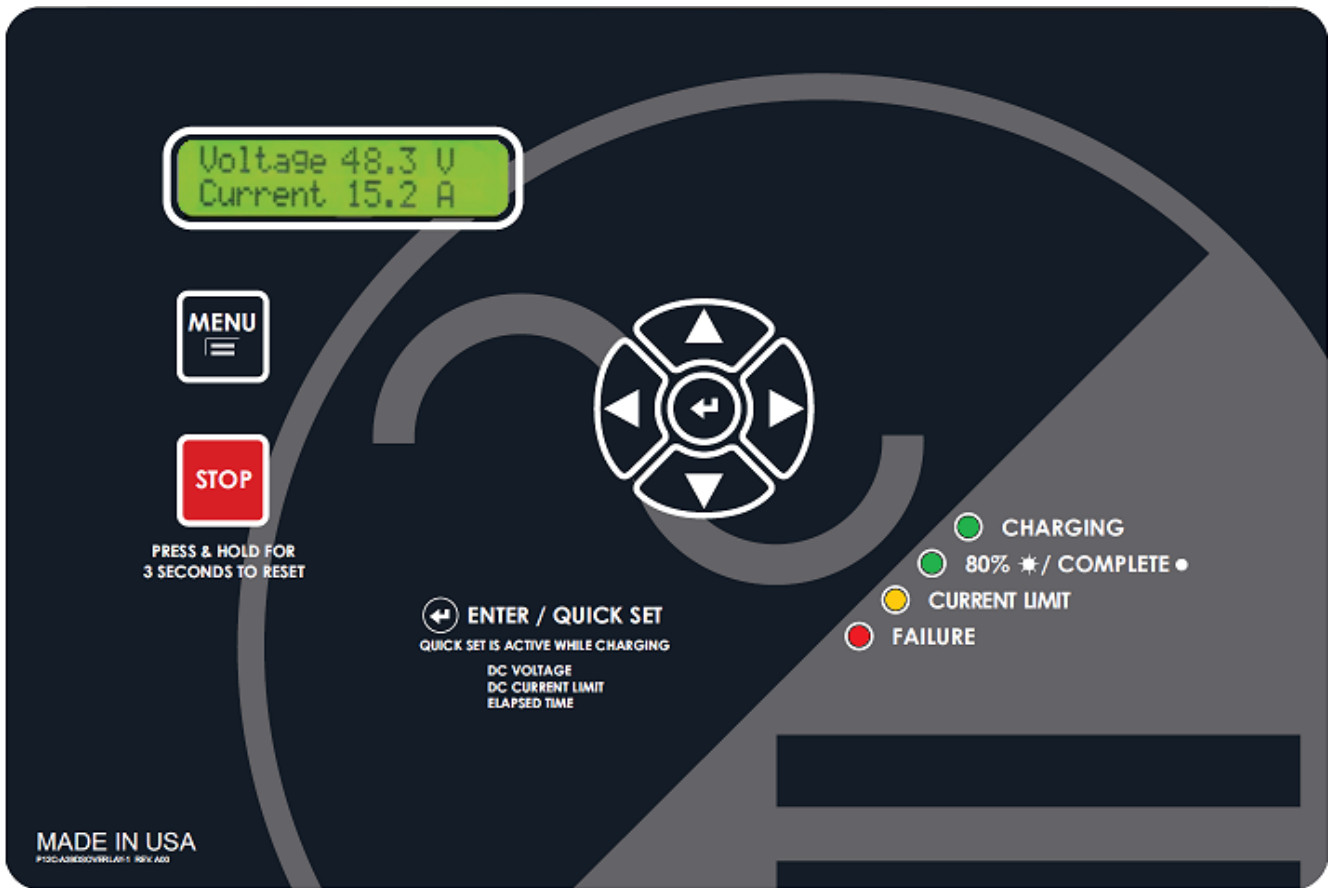


Figure 3 – A39DS Front Panel

The parameters viewable on the idle display are as follows:

#### Standard A39DS Display Sequence

Voltage 132.3 V Current 15.2 A	System DC Outputs	Elapsed Time 01:07:34	Elapsed Time
Logging Status OK 0.01 Pct	Logging Status	Timer set to 08 Hours	Timer Setting
07/29/2023 11:27:39	Charger Clock – Date and Time	A-H Returned 248.6	Amp-Hour Returned

### 3.3 Output Voltage Adjustments

The output voltage of the A39DS charger is set to a default value of 10% above the battery voltage. But should be adjusted to meet the battery manufacturer recommendations. To adjust the DC output voltage, refer to Section 4.1.1.

#### NOTES:

1. When making output voltage adjustments with batteries connected, the immediate change will be reflected on the output current and NOT the voltage due to the voltage difference between the output and the batteries.
2. Immediate change in voltage might not be seen due to the back-feed of the battery voltage when performing adjustments.

## 4 Controller Menus

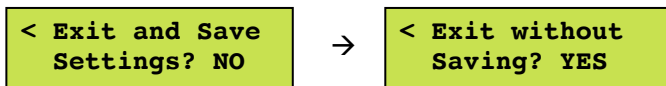
The A39DS is equipped with multiple settings and test menus. Refer to Appendix A for details on the structure of the charger menus. Access menus by pressing the MENU button on the front panel. Navigate using the BACK, UP, DOWN and ENTER button. To enter a submenu, use the ENTER button. Quick set is also available using the ENTER button while charging the battery.

### Saving Settings

At any point, the user can press the BACK button from the main Settings Menu to exit the Settings Menu. When the back button is pressed (on the main Settings Menu), the user is prompted if they would like to "Exit and Save Settings?"

If the BACK button is pressed again, the control board will return to the Settings Menu. If "YES" is selected, the display will read "Saving Settings", the menu will be exited, and settings saved. If "NO" is selected, the user is prompted to "Exit without Saving?"

From this screen, if "YES" is selected, the user will be returned to the DC output display and all changes to the settings will not be saved. If "NO" is selected, the user will be returned to the Settings Menu.



### 4.1 Settings Menu

All equipment is shipped from the factory fully checked and adjusted based on the model number. Do not make any adjustments unless the equipment has been powered up and the settings have been determined to be incorrect. If the settings have been determined to be incorrect, adjustments may be made as detailed below.

Once in the Settings Menu, the user can navigate the menus with the up and down arrows. To enter a submenu, use the ENTER button. The BACK button returns to the previous menu. When making a selection, the ENTER button will store the value and step back. The BACK button will not save the change and will go a step back. At any point, the settings menu can be exited, with or without saving the settings.

The settings menu is divided into 4 submenus:

- Output Settings
- Alarm Settings
- Advanced Settings
- Basic Defaults

**NOTE:** Some chargers may have additional settings included in the Settings menu; contact La Marche for further explanation of settings not mentioned below.

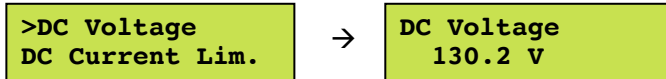
The Settings menu is as follows:

### 4.1.1 Output Settings

The Output Settings submenu provides access to change the DC Voltage, DC Current Limit as well as the Elapsed Time.

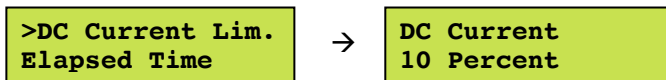
#### DC Voltage Setting

The DC voltage is automatically set once the battery voltage is detected. The DC voltage increments by 0.1V. Select "DC Voltage" and then press ENTER button. Press the UP and/or DOWN buttons until the desired voltage level is displayed. Press ENTER to store the setting or BACK to cancel.



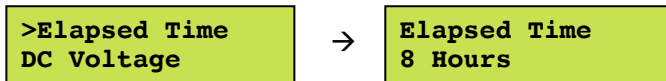
#### DC Current Limit Setting

The DC current limit automatically defaults to 10% of the rated output. The DC current limit increments by 1%. Select "DC Current Limit" and then press ENTER button. Press the UP and/or DOWN buttons until the desired current limit level is displayed. Press ENTER to store the setting or BACK to cancel.



#### Elapsed Time

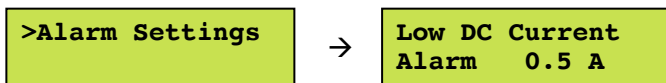
The Elapsed Time defaults to 8 hours on start-up. The charging time increments by 1 hour. Select "Elapsed Time" and press then ENTER button. Press the UP and/or DOWN buttons until the required charging time is displayed. Press ENTER to store the setting or BACK to cancel.



### 4.1.2 Alarm Settings

The Alarm Settings submenu provides access to the change the Alarm Thresholds. The Alarm Thresholds setting allows the user to determine the current or voltage value at which an alarm trigger. The threshold can be changed for the following:

- Low DC Current



**NOTE:** Alarm threshold defaults are based on the charger rating. The alarm threshold values shown above are not representative of the default values for any specific A39DS charger.

### 4.1.3 Advanced Settings

The Advanced Settings Menu allows the user to access and modify other parameters of the charger which are not included in the basic Settings Menu. The Advanced Settings Menu is divided into 7 submenus:

- Shutoff Enable
- AC Volts Scale
- Security
- Firmware Menu
- LCD Settings
- Serial Number
- Set Clock
- Set to Default
- Logs and Files

#### Shutoff Enable

The Shutoff Enable Settings submenu provides access to enable or disable the charger shutoff when Low DC Current alarm occurs. If enabled, during Low DC Current alarm, the charger will terminate the battery charge. If disabled, the charger will not terminate the battery charge during Low DC Current alarm. The charger will continue charging the battery until the elapsed time is reached.

#### AC Volts Scale

The "AC Volts Scale" option is included for chargers that have multiple taps. This setting adjusts the scaling used to measure the charger's AC voltage. If the charger has a single input voltage, do not adjust this setting as it affects the AC Low & AC High alarms.

#### Security

The "Security" menu allows the user to set a password to enter calibration. By default, the password is disabled. To enable the menu password, enter the Settings Menu by pressing the Menu button on the front panel. Navigate to Advanced → Security → Password Enable. Select YES and enter "0000". Navigate to "Set Password". Set password to desired four-digit pin. Make sure to save this new number as it will be necessary to access the menu after enabling the security feature. If the security feature is decided to be disabled at a later time, reset password to "0000" following the same steps previously mentioned.

**NOTE:** *If a password is set, no changes can be made within this menu without knowing the password. In case the password is forgotten or lost, consult factory for password reset.*

#### Firmware Menu

The Firmware Menu allows the user to view the firmware version, as well as update the firmware if desired. The submenus are as follows:

##### ***Firmware Version***

The menu allows the user to view the current firmware version of the charger.

##### ***Update Firmware***

The A39DS firmware can be updated, as a standard feature, via a microSD card. To update the firmware, follow the procedure below:

**NOTE:** *If more than one firmware .bin file is on the microSD card, the bootloader will not program or reprogram the flash and will show a message saying "More than 1 file found!" and will loop forever.*

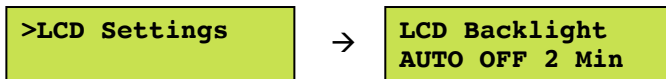
*If no firmware .bin file is on the microSD card and the program flash is empty, the bootloader will loop forever and display the message "No update file found!"*

1. Insert the microSD card into the computer using a microSD card converter.
2. Back up all files on the microSD card to the computer.
3. Format the microSD card.
4. Find the firmware .bin file provided and upload it into the microSD card.

5. Safely remove the microSD card from the computer and insert it on the A39DS charger's microSD card slot.
6. Update the firmware by entering the Settings menu:  
*Menu → Advanced → Firmware Menu → Update Firmware*
7. Enter the password provided (must contact La Marche Service Department) and select YES when prompted to update the firmware. The charger will start to program itself. Do not interrupt the power or the board while it is programming!

### LCD Settings

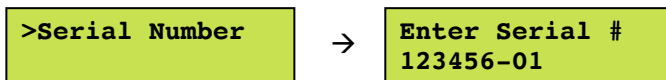
The "LCD Settings" option allows the user to control the LCD backlight. By default, the LCD backlight automatically turns off after two minutes. The user may also set it to be always on.



### Serial Number

The "Serial Number" setting allows the user to change the serial number associated with the S2A-368S board. This serial number is the serial number of the A39DS charger and is set at the factory for new chargers. If a user receives a replacement S2A-368S board, the serial number will have to be set via calibration.

In order to change the serial number used by the software, select "Serial Number" from the Settings menu and press the ENTER button. Each digit of the serial number is adjusted individually. Press the LEFT and RIGHT buttons to select digits. If the leftmost digit is selected, pressing left will exit the serial number setting and discard changes. Press the UP and DOWN buttons to increase and decrease the selected digit.



### Set Clock

The "Set Clock" setting allows the user to program the real-time clock used by the software. This clock is used in the data logging to timestamp events. In addition, the clock can be reset which returns the clock to the date setting of software revision.

### Set to Default

The "Set to Default" option resets all user-adjustable settings to the factory defaults. It is important to note that the factory defaults are not necessarily the correct settings for the specific DC system. Before the charger is shipped, adjustments are made at the factory using the same calibration procedure. If the charger is reset to default, these factory changes may be reset.

### Logs and Files

The A39DS now includes data logging as a standard feature. The EVENT log file is written as a .csv file. The "Logs and Files" menu allows the user to access the A39DS Data Log and make changes to the Data Log settings. The submenus are as follows:

### ***Enable Event Logging***

The "Enabl Event Log" option allows the user to enable Event type logging. By default, Event Logging is enabled.

### ***Log Interval***

The "Log Interval" option allows the user to set the interval that data is logged. By default, the interval is set to 60 minutes, but can be adjusted from 1 to 60 minutes.

### ***Initialize***

To initialize a memory card for use in the A39DS, select "Initialize" from the "Config Files" menu and follow the prompts. Initializing a microSD card will erase all data from the card; it is required to use a blank and formatted microSD card for use. Refer to Section 5 under *Formatting the MicroSD Card* for formatting instructions. A memory card only needs to be initialized once. After it has been initialized in a charger, it can be used in any other A39DS charger without being initialized again.

### ***Files Menu***

The "Files Menu" allows the user to access the following submenus:

#### ***Remove Drive***

The "Remove Drive" option must be used prior to removing the microSD card from an energized charger. This prevents damage to the microSD card data. Refer to Appendix B for removal instructions.

#### ***Insert Drive***

The "Insert Drive" option must be used prior to installing the microSD card into an energized charger. This prevents damage to the microSD card data.

#### ***Save Settings***

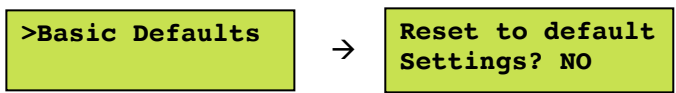
The "Save Settings" menu allows the user to create a read-only customer and factory settings .csv file which is saved into the inserted microSD card. The files contain supportive information on factory settings of the charger and the customer settings of the charger. Should any issues arise, and service department is required to be contacted, these files may be downloaded.

#### ***Format Drive***

To format a memory card for use in the A39DS, select "Format Drive" from the "Files Menu" and follow the prompts. Formatting a microSD card will erase all data from the card.

#### **4.1.4 Basic Defaults**

The "Basic Default" menu allows the user to load the factory default settings for all parameters not included in the Advanced Settings menu. Loading basic default settings will not reset any settings included in the advanced section of the Settings menu.



#### 4.2 Test LEDs

The "Test LEDs" menu allows the user to run a basic lamp test on the A39DS. After selecting this menu, press the "ENTER" button to light all the LEDs on the display membrane. To end the LED test, press back.

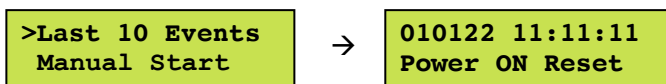


#### 4.3 Reset Alarms

The "Reset Alarms" menu allows the user to reset all alarms. This feature can be used to clear alarms when certain alarms have been set to latch upon triggering.

#### 4.4 Last 10 Events

Displays the last 10 events that have occurred on the front screen of the charger. This is to be used as a quick reference.



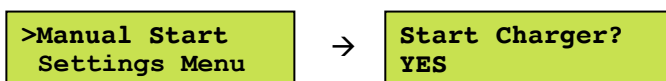
#### 4.5 Manual Start – Zero Volt Battery Start

The "Manual Start" menu allows the user to start the charger when the battery voltage is lower than the minimum detection voltage. This feature should only be utilized (1) when the battery is discharged to a level the charger does not recognize, and (2) when the battery can tolerate the minimum output voltage setting of the charger. See the output voltage setting information below:



- The 30V model has a minimum output voltage setting of 2V.
- The 60V model has a minimum output voltage setting of 6V.
- The 90V model has a minimum output voltage setting of 8V.
- The 150V model has a minimum output voltage setting of 12V.

After selecting this menu, press the "ENTER" button. To start the charger, select YES & press the "ENTER" button again. The charger will start charging the battery with the minimum output voltage setting & 10% current limit.





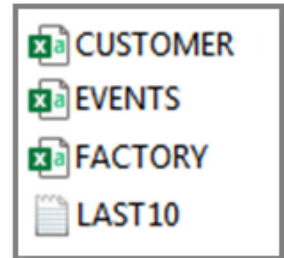
## 5 Data Logging

The A39DS now includes data logging as a standard feature. The log file is written as a .csv file format which can be opened using Microsoft Excel or any number of free spreadsheet programs. It can even be opened on many modern smartphones. The data logs are written to an included microSD card, which plugs into a slot located at the top left of the S2A-368S board (when looking at the back of the front door). The data log can be set to log Charger Events, as well as to log all data at a specified interval. By default, the log file is set to Events only.

The microSD card can be removed, following the proper menu prompt, and has various files included as seen on the figure aside. The three data files are CUSTOMER.csv, EVENTS.csv, FACTORY.csv, and LAST10 which can be downloaded to a computer for easy review. A microSD card reader adapter will be necessary to interface with a computer. Refer to Appendix B for instructions.

The following guidelines should be taken into consideration:

- Do not use the microSD card for any other purpose besides data logging and firmware updating. Data corruption/microSD card damage may occur.
- Do not touch metal contacts on the back side of the microSD card when handling.
- MicroSD card to be used MUST be blank and formatted. To format the microSD card, install it on a PC and run a full format.



### Events Only Logging

The Events Only Logging records data only when an event occurs. When an event occurs, all charger data points are written to better understand the cause of said event. The events that are logged are: Alarm Occurrence, Alarm Cleared, Calibration Entered, Calibration Closed, Battery Connected, Battery Disconnected and Charger Reset.

At any event occurrence, the data log file will record the date, time, DC Voltage, DC Current, AC Voltage, Elapsed Time, Cooling Time, A-H returned, as well as the event which occurred.

### Interval Logging

Interval Logging records a log file that records data continuously at a specified time interval. In addition, any charger event will be recorded at the time of occurrence. The interval log records all the same data as is listed above. The default interval when set up is 24 hours and is adjustable between 1 to 59 minutes with 1-minute increments, or 1 to 24 hours.

### Formatting the MicroSD Card

The microSD card may need to be formatted for the following reasons:

- Installing a new microSD card sourced from a 3<sup>rd</sup> party
- Data on original microSD card has been found corrupt and non-usable
- Other non-charger data has been detected on the microSD card
- If the A39DS charger does not recognize the microSD card

There are two acceptable procedures to format the microSD card. It is important that only these two methods are used, as the A39DS charger does not run a Windows-style NTSF, FAT, or FAT-32 based sector partition scheme. If the microSD card has been formatted to one of these partition schemes, the card may have trouble maintaining data after several months of records. It should also be noted the microSD card should not contain pictures, microSD card management software, or any other non-intrinsic charger data.

Please be advised that formatting the microSD card will completely erase any data; make a copy of any desired data on your PC prior to formatting. Formatting will create the microSD card sector partitions; these are the blocks where bytes of data are divided and shared.

### **MicroSD Card Format Method 1 (Preferred):**

The A39DS can properly format the microSD card with its built-in initialize function. With the microSD card installed in the charger, press MENU → Settings Menu → Advanced → Logs & Files → Initialize. The charger will ask you if you want to erase all data, select yes. The microSD card is now ready to be used in the charger.

### **MicroSD Card Format Method 2 (Requires Internet Connection & Admin Rights):**

With the microSD card installed in your PC, go to the following link and follow their directions to install.  
<https://www.sdcard.org/downloads/formatter/>.

After accepting the terms, it will download a ZIP file containing an installation executable program: "MicroSD Card Formatter"; install the program.

Once installed, insert your microSD card and open the "SD Card Formatter" program (See image below). To format, select the microSD card, check "Overwrite Format", then click "Format". A warning message will be given that formatting will erase all data on the card, click "Yes"; see image. The program will begin to fully format and partition the data sectors. When formatting is complete, an indication message will be received; see image.

### **Installing/Removing the MicroSD Card**

Installing/Removing the microSD card requires opening the door of the battery charger and the necessary precautions must be considered; dangerous voltage can be present inside the charger. Prior to removing or inserting the microSD card, refer to Section 4.1.3 to install or remove the microSD card. Failure to properly remove or install the microSD card can result in corrupt data or microSD card failure. To remove, prompt the Settings Menu for removal, then simply push in to release the microSD card from its mounting slot. To install, prompt the Settings Menu for inserting, then simply push in to insert the micro microSD card into its mounting slot.

### **Reading the Log File**

The data log file is written as EVENTS.csv. There may be other files written to the microSD card as well, but the events and/or interval logging is written entirely to the EVENTS.csv file. Simply open the EVENTS.csv file with the spreadsheet software of choice.

Simply open the EVENTS.csv file with the spreadsheet software of choice. The file looks like the figure shown below. At any event occurrence, the data log file will record the date, time, DC Voltage, DC Current, AC Voltage, Elapsed Time, Cooling Time, A-H returned, as well as the event which occurred.

LaMarche Mfg. Company A39 Event Log File Created on 02/20/2024 at 07:51:48 Charger Serial Number 000000-00 Firmware P368S4000 022024									
Date	Time	DCV (V)	LS_DCV (\	DCA (A)	ACV (V)	Elapsed Time (HH:MM:SS)	Cooling Time (HH:MM:SS)	A-H Returned	Event
2/20/2024	7:53:13	2.6	2.6	0	240.7	00:00:00	00:00:00		0 Battery Connected
2/20/2024	7:53:20	2.6	2.6	0.5	240.5	00:00:06	00:00:00		0 Low DC Current Alarm FAIL
2/20/2024	7:53:21	2.6	2.6	1	240.4	00:00:07	00:00:00		0 Low DC Current Alarm OK
2/20/2024	7:53:59	5	5	2.5	240.6	00:00:46	00:00:00		0 Stop Switch
2/20/2024	7:55:23	0.2	0	0	240.3	00:00:46	00:01:24		0 Battery Disconnected
2/20/2024	7:55:26	0	0	0	0	00:00:00	00:00:00		0 System Reset
2/20/2024	7:56:57	2.6	2.6	0	240.6	00:00:00	00:00:00		0 Battery Connected
2/20/2024	9:56:58	6	5.8	2.8	242.5	02:00:00	00:00:01		6.2 Charge Complete-Timer
2/20/2024	10:52:04	1.9	1.1	0	242.3	02:00:00	00:55:07		6.2 Battery Disconnected

## 6 Service

All work inside the A39DS charger should be performed by qualified personnel. La Marche is not responsible for any damages caused by an unqualified technician.



Before working inside the A39DS, ensure the AC power is off at the main breaker box and the battery has been removed from the charger's DC output terminals, either by removing the battery cables or exercising the battery disconnect. Verify that no voltage is present by using a voltmeter at all input and output terminals.

### 6.1 Performing Routine Maintenance

Although minimal maintenance is required with La Marche chargers, routine checks and adjustments are recommended to ensure optimum system performance.

**NOTE:** When ordering replacement parts, provide model number and serial number.

#### Yearly

1. Confirm air vents are open. Remove dust and debris from interior of unit.
2. Verify all connections are tight.
3. Perform a visual inspection on all internal components.
4. Check front panel display for accuracy and LED operation.
5. Measure the output ripple:
  - With the battery connected, measure ripple at the DC output terminals of the charger with a True-RMS multimeter in the AC-Voltage setting. If the ripple reading is higher than the specified value in the table below, the capacitors are recommended to be replaced.

Charger Model	AC Ripple Limit
30VDC	30mV RMS
60VDC	
90VDC	100mV RMS
150VDC	

#### Every 7 Years

1. If the charger is consistently operated in higher temperature environments, all capacitors are recommended to be replaced.

#### Every 10 Years

1. Check magnetics, components and wiring for signs of excessive heat.
2. Replace all capacitors if not done so at the 7-year interval.

## 6.2 Troubleshooting Procedure

Troubleshooting should be performed only by trained service personnel or experienced electricians. Before setting up any complicated testing or making any conclusions, inspect the charger using the guide below.

Check the following:

1. Check DC output cables & connections.
2. Check charger specifications against customer order.
3. Check input connections, input voltage and breaker size.
4. Check for shipping damage, loose connections, broken wires, etc.
5. Certain failures can be caused by defective batteries; make sure batteries are free from defects.

**NOTE:** *If the problem is found to be in the printed circuit boards, the board should be replaced. No attempt should be made to repair circuit boards in the field.*

La Marche Service Technicians are available to help with troubleshooting or with scheduling charger service. When calling for a service inquiry or for troubleshooting assistance, be sure to have all of the following information on hand:

1. Equipment model number and serial number.
2. The measured AC input voltage.
3. The measured DC output voltage, with and without the battery.
4. Result of the check of the AC and DC breakers.
5. The DC output current and voltage, measured with battery and load connected to charger.

**NOTE:** *When ordering replacement parts, drawings, or schematics, provide the model number, serial number, and description of problem, if available.*

La Marche Phone Number: (847) 299-1188

## Ordering Replacement Parts

Contact La Marche to place an order for spare or replacement parts. To order replacement parts; please provide the model and serial number of the battery charger, the part needed, and the quantity required.

### 6.3 Troubleshooting Chart



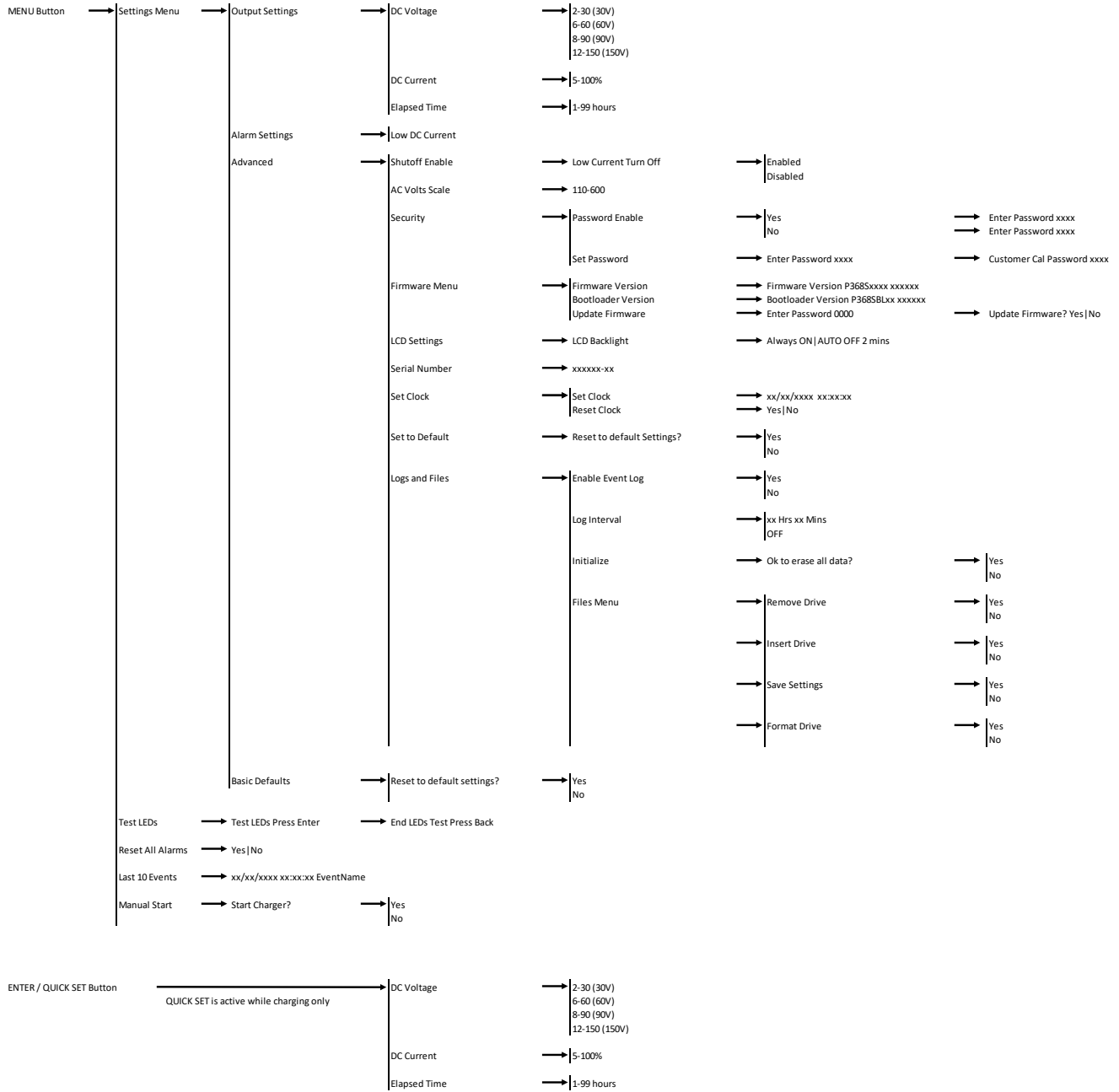
Isolate from all power sources prior to performing any interior verifications or part replacements.

Symptom	Possible Cause
AC Breaker Trips Immediately (High Input Current)	Wrong AC Input Voltage AC Input Taps on Power Transformer are Incorrectly Set Incorrect, Damaged or Loose Cable/Harness Connections DC Output Too High Defective Component on Heatsink Assembly
DC Breaker Trips Immediately (High Output Current)	Incorrect, Damaged or Loose Cable/Harness Connections Incorrect Battery Connected Shorted Output Cables Shorted Battery Cells or Customer Equipment Defective Component on Heatsink Assembly
No Display and No LEDs	No AC Voltage Applied to Charger Charger AC Breaker is open Incorrect, Damaged or Loose Cable/Harness Connections Defective Control/Display Board (S2A-368S)
Failed LED Test	Defective Control/Display Board (S2A-368S) Defective LEDs
Meter Reading Incorrect Voltage or Current	Incorrect, Damaged or Loose Cable/Harness Connections Incorrect Settings on Control Board Defective Shunt Defective Control Board (S2A-368S)
Charger Running Hot	Inadequate Ventilation Ambient is Too Hot
Battery Temperature Too High	Insufficient Cool Down Between Charges Battery Power Demand Too Great Battery Needs to be Equalized
Erratic Operation	Defective Control Board (S2A-368S) Incorrect, Damaged or Loose Cable/Harness Connections Defective Component on Heatsink Assembly Moisture Inside Cabinet Lack of Maintenance High Ambient Temperature
Low Output Voltage or Current	Output Voltage settings are Incorrect Charger is in Current Limit Defective Control Board (S2A-368S) Defective Component on Heatsink Assembly
High Output Voltage or Current	Output Voltage settings are Incorrect Defective Control Board (S2A-368S) Defective Component on Heatsink Assembly

#### Ordering Replacement Parts

Contact La Marche to place an order for spare or replacement parts. To order replacement parts; please provide the model and serial number of the charger, the part needed, and the quantity required.

# Appendix A: A39DS Menu Structure Flowchart



## Appendix B: MicroSD Card File Retrieval Instructions

The following instructions are for retrieving the files in the microSD card on an A39DS charger via the Settings Menu. The instructions are as follow:

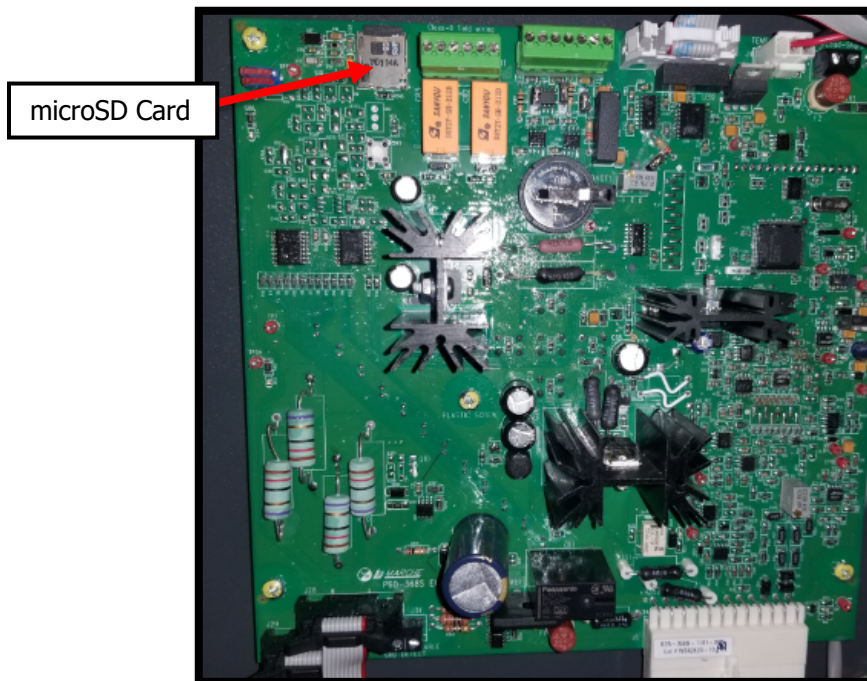
1. Press the "Menu" button to enter the Customer Calibration menu and navigate through the following and select "YES" in the end to save the SETTINGS files:

*Settings Menu → Advanced → Logs and Files → Files Menu → Save Settings*

2. Press the back button and select "Return to Menus" and repeat this process as needed to return to the Logs and Files submenu.
3. Select "Save Settings" and select "YES" in the end to save the settings file.
4. Press the back button and select "Return to Menus" to return to the Logs and Files submenu.
5. Select "Remove Drive" and select "YES" to properly remove the microSD card.
6. Open the door of the charger and locate the microSD card mounted in the S2A-368S display board (mounted to the door). Refer to figure below for microSD card location.
7. Safely remove the microSD card and using a microSD card reader and a computer, extract all the files from the microSD card.
8. Press the "Menu" button to enter the Customer Calibration menu and navigate through the following and select "YES" in the end to safely reinstall the microSD card into the S2A-368S board microSD card slot:

*Settings Menu → Advanced → Logs and Files → Files Menu → Insert Drive*

9. Press the back button and select "Exit Menus" and select "YES" to return to the main screen.
10. Verify the charger has resumed logging by pressing the up or down buttons to scroll to "Logging Status" and assure it states "OK."



## Appendix C: A39DS Specifications

<b><i>ELECTRICAL</i></b>	
<b>AC Input</b>	120, 208, 240, or 480VAC Voltage range +10% / -12% Frequency Range 50Hz or 60Hz $\pm$ 5%
<b>DC Output</b>	20 - 200 ADC 30, 60, 90 or 150VDC
<b>Output Filtering</b>	30, 60VDC - 30mV RMS, with battery 90, 150VDC - 100mV RMS, with battery
<b>Regulation</b>	$\pm$ 1% from no load to full load over the specified input voltage, frequency and ambient temperature range.
<b>Meters</b>	Digital Meter Display
<b><i>PROTECTION</i></b>	
<b>Current Walk-In</b>	The output current will gradually increase after the charger is turned on, eliminating surges and overshoot
<b>Current Limit</b>	10 - 100% of the rated DC output current.
<b>AC Breaker</b>	AC breaker is standard equipment. (2KAIC or 5KAIC depending on the model)
<b>DC Breaker</b>	DC breaker is standard equipment. (5KAIC, 7.5KAIC or 10KAIC depending on the model)
<b>Emergency Restoration</b>	The battery charger may be connected to a battery which is heavily discharged and recharge it without clearing any protective devices.
<b><i>ENVIROMENTAL</i></b>	
<b>Audible Noise</b>	Less than 65dBA at any point 5 feet from any vertical surface
<b>Operating Temperature</b>	32 to 122°F (0 to 50°C)
<b>Storage Temperature</b>	-40 to 185° F (-40 to 85° C)
<b>Relative Humidity</b>	0 to 95% (non-condensing)
<b>Cooling</b>	Convection cooled
<b>Shock</b>	The battery charger in its shipping container withstands shock developed when one edge of the container is dropped six inches while the opposite edge is resting on the ground, or it is dropped two inches without any physical damage or degradation of the electrical performance.
<b>Vibration</b>	The battery charger in its shipping contained, withstands vibration encountered in shipping without physical damage or degradation of the electrical performance.
<b>Altitude</b>	This battery charger is capable of operation at altitudes up to 10,000 feet at an ambient temperature of up to +40 degrees C.
<b>Ventilation</b>	The charger should be mounted so that ventilating openings are not blocked and air entering the cabinet does not exceed 50 degrees C (122 degrees F).



## Appendix D: Case Size & Shipping Weight

Model	DC Output			AC Input	Case	Aprox. Weight (Lbs)
	Amps	Volts	DCV Range			
A39DS-60-30V-ABD1	60	30	2 – 30	120/240/208 VAC – 1 PH.	6	175
A39DS-20-60V-ABD1	20	60	6 – 60	120/240/208 VAC – 1 PH.	6	130
A39DS-40-60V-ABD1	40	60	6 – 60	120/240/208 VAC – 1 PH.	6	190
A39DS-100-60V-BD3	100	60	6 – 60	240/208 VAC – 3 PH.	8A	325
A39DS-150-60V-BD3	150	60	6 – 60	240/208 VAC – 3 PH.	8A	350
A39DS-200-60V-BD3	200	60	6 – 60	240/208 VAC – 3 PH.	72	450
A39DS-100-60V-C3	100	60	6 – 60	480 VAC – 3 PH.	8A	325
A39DS-150-60V-C3	150	60	6 – 60	480 VAC – 3 PH.	8A	350
A39DS-200-60V-C3	200	60	6 – 60	480 VAC – 3 PH.	72	450
A39DS-60-90V-BD1	60	90	8 - 90	240/208 VAC – 1 PH	6	300
A39DS-100-90V- BD3	100	90	8 - 90	240/208 VAC – 3 PH.	8A	350
A39DS-150-90V-BD3	150	90	8 - 90	240/208 VAC – 3 PH.	8A	565
A39DS-200-90V-BD3	200	90	8 - 90	240/208 VAC – 3 PH.	72	637
A39DS-100-90V-C3	100	90	8 - 90	480 VAC – 3 PH.	8A	350
A39DS-150-90V-C3	150	90	8 - 90	480 VAC – 3 PH.	8A	565
A39DS-200-90V-C3	200	90	8 - 90	480 VAC – 3 PH.	72	637
A39DS-30-150V-BD1	30	150	12 - 150	240/208 VAC – 1 PH	6	300
A39DS-50-150V- BD3	50	150	12 - 150	240/208 VAC – 3 PH.	8A	345
A39DS-100-150V- BD3	100	150	12 - 150	240/208 VAC – 3 PH.	8A	600
A39DS-150-150V- BD3	150	150	12 - 150	240/208 VAC – 3 PH.	27	640
A39DS-200-150V- BD3	200	150	12 - 150	240/208 VAC – 3 PH.	27	690
A39DS-100-150V- C3	100	150	12 - 150	480 VAC – 3 PH.	8A	345
A39DS-150-150V- C3	150	150	12 - 150	480 VAC – 3 PH.	27	600
A39DS-200-150V- C3	200	150	12 - 150	480 VAC – 3 PH.	27	690

## Appendix E: Document Control and Revision History

Part Number: 148973  
Instruction Number: P25-LA39DS-1  
Issue ECN: 23419 – 10/23

<b>23530 – 03/24</b>			