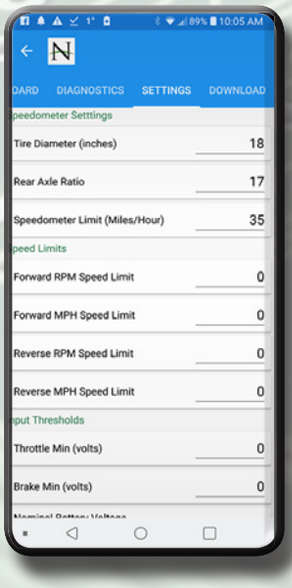
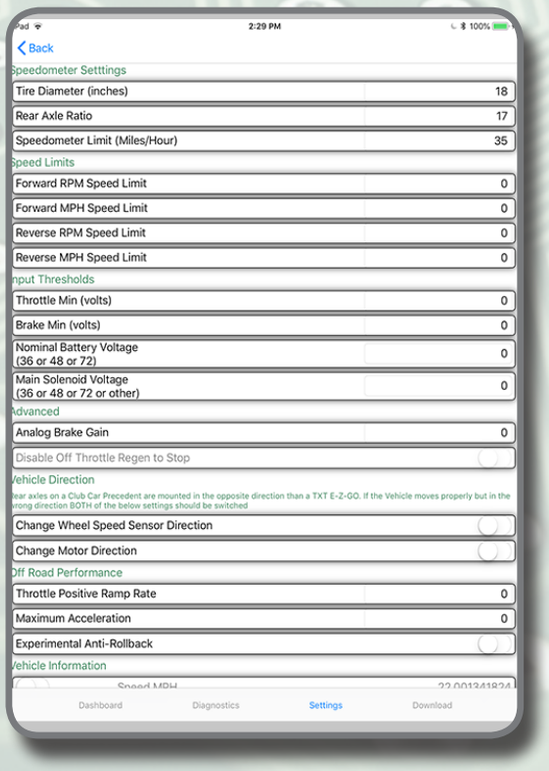
User App and Dealer / Technician App Set-Up and Instruction Guide For DC

Android



IOS

Tablet (IOS & Android)



Available from:

ANDROID APP ON Google play

Available on the App Store

NavitasVS.com

APP INSTALLATION

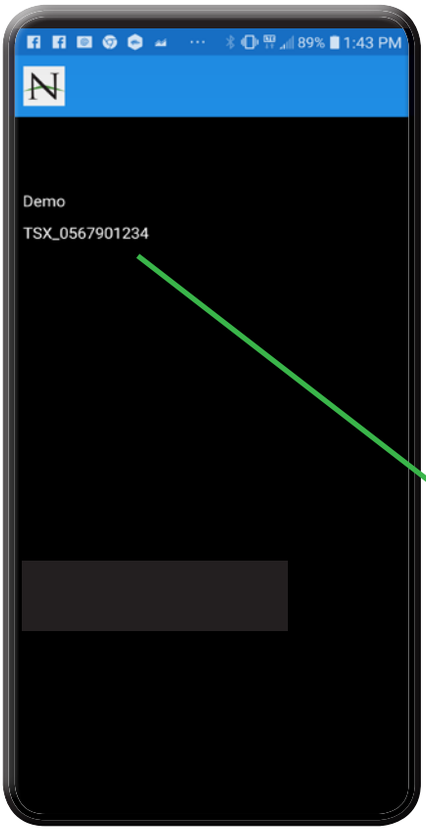
The **Navitas Customer App** is available online through Google Play and the Apple App Store.

Get it on Google play Available on the App Store

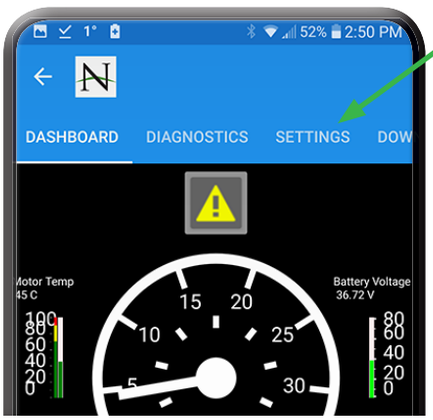
The **Dealer/Technician App** is available by contacting Navitas at 1-844-576-2499.

- Navitas will register your email and ask what operating system you are using on your phone (Android vs IOS).
- Android users will receive an email from Navitas with access to the App on Google Store IOS users will receive and email directly from Apple TestFlight with a link to the App.
- Download App to phone.
- Install the Controller and turn car to ON
  - TSX controller will show a Green Light
  - TAC controller will blink once to show that power is connected.

NOTE: Some car models will require you to turn ON the RUN/TOW switch and others will power ON with a key switch and others will power ON with a key switch.



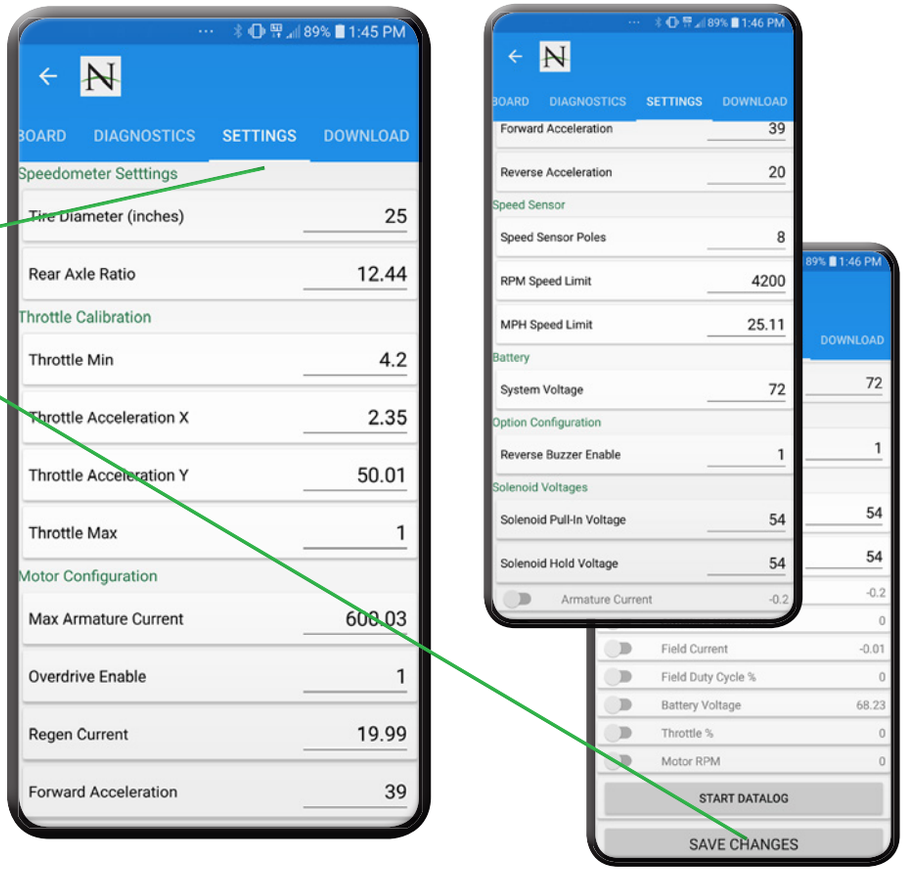
- Open the App and choose to connect to the TSX or TAC controller shown (you will see the serial number so you can make sure you are connected to the serial number on the appropriate controller).
- Each controller comes loaded with the appropriate software for your vehicle already installed and functional.
- **NOTE: We occasionally provide diagnostic updates that can be downloaded into the controller if recommended by the engineering division of Navitas.**
- It is now time to SETUP THE CAR... Select the car by touching the serial number and the DASHBOARD page will appear.
- From the DASHBOARD, select the SETTINGS tab.



SETTINGS TAB

CAR SETUP:

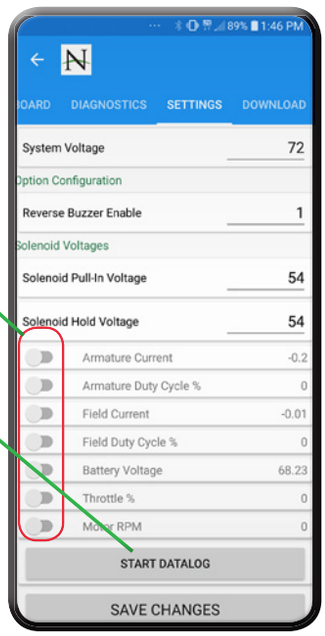
- Select the “Settings” tab and verify the settings shown.
- If any are changes made, remember to select “Done” and then select “SAVE CHANGES” at the bottom of the Settings page.

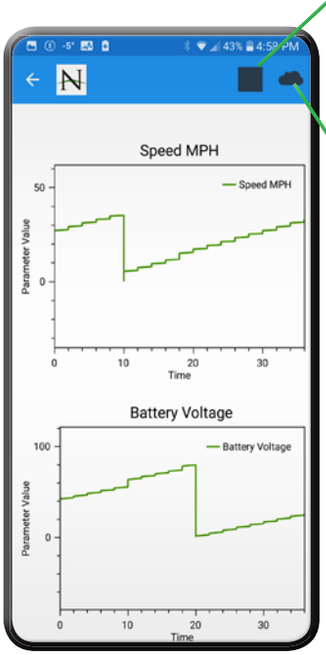


Data Logging:

On the bottom of Settings page, there are toggle switches you can select to log the performance of your car.

- Select the toggle switches and then select “START DATALOG”.
- This will show you real time graphing of the car’s performance.
- This information cannot be saved and only viewed with each drive.





- You can stop and start the logging with the icon at the top right of the page.
- Select the cloud icon to share the data with Navitas Engineering if asked to.

DOWNLOAD TAB

5 Steps to Download DC Software - IMPORTANT

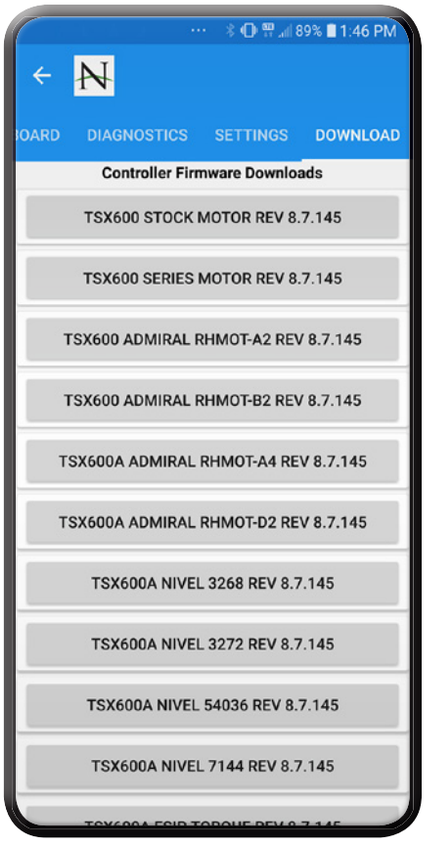
Controllers arrive from the factory with software already installed. If directed by Navitas to download an updated version of your software for the appropriate motor on the car, then here are the steps to download:

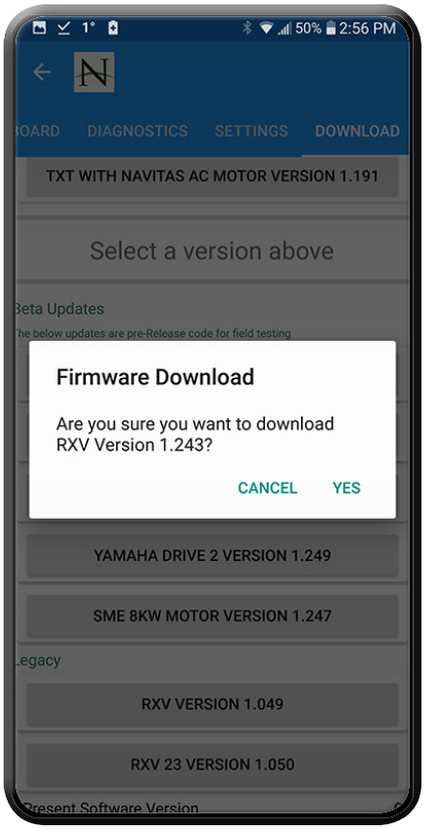
1. Go to Download Page and choose newest version of software directed by Navitas for your vehicle model/motor listed from top of page. (NOTE, there are also beta firmware updates available to utilize if instructed by Navitas Engineering to try).
2. Choose "YES" to confirm download when prompted

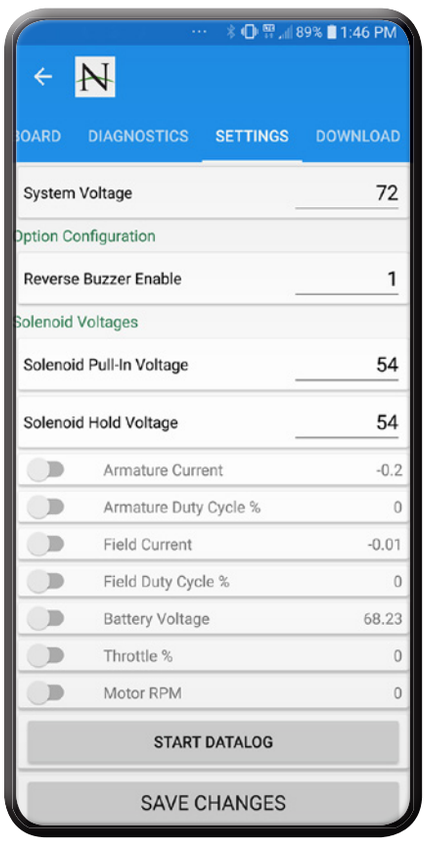
WARNING: When you have selected `YES`to confirm download, align the phone/tablet within 1 meter of controller and DO NOT MOVE PHONE OR USE PHONE IN ANY WAY until the download completes (usually 3-4 minutes pending connection).

THE CONTROLLER COULD BECOME PERMANENTLY DISABLED IF THE PHONE/TABLET LOSES CONNECTION TO THE CONTROLLER DURING THE DOWNLOAD!

3. Go to "SETTINGS", Tab and Scroll down to bottom
4. Press "SAVE CHANGES"
5. Review and adjust settings, select "Done" after each change, then select "SAVE CHANGES" at the bottom of the screen.







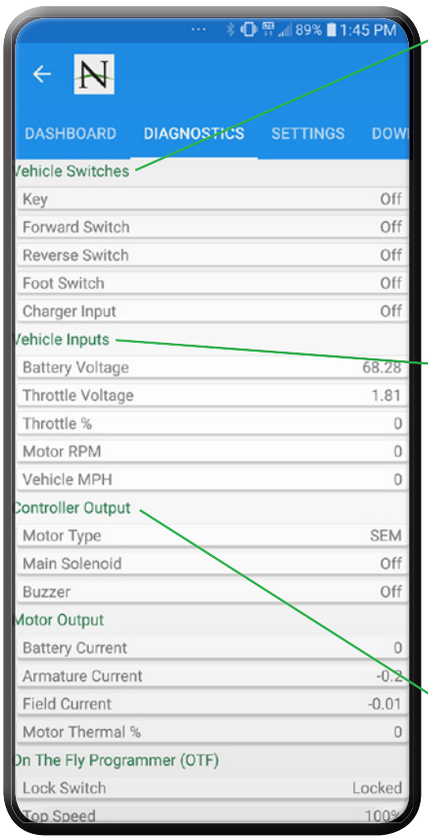
DASHBOARD TAB

DC APP DASHBOARD FUNCTIONS EXPLAINED:

Here is a review of each item on each page of the AC App Dashboard

- **Navigation Bar** (located at bottom for IOS and on top for Android)
- **Speedometer** – if tire size and gear ratio on the settings tab is correct, then the speedometer will report speed directly from the vehicle as opposed to GPS
- **Controller Temperature** – measures the temperature of the controller
- **Lock Button** – press button to lock or unlock car remotely.
- **Direction status** – Indicates the selected gear: F (Forward), N (Neutral), and R (Reverse)
- **Caution sign** – indicates errors stopping vehicles or warnings about state of vehicle. When you press the caution sign, faults will show. You can choose email and it will generate an email to send to your dealer or you can cancel and correct the faults
- **Battery Voltage** – measures the battery charge
- **Key Icon** – shows key is present in vehicle and turned on or greyed out if off.

DIAGNOSTICS TAB



DC Vehicle Switches

*These switches are measuring signals that are either driven to ground or battery voltage

- **Key** – shows on or off
- **Forward Switch** – shows on or off
- **Reverse Switch** – shows on or off
- **Foot Switch** – show on or off
- **Charger Input** – shows connected or off

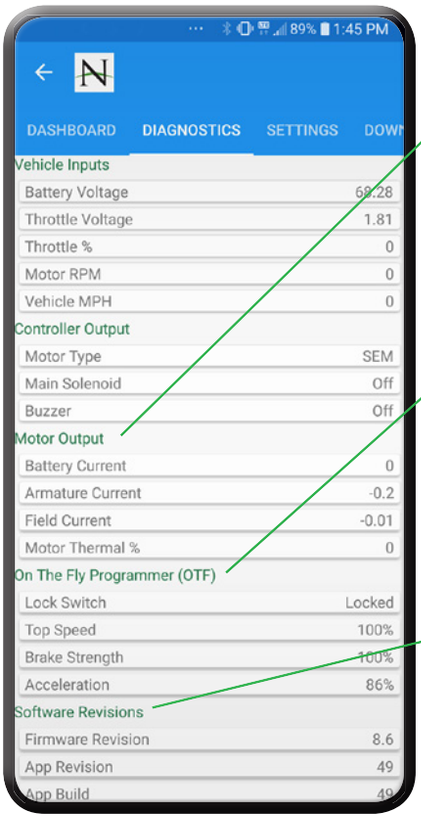
Vehicle Inputs

*These are analog signals that measure between ground and 5V

- **Battery Voltage** – displays present voltage across B+ & B- of controller
- **Throttle Voltage** – displays present voltage. Most vehicles run from .5-4.5 volts
- **Throttle %** - displays throttle percentage based on throttle configuration values
  - **Motor RPM** – shows motor speed as picked up by speed sensor on motor
  - **Vehicle MPH** – displays vehicle speed based on wheel size/gear ratio settings and motor RPM

Controller Output

- **Motor Type** – displays current motor configuration type: SEM (Shunt), Series or PM (brushed Permanent Magnet)
- **Main Solenoid** – shows on or off
- **Buzzer** – shows on or off



Motor Output

- **Battery Current** – displays current being drawn from the battery by the controller
- **Armature Current** – displays current being pushed into the motor
- **Field Current** – displays current being pushed into field windings of motor
- **Motor Thermal %** - displays a calculated motor thermal percentage (does not show actual temperature) The controller will limit power output if this reaches 100%

On the Fly Programmer (OTF)

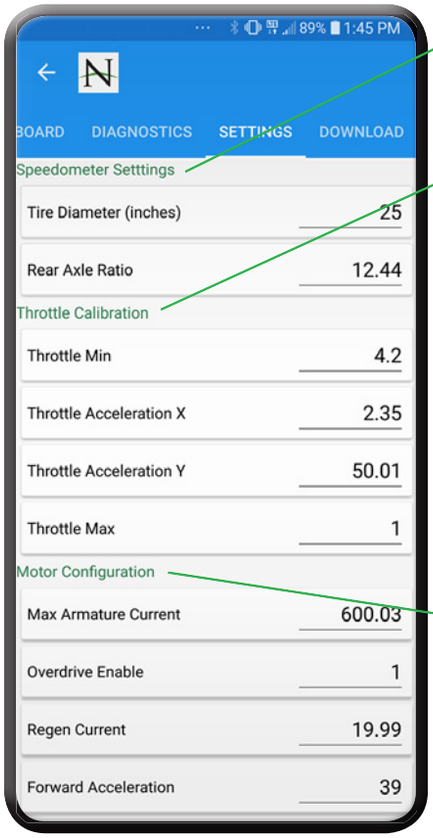
*If no OTF present, values default to smooth drive settings

- **Lock Switch** – when locked, the vehicle will store the 3 settings listed below:
  - **Top Speed** –Shows current position of dial on OTF
  - **Brake strength** - Shows current position of dial on OTF
  - **Acceleration** – Shows current position of dial on OTF

Software Revisions

- **Firmware Revision** – Revision of internal controller code
- **App Revision** – Revision of current app
- **App Build** – Build of current app

SETTINGS TAB



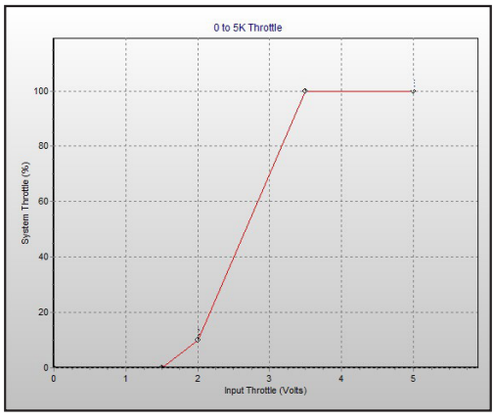
Speedometer Settings

- **Tire diameter** (inches) – used to calculate vehicle speeds and speed limits
- **Rear Axle Ration** – used to calculate vehicle speeds and speed limits

Throttle Calibration

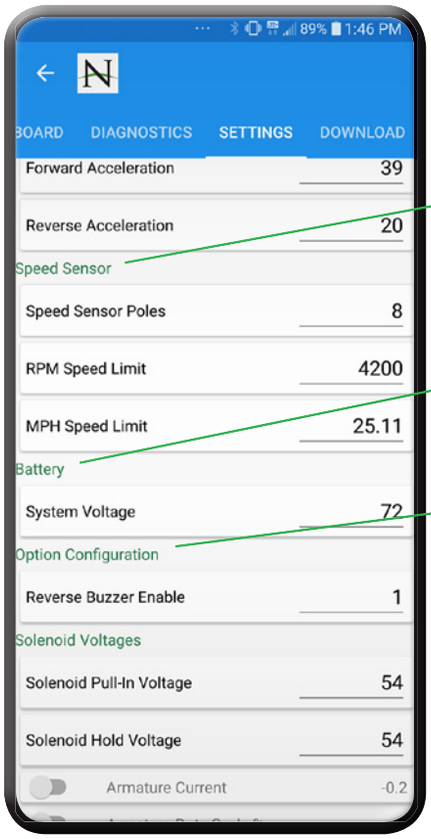
- **Throttle Min** – Throttle voltage at start of throttle. Throttle voltage below this setting will be read as 0% throttle. Throttle Min default is 1.5V
- **Throttle Acceleration X** – Used for shaping the throttle. This is the voltage on the throttle that will give Throttle Acceleration Y output %. Throttle Acceleration X default is 2.0V
- **Throttle Acceleration Y** – Used for shaping the throttle. This is the percentage of motor output at Throttle Acceleration X voltage. Throttle Acceleration Y default is 10%
- **Throttle Max** – Throttle voltage at end of throttle. Throttle voltage above this setting will read as 100% throttle. Throttle Max default is 3.5V.

  See diagram (lower right)



Motor Configuration

- **Max Armature Current** – Maximum current that will be pushed into the armature of the motor.
- **Overdrive Enable** – Enables or disables the Overdrive function of the controller 1 – enabled
  0 – disabled
- **Regen Current** – Maximum current pulled from motor when throttle is released.
- **Forward Acceleration** – In %, determines how fast the motor accelerates in forward
- **Reverse Acceleration** – In %, determines how fast the motor accelerates in reverse



Speed Sensor

- **Speed Sensor Poles** – Number of magnet poles on motor. Typically 8 or 4
- **RPM Speed Limit**- Forward speed limit in RPM
- **MPH Speed Limit** – Forward speed limit in MPH

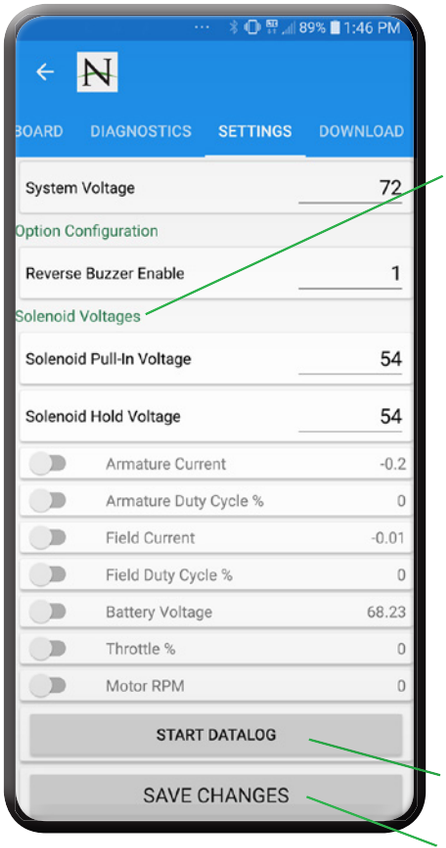
Battery

- **System Voltage** – Nominal battery voltage for the vehicle. Controller will automatically switch from 36 to 48V

Option Configuration

- **Reverse Buzzer Enable** – Option to disable the buzzer output. For off-road use only. Care must be taken while driving when disabling a safety feature of the controller

SETTINGS TAB, cont'd



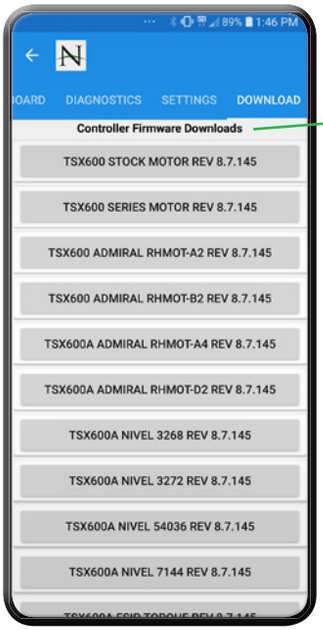
Solenoid Voltages

- **Solenoid Pull-In Voltage** – Voltage across main solenoid for short duration when it first turns on
- **Solenoid Hold Voltage** – Voltage across main solenoid when on
- **Armature Current** – Displays the current being pushed into the armature of the motor
- **Armature Duty Cycle%** - displays the percentage of voltage that is being applied across the armature
- **Field Current** – Displays the current being pushed into the field windings of the motor
- **Field Duty Cycle %** - displays the percentage of battery voltage that is being applied across the field windings of the motor
- **Battery Voltage** – displays the voltage across B+ & B- on the controller
- **Throttle %** - displays the current throttle position as based on throttle calibration
- **Motor RPM** – displays the current motor rpm

Start Datalog button – navigates to datalog screen

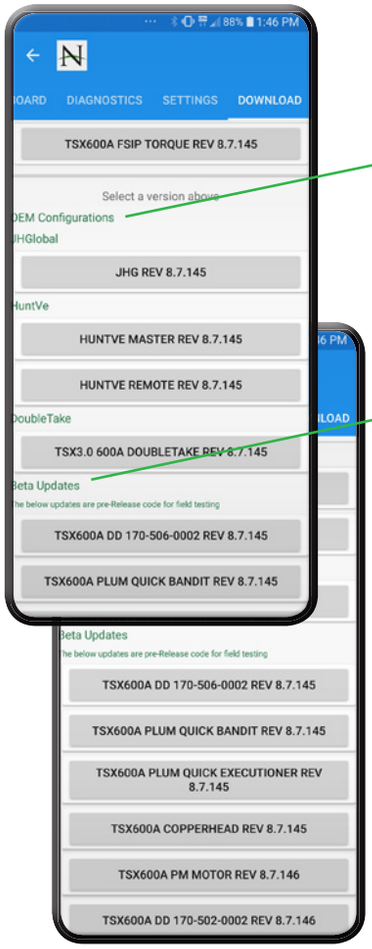
Save Changes button – used to save changes in settings internally

Downloads



Controller Firmware Downloads

- **Top Firmware Versions** - are present releases



- **OEM Configurations** – for OEM use
- **Beta Updates** - Trial software for testing of minor fixes

Visit www.navitasvs.com/support or www.navitasvs.com/faq to see videos and pdf manuals for Bluetooth App assistance

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