

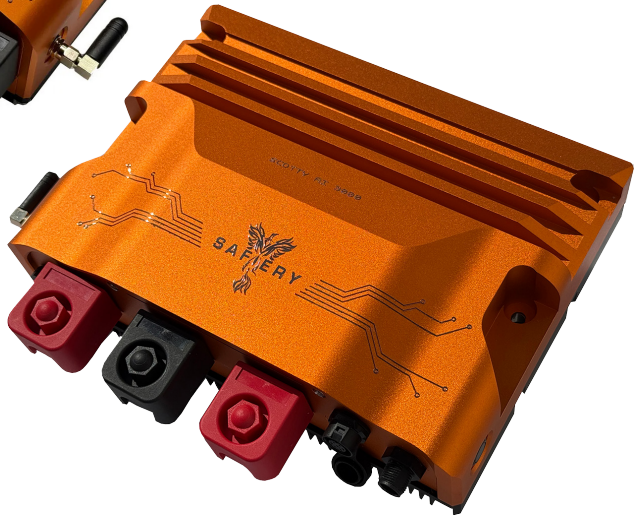


SCOTTY 1500 & 3000

INSTALLATION & OPERATION MANUAL



**UPDATED WIRING
INCLUDED
OCT 2025**



SCOTTY 1500 12-24V, 12-36V 12-48V

SCOTTY 3000 12-24V, 12-36V 12-48V

SCOTTY 3000 24-48V

ALL Bidirectional with 3 CAN Ports

Tomorrow's Technology, Today

WWW.SAFIERY.COM

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- This manual contains important instructions that shall be followed during installation and maintenance.
- Danger of explosion from sparking and danger of electric shock.

GENERAL SAFETY REGULATIONS

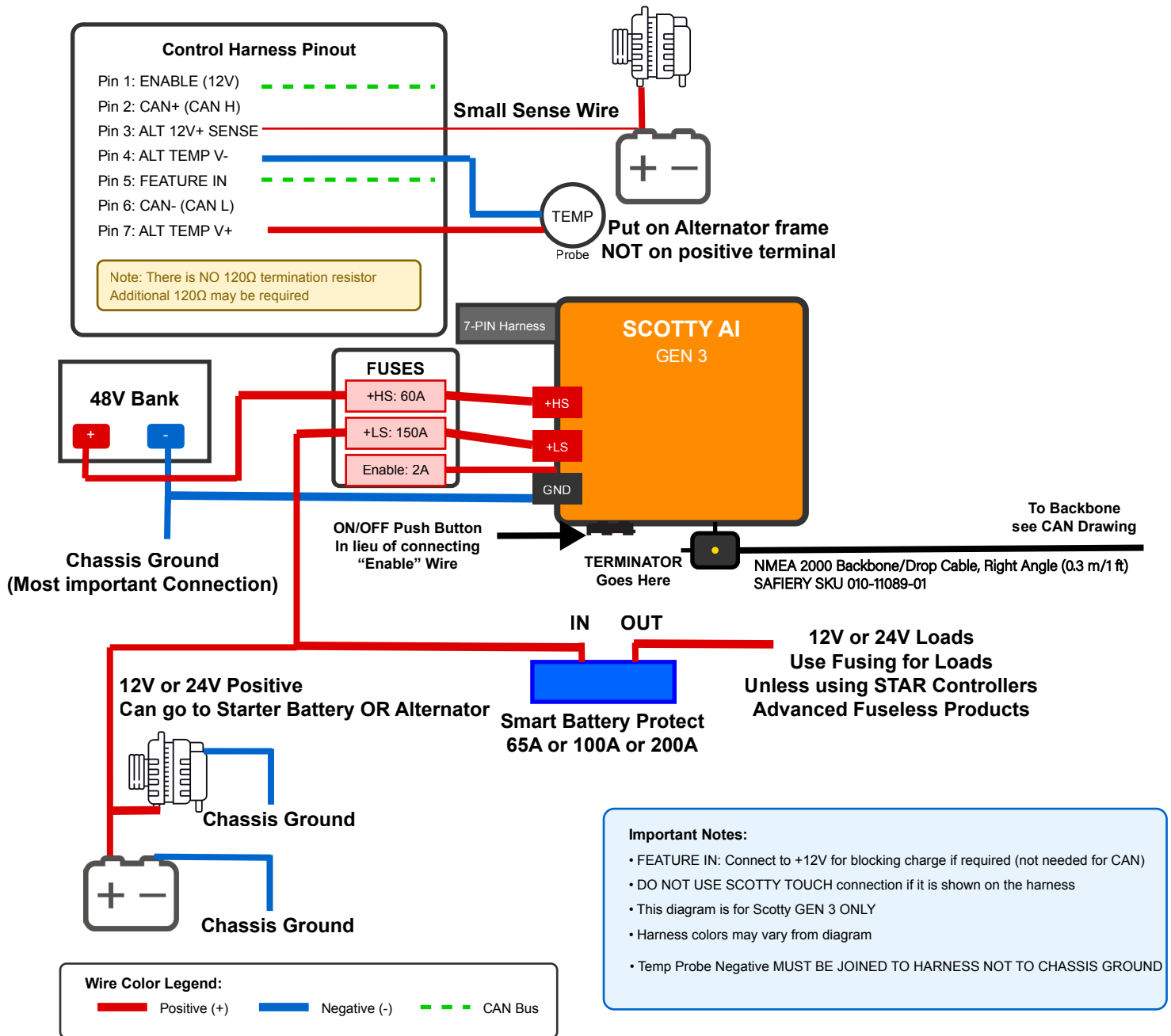
- Please read the safety instructions below before installing and using the Scotty AI 1500 to avoid risks of fire, electric shocks, personal injuries or equipment damage.
- This product is designed and tested in accordance with international standards. The equipment should be used for its designated application only and in accordance with the specified operating parameters.

REGULATIONS FOR SAFE INSTALLATION

- For electrical work, follow the local national wiring standards, regulations and these installation instructions.
- Install the product in a heatproof environment. Ensure therefore that there are no chemicals, plastic parts, curtains or other textiles, etc. in the immediate vicinity of the equipment.
- It is normal for the Scotty AI 1500 to get hot during operation. Keep any objects that are heat-sensitive away.
- Never install or use the product at sites where gas or dust explosions could occur.
- Use flexible multi-stranded copper cables for the connections (UL: Class I; IEC: Class 5).
- The installation must include a fuse in accordance with the recommendations in the table Cable type recommendations.
- Always remove all dirt and paint from chassis connection points. Apply the correct torque when fastening the connection bolts.

SCOTTY AI 1500 / 3000 - WIRING DIAGRAM "A"

Victron Energy Compatible Installation

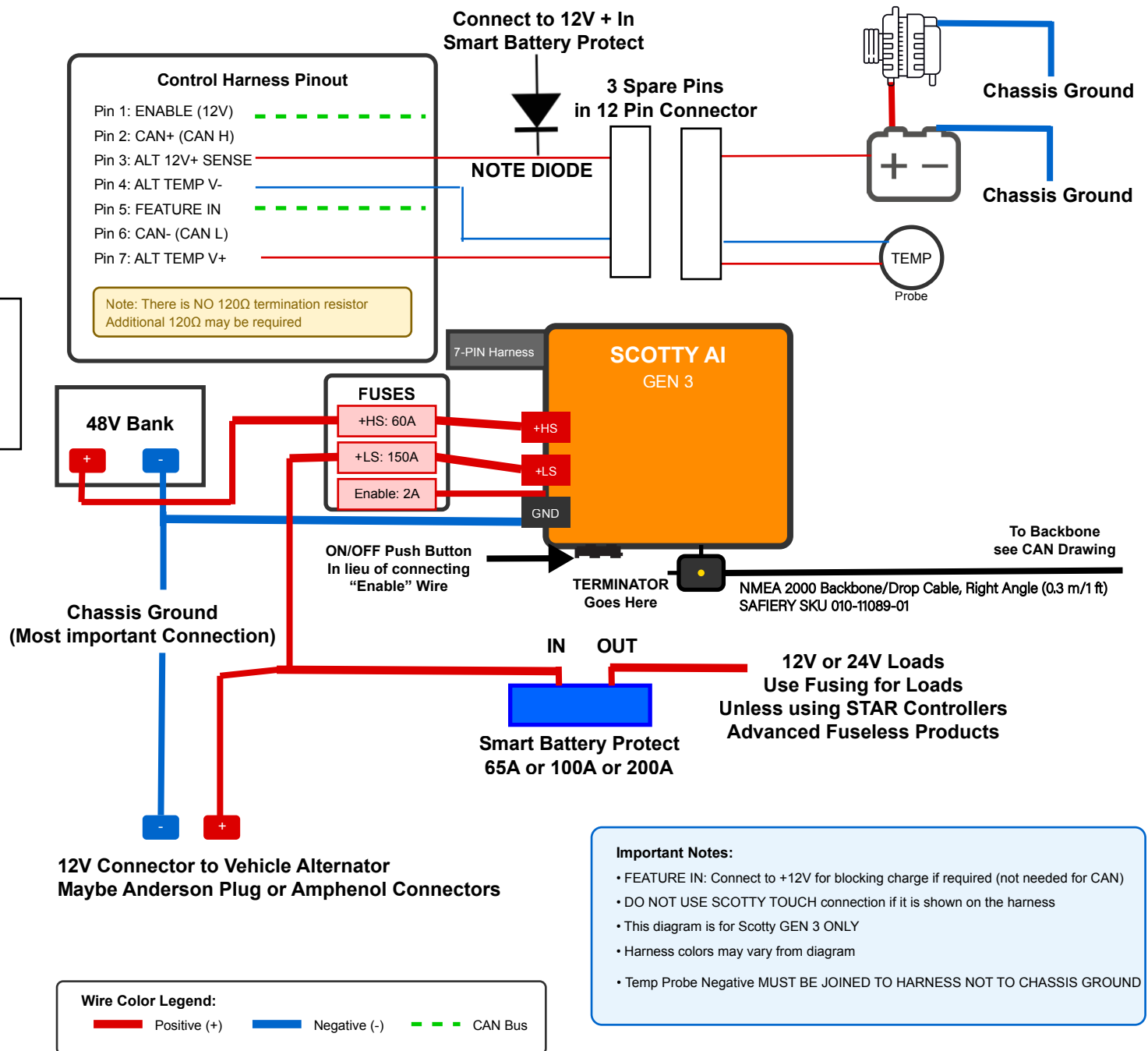


WHEN TO USE THIS WIRING DIAGRAM "A"

Straight connection of Scotty in a Canopy (not Jack Off)
Straight connection of Scotty in a Van like Sprinter /VW Crafter Etc
Straight connection of Scotty in a Truck with 24V on Low Side.

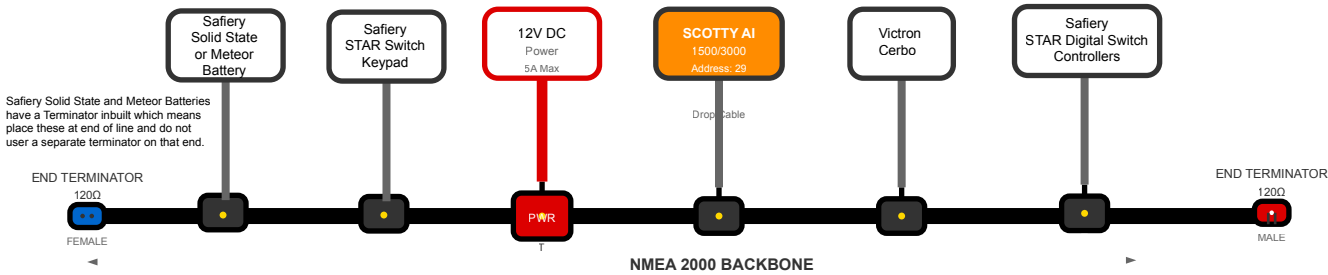
SCOTTY AI 1500 / 3000 - WIRING DIAGRAM "B"

Victron Energy Compatible Installation



WHEN TO USE THIS WIRING DIAGRAM "B"

Straight connection of Scotty in a Canopy Jack Off with 12V power still required after jack
Straight connection of Scotty in a Caravan with an Anderson Plug for Vehicle Charging



NMEA 2000 Network Rules

Backbone:

- Maximum length: 200m (656 ft)
- Minimum length between T's: 0.5m
- Cable type: Safieri NMEA 2000 Compliant

Drop Cables:

- Maximum length: 2m each
- For longer lengths: Run longer ~ 20m cable with terminator at T piece at end

Power Requirements

Network Power:

- Voltage: 12V DC (9-16V range)
- Current: 3A typical, 5A maximum
- Insert Power towards centre of backbone or network

Termination Requirements

Terminators:

- Exactly 2 required (one at each end)
- Resistance: 120Ω ± 6Ω
- Male on one end, Female on other
- Safieri Solid State and meteor Batteries have a Terminator inbuilt Which means place these at end of line in drawing above and do not use a separate terminator on that end.

Connector Types:

- Safieri NMEA 2000 Compliant Micro-C (M12) 5-pin standard

NMEA 2000® Network Topology

Data Cabling Component Summary - First Line is SKU Descriptor



NMEA 2000 Backbone 4 port
Connect up to 4 cables
and two Terminators



NMEA 2000 Terminators,
1 Male and 1 Female as Pair
Comes individually in kit



NMEA 2000
T-connector,
1 Male 2 Female



NMEA Female
to Female Connector
2 female



NMEA 2000 Drop Cable
1m, 2m, 5m
Males one end female other



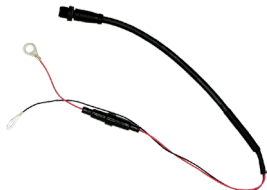
BMG Plug to NMEA and Power
NMEA Male out plus
12V Power and ground Wires



VE.Can to NMEA2000 Round Male
Victron Cerbo Connecting Cable
STAR and Scotty AI Devices



NMEA to STAR-Power Connecting Cable
STAR-Power Only
Males one end CAN wires other



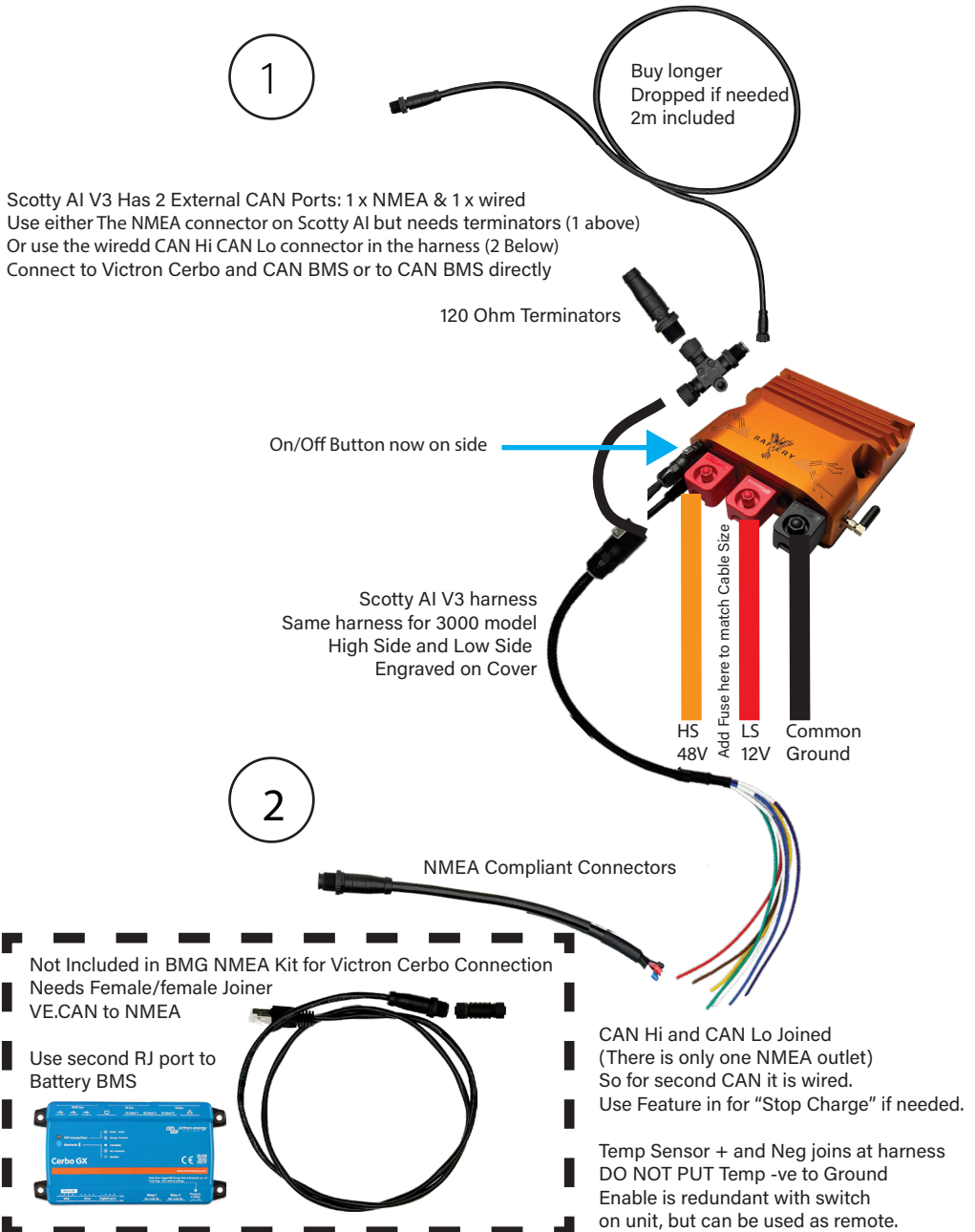
NMEA 2000 Power Injector
NMEA 12V Required
For CAN keypads



NMEA to STAR-Switch
SP8 CABLE Kit Short 1m
Included with Keypads

Wiring Diagram

Plus Data Cabling Kit To be ordered as an



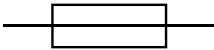
The alternator temperature sensor is essential for the operation of the Scotty AI. coming out of harness, connect the alternator temperature

If the Scotty AI 3000 Harness has a Temperature Ground wire coming out of harness, connect the alternator temperature sensor negative to that harness ground wire.

DO NOT CONNECT THIS TO SCOTTY GROUND OR CHASSIS GROUND!

**AT FIRST CONNECT THE
SCOTTY GND CONNECTION**

**POINT TO THE CHASSIS!
NEVER DISCONNECT**



For Scotty AI 3000 12V
Fuse: 250A for 70mm² - 12V
Fuse: 125A for 25mm² - 48V

For Scotty AI 1500 12V
Fuse: 150A for 50mm² - 12V
Fuse: 60A for 16mm² - 48V

For Scotty AI 3000 24V LS
Fuse: 150A for 50mm² - 24V
Fuse: 125A for 25mm² - 48V



INSTALLATION

- 1** Have your High Side 24 V or 48 V (HS) batterie connected and the isolator applied so there is no power connection.
Connect the 12 V Low Side and the 'Enable Wire to 12 V Side'. A green flashing LED starts flashing. No Power will flow as no 24 V or 48 V battery is connected to HS.
- 2** Open phone/tablet/laptop to WiFi > scan> connect to 'Scotty XXXX' SSID.
The initial password is either 12345678 or on newer versions Scottyai@O (capital S). You can change the password later.
- 3** Once connected, the 'wheel connection indicator may still be turning' as there is no internet. Go to the browser (we use Chrome) and type in: 172.24.24.1. Save this page to your home screen for future easy use. Check the values on the status page.
- 4** You are ready to go. Just turn on the 24 V or 48 V battery on the HS to operate. Apply a voltage greater than 13 V and up to 125 A of current to the Low Side (LS), which will then charge a 24 V or 48 V battery on the High Side as a maximum of 60 A for a 24 V battery at 28 V, or 30 A for 48 V battery at 52 V.
USB Bluetooth adapters that have been tested and known to work:

OPERATION

- Soft' puts the lowest load on the 12 V Power Supply.
- Turn Scotty AI 'Off' and select 'Soft' for the lowest load setting.
- Go to 'Medium' for first-time users who are unsure.
- Go to 'Hard' to drive the maximum power from Low Side.

Scotty Not Charging?

1. What colour light is on under Scotty
- [] A: No Light
 - [] B Red Light
 - [] C Green Light

If A: Check power to Scotty, check fuse to breaker switch and check it is turned on.
If there is to power to Scotty and no light on > very unusual > RMA back to Safiery

If B: Turn Scotty Off at the breaker so there is no LED, then turn back on.
Log into App and then read the error code on the screen. This tells you what problem is.
Refer manual to log in if unsure. If still unsure send screenshots to our chatbot with your details.

If C: Turn Scotty Off at the breaker so there is no LED, then turn back on.
If still green, Scotty is running fine. Check other items for the problem. Has main power fuse gone?
Are the batteries full?

SCOTTY AI TROUBLE SHOOTING INSTRUCTIONS & DIAGNOSIC PROCEDURE

When Scotty AI is not charging or performing as expected, scroll to the bottom of the main page and read the reported fault.

The figure shows a list of failures on the main page.

- After reading, goto: Potential Solutions Guidance to understand what the fault means.
- The following text shows an Enumeration list of Fault Problems and possible Solutions.

'Feature In' Activated:

The designed feature allows the receipt of stop charge requests from the house battery when the CanBus connection from the battery management system (BMS) is not in use.

- It is recommended to verify the condition of the house battery;
- If this feature is not required, you can disable it from the system settings.

'Inverted Feature In' Activated:

This functionality is similar to the 'Feature In' feature but with an inverted operation.

- It activates when it detects a 0 V signal in the 'Feature In' wire.
- It is recommended to verify the condition of the house battery; if this feature is not required, you can disable it from the system settings.

If this is selected and nothing is connected to the feature-in, Scotty will naturally stop!

HS (High Side) battery preventing charge:

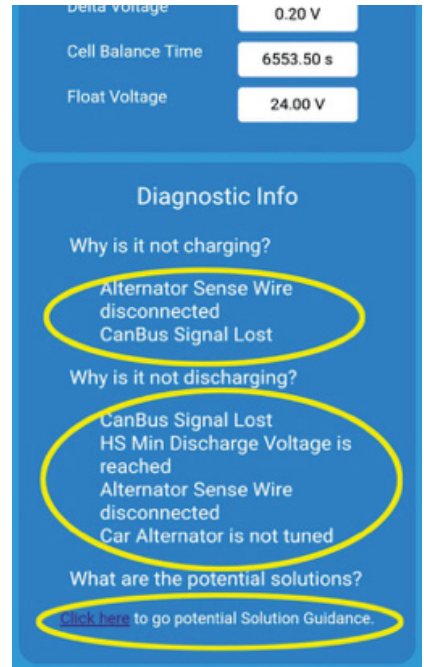
A high-side battery preventing charge means that the house battery BMS is not accepting a charge, which may suggest that the Battery is already fully charged.

- However, it is also possible that there may be underlying issues with the Battery's health.
- Therefore, we recommend thoroughly checking the house battery's condition to ensure optimal functionality.

Alternator current limit is configured to 0:

The alternator current limit pertains to the maximum current drawn from the alternator.

- The limit is currently set to zero, indicating that no charging is taking place.
- To modify this setting, please navigate to the 'Tuning page' where you can adjust the alternator current limit to the desired level.



Alternator temperature protection is active:

The current indication is that the alternator is overheated, so you cannot use it now.

- If the alternator's temperature is not high, there is a possibility that the temperature probe may have become disconnected. Therefore, we recommend checking the wiring to ensure it is properly connected.
- Most Engines run around 90°C under the engine bay, but some vehicles go as high as 105°C.
- We recommend increasing it to 120°C in this case.

HS Charge Voltage is reached:

Based on current readings, the high-side battery voltage has reached the maximum allowable charge voltage.

- To modify this setting, please access the designated 'Tuning page.'
- However, we strongly advise referring to the battery manufacturer's specifications before making any changes.

An Error Occurred:

We suggest checking for error messages, which may indicate that the HS or LS terminal is not adequately connected to the Battery.

- To begin troubleshooting, we recommend inspecting the fuses and isolators and ensuring they function correctly.

Voltage Sense Wire disconnected:

The current indication suggests that the sense wire is not detecting sufficient voltage.

- It may be due to a disconnected wire or a depleted starter battery.
- If the cause of insufficient voltage is a depleted starter battery, it may not be possible to charge it via the current system. In this case, we recommend connecting an external charger to increase the starter battery voltage to an acceptable level.

CAN Bus Signal Lost:

The current indication suggests that the system may have lost its connection, as it requires a functioning CanBus system to operate even when not connected to a CAN Bus battery.

- We recommend checking the CAN-H and CAN-L cables and performing a power cycle to resolve this issue.

HS Battery is in Float Mode:

- Based on current readings, it appears that the high-side battery float charge mode. To modify this setting, please access the designated 'setting page.'
- However, we strongly advise referring to the battery manufacturer's specifications before making any changes.

Idle Setting Off:

The current configuration appears to be in the Prevent charging mode because Scotty AI is turned off.

- To modify this parameter, please access the main page and adjust the 'Idle' settings accordingly.

The Car Engine is Off:

The system thinks the car engine is off, so there is no charge.

- Please note that the system has a less-than-minute delay in changing states.

HS Battery Preventing Discharge:

High Battery-preventing discharge means that the house battery BMS is not accepting a discharge, which may suggest that the Battery is already fully discharged.

- However, it is also possible that there may be underlying issues with the Battery's health.
- Therefore, we recommend thoroughly checking the house battery's condition to ensure optimal functionality.

The Car Engine is On:

The system thinks the car engine is on, which means no discharge.

- Please note that the system has a less-than-minute delay in changing states.

HS Min Discharge Voltage is reached:

Based on current readings, the high-side battery voltage appears to have reached the minimum allowable discharge voltage.

- To modify this setting, please access the designated 'setting page.'
- However, we strongly advise referring to the battery manufacturer's specifications before making any changes.

LS (Low Side) Load is Low:

Based on the current readings, there is an insufficient load connected.

- We recommend checking the camping voltage and LS voltage to ensure the system's proper functioning.

SCOTTY DIAGNOSTIC PROCEDURE IN CASE OF INSUFFICIENT POWER

At first do the Auto-Tune:

- Check the Tuning Page
 - Ensure that the Alternator Size is Correct?
 - Ensure that max Alternator Current is Correct?
- Check the Status Page.
- Ensure that Scotty AI is set to 'Hard'?

If all the above is correct, do the following:

- Run the engine at cruising speed.
- Watch the data on the Status Page.
- Note the LS alternator Voltage sense.
If it is above 12.8 V, then the alternator is producing power to match the load.

Take a screenshot of this status page to keep a record of the LS alternator Voltage sense.
- Go to the Starter battery.
- Measure the voltage on the starter battery accurately.
- Compare this to the Voltage on the screenshot.
The voltage difference x the current in A is the cable loss.
So 13.2 V at the battery, and 12.8 V on the Scotty AI Status Page, means 0.4 V at, so say 100 A = 40 W. It is far too high, and you check the Negative path at first for a good connection. A good loss is 10-15 W.
- Look at the Scotty Status page screenshot.
If the number it shows is less than the above calculation, then the problem is the negative connection.
- The negative wire from the Starter battery to the chassis in the engine bay must be bolted to and paint-free and clean metal surface.
- The negative wire from the Target Auxiliary battery to the chassis must be bolted to an paint-free and clean metal surface on the chassis.
- We do not recommend laying a separate negative wire, unless there is no chassis for example on a boat. The negative wire is generally the problem in 95% of all circumstances.

If all the above is correct, do the following:

1. The starter battery MUST be AGM or Lead/Acid.

If it is Lithium, remove it and return it to the factory standard.

2. The alternator can not deliver enough power.

3. Engine or vehicle loads on a 12 V alternator are high. (Nissan Patrol has electric power steering and takes a lot of power, leaving little power for Scotty AI. Scotty AI takes power AFTER the vehicle loads, so they are not compromised.

4. Cable sizes are too small (both positive and or negative).

5. Target Battery(s) can not accept charging at a higher rate, either because they are high SOC or, the temperature has limited BMS, or the Lithium battery just has a lower charging rate (less expensive Lithium batteries.)

6. If charging a caravan from a vehicle with Scotty AI in it and a 7-10 m run at 48 V from Scotty AI to Lithium in the Van, then especially when solar is running, the voltage differential will not be as high and an expected charge rate is 1000 W at caravan 49-50 V and 2000 W when the expected caravan charge rate is 47-48 V.

7. Note that Scotty AI does not use the State of Charge in any calculation. We only use voltage for control.

8. State of Charge is a 'Calculated concept' and does not exist in any measured form.

It is a calculation that may be reasonable after the batteries are 100% for 2 hours or so.

If batteries operate in the 20-85% band repeatedly over a 1-2 week period, they will likely be around 50% max of their capacity, because the cells have not balanced.

Safiery's 48 V batteries actively balance between 90-95% SOC calc value. They are only fully charged when the calculation shows 100% SOC.

NEVER DISCONNECT THE NEGATIVE - NEVER

Scotty AI 3.0 Tuning Guide

Scotty AI 3.0 or Scotty GEN 3 can be identified through its lable (SCOTTY AI 3.0) or its version number (V3.x.x.x).

Scotty AI 2.0 is labled as SCOTTY AI 2.0 and its version starts with V2.x.x.x. This guide can be used for tuning a SCOTTY AI 2.0. There are a few different you need to know:

- An interface may be slightly different
- Scotty AI 2.0 does not have a **Low Side Charging Algorithm**
- For Scotty 1500 (1.5kW) harness do not have **ALT TEMP** V- wire, you need to connect temprature sense negative cable direcly to Scotty negative terminal

I. Quick check:

I. GND Scotty terminal is connected to ground

II. + LS Scotty terminal is connected to alternator (+12V or +24V)

III. +HS Scotty terminal is connected to a battery bank (+24V or 36V or

IV. Enable is connected either to +LS or +HS

V. ALT SENSE 12V+ is connected to alternator (+12V or +24V)

VI. ALT TEMP V+ is connected to a temprature sense positive (red

VII. ALT TEMP V- is connected to a temprature sense negative (black

VIII. CAN communication is connected to a CAN system (optional)

II. Scotty Wifi Access

We recommend to turn off auto connect function of a wifi network

Go to wifi, select a Scotty wifi



Enter a Scotty wifi password: Scottyai@0

Go to a web browser: <http://172.24.24.1>

Please Update Token

Terms And Conditions

[Click here](#) to go Terms And Conditions.

Token

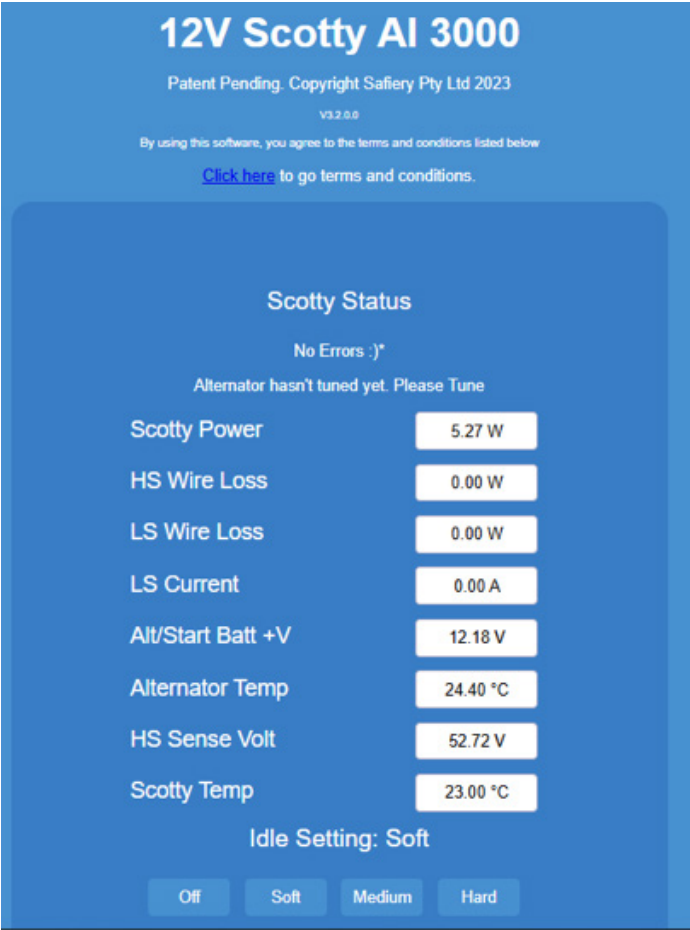
You need a TOKEN to run Scotty AI .
The "fine print" department require that you agree to and sign an End User Licence Agreement. Once you complete this, you will be emailed an 8 digit TOKEN. Enter that into the Tuning Page. It is only needed once. Thank you
Go to <https://safieri.com/SAL>

After update the Token, please refresh the WebPage

A token for scotty is: 11337777 (if required), refresh a web page after you update a token.

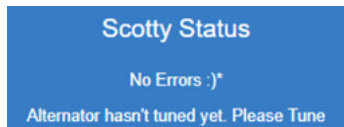
III. Scotty Main Page

In a Scotty main page, you can see information about **Scotty Status**, **Idle Setting**, **Parameters**, **CAN BATTERY**, **BATTERY WITHOUT CAN**, and **Diagnostic Info**.



a, Scotty Status

For a Scotty is ready to tune, you can look at the Scotty Status in a Scotty main page via the following indicators:



There is no error and Scotty is ready for tuning.



Indicate a Scotty power. Please note that a Scotty consumes a few W while it is at a Camping mode (ready to change a direction either charging or discharging).

Indicate a Scotty power. Please note that a Scotty consumes a few W while it is at a Camping mode (ready to change a direction either charging or discharging).

A negative number means that Scotty charges from +LS to +HS.

A positive number means that a Scotty discharge from +HS to maintain +LS at Camping Set Point.



Indicate a voltage of alternator or LS battery bank (for instance, 12.18V).

If you do not see a LS voltage (around 12V, 24V for 12V, 24V respectively alternator), please check an ALT SENSE 12V+ wire to make sure it is connected to either alternator or LS battery bank and battery presents voltage. In some case, LS battery bank may go flat.

ALT SENSE 12V+ wire must be connected to +LS alternator or +LS battery bank for a Scotty to be fully function.



Indicate a alternator temperature.



If you see a huge number, or any unreasonable number, you should check a temperature wiring, either it is not wired correctly or temperature sense may damage during an installation.



Indicate a +HS voltage, for instance 52.69V.

If you do not see any +HS voltage is presented, please check whether you +HS is connected to a +HS battery bank or a HS battery bank is turned on.

Scotty Temp

24.00 °C

Indicate a +HS voltage, for instance 52.69V.

If you do not see any +HS voltage is presented, please check whether you +HS is connected to a +HS battery bank or a HS battery bank is turned on.

b, Idle Setting

Idle Setting: Soft

Off

Soft

Medium

Hard

Indicate a charging mode of Scotty. You can either select a Soft, Medium, or Hard mode.

A Hard mode means a Scotty take as much as power available from alternator.
A Medium mode means a Scotty take a fair bit of power available from alternator.

c, CAN BATTERY

All battery information can be seen though Scotty via Scotty main page, at CAN BATTERY section.

CAN BATTERY

Sensing Current	0.10 A
Sensing Voltage	52.66 V
Current	0.00 A
Voltage	52.00 V
SOC	71.00 %
SOH	100.00 %
Charge Voltage Lim	58.00 V
Max Charge Current	25.00 A
Max Discharge Current	40.00 A
Max Discharge Current LS	6490.37 A
Max Charge Current LS	4056.48 A
Temperature	32.00 °C

d, Battery without CAN

These information shows +HS voltage and some parameter that set up in a tuning page, like minimum discharge voltage, maximum charge voltage, floating voltage.

BATTERY WITHOUT CAN	
Current	0.10 A
Voltage	52.66 V
Minimum Voltage	46.20 V
Maximum Voltage	53.00 V
Delta Voltage	0.20 V
Cell Balance Time	6553.50 s
Float Voltage	24.00 V

IV. Scotty Tuning Page

We recommend to turn off auto connect function of a wifi network

After cheking key parameters, Scotty is ready for tuning.
To access a tuning page, click a link at the end of Scotty Status section in the main page.

[Click here](#) to go Settings and Tuning Page.

Or access: <http://172.24.24.1/tune>

Welcome to Auto-Tuning of your Scotty

Errors

No Errors :)*

If Scotty is wired corrected, you should see a **No Errors :)*** message.

Parameter Setting:

To change a parameter, click on a right box, delete it, type a new **number**, and click **Update**.

Tuning

There are 6 Steps:

1. Make sure High Side Battery not fully charged, and turn off all 12V loads like lights, air conditioner, fridge etc. Idle the car for more than 2 minutes

2. What is the Alternator size in Amps?

AlternatorSize Update

3. Is it Smart Alternator?: YES

4. Low side charging parameters

Camping SetPoint Update

HS Min Discharge Volt Update

HS Max Discharge Current Update

5. High side charging parameters

HS Float Volt Update

HS Absorbion Time Update

HS Max Charge Volt Update

Alternator Max Temp Update

Alternator Current Limit Update

Smart Alternator Trigger Voltage Update

LSC Command Update

Feature in: Disabled

6. Click Auto Tune button and wait 2 minutes

a) Alternator Size

AlternatorSize	<input type="text" value="150.00 A"/>	<input type="text" value="-0.1"/>	<input type="button" value="Update"/>
----------------	---------------------------------------	-----------------------------------	---------------------------------------

Put a LS alternator size, if you do not know exact number, enter 150 for Scotty 1.5kW and 250 for Scotty 3kW.

b) Camping set point

Camping set point is a voltage that Scotty will maintain for +LS battery when it discharge from +HS to +LS.

Camping SetPoint	<input type="text" value="12.60 V"/>	<input type="text" value="-0.1"/>	<input type="button" value="Update"/>
------------------	--------------------------------------	-----------------------------------	---------------------------------------

We recommend set it at 12.6V and 25.2V for 12V and 24V battery, respectively. You may lift up a camping set point higher, however, do not make it higher than 13.0V and 26.0V with 12V and 24V battery, respectively. Only increase it when necessary (some devices need a certain voltage for normal operation).

c) High side minimum discharge voltage

HS Min Discharge Volt	<input type="text" value="46.20 V"/>	<input type="text" value="-0.1"/>	<input type="button" value="Update"/>
-----------------------	--------------------------------------	-----------------------------------	---------------------------------------

High side minimum discharge voltage is voltage that Scotty will stop discharge from +HS to +LS if +HS voltage get lower to this point. Please check a battery parameter for this set up.

For lithium battery, we recommended to put at a nominal voltage (24V, 36V, 48V).

For sodium battery, please check with battery provider or battery parameter.

d) High side maximum discharge current

HS Max Discharge Current	<input type="text" value="0.00 A"/>	<input type="text" value="-0.1"/>
--------------------------	-------------------------------------	-----------------------------------

It is a maximum discharge current from +HS to +LS.

You can turn off a discharge function from Scotty by put a zero (0) current.

Maximum set up for Scotty

Scotty Type	Maximum +HS current
1.5kW: 12V-24V	40A
1.5kW: 12-36V	40A
1.5kW: 12-48V	30A
3kW: 12V-24V	80A
3kW: 12V-36V	80A
3kW: 12V-48V	60A
3kW: 24V-48V	60A

e) High side floating voltage

HS Float Volt	24.00 V	-0.1
---------------	---------	------

It is a floating voltage while Scotty charge from +LS to +HS.

Please carefully check a set up parameter for your battery. Different batteries have different float voltage.

You can not enter a **HS Float Volt** is higher than a **HS Max Charge Volt**

f) High side maximum charge voltage

It is a maximum charge (obsorbtion) voltage for your +HS battery.

HS Max Charge Volt	53.00 V	-0.1
--------------------	---------	------

Wrong set up can cause a damage to HS battery!

g) Alternator Maximum Temperature

If your alternator temperature is higher than a set up number, Scotty will stop taking power from +LS to +HS to prevent a heating up alternator. When temperature of alternator is lower, Scotty will operate as normal.

Alternator Max Temp

100.00 °C

-0.1

Recommend set up is 1000C.

h) Alternator current limit

This set up allows to limit a maximum power that Scotty can charge from +LS to +HS.

Alternator Current Limit

250.00 A

-0.1

Recommend maximum set up for alternator current limit:

Scotty Type	Maximum +HS current
1.5kW: 12V-24V	75A
1.5kW: 12-36V	120A
1.5kW: 12-48V	120A
3kW: 12V-24V	150A
3kW: 12V-36V	220A
3kW: 12V-48V	220A
3kW: 24V-48V	110A

Please note a current limit set up can be varied depend on +LS voltage, however, do not set it up for Scotty work at higher than its rated power, 1.5kW for 1500 Scotty and 3kW for 3000 Scotty.

For charging from +LS to +HS, maximum current for Scotty +HS is **40A for Scotty 1500** and **80A for Scotty 3000**.

For 12V-24V Scotty used, please bare in mind the maximum +HS current while calculating a alternator current limit (+LS).

For example:

Scotty 1.5kW: 12-24V

+HS voltage at 26V

+ LS voltage at 12.8V

+LS current limit can be calculated: $26(V) \times 40(A) / 12.8(V) = 81.25(A)$

Please note while Scotty is running, +LS and +HS are varied.

i) Smart Alternator Trigger Voltage

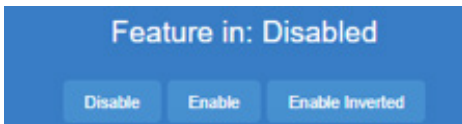
Recommend seting for this parameter is 12.3V and 24.9V for 12V and 24V +LS Scotty, respectively.



However, keep this set up **0.3V** lower than a **Camping SetPoint**

j) Feature in

Keep feature in disable if you do not control a Scotty through a **Feature In** wire



If **Feature In** wire is connected for control Scotty working

Enable need to be selected if you want to control Scotty by a positive control (+12V or +24V only);

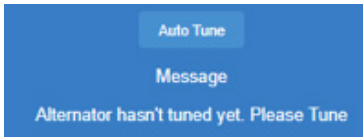
Enable Inverted need to be selected if you want to control Scotty by negative control (GND)

g) Auto Tune

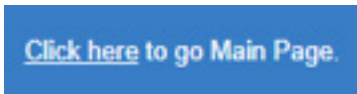
After all parameters have been set up. Turn on a engine.

And Click **Auto Tune**

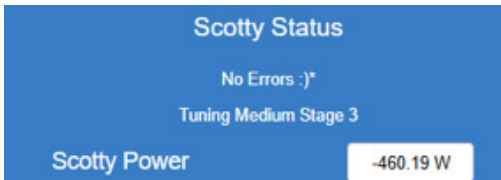
Tuning process goes through 04 steps: Initiating Tuning State, Tuning Soft Stage, Tuning Medium Stage, Tuning Hard Stage.



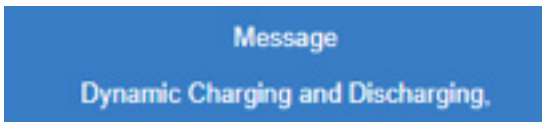
You may would like to come back a Scotty Main Page to keep an eye on how much power Scotty charge from +LS to +HS buy click a link at the bottom of the Tunning page.



Below is a screenshot of Scotty while it is tuning at Medium Stage.



When tuning is successfully, you will se a message **Dynamic Charging and Discharging**



V. Scotty Advanced Page

You only need to access a Scotty advance page for setting up a master and slave Scotty. A master and slave set up is required when a system that have two Scotty working together with a single LS battery bank (two alternators is joined with a single battery bank). CAN connection between two Scotties is required for this set up.

Please contact us for IP address to access Scotty Advance Page.

Do not change any other parameters than the following parameters: **Master**, and **Slave**.

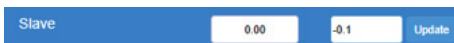
Before seting a master and slave Scotty, you need to tune Scotty individually as above procedure. After completing tune both Scotties individually, you need to access Scotty Advanced Page to set up a master and slave Scotty.

For master Scotty: Enter number **10** into a **Master** and click **Update**



Please note keep a **Slave** as default.

For slave Scotty: Enter number **10** into a **Slave** and click **Update**



Please note keep a **Master** as default.

WARRANTY

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[youtube.com/@Safiery](https://www.youtube.com/@Safiery)

THE 3 MOST COMMON CALLS ARE:

1. Flattened our batteries - use solar to recover to minimum voltage. Only use 240V AC power after reaching minimum voltage.
2. AC Inverter/Charger will not charge. Usually because the AC In line has an earth fault on the supply side and Safiery systems will not charge unless there is a properly connected earth AND the Active power in is wired correctly at the power supply. Common on farm stays.
3. Inverter not working. Usually because it is switched to "Charge Only" and it will not operate as inverter. Simply switch to "on" position.

