



SCOTTY 1500 & 3000

INSTALLATION & OPERATION MANUAL



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

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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

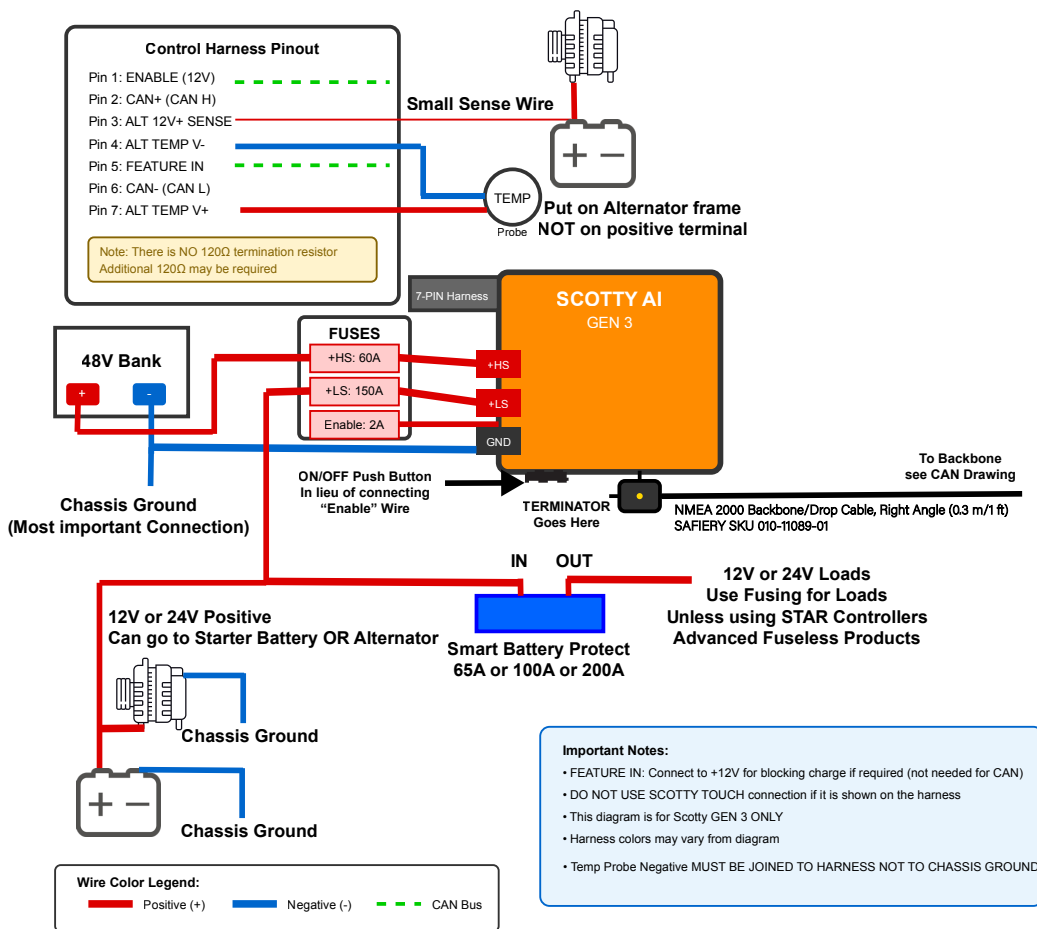
- Please read the safety instructions below before installing and using the Scotty AI to avoid risks of fire, electric shocks, personal injuries or equipment damage.
- This product is designed and tested in accordance with international standards. The equipment should be used for its designated application 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 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.
- Before any welding, grinding or other high-current work on the vehicle chassis or body, fully disconnect the Scotty AI. Isolate both the HS and LS supplies (isolator off or fuse removed), then remove the HS and LS positive cables. **The negative (GND) always comes off last and always goes back on first.** The chassis is the common ground, so welding current can pass through the unit and damage it if it is left connected.

SCOTTY AI 1500 / 3000 WIRING DIAGRAM "A"

Victron Energy Compatible Installation

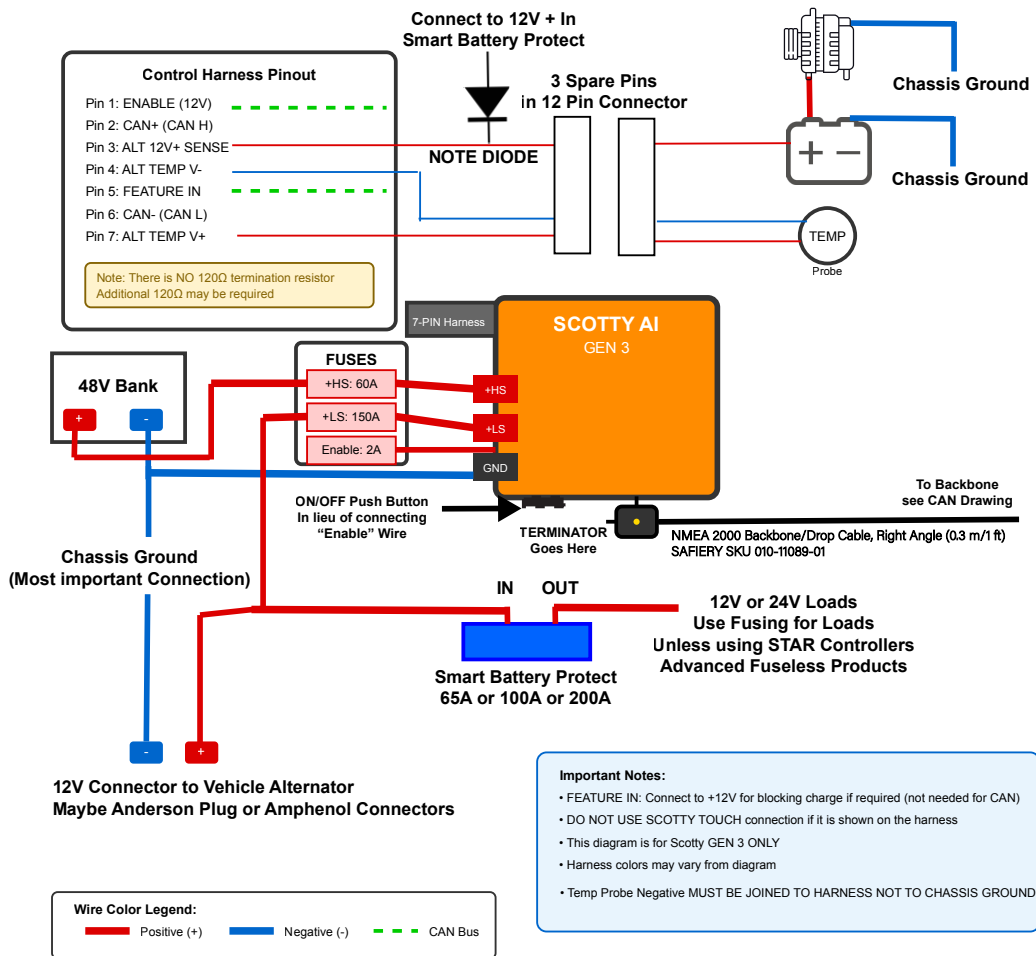


WHEN TO USE THIS WIRING DIAGRAM "A"

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"

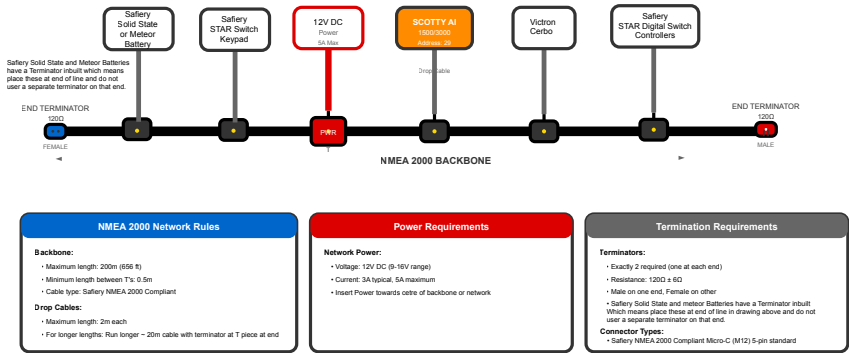
Victron Energy Compatible Installation



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 TOPOLOGY

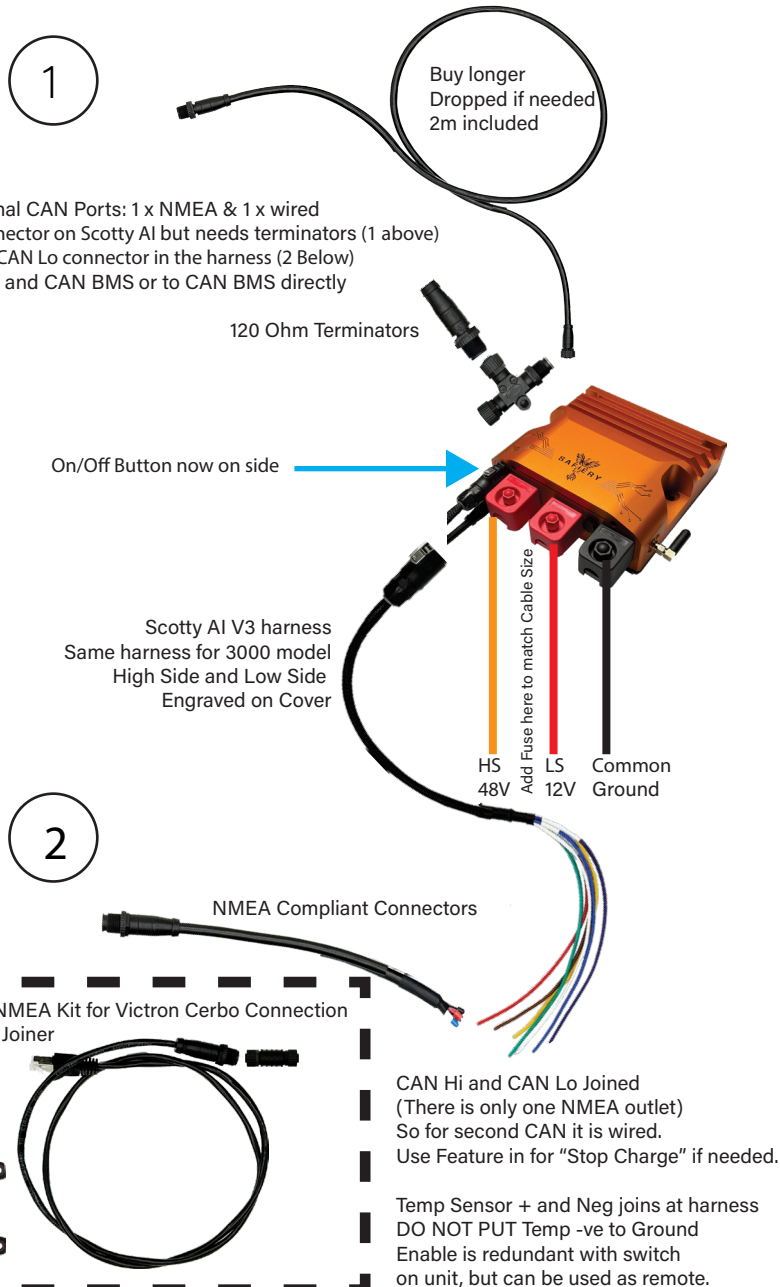


NMEA 2000B Network Topology

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	

HARNESS AND DATA CABLING (SCOTTY AI V3)



NEGATIVE CONNECTION



ALTERNATOR TEMPERATURE SENSOR

The alternator temperature sensor is essential for the operation of the Scotty AI. Connect the sensor to the temperature wires coming out of the harness.

If the Scotty AI 3000 harness has a Temperature Ground wire, 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**

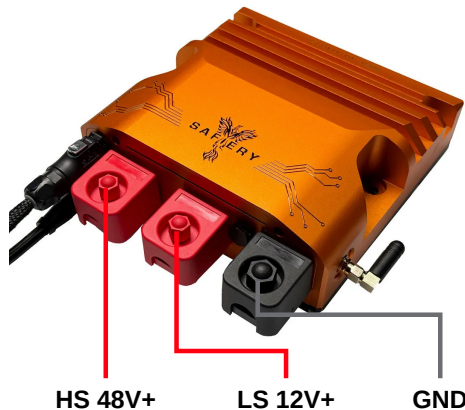
**POINT TO THE CHASSIS!
NEVER DISCONNECT**

Never disconnect GND while HS or LS is live. If the unit must be removed, for example before welding, disconnect HS and LS positives first. **The negative (GND) always comes off last and always goes back on first.**

CABLE AND FUSE SIZING

Cable and fuse sizes must suit each installation. Size them to the wiring standards that apply, for example AS/NZS 3000, AS/NZS 3001 (RVs) or AS/NZS 3004.2 (boats), so the fuse protects the cable ($I_B \leq I_N \leq I_Z$).

TERMINAL LAYOUT



INSTALLATION

1. Have your High Side 24 V or 48 V (HS) battery connected and the isolator applied so there is no power connection. Connect the 12 V Low Side and the Enable wire to the 12 V side. A green LED starts flashing. No power will flow, as no 24 V or 48 V battery is connected to HS.
2. On your phone, tablet or laptop, open WiFi, scan and connect to the 'Scotty XXXX' network. The initial password is either 12345678 or, on newer versions, Scottyai@0 (capital S). You can change the password later.
3. Once connected, the connection indicator may keep turning, as there is no internet. Open a browser (we use Chrome) and go to 172.24.24.1. Save this page to your home screen for easy use. Check the values on the status page.
4. You are ready to go. 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). This charges a 24 V or 48 V battery on the High Side at a maximum of 60 A for a 24 V battery at 28 V, or 30 A for a 48 V battery at 52 V.

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 the Low Side.

Scotty Not Charging?

Check what colour light is on under the Scotty: no light, red light or green light.

No light: Check power to the Scotty. Check the fuse and the breaker switch, and make sure it is turned on. If there is power to the Scotty and still no light, this is very unusual. Contact Safiery Support to arrange an RMA.

Red light: Turn the Scotty off at the breaker so there is no LED, then turn it back on. Log in to the Scotty page and read the error code on the screen. This tells you what the problem is. Refer to this manual to log in if unsure. If still unsure, send screenshots to Safiery Support with your details.

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

SCOTTY AI TROUBLE SHOOTING INSTRUCTIONS & DIAGNOSTIC 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:

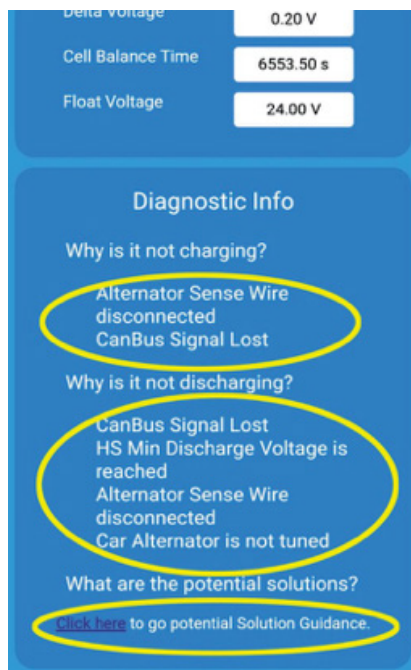
A high-side battery preventing charge means that the house battery BMS is not accepting a charge, which may suggest that the Battery is already fully charged.

- 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'?

DIAGNOSTIC PROCEDURE (CONTINUED)

1. Run the engine at cruising speed.
2. Watch the data on the Status Page.
3. Note the LS alternator voltage sense. If it is above 12.8 V, the alternator is producing power to match the load. Take a screenshot of the status page to keep a record of the LS alternator voltage sense.
4. Go to the starter battery and measure its voltage accurately.
5. Compare this to the voltage on the screenshot. The voltage difference multiplied by the current (A) is the cable loss. For example, 13.2 V at the battery and 12.8 V on the Scotty AI status page is 0.4 V. At 100 A that is 40 W, which is far too high. Check the negative path first for a good connection. A good loss is 10 to 15 W.
6. Look at the Scotty status page screenshot. If the number it shows is less than the above calculation, the problem is the negative connection.
7. The negative wire from the starter battery to the chassis in the engine bay must be bolted to a paint-free, clean metal surface.
8. The negative wire from the target auxiliary battery to the chassis must be bolted to a paint-free, clean metal surface on the chassis.
9. We do not recommend laying a separate negative wire unless there is no chassis, for example on a boat. The negative wire is the problem in 95% of cases.

IF ALL THE ABOVE IS CORRECT, CHECK 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 cannot deliver enough power.
3. Engine or vehicle loads on a 12 V alternator are high. For example, a Nissan Patrol has electric power steering that takes a lot of power, leaving little for the Scotty AI. Scotty AI takes power after the vehicle loads, so they are not compromised.
4. Cable sizes are too small (positive and/or negative).
5. The target battery cannot accept charging at a higher rate. This can be because it is at a high SOC, the BMS has limited charging due to temperature, or the lithium battery has a lower charge rate (less expensive lithium batteries).
6. When charging a caravan from a vehicle with a Scotty AI and a 7 to 10 m run at 48 V to the lithium battery in the van, the voltage difference will not be as high, especially when solar is running. Expect around 1000 W when the caravan is at 49 to 50 V, and 2000 W when it is at 47 to 48 V.
7. Scotty AI does not use State of Charge (SOC) in any calculation. It only uses voltage for control.
8. SOC is a calculated value and is not measured. It may be reasonable after the batteries have been at 100% for about 2 hours. If batteries operate in the 20 to 85% band repeatedly over 1 to 2 weeks, they will likely be around 50% of their real capacity, because the cells have not balanced. Safiery 48 V batteries actively balance between 90 and 95% calculated SOC. They are only fully charged when the calculation shows 100% SOC.



NEVER DISCONNECT THE NEGATIVE WHILE HS OR LS IS LIVE.

The negative (GND) always comes off last and always goes back on first.

SCOTTY AI 3.0 TUNING GUIDE

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

Scotty AI 2.0 is labelled SCOTTY AI 2.0 and its version starts with V2.x.x.x. This guide can also be used for tuning a Scotty AI 2.0, with these differences:

- The interface may be slightly different.
- Scotty AI 2.0 does not have a **Low Side Charging Algorithm**.

Note: The Scotty 1500 (1.5 kW) harness does not have an **ALT TEMP V-** wire. Connect the temperature sensor negative directly to the Scotty negative terminal.

I. Quick Check

Before tuning, check the wiring:

- | | |
|-------|---|
| I. | GND Scotty terminal is connected to ground. |
| II. | +LS Scotty terminal is connected to the alternator (+12 V or +24 V). |
| III. | +HS Scotty terminal is connected to a battery bank (+24 V, 36 V or 48 V). |
| IV. | Enable is connected to either +LS or +HS. |
| V. | ALT SENSE 12V+ is connected to the alternator (+12 V or +24 V). |
| VI. | ALT TEMP V+ is connected to the temperature sensor positive (red wire). |
| VII. | ALT TEMP V- is connected to the temperature sensor negative (black wire). |
| 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

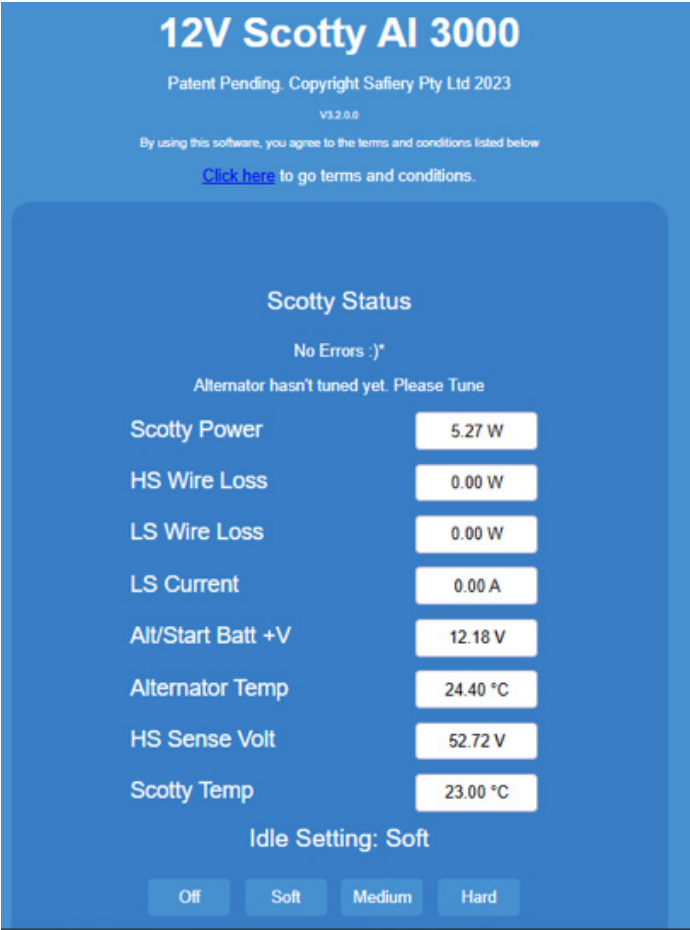
Go to a web browser: <http://172.24.24.1>

A screenshot of a web page titled 'Please Update Token'. The page has a blue background. It contains a section titled 'Terms And Conditions' with a link 'Click here to go Terms And Conditions.' Below this is a section titled 'Token' with a text input field containing '0' and an 'Update' button. Further down, there is a paragraph explaining the need for a token to run Scotty AI, mentioning a 'fine print' department, an End User Licence Agreement, and an 8-digit token. It also provides a URL: 'Go to https://safieri.com/SAL'. At the bottom, it says '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.

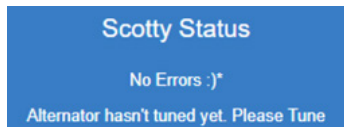
III. Scotty Main Page

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

Indicates the Scotty unit temperature, for instance 24.00 °C.

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

3. Is it Smart Alternator?: YES

4. Low side charging parameters

Camping SetPoint

HS Min Discharge Volt

HS Max Discharge Current

5. High side charging parameters

HS Float Volt

HS Absorbion Time

HS Max Charge Volt

Alternator Max Temp

Alternator Current Limit

Smart Alternator Trigger Voltage

LSC Command

Feature in: Disabled

6. Click Auto Tune button and wait 2 minutes

a) Alternator Size

AlternatorSize	150.00 A	-0.1	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	12.60 V	-0.1	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	46.20 V	-0.1	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	0.00 A	-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

Recommended setting is 100 °C.

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	Max alternator 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

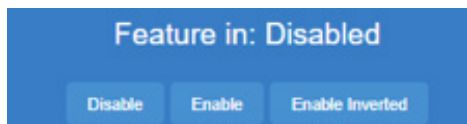
Recommend seting for this parameter is 12.3V and 24.9V for 12V and 24V +LS Scotty, respectively.



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);

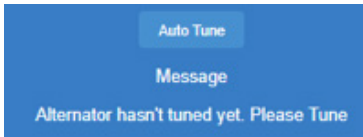
Enable Inverted need to be selected if you want to control Scotty by negative control (GND)

g) Auto Tune

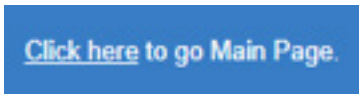
After all parameters have been set up. Turn on a engine.

And Click **Auto Tune**

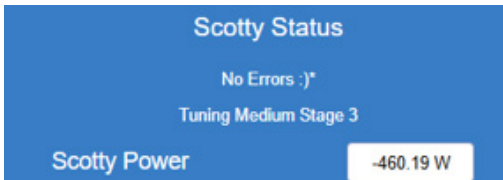
Tuning process goes through 04 steps: Initiating Tuning State, Tuning Soft Stage, Tuning Medium Stage, Tuning Hard Stage.



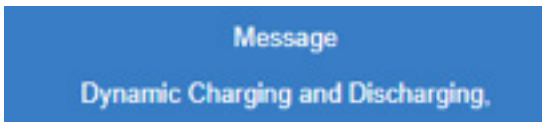
You may would like to come back a Scotty Main Page to keep an eye on how much power Scotty charge from +LS to +HS buy click a link at the bottom of the Tunning page.



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**.

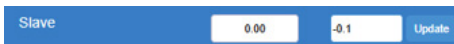
Before seting a master and slave Scotty, you need to tune Scotty individually as above procedure. After completing tune both Scotties individually, you need to access Scotty Advanced Page to set up a master and slave Scotty.

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.

VI. Scotty Software Updates

Scotty AI software updates are on the Safiery website under **Software Downloads**:
<https://safiery.com/software.html>

Before updating, check the version on the Scotty main page (for example V3.2.0.0). Only install the update that matches the version already running.

Do not install a different main version. For example, if your Scotty runs version 3 software, do not update it to version 4. Installing the wrong version will brick your Scotty and is not covered by warranty.

If you are not sure which version you have, contact Safiery Support with a photo of the product label and the Scotty main page before updating.

If your Scotty is a non-AI version, Safiery offers an AI upgrade for the board. Contact Safiery Support to arrange it.

WARRANTY

Safiery products come with a 5-year warranty. See the Safiery warranty policy for full coverage and exceptions: <https://safiery.com/warranty-policy>

Making a Warranty Claim

Make all warranty claims online at <https://safiery.com/warranty.html>

You will need:

- Your invoice or order number and date of purchase.
- The Scotty serial number (on the product label).
- A description of the fault and when it was noticed.

What Happens Next

1. You receive a case reference by email.
2. Our team reviews the request against your purchase and the warranty terms.
3. If covered, we issue an RMA with return instructions.
4. We inspect the unit and resolve the claim by repair, replacement or credit.

Not Covered

- Misuse, unauthorised modification, water ingress beyond the rated ingress protection, and normal wear items.
- Installing a software version that does not match the unit (see VI. Scotty Software Updates, page 26).

Third-party products (for example Victron) follow the manufacturer's own warranty process. Contact **support@safiery.com** and we will point you the right way.

CONTACT / SUPPORT

GET IN TOUCH

Email: support@safiery.com

Phone: +61 7 2102 2553

Address: 45/8 Distribution Court, Arundel QLD 4214

Web: www.safiery.com

SOCIALS

instagram.com/safiery.global

youtube.com/@Safiery

WARRANTY CLAIMS

To make a warranty claim, go to <https://safiery.com/warranty.html>

SOFTWARE DOWNLOADS

<https://safiery.com/software.html>

THE 3 MOST COMMON CALLS

1. **Flat batteries.** Use solar to recover the batteries to minimum voltage. Only use 240 V AC power after reaching minimum voltage.
2. **AC inverter/charger will not charge.** This is usually because the AC input has an earth fault on the supply side. Safiery systems will not charge unless there is a properly connected earth and the active is wired correctly at the power supply. This is common at farm stays.
3. **Inverter not working.** This is usually because it is switched to “Charge Only”, so it will not operate as an inverter. Switch it to “On”.



SCOTTY AI 1500 & 3000

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Tomorrow's Technology, Today