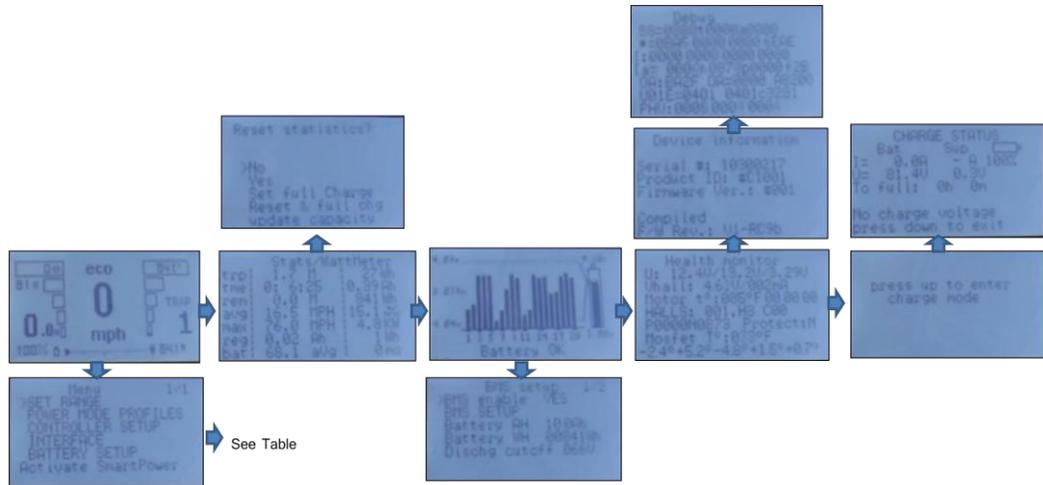
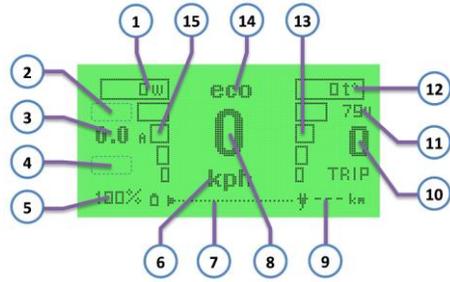


MENU REFERENCE: Adapto mini-E and MAX-E Controller

Main Menu flow



1. Real time power use in watts
2. TSC (traction control system) is displayed when enabled
3. Battery current in amperes
4. Smart-Range data, (when enabled)
5. Battery level SOC (state of charge) in %
6. Speed units (kph, mph)
7. Graphic display battery "fuel gauge"
8. Speedometer
9. Estimated remaining range at current SOC
10. Odometer (since last reset)
11. Battery voltage
12. Motor Temperature (if thermocouple is connected and configured)
13. Graphic display temperature gauge / Overheat current limit bar
14. Power profile / information messages (eco / normal / boost / cruise / brake / charge etc.)
15. Graphic display power gauge.



trp	Trip distance	Wh used
tme	Driving time	Ah used
rem	Remaining range	Remaining Wh
avg	Average speed	Average consumption
max	Max. recorded speed	Max. Power
reg	Regen Ah recovered	Recovered power Wh
bat	Average voltage	Battery Int. Resistance

```

States/WattMeter
trp|021.5 Km |0280 Wh
tme|00:37:47 |14.2 Ah
rem|000.0 Km |0000 Wh
avg|034.1 KPH |13.0 %
max|208.5 KPH |02.9 kW
reg|00.01 Ah |0000 Wh
bat| 19.7 aVg |0075 mΩ
  
```

ODO	Odometer	Km	Total used kWh
CYC	Number of cycles	cls	No. of complete
BWH	Remaining	Wh	Max. battery capacity
BAH	Remaining	Ah	Max. battery capacity
Ire	Battery int.	mΩ	Minimum battery Ire

```

Total State
ODO 0021 Km 000.0 kWh
CYC 0001 cls 0002 ful
BWH 0222 Wh 0236 max
BAH 18.55 Ah 19.97 max
IRe 0075 mΩ 0060 min
  
```

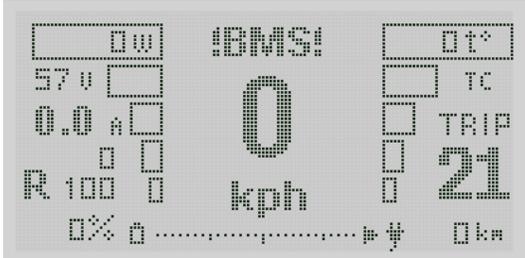
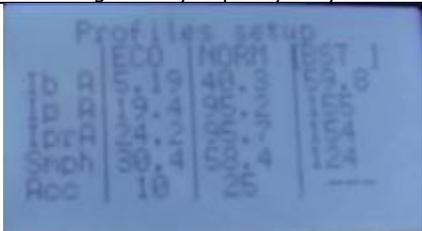
1. Top Display – voltage of highest cell or parallel cell bank (auto-detect)
2. Middle display – the difference between the maximum and minimum voltage of battery cells or parallel cell banks
3. Lower Display – voltage of lowest cell or parallel cell bank. (auto-detect)
4. Battery status (BMS fail, Battery empty, Balancing, Charging, Battery OK)
 - BMS fail - BMS error (failure or improper configuration)
 - Battery empty - Low battery
 - Balancing - Battery balancing mode is active
 - Battery OK - The battery is serviceable, other modes are disabled



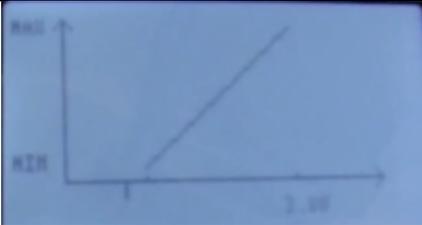
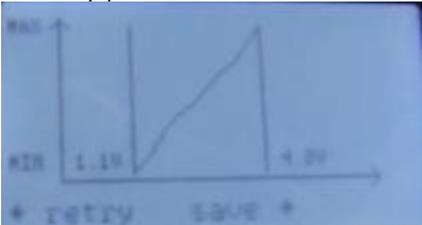
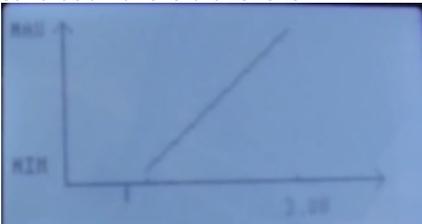
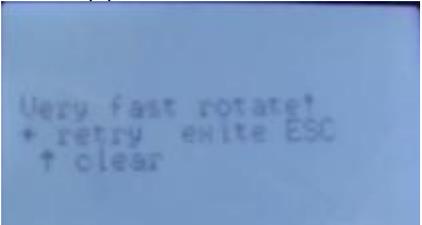
Health Monitor

```

Health monitor
U: 12.6V/19.4V/3.27V
Uhall: 4.66V/002mA
Motor t°: 000°C 00 00 00
HALLS: 111, H2 CFF
P0000N0828 Protect: N
Mofset T°: 026°C
-4.0°+9.9°-0.0°-2.3°+3.4°
  
```

Main Menu (Path)	Menu Item	Sample Entry/Range
Main Menu > SET RANGE	Range	018.0M
	Power amount	080.0Ah
	Power range	04.0Ah Additional settings <Power range> is needed in order to overcome the inclines and compensate for uneven loads. More <power range> should be set if your route has a lot of hills or climbing. In other words, this option sets the reserve capacity that can be used without significantly reducing power. The controller will automatically limit the power of the motor to travel a given distance. It should be understood that the power consumption depends primarily on the vehicle speed and optional automatic power correction cannot increase the maximum range on a single charge indefinitely.
	Go	 <p>When activated, <Set Range> mode is displayed in the lower left hand corner of the main screen. Display reads either "R" or a value between 0 and 2.</p> <p>The value displayed is the percentage of distance traveled relative to the percentage of remaining and reserve capacity.</p> <p>If you reach the reserve early, the bike will continue to run in economy mode, but the remaining battery capacity may not be enough to reach your destination.</p>
Mani Menu > Power Mode Profiles	ECO NORM BOOST	
	Ib A	59.8 battery current limit in amps
	Ip A	155 phase current limit in amps
	Ipr A	45 phase current limit regenerative braking in amps
	Smph	maximum speed limit in kmh or mph
	Acc	Acceleration limiting
Controller Setup 1/4	Speed ratio	084.8 This value is given in millimeters per electrical revolution. To calculate the required value must be the circumference of the wheel assembly divided by the number of pole-pairs in your motor. For most direct-drive motors the number of pole-pairs is equal to 23. If possible, verify the data for your motor. For example, for a 9 Continent motor, 24" rim with a 2.5" tire the value will be $1965\text{mm}/23 = 85.4\text{mm}$
	Autodetect	The "auto-detect" option is designed for the automatic settings of the controller under the motor. When you run this option, make sure that the motor rotates freely, and is located in a convenient position for 2-3 minutes of free rotation. It is strongly recommended not to conduct this procedure under load. Support the vehicle securely so that the motor/wheel is not obstructed in any way, and you can keep the throttle applied. In the event of an emergency, interrupt the process by immediately releasing the throttle. To start the process you need to press and hold the throttle control fully open. Within a few seconds after starting, the motor should make a few brief movements forward

		<p>while determining the connection sequence for the Hall sensors. At this time, you must make sure that the rotation actually occurs in the "forward".</p> <p>If the motor / wheel rotates in the reverse direction, immediately release the throttle control, exit to the previous menu and change the following parameter <Direction> to the opposite. Then you can return to Autodetect prompt and start over.</p> <p>After confirming that the motor/wheel rotates in the correct direction, continue holding the throttle until you see on the screen the message <Successfull> .</p> <p>If there is an error, there will be a corresponding message. During the first 1.5-2 minutes when Autodetect is active, the motor will rotate slowly, after which it will spin for about 75 % of the maximum speed.</p> <p>If Autodetect is complete (motor has stopped turning and the message <Successfull> is displayed), you can release the throttle. You may exit to the main screen. Be sure to save settings when prompted.</p> <p>If an error message appears:</p> <ul style="list-style-type: none"> • <Interrupted By thr> (interrupted throttle) indicates the throttle was released before the auto-detection cycle was completed. • <Halls Error> problem with the Hall sensors • <Interrupted By key> if you press any button during the cycle • < Unknown error> other errors. <p>Autodetection may not work in a few cases, namely:</p> <ul style="list-style-type: none"> • hall sensors are connected incorrectly, defective or damaged • all phase conductors are not connected, or connections are poor • hall sensors are installed with more than 30 degrees of offset • Sensors in the motor were installed to work with a 60 degree controller. <p>In this case, you must make sure that all phase conductor connections are secure and the motor has the correct hall sensor locations designed for use with a 120 degree controller.</p>
	Direction	<p>+/-</p> <p>Change the direction of rotation of the motor. Change this option to the opposite if when you try to run the Autodetect process, the wheel rotates in the wrong direction. After changing direction restart the Autodetect process</p>
	Callibration	(submenu)
Callibration 1/3	Voltage adj	<p>081.4</p> <p>Calibration of voltmeter. Press the "left" "right" buttons to adjust the voltage displayed on the right. The voltage display is calibrated by the manufacturer. Adjustment by the user is normally not necessary. However, if you have an accurate voltmeter and ammeter, you may manually re-calibrate the data values.</p> <p>To calibrate the voltage supplied to the controller, connect a precision voltmeter directly to the controller power supply terminals. If the displayed voltage on the controller and the voltmeter do not match, change the Voltage adj setting until the two readings are the same.</p> <p>To calibrate the power meter, you need an accurate ammeter / wattmeter installed in the controller power supply circuit. Under constant load of 10-15 amps without stalling the motor, compare the readings between the precision ammeter and the ammeter display on the main screen of the controller. Adjust value ShuntR until these values match.</p> <p>We remind you that the manufacturer is not liable for possible damage to the battery / motor by incorrect user-adjusted parameters.</p> <p>For a detailed description of the Calibration menu, see Chapter 3.3.4</p>
	ShuntR	<p>0.612mΩ</p> <p>Resistance of the built-in shunt. Calibrated by the manufacturer. Adjustment by the user is normally not necessary.</p>
	ShuntZ	0000
	Shunt2	<p>+0.00%</p> <p>If the maximum current shown on the ammeter while in use differs from the maximum current set in the power mode profiles, change this value. Adjusting this value will change the settings of current profiles (power mode profiles), while the actual current used does not change. This setting is used to fine tune the displayed current while in use to match the actual controller current limits.</p>
Callibration 2/3	Zero offset	<p>+1</p> <p>Calibration of zero current. Setting used to adjust "zero" on the display when there is no load. Used to correct zero point of the power meter.</p>

	Thr limits	 <p>Calibration of the throttle - mandatory setting. Correct operation of some options is not possible without these settings, including the motor auto-detection process (Autodetect).</p> <p>In the calibration mode the throttle / brake buttons <left "and" right> you can adjust the current limit and the <up "and" down> switch between upper and lower limit.</p> <p>The current position of the throttle / brake limits is described by a coordinate axis. At the throttle minimum position, it is recommended to set the lower limit just to the right (with the cross-over), as the hall sensors are sensitive to temperature swings and different environmental conditions may shift the zero point or "off" threshold. Incorrect calibration may lead to a sudden movement of the vehicle. The picture below is an example of proper calibration.</p> <p>Please note that when replacing either the throttle or brake controls, the calibration procedures should be repeated to ensure proper operation.</p>
	Thr linear	<p>Calibration throttle linearity Smoothly push throttle. Press ESX for exit...</p> 
	Thr progr.	<p>1/0 Set the throttle progression (0 = linear)</p>
Callibration 3/3	Brk limits	<p>Calibration of the brake lever.</p> 
	Brk linear	<p>Setting of the brake lever progression (0 = linear) Smoothly push brake... Press ESC for exit...</p> 
	Weight	<p>0150KG Total weight of vehicle with a driver.</p>
	Int TSensor	<p>KTY83 Type of thermal sensors. Set by the manufacturer, the user does not require adjustment.</p> <p>Controller disables the motor in the following cases: Over temperature limit has been reached. Allow motor/controller to cool.</p>
Setup (2/4) > Regen setup 1/3	Enable	<p>ON/OFF (regen settings) In the Settings menu, in order to configure regenerative braking you must set the maximum battery voltage, maximum safe intermittent charging current which the battery can handle, and also enable and configure the active engine braking mode when needed. For a full description of each setting, see chapter Controller Setup-> Regen Settings section 3.3.5</p>
	ActiveMode	<p>NO/YES</p>

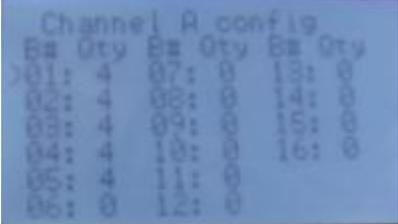
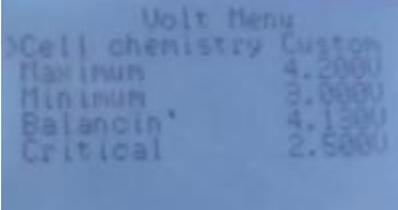
		<p>When braking, regeneration is possible down to zero speed. Required for operation mode motor KV setting and motor winding resistance are required for operation. These parameters are set during the Autodetect process.</p> <p>Common Problem: Jolt felt when applying or releasing the throttle or brake: Typically, this problem occurs when the values for the active engine braking settings as well as Wire R PHC are not right. To resolve this problem, you must perform a full Autodetect cycle and check that all the settings associated with active braking are displayed correctly.</p>
	ForcedActive	<p>NO/YES</p> <p>With this option disabled, regenerative braking is initially performed by classical regeneration (ie shorting all phases of the motor and the subsequent current accumulated in the windings is drained to the battery), and when the current starts to decline, the mode automatically switches to reverse motor braking. When switching to reverse you will hear an audible "click". At high speeds reverse motor braking requires the right timing settings and complementary lead angles. If this option is enabled, reverse motor braking always occurs.</p>
	Rated Current	<p>27.3A</p> <p>Current limit during regeneration. Set this value not to exceed your battery maximum safe charging current.</p>
Regen setup 2/3	Inversion	<p>NO</p> <p>Inverts brake sensor inputs. When setting brake calibration limits, if you press the brake lever and the signal voltage decreases (ie calibration slider moves to the left), change this setting to the opposite.</p>
	Smooth	<p>NO</p> <p>If this option is enabled, the reverse force during regeneration will gradually increase and also decrease smoothly when the brakes or regen button is released. Useful when using a switch instead of a Hall sensor.</p>
	PWM limit	<p>95.3%</p> <p>Limits minimum PWM cycle when using standard brakes. A higher value will allow you to slow down to a lower speed, however the efficiency will be reduced, and the motor temperature will increase. Recommended to set at about 95 percent.</p>
	SPD sensor	<p>NO</p> <p>Allows you to connect a speed sensor to the brake lever input on the controller. Useful for bikes with a freewheel or motors with an overrunning clutch where regenerative braking cannot be used and an external speed sensor is required.</p> <p>The controller supports motors with planetary gearsets and has some additional SETUP options to simplify use with these types of motors. Also possible to connect a reed type speed sensor or external Hall speed sensor in place of the brake lever sensor when using a motor with a freewheel or overrunning clutch.</p>
	Torque rise	<p>0080</p> <p>Optional setting for reverse motor braking. Allows you to configure a smooth response at low speeds. The higher the value, the stronger the braking at low speed. 80-150 is recommended.</p>
	Min speed	<p>005</p> <p>Minimum speed during motor reverse braking. In tenths of kmh. The default value is 2.</p>
Charge setup 1/2	Charge enable	<p>YES/NO</p> <p>Enable/disable charging through the controller. When set to "YES" the charge mode will be active and will begin immediately after connecting the charger with the charging coil to the controller.</p> <p>Charging mode can be used only with the optional capacitor/charge coil connected in accordance with the connection diagram.</p> <p>For the charge mode to work correctly, you must configure the maximum charge voltage (Max voltage), plug-in power supply current limit (Supply Current), charging current of the battery (Battery current) as well as the allowable voltage drop of the power supply (Supply Vdrop).</p> <p>Since the charge current is directly dependent on the power supply current, the current limit will occur at an absolute minimum of the two values. In other words a high battery current setting may not be achieved when using a fixed, low current power supply that can't tolerate a significant voltage drop. Description of the parameters, see Chapter Description of the parameters, see Chapter 3.3.6</p>
	Charge cutoff	<p>74.8V</p> <p>The maximum charging voltage of the battery.</p>
	Supply current	<p>10.0A</p> <p>Limits power supply current. Set at no more than the permissible rated current for the power supply / charger used.</p>
	Charge Current	<p>10.0A</p> <p>Limit the battery charge current. Set this value no higher than the maximum safe</p>

		charging current for your battery.
Charge setup 2/2	Supply Vdrop	1.19V Maximum voltage drop cutoff. Sets the power supply maximum voltage drop under load. When using high-quality switching power supplies, use a value of about 3V.
	ChgSensor inv	YES
Traction Settings 1/6	Throttle mode	TORQ (default) or SPD. In TORQ mode, power is regulated by the applying throttle. The SPD speed mode commands speed within a small range of power (i.e. setting close to Chinese controllers). In other words, in speed mode, the controller will not stop applying full power (limited by the current profile) until the speed commanded by the throttle is reached.
	Thr Cruise	OFF Enables or disables the ability to use cruise control. Cruise control mode allows you to maintain a constant speed without holding the throttle. If this setting is disabled, then the cruise control mode cannot be used. If this option is enabled, then cruise control can be activated in two ways: a) rapid triple click the accelerator b) while holding the throttle in non-zero position, press the display "up" then release the throttle. Turn off cruise control pressing on the brake lever or press the regen button. To activate the cruise control you need to increase speed to at least 8-10 km/h. When active, cruise control speed can be adjusted by pressing the display button up and down.
	PWM rise lim	00080 regulates the maximum speed of the motor (or the maximum rate of increase in cycle of the PWM) and to some extent the rate of acceleration when cracking the throttle. The larger the number, the faster. The highest setting is 80, for extreme driving and maximum performance.
	SPD smooth	20000 Adjusts the smoothness of operation when approaching speed limits. When the speed nears the maximum, the controller starts to limit power. The size of this window near the speed limit is controlled by this setting. The higher the number, the sharper the speed limit is triggered. The smaller the number, the harder it is to maintain a constant speed, but maintaining speed is smoother and softer.
Traction Setup 2/6	TRK	NO/YES Enables Traction. When enabled, the controller limits the acceleration of the motor. Usually if the wheel ran over a piece of ice, it starts to sharply accelerate. At this point, Traction works for some time and then resets motor power.
	TRK dV	17.9# Sets the speed at which Traction control is activated
	TRK dA	0020 limits sharpness (term for the acceleration of acceleration) when Traction is enabled. You can gain more control and at the same time achieve high thrust (acceleration) with no downside. When traction is lost, and the wheel starts to spin, sharpness is high, unlike applying throttle smoothly with good traction. When traction is lost, this setting limits sharpness to help you regain control.
	PWR Rise	00002 The recovery time after traction loss is detected.
Traction Setup 3/6	LS enable	OFF Current limitation at low speeds. Helps when using motors BMC / MAC, which can start with a sharp jolt due to the engagement of the freewheel.
	LS current	2.45A Limits the starting current.
	LS start	09MPH The speed at which the current is allowed to start increasing.
	HS start	18MPH Speed above which maximum current is available (that current specified in the profile). That is, the current gradually increases, from the speed LS start and maximizing at speed HS start.
Traction Setup 4/6	2WD enable	ON/OFF enables/ disables all-wheel drive mode. A second controller can be connected to the peripheral bus of the main controller. The slave controller is controlled by the main controller, if this option is enabled.
	Slave SL	29MPH When this speed is reached, the second additional controller is disabled. For example when using a planetary geared motor with an over running clutch as a slave, you can set it to turn off when it reaches a preset speed, since it only acts as an helper at startup and low speeds or in those situations like climbing where the main direct-drive motor may not be sufficiently effective. The slave controller must have an additional connector. The additional connector is not included as standard and must be ordered separately.
	BMS halls fix	NO

		Option to help overcome the start problem in older BMC/MAC Motors by shifting the lead angle back when starting. There is a bit of reduced efficiency initially, but starts are better.
	SLESS acc	030 ?
Traction Setup 5/6	ACC off on BRK	YES with this option enabled, if you hold the throttle on and let go of the brake, the motor will not operate. To run the motor you must release the brake control before applying the throttle
	Backwd SPD	009 H Maximum reverse speed.
	Anti thief	NO/YES This mode is designed to provide extra security for a password-protected bike or moped without a freewheel. This feature makes the wheels very hard to turn, making it difficult for an unauthorized person to ride the bike. If the mode is enabled, the controller will prevent the motor and/or wheel from turning until the correct password is entered. This feature does not provide protection for a vehicle equipped with a freewheel or an overrunning clutch.
	Anti th. PHC	46.6A phase current protection regime in accordance with your motor.
Traction Setup 6/6	Slave No	0000
Advanced Setup 1/5	Angle corr.	-8.18° This setting makes up for the inaccuracy of the Hall sensors installed. That is, the difference between the applied magnetic field of the stator and the Hall sensor angle readings. Since three Hall sensors are installed, this setting is the average deviation of the three gauges from zero. Deviation of each sensor separately is determined and automatically compensated for during the rotation of the motor. Determined automatically during the motor auto-detect process.
	Angle corr2	+0.00° Analog versions of the above settings for reverse thrust mode (ie, active braking)
	Ind timing	0430uS Sets the delay compensation between the signal hall sensor and the control signal of the controller. When rotating at high speeds, the signal from the sensors has been delayed, so you need to adjust the timing. Accordingly, it is the sum of the controller Hall sensor filter circuit delay and the controller CPU processing time. Determined automatically during the motor auto-detect process. PWR timing - Sets the lead angle shift in relation to the phase current. The greater the inductance of the windings of the motor, the stronger the control signal phase currents. This setting compensates BEMF.
	PWR timing	+0.51 PWR timing affects power consumption (and efficiency) of the motor under load. Set PWR timing (usually one of these values: 0.17 for high-speed motors, 0.3-0.5 for average and 0.7-1.2 for slow motors), to achieve maximum acceleration when you mash the throttle at cruising speed.
Advanced Setup 2/5	PWR timing2	+0.51 Analog versions of the above settings for reverse thrust mode (ie, active braking)
	OVS timing	005° Setting responsible for extra motor speed when the battery voltage is not high enough to achieve the maximum vehicle speed. Works like this: When the PWM cycle is nearly 100%, the controller increases the lead angle, which enables additional speed (and reduced efficiency of the motor). Only if the voltage is limiting the maximum motor speed, not the wind resistance, will this work. OVS can raise the maximum speed by reducing the efficiency of the motor. Optimal values are usually 2-4. Select a value by trial and error. Keep in mind that if you raise settings "OVS" and "ind timing" really high and run high currents, no speed limit and high RPM, the motor can quickly overheat and you can even burn up the controller. Therefore, to avoid such situations it is recommended to set the maximum speed limit when configuring profiles somewhere around 20% more than the maximum speed of your vehicle on the road.
	Termosensor	YES Termosensor – Enables motor temperature sensor function. Possible values: NO (off), YES (connected and enabled), YES/P (enabled with prediction). YES/P mode enables compensation for the reaction time of the temperature sensor.
	Motor Tsens	KTY81 Selection of the temperature sensor in the motor.
Advanced Setup 3/5	T° limit	355° F Peak temperature limit of the motor. Upon reaching the temperature 20 degrees below this limit, the controller will begin limiting power as the temperature increases,

		reaching zero power at the temperature limit.
	HallOffset	060° HallOffset, HallReverse, WireReverse – Three settings are responsible for setting up the correct orientation of the Hall sensors with respect to the phase conductors, as well as the reversal the motor phase conductors and Hall sensors. These settings are altered when “guessing” to find the correct phase and Hall wiring combinations. Determined automatically during the auto-tuning the motor.
	HallInverse	0000
	HallReverse	NO
Advanced Setup 4/5	WireReverse	NO
	Wire R.mOhm	104 Stator resistance at standard temperature (24 degrees C). Determined automatically during the motor auto-detect process. Wire R and Motor KV values are needed for a new algorithm for calculating the phase current (based on the current speed, control voltage and winding resistance, and not from the control voltage and current, as in the standard version). This algorithm is required to reverse the engine braking, and also improves the smoothness and precision of the phase current limits. It includes the following settings: Wire R PHC - The use of an alternative algorithm for calculating the phase current. Allows you to calculate the current even at zero cycle of the PWM that is required for proper zero crossing at work reverse braking. Important: when this setting is turned off, the motor KV will be sensed automatically if the motor spins up to medium speed and the throttle is released. After you enable this setting, automatic motor KV sensing does not occur.
	Motor KV	05512 KV motor. Measured in arbitrary units. Determined automatically during the motor auto-detect process.
	Wire R PHC	NO
Advanced Setup 5/5	Control Method	SINE, block control, and sensorless mode Method of motor control. Sine-Sine (RECOMMENDED). SQWAV – Similar to sine, but disconnects the third phase. Emulates block control. Not recommended. SLESS - sensorless mode. Recommended only in the case of emergency due to failure of the hall sensors, because at low speed and at high power it is unstable. This is not a mistake. Sensorless mode can be used in the event of damage to the wiring, the motor Hall sensors themselves, or if the Hall sensors are on standby. Using sensorless mode is not recommended when Hall sensors are present.
	PWM freq	18KHz Controller PWM frequency for motor control and also charge mode and the DC-DC converter function using the optional capacitor-coil. Normal PWM frequency is 18khz MAX-E controller frequency is preset to 18 kHz only. The MINI-E controller can be set to 33kHz, however this is only recommended with motors or coils that do not work well on 18kHz.
	ADDNZ	05 Compensation for motor hum that occurs at low speeds due to the switching speed of the controller power MOSFETS. Recommendations: MINI-E 2-3, MAX-E 5-6. Adjust by trial and error.
	System reset	
Setup ¾ > DCDC Setup	DCDC Setup	The DC-DC converter function allows you to use the controller as a power source with a set voltage, which may be lower than the voltage of the connected battery. To use this option, you must be connected to the capacitor/charge coil output. Enable the function by selecting “ON” in the menu to use the switching DC-DC converter. However, if you enter the menu on the main screen and save the settings when prompted, the feature is automatically turned off for safety reasons. Therefore, it is recommended to set the required parameters DC-DC voltage and DC-DC Current, exit while saving the settings, and then switch the DC-DC Enable mode to ON. When you exit to the main screen, the controller should not prompt you to saving settings if no other parameters were changed. The main screen will display the current battery statistics and power consumption from the controller. To deactivate the DC-DC converter, go to the menu and switch mode DC-DC Enable to OFF. If you have changed any parameters and then exit to the main screen, by selecting “save settings” the DC-DC converter is switched off automatically.
	Current limit	Output current limitation.

	Voltage out	Setting the output voltage.
	DC-DC enable	Enabling DC-DC converter function
	Master passwd	<p>System password protection/switch for the controller. When you enable this function you will need enter this password each time to activate the controller. The controller will not boot without the password, and motion is impossible. Passwords must be carefully noted.</p> <p>User cannot recover or change the password without the original password.</p> <p>Password is entered using the Up Down Left Right buttons in a random sequence. At the end of the password sequence, push the back button. By default, the password is disabled. When first changing your password, be careful and note the sequence you have entered since it is impossible to reset the password yourself without knowing the original password. See Chapter 3.4</p>
	Menu password	<p>Password menu allows you to set a password only to enter the main menu, i.e. when it is activated, you can include a controller, drive, switch profiles, view and reset statistics.</p> <p>However, to change the settings in the main menu you will be required to enter the password that you set.</p>
	Protection	<p>Y/N</p> <p>Controller disables the motor in the following cases: Overcurrent protection tripped (Protect = "Y") To recover, you can try to reset protection to "N" in the Advanced menu settings, or restart the controller.</p>
	EXT SPD ratio	010.0
Setup (4/4)> Interface Setup 1/3	Speed units	<p>MPH/KPH</p> <p>Displayed speed and temperature units. When selecting "KPH" the speed will be displayed in kilometers per hour and the temperature in degrees Celsius. When selecting "MPH" speed will be displayed in miles per hour and the temperature in degrees Fahrenheit, respectively.</p>
	T display	<p>T/OVH</p> <p>Graphic display bar indicator on the right side of the home screen. When you select "t o" the bars will fill as the motor/controller temperature increases. When you select "OVH" bars will fill out only when the overheat protection temperature limit is reached and current limiting is enabled due to overheating of the motor/controller.</p>
	LCD refresh	<p>0.2S</p> <p>Change the refresh rate on the main screen. Values specified in tenths of a second.</p>
	Brightness	<p>HI/LO</p> <p>Backlight brightness. Settings: "HIGH" (bright) and "LOW" (blackout).</p>
Interface setup 2/3	Backlight	<p>Str</p> <p>Activates the rear taillight / brake light. Function can only be used with an external DC-DC converter connected.</p>
	HeadLight	<p>High</p> <p>The controller can control an external DC-DC converter on the data bus to control headlights, horn etc. Control of the headlight and horn ports is possible by using the function keys and quick menu options. Function can only be used with an external DC-DC converter connected (not included).</p>
	Quick Menu	<p>NO</p> <p>option enables the quick menu that appears when you press the "Down" button from the main screen instead of the usual multi-step method. Used for quick access to frequently used functions.</p>
	Qmenu Setup	In this menu you can set the quick menu functions you want when the Quick menu is enabled
Interface setup 3/3	Suspend mode	<p>YES/NO</p> <p>Enabling reduced energy consumption when idle. Enable this option if you want the controller to enter the power saver mode when not in use. When Suspend Mode is active the display is blank. To wake up the controller, simply press any button on the display.</p>
	Suspend time	<p>0360S</p> <p>Time in seconds after which the controller will go into power save mode when not in use.</p>
Battery > BMS Setup 1/2	BMS enable	<p>YES/NO</p> <p>Enables BMS Adappto module. If BMS is not used in your configuration, select "No", (but even if no, these values is required before using the controller.)</p> <p>If using the Adappto BMS module, you need to set the minimum and maximum voltage thresholds for the particular type of cells used in the battery.</p> <p>Common Problem: If the BMS module is connected and enabled and showing incorrect thresholds, the battery is low or damaged, or if communication with the BMS is faulty or has ceased.</p>
	Battery Ah	10.0AH

		Set the battery capacity in Amp-hrs
	Battery WH	00541Wh Set the battery capacity in Watt-hrs. Calculate by multiplying the nominal pack voltage by the battery capacity in Amp-hrs.
	Dishcg cutoff	066V Low battery voltage cutoff (LVC). Setting protects the battery from over-discharge if the Adapto BMS module is not used. Set value according to the requirements of your battery. minimum allowable low voltage cutoff (Dischg cutoff) – Common Problem: Motor cuts out intermittently This problem occurs usually due to the incorrect setting of the upper or lower battery voltage limits. Navigate to the BMS setup and set the correct value LVC and HV cutoff for your battery. Keep in mind that a battery with high internal resistance may require values with a small margin, since the voltage across the battery under load may be very different from the no-load voltage
	HV?	88V Setting for the maximum charge voltage. Protects battery from overcharging during prolonged use of regenerative braking, for instance when descending long grades. Attention! Regenerative braking does not work on a fully charged battery. This setting does not provide protection from the use of incorrect battery chargers. Controller disables the motor in the following cases: - If the supply voltage is higher than the maximum allowed by the firmware. - The supply voltage is higher than the HV cutoff setting or lower than the Dischg cutoff setting in the BMS setup menu.
BMS Setup	Channel A config	 <pre> Channel A config R1 Qty R2 Qty R3 Qty 01: 4 07: 0 13: 0 02: 4 08: 0 14: 0 03: 4 09: 0 15: 0 04: 4 10: 0 16: 0 05: 4 11: 0 06: 0 12: 0 </pre> <p>In this menu you can configure the module BMS Adapto module if it is both connected and enabled. Instructions for configuring the module are included with the Adapto BMS.</p>
	Channel B config	
	Cell V config	 <pre> VOLT Menu Cell chemistry Custom Maximum 4.200V Minimum 3.000V Balancing 4.130V Critical 2.500V </pre>
	BMS Status	 <pre> BMS status >BMS Debug Monitor BAT discharged NO CU node NO BAT Balancing NO BAT charged NO debug monitor len/crc 0000/0000 lost packets 0004 cell 0 error 0000 bus errors 0000 errors sent 0001 0103 0104 0102 0100 lost lost lost sent </pre>

	Cell V calibration	<pre> Voltage calibration >Channel A Board number 01 Cell 4.050V Cell 4.0540 Cell 4.0380 Cell 4.0790 </pre>	
	Cell board config	<pre> Cell board config Board number: (< >) Please connect only one cell board to channel A and connect batt to balance port (< > to change board cancel: ↑ - save </pre>	
	Battery Monitor	<pre> ↑CH A↑ <Board Number> Cell 01 02 03 1: 4.053 4.080 4.078 2: 4.054 4.041 4.077 3: 4.070 4.040 4.045 4: 4.079 4.050 4.049 0: 0.040 4.091 4.041 </pre>	
<pre> >SAVE SET DISCARD </pre>			