NIK®

KT-TF01 User Manual

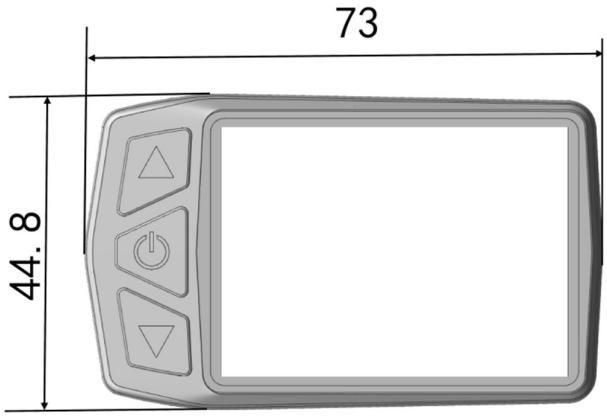
Contents

Preface

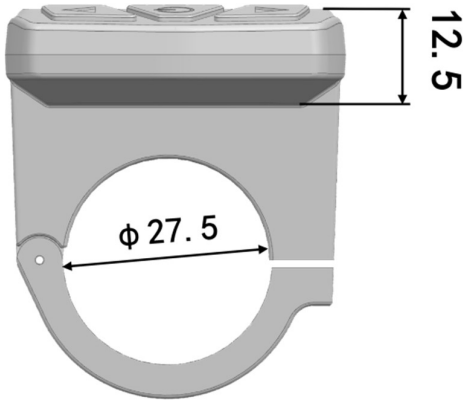
This manual will help the user understand and familiarize themselves with the KT-TF01 display function, operations, setting the e-bike Parameters, and how to achieve the best match of the e-bike components to improve performance to the electric bike system. The manual covers installation, operation, Parameter setting of the display and how to use it properly, which helps users set up the functionality of the electric bike system.
Parameter setting of the display and how to use it properly, which helps you resolve problems that appear in practical use.

Outlook and Size

○ **Display Dimension**



Display Dimension



Dual Bracket Mounting Dimension

○ **Main Material and Color**

PC is main material used for KT-TF01 display and button box housing, and the

housing color is black.

○ **Wiring Schematic**

Installation Instruction

Using the appropriate methods and fixtures, mount the LCD on the left side of the handlebar. Refer to the following images below for installation on specific handlebar diameters. While the e-bike is off, connect the necessary wiring and check to make sure all connections are attached. Finally, remove the protection film from the display.

○ Handlebar Installation Location

Function Overview

KT-TF01 display provides you with a variety of functions such as e-bike controls and e-bike status digitally displayed to meet the trip demands.

Trip time display; single trip time (**TIM**) and total trip time (**TTM**)).

Trip speed display; real-time speed (**KM/H** or **MPH**) and a single maximum speed (**MXS**) and a single average speed (**AVS**).

Trip distance display; distance of single trip (**DST**) and odometer (**ODO**).

Throttle activation will show (**THROTTLE**).

Pedal Assist System (PAS) activation will show (**ASSIST**).

Pedal Assistant System (PAS) levels are between 0 – 5, changed with up and down buttons

4 – 6 KM/H power walk ( ) function.

Cruise function (**CRUISE,**).

Battery capacity indicator ( ).

Real-time battery voltage (**VOL**) display

Motor power ( ) and temperature (**MOTOR** ℃) display.

Brake status display ( ).

Turn on backlighting and lights ( ).

Environment temperature (**℃** or **℉**) display.

Data clearing.

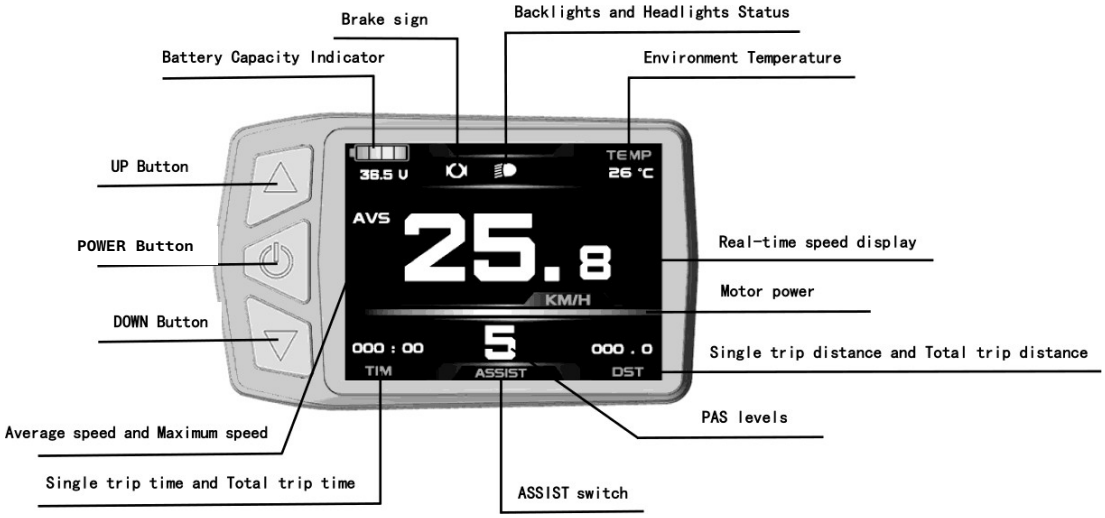
Fault code display.

User Parameter setting.

24V, 36V, 48V supply voltage can automatic identification and be compatible.

Display Content

The display content is shown as followed.



Button Definition

KT-TF01 display is designed for the display to be on the left side of the handlebars. The electric bike control buttons next to the left-hand grip of the handlebars for ease and safety.

There are three buttons on the operating panel of the display, which are icons of button (UP), button (POWER) and (DOWN).

○ **On/Off**

To turn on or off hold down the power button *2 seconds*. The system will automatically shut down when stationery and not in use for 5 to 20 minutes (can be adjusted in setting). When powered off, the power consumption of the display and controller is zero.

○ **Display Interface**

Turn on the display, the display is in the startup display 1.

Display 1

In display 1, press the power button to enter display 2.

Display 2

In the riding mode within 5 seconds, display 2 automatically jump to display 1

Display 3

In display 2, press power button, display will enter display 3, and press again to go back to display 1.

In each display interface, if you hold power button for 2 seconds, the display will be powered off.

○ **Throttle Indicator**

The THROTTLE indicator will show on the display when activated (see figure below).

○ **Pedal Assist System (PAS)**

The ASSIST indicator will show on the display when activated (see figure below).

○ **PAS Modes**

Press button **(UP)** or button **(DOWN)** button to adjust the pedal assist level, changing the motor power output. The range of pedal assistance is between 1 and 5 (also can be configured to the rider's requirements), where 1 provides the lowest assist and 5 provides the highest assist. When the PAS level is set to 0, the pedal assist function is off. Powering on the display PAS level will default 0 (this can also be configured in the settings as required by users). When the pedal assist system level is 0, there is no pedal assist function. Activating the throttle will override the 1 through 5 PAS function and will show on display (this can also be configured in the settings as required by users for the 0 level).

At every startup, the display will automatically restore assistance (this can also be configured as required by users) when it was shut down at last time or 0 mode. When the pedal assist is 0 zero, there is no pedal assist function.

○ **Power Walk Function**

Users can use the Power Walk function for assistance while walking alongside the e-bike or riding in crowds. Hold **(DOWN)** button and the motor will provide power until the e-bike reaches 4, 5 or 6 Km/H. The display will show the ( ) flashes, indicating the function is active. By releasing the **(DOWN)** button, the assist function will be deactivated.

○ **Cruise Function**

When the e-bike is traveling above 7Km/H, hold **(DOWN)** button for 3 seconds to set the cruise function. The LCD8S P will display "**CRUISE**" and to indicate that the cruise function has been activated (as seen in the figure below). Pull a Brake Lever or hold any button to deactivate cruise. Note: This feature only works if it has been activated through the Parameter settings (See C7 in Parameter setting).

○ **Headlight Function**

Hold **(U P)** button for *3 seconds* to turn on the headlights and/or taillight.

When this function is activated, the display will show , sign to indicate it is on **(Note: Controller requires headlight output functions)**. Hold **(U P)** button again to turn off headlights and/or taillight.

○ **E-Brake Status Indicator**

When the e-brake is activated, the display will show as shown in the figure.

○ **Battery Capacity Indicator**

The KT-TF10 can identify 24V, 36V, 48V battery capacities when used with supporting controllers. When the battery capacity is over 70%, four bars from the battery indicator will be displayed. As the battery capacities drop, the bars will change accordingly. Once the power capacity is less than 15%, the battery indicator will be empty and show zero bars. If the power display frame flashes, it is due to voltage shortage where the controller will power off.

Voltage shortage flash

Battery capacity indicator

○ **Environmental Temperature**

After turning on the display, the environment temperature will display the environment temperature in the right corner.

The temperature display value may be in deviation shortly after boot-up, and the display value will gradually approach the environment temperature within 10 minutes after boot-up.

○ **Single Data Clearing**

After *5 seconds* after turning on the display, hold both the **(UP)** button and the **(DOWN)** button simultaneously for about *2 seconds*. The single trip time (**TIM**) and single trip distance (**DST**) flicker, Press **(P O W E R)** button and the record contents of both will be cleared. If there are no operations within five seconds of (TM) and (DST) flashing, the KT-TF01 will return to Display 1, and the original record content will be saved. Under the status of data flashing, if there were no operations on the data within *5 seconds*, the KT-TF01 will automatically return to Display 1 after *5 seconds*, and the original record content will be saved.

○ **Automatically Prompt Interface**

Error Code Display: When there are issues with the electronic control system of the e-bike, the LCD will automatically display (flicker) a fault code. This cannot be removed until the fault is fixed. Refer to **Error Code & Definition Table** for reference.

Error Code & Definition Table：

Error Code	Definition
Motor position sensor fault!	Failure of electronic motor position (Hall Sensor)
Motor or controller short circuit fault!	Motor or Controller Failure
Throttle fault!	Malfunction of throttle or PAS operation

Motor operating temperature alarm: When the motor operating temperature exceeds the warning value, the motor operating temperature display flashes to alarm the rider, while the controller will provide the appropriate protection to the motor.

User Setting Project

KT-TF01 Display User Parameter Settings：

◇ General Parameter Settings

◇ P Parameter Settings

◇ C Parameter Settings

◇ L Parameter Settings

General Project Setting

To enter the parameter setting, simultaneously hold  button and  button for ***3 seconds*** within ***5 seconds*** of turning the LCD on.

When the parameter settings are idle for more than 1 minute the LCD will automatically return to display 1, and the original set values will be saved.

○ **Maximum Speed**

LIM (Limit) and the speed will be displayed, indicating the maximum riding speed (refer to image below for illustration). To adjust, press the  button to increase or  button to decrease the speed. Once desired speed has been selected, press the  button to confirm changes and move onto wheel diameter. After finishing the maximum riding speed setting, press  button to save the current set values.

Note: The motor will stop when the speed exceeds the max speed that has been set.

○ **Wheel Diameter**

Under After confirming the maximum riding speed setting, press button **(DOWN)** to enter the wheel diameter setting interface, press button to confirm, and then the wheel diameter display column flashes. Press button **(UP)** or button **(DOWN)** to choose the corresponding wheel diameter specification to the e-bike. The selection of wheel diameter sizes is 5, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 27.5, 700c, 28 and 29 inches.

After finishing the wheel diameter setting, press button to save the current setting specification then press button (DOWN) to enter the next setting.

○ **Metric and Imperial Units**

Enter the metric/imperial unit setting (UNT) interface, and press button to select, the value will flash. Press button (**UP**) or button **(DOWN)** to make selection of the four odes for metric/imperial units as speed, mileage, and ambient temperature.

Definition Table of Metric/Imperial Units：

Code	Speed	Mileage	Ambient Temperature
0	Km/h	Km	℃ (Centigrade)
1	MPH	Mile	℃ (Centigrade)
2	Km/h	Km	℉（Fahrenheit）
3	MPH	Mile	℉（Fahrenheit）

After finishing the metric/imperial units setting, press POWER button to save setting.

P Parameter Setting

Enter the P parameter settings by pressing button (**DOWN**) to enter P Parameters Setting.

○ P1 Motor Characteristic Parameter Setting

P1 = Motor Gear Reduction Ratio x Number of motor Magnets (Rounding if necessary). P1 setting ranges between 1-255, move cursor to P1 and press button **(Power)** to select, the value will flash. press button button (**UP**) or button (**DOWN**) for selection within the range of 1-255.

After finishing P1 Parameter setting, press button to save current set values and press button **(DOWN)** to enter P2 parameter setting.

○ P2 Wheel Speed Pulse Signal Setting

Under Parameter setting interface, move cursor to P2 and press button **(Power)**, the value will flash.

P2 Parameter is a setting mode for wheel speed pulse signal. If the wheel generated 1 pulse signal by a revolution, the P2 value should be set to 1. If the wheel generated 6 pulse signals by a revolution, P2 should be set as 6. If users did not configure the Parameter, then P2 can be set to 0. The selection of P2 values ranges from 0 to 6. Press button (**UP**) or button **(DOWN)** for selection.

After finishing P2 Parameter setting, press button (**Power**) to return the Parameter setting interface.

Note, when P2 Parameter is set to be 0 for the built-in clutch motor, when the internal motor rotors stop or the internal rotor speed is lower than the outer rotation speed, the speed displayed on the LCD will be inaccurate.

○ **P3 Throttle Assist Level Control Setting**

Under Parameter setting interface, move cursor to P3 and press button **(POWER)**, the value will flash.

P3 Parameters affect the pedal assist system (PAS) control setting. When the value is set to 0, the throttle is dependent on the PAS level ratio. This means when the PAS level ratio is 1, the throttle will provide the least amount of power, whereas when it is 5, the throttle will provide the most power. If the P3 Parameter is set to 1, the throttle is independent from assist levels and will provide maximum power regardless of the PAS level chosen.

Press button **(UP)** or button **(DOWN)** for selection.

After finishing P3 Parameter setting, press button (**POWER**) to return to the Parameter setting interface.

○ **P4 Throttle Activation Setting**

Under Parameter setting interface, move cursor to P4 and press button **(POWER)**, the value will flash.

P4 settings are for controlling throttle activation. When the P4 Parameter is 1, the throttle is under "delayed startup" where the throttle will only activate the motor after the motor has been activated via Pedal Assist System. Setting the P4 to 0 will set the throttle to activate the motor when triggered. Press button (**UP**) or button **(DOWN)** for selection. After finishing P4 Parameter setting, press button (**POWER**) to return to Parameter setting interface.

○ **P5 Battery Monitoring Setting**

Under Parameter setting interface, move cursor to P5 and press button **(POWER)**, the value will flash.

P5 Parameter is battery capacity monitoring mode. When the value is set to 0, the power monitoring is in "real-time voltage" mode where the method to determine the battery capacity is based on real-time voltage. Once the P5 Parameter is set to a specified value, the power monitoring is in "smart battery capacity" mode where the value set is determined by the battery characteristics. Such that, 24V lithium batteries are typically set between 4-11,

36V lithium batteries set between 5-15 and 48V lithium batteries set between 12-20. The P5 Parameter setting ranges from 0-40. Press  button (**UP**) or  button **(DOWN)** for selection.

After finishing P5 Parameter setting, press  button (**POWER**) to return Parameter setting interface.

Exit P Parameter Setting

Among the five P parameter settings, when each parameter setting is completed,

hold  button for 2 seconds to exit the setting and return to display, and the current set parameters will be saved.

Under each parameter setting interface, if there is no button operation on the display for more than 1 minute, and then the display will automatically return to display 1, and the original set parameters will be saved.

C Parameter Setting

○ C1 Pedal-Assist Sensor and Parameter Select Setting

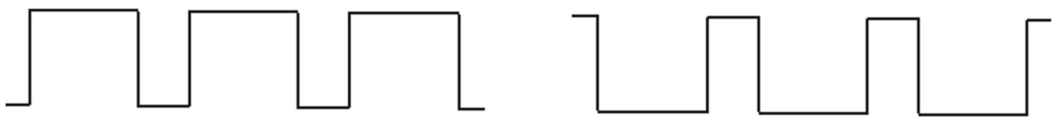
Under Parameter setting interface, move cursor to C1 and press button **(POWER)**, the value will flash.

C1 Parameter setting interface.

C1 is Pedal-Assist sensor and Parameter select setting; its definition is shown in the following table. C1 setting ranges between 0-7, press button **(UP)** or button (**DOWN**) for selection.

C1 Parameter definition table：

Pedal Assist Sensor	C1 Value	Sensitivity
BZ-4(5): 5 Magnet Signal	**00**	Standard
	01	Low
	02	Lowest
IPAS: 8 Magnet Signal	**2**	Standard
BZ-4(8): 8 Magnet Signal	00	High
	01	Standard
	02	Low
BZ-10: 10 Magnet Signal	00	Highest
	01	High
	02	Standard
D12: 12 Magnet Signal	01	Highest
	02	High
	03	Standard
V12L: 12 Magnet Signal	05	Highest
	06	High
	07	Standard
Torque Sensor	**4**	Standard



Forward power sensor signal waveforms　　Reverse power sensor signal waveforms

After finishing C1 Parameter setting, press button (**POWER**) to return to Parameter setting interface.

○ **C2 Motor Phase Classification Coding Setting**

Under Parameter setting interface, move cursor to C2 and press button **(POWER)**, the value will flash.

C2 Parameters set the different phases of the motor when using a sine wave drive. The default value is 0, indicating that the used Quantum motor phase is standard. When the Parameter is set as a specified value, a particular motor phase is selected. The range of values for C2 are between 0-7, press button **(UP)** or button (**DOWN**) for selection.

After finishing C2 Parameter setting, press button (**POWER**) to return to Parameter setting interface.

○ **C3 Pedal Assist Level Initialization Setting**

Under Parameter setting interface, move cursor to C3 and press button **(POWER)**, the value will flash. Settings for the pedal assist start up level is 0-8.

Press button **(UP)** or button **(DOWN)** for selection C3 Parameter values.

C3 Parameter values：

C3	Parameter value meaning
0	**The display is powered on, and the power assist ratio is at gear 0.**
1	The display is powered on, and the power assist ratio is at gear 1.
2	The display is powered on, and the power assist ratio is at gear 2.
3	The display is powered on, and the power assist ratio is at gear 3.
4	The display is powered on, and the power assist ratio is at gear 4.
5	The display is powered on, and the power assist ratio is at gear 5.
6&7	Retain
8	Each startup will automatically restore the gear shutdown last time.

After finishing C3 Parameter setting, press button (**POWER**) to return Parameter setting interface.

○ **C4 Throttle Function Setting**

Under Parameter setting interface, move cursor to C4 and press button **(POWER)**, the value will flash.

C4 is throttle function setting, the setting range is 0-4, press button **(UP)** or button (**DOWN**) for selection.

C4 Parameter definition table：

C4 Value	Throttle in PAS Level = 0	Throttle in PAS Level = 1 - 5
0	No Throttle	Full Throttle Control
1	No Throttle	Throttle Limited to 6Km/h
2	**No Throttle**	**Throttle Speed Programmed to Rider's Specification**
3	Full Throttle Control	Full Throttle Control
4	No Throttle	Throttle is Dependent of PAS Level and Entered Ratio: 30 - 60

When C4 = 2, the speed limit value of throttle flashes, press (UP) button or (DOWN) button to make selection, and the default value is 20. When C4 = 4 the value is the percentage speed with power assist level, press (UP) button or (DOWN) button for selection, and the default value is 50%. The percentage values of other levels calculate automatically. After finishing C4 parameter setting, press button to save the current value and then press button (**DOWN**) to enter C5 parameter setting interface.

○ C5 Controller Maximum Current Adjustment Setting

Under Parameter setting interface, move cursor to C5 and press button **(POWER)**, the value will flash.

C5 settings are for controlling the maximum operating current. The default value is 8 and the value ranges from 0 to 10. Refer to table below for definition of each value.

The default value is 10, setting range is 0-10, press button (**UP**) or button **(DOWN)** for selection.

C5 Parameter definition table：

C5 value	Maximum current value (A)
00	Three level slow start/ Maximum current value
01	Two level slow start/ Maximum current value
02	One level slow start/ Maximum current value
03	Maximum current value÷2.00
04	Maximum current value÷1.50
05	Maximum current value÷1.33
06	Maximum current value÷1.25
07	Maximum current value÷1.20
08	**Maximum current value÷1.15**
09	Maximum current value÷1.10
10	Maximum current value

When C5 setting is 10, maximum current value is controller maximum operating current value (ie, limit current value); when setting is 9, maximum current value divided by 1.10, when setting is 8, maximum current value divided by 1.15 and so on.

After finishing C5 Parameter setting, press button (**POWER**) to return to Parameter setting interface.

○ **C6 Screen Brightness Adjustment Setting**

Under Parameter setting interface, move cursor to C6 and press button **(POWER)**, the value will flash.

C6 is the display backlight brightness adjustment setting, the default value is 3, and setting range is 1-5, press button **(UP)** or button **(DOWN)** for selection.

C6 Parameter definition table：

C6 value	Backlight brightness
1	Dimmest
2	Darker
3	Standard
4	Brighter
5	Brightest

After finishing C6 Parameter setting, press button (**POWER**) to return to Parameter

setting interface.

○ **C7 Cruise Function Setting**

Under Parameter setting interface, move cursor to C7 and press button **(POWER)**, the value will flash.

C7 is cruise function setting, the setting range is 0 or 1, press button **(UP)** or button **(DOWN)** for selection.

C7 Parameter definition table：

C7 value	Cruise function
0	Off
1	On

After finishing C7 Parameter setting, press button (**POWER**) to save return to Parameter setting interface.

○ **C8 Motor Operating Temperature Display Setting**

Under Parameter setting interface, move cursor to C8 and press button **(POWER)**, the value will flash.

C8 is motor operating temperature display setting, the setting range is 0 or 1, press button **(UP)** or button **(DOWN)** for selection.

C8 Parameter definition table：

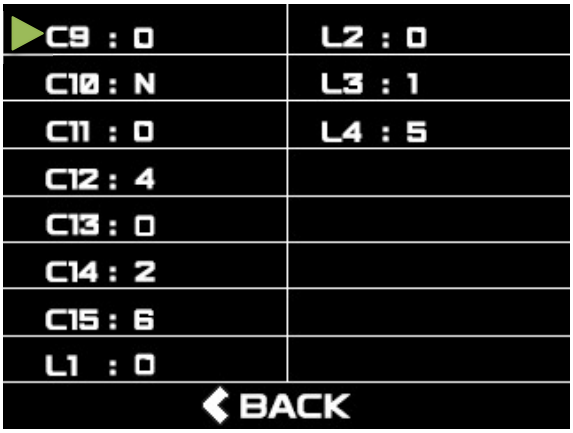
C8 value	Motor operating temperature
0	Function off
1	Function on

Note, the motor operating temperature display requires installing temperature sensor in the motor, output temperature detection signal simultaneously.

After finishing C8 Parameter setting, press button (**POWER**) to return to Parameter setting interface.

○ **C9 Startup Password Setting**

Under Parameter setting interface, move cursor to C9 and press button **(POWER)**, the value will flash.



C9 is display power-on Password setting, the default value is 0, press button **(UP)** or button **(DOWN)** for selection.

C9 Parameter definition table：

C9 value	Startup Password Setting
0	Function off
1	Function on

When C9 setting is 1, press button **(POWER),** then the Password function on, and then enter the Password settings interface, three-digit Password setting columns flash.

Password Setting Interface

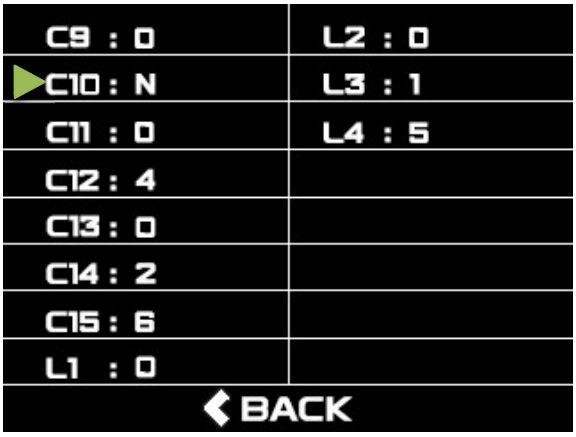
The Password setting is done sequentially from left to right, press button to confirm after each setting and enter next setting. Password setting range is 000-999, press button **(UP)** or button **(DOWN)** for selection.

Note, if you forget your Password, it can only be reset by copying data from data source display (see Parameter copy).

After finishing C9 Parameter setting, press button (**POWER**) to return to Parameter setting interface.

○ **C10 Restore KT Factory Setting**

Under Parameter setting interface, move cursor to C10 and press button **(POWER)**, the value will flash.



C10 is automatic restore KT factory settings (EBO and NIK factory defaults are listed on the last pages of the manual), the default is N, to set C10=Y when reset the display, press button **(UP)** or button **(DOWN)** for selection.

C10 Parameter definition table：

C10 value	Restore default setting
N	Function off
Y	Function on

After finishing C10 Parameter setting, press button (**POWER**) to return to Parameter setting interface.

○ **C11 Display Attribute Selection Setting**

Under Parameter setting interface, move cursor to C11 and press button **(POWER)**, the value will flash.

C11 is display attribute selection setting, the setting range is 0-4, press button

(UP) or  button **(DOWN)** for selection.

C11 Parameter definition table：

C11 value	Display Attribute
0	Display uses TF01 new version of communication protocol, it is compatible with LCD1 and LCD2.
1	Display uses LCD1 and LCD2 old version communication protocol, it is not compatible with second-generation display.
2	As data source for copying Parameters, the display transfers data to other second-generation displays.
3	As data source for copying Parameters, the display transfers data to other third-generation displays.
4	As data source for copying Parameters, the display transfers data to other fourth-generation displays.

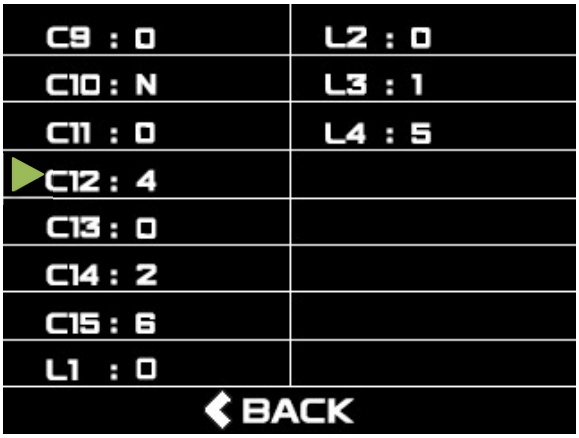
C11 selects 2, hold  (POWER) for 2 seconds to save and exit the setting environment, and then the display is served as data source for copying Parameter (see Parameter copy), there's source logo on display interface.

Data Source Display Interface

After finishing C11 Parameter setting, press  button (**POWER**) to return to Parameter setting interface.

○ C12 Controller Minimum Voltage Adjustment Setting

Under Parameter setting interface, move cursor to C12 and press button **(POWER)**, the value will flash.



C12 is controller minimum operating voltage adjustment setting, the default value is 4, and the setting range is 0-7, press button **(UP)** or button **(DOWN)** for selection.

C12 Parameter definition table：

C12 Value	Minimum Voltage (V)		
	24V Controller	36V Controller	48V Controller
0	Default Value-2V	Default Value-2V	Default Value-2V
1	Default Value-1.5V	Default Value-1.5V	Default Value-1.5V
2	Default Value-1V	Default Value-1V	Default Value-1V
3	Default Value-0.5V	Default Value-0.5V	Default Value-0.5V
4	Default Value=20V	Default Value=30V	Default Value=40V
5	Default Value+0.5V	Default Value+0.5V	Default Value+0.5V
6	Default Value+1V	Default Value+1V	Default Value+1V
7	Default Value+1.5V	Default Value+1.5V	Default Value+1.5V

C12 default value is 4, controller minimum operating voltage (voltage shortage value); when setting is 5, the default value plus 0.5V, when setting is 3, the default value minus 0.5V and so on.

After finishing C12 Parameter setting, press button (**POWER**) to return to Parameter setting interface.

○ **C13 ABS Brakes and Recharge Control Setting**

Under Parameter setting interface, move cursor to C13 and press button **(POWER)**, the value will flash.

C13 is ABS brakes of the controller and Parameters of Recharge control setting, the default value is 0 with the setting range between 0-5, press (UP) button or (DOWN) button to make selection.

C13 Parameter definition table:

C13 Value	ABS Braking Strength	Energy Recovery Efficiency
0	None	None
1	Class 1 Braking Strength	Best energy recovery
2	Class 2 Braking Strength	General energy recovery
3	Class 3 Braking Strength	Weaker energy recovery
4	Class 4 Braking Strength	Poor energy recovery
5	Class 5 Braking Strength	Bad energy recovery

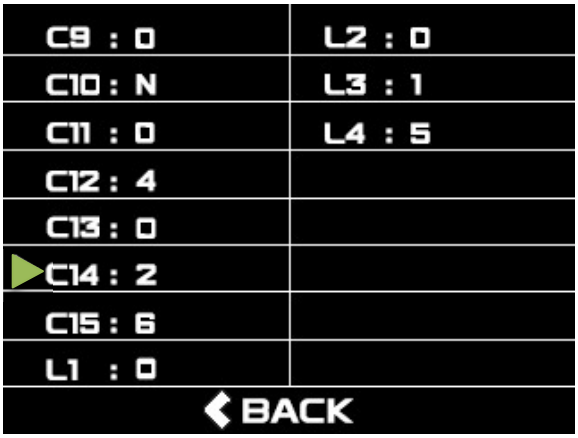
The recommended value of C13 is 0; other values need to be chosen with caution for use.

1. Higher the numbers for braking intensity level, the braking strength will be greater and the greater damage to the motor shaft.
2. If the battery has a BMS function, disable this function (EBO and NIK batteries have BMS functions).

After finishing C13 Parameter setting, press button (**POWER**) to return to Parameter setting interface.

○ **C14 Pedal Assist Tuning Parameters Setting**

Under Parameter setting interface, move cursor to C14 and press button **(POWER)**, the value will flash.



C14 is the Parameters of power-assist tuning setting, with the default value of 2. The pedal assist tuning is between 1-3, and it is invalid until P3 equals to 1. The setting range 1-3, press (**UP**) button or (**DOWN**) button to make selection.

C14 Parameter definition table:

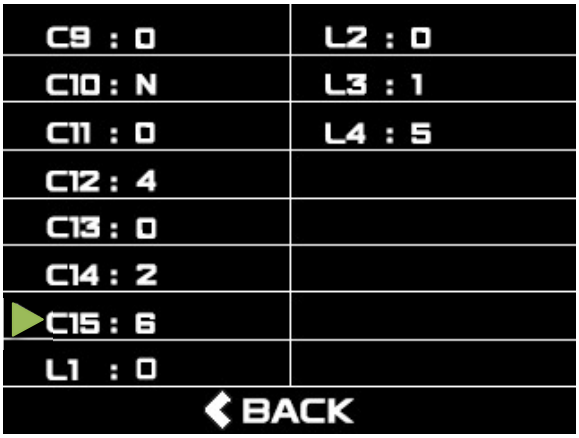
C14 Value	Assist strength of motor
1	Weak assist strength of motor
2	General assist strength of motor
3	Stronger assist strength of motor

After finishing C14 Parameter setting, hold button **(POWER)** to save the current set values and enter C15 Parameter setting interface.

○ **C15 Power Walk Speed Parameters Setting**

Enter C15 Parameters setting interface, C15 flashes.

C15 is the setting of power walk speed, default value is 6, range from 4-6, press (UP) button or (DOWN) button to choose.



C15 Parameters

C15 Value	Power Walk/Push Speed
4	4 Km/H
5	5 Km/H
6	6 Km/H

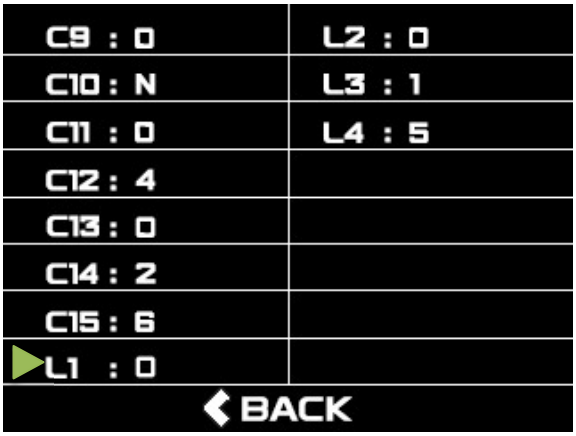
After finishing C15 Parameter setting, hold button **(POWER)** to save current set values and enter C1 Parameter setting interface again. Or hold button **(POWER)** for 2 seconds to exit C Parameter setting environment and return to the display.

L Parameter Setting

○ L1 Parameter Setting

Under Parameter setting interface, move cursor to L1 and press button **(POWER)**, the value will flash. L1 Parameters are applicable to the automatic under-voltage controller. The default factory setting is 0.

- L1=0, the automatic under-voltage controller can automatically select the under-voltage value according to the battery voltage.
- L1=1, the under-voltage value of the automatic under-voltage controller is forced to be 20V.
- L1 = 2, the under-voltage value of the automatic under-voltage controller is forced to be 30V.
- L1 = 3, the under-voltage value of the automatic under-voltage controller is forced to be 40V.

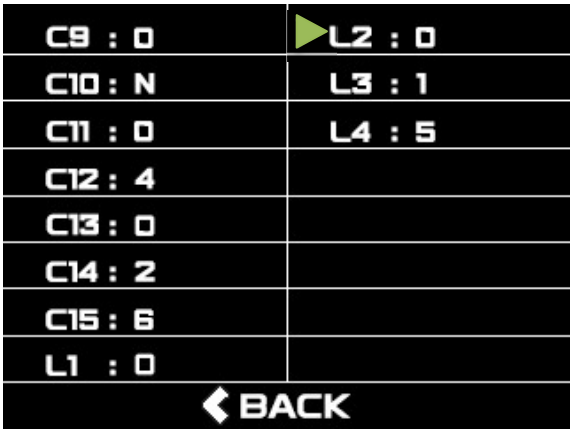


After finishing L1 Parameter setting, press button **(POWER)** to return to Parameter setting interface.

○ L2 Parameter Setting

Under Parameter setting interface, move cursor to L2 and press button **(POWER)**, the value will flash. L2 Parameter is suitable for the super high-speed motor controller. The factory setting is 0. L2 Parameter will be activated when the value of P1 Parameter exceeds 255. L2 Parameter should be used in combination with P1.

- L2=0, P1 Parameter is set as the calculated value.
- L2=1, P1 Parameter is set as a half of the calculated value.

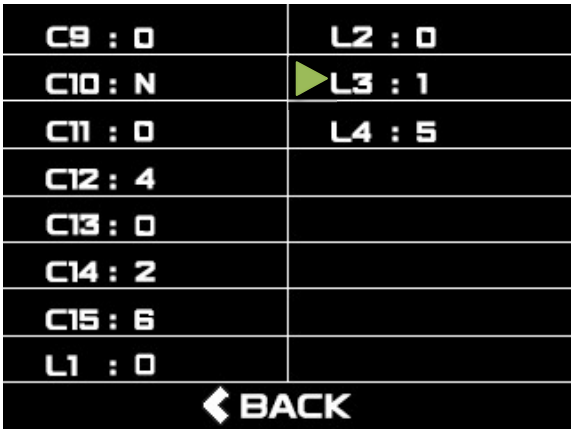


After finishing L2 Parameter setting, press button **(POWER)** to return to Parameter setting interface.

○ **L3 Parameter Setting**

Under Parameter setting interface, move cursor to L3 and press button **(POWER)**, the value will flash. L3 Parameter is applicable to the dual mode controller. The default value of the factory is 1.

- L3=0, the controller will activate non-Hall model only when the Hall sensor in the motor fails.
- L3=1, the dual mode controller will choose the proper model to use according to the controller system optimization.



After finishing L3 Parameter setting, press button **(POWER)** to return to Parameter setting interface.

○ **L4 Parameter Setting**

Under Parameter setting interface, move cursor to L4 and press button **(POWER)**, the value will flash. L4 Parameter is used to adjust the delay time of automatic shutdown of the LCD, the default value is 5, and the range of adjustment is 5-120 minutes.

- L4=5, the delay time is 5 minutes.
- L4=20, the delay time is 20 minutes.

After finishing L4 Parameter setting, press button **(POWER)** to return to Parameter setting interface.

○ **Exit Parameter Setting**

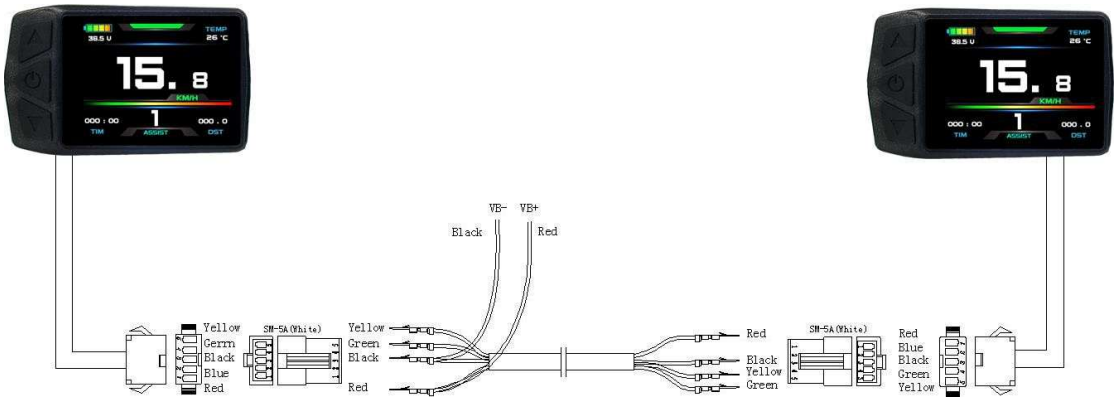
After each setting, the display will exit Parameter setting interface and return to display, If hold button **(POWER)** for 2 seconds.

Under each Parameter setting interface, if there is no button operation on the display for more than 1 minute, and then the display will automatically return to display, and the original Parameters will be saved.

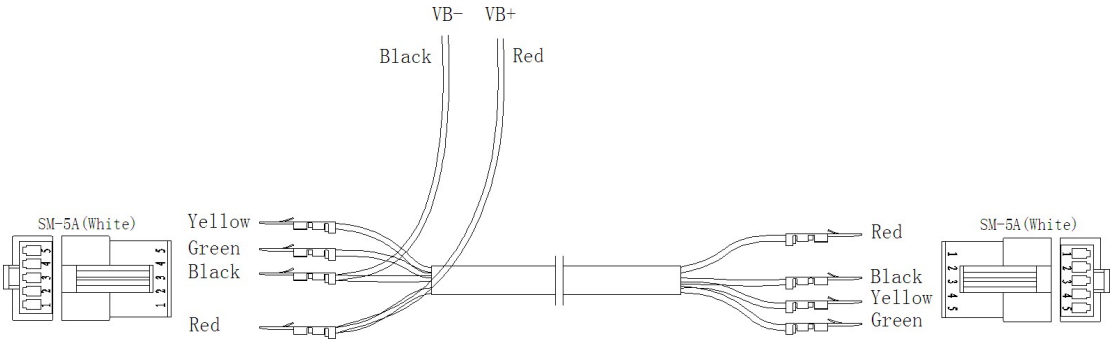
Parameter Copy

Set Parameters (include general project Parameter, P Parameter and C Parameter) of all KT-TF01 display produced by our company according to requirements and set the display to be a data source according to the method of **"C11 display attribute selection setting".**

Use special wiring cables to properly connect to the TF01 display which needs to be copied with this data source according to the diagram.



Display Parameter copy wiring diagram



Special wiring cable

Turn on display power supply of data source. Power supply of 48V or 36V or 24V is available (VB + positive power supply). After wiring the display needs to be copied, hold button until display is powering up. Within 5 seconds after powering up, hold button (**UP**) and button (**DOWN**) simultaneously for about 2 seconds, display Parameter copy is completed. If the copy operation is correct, the display subject to be copied will display as follows.

Interface of finishing Parameter copy

Note, Both C9 power-on Password and C11 display attributes can't be copied.

TF01 display can only copy Parameter of the same display model.

User Setting Note

After entering the user setting environment, if there is no button operation on the data for more than 1 minute, the display will automatically return to display, and the new set Parameters will not be saved.

The factory Parameter set value, and the default value of the display can be set according to user requirements, the display Parameter can be restored by using **"C10 automatically restore factory setting "** approach when adjusting it.

The Parameter of all torque controller and the controller with special function should be according to the result of the actual testing.

Version Information

KT_TF01_V1.0
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Default Settings

Setting	EBO Values	Description
LIM	72km/h	Maximum Speed Setting • 32km/h and Remove Throttle for **Class 1** • 32km/h for **Class 2** • 72km/h or 45km/h for **Class 3**
DIM	27.5”	Wheel Diameter
UNT	3	Imperial Units
P1	100	Motor Gear Reduction Ratio X Rotor Magnets
P2	1	Wheel Speed Pulse Signal Setting
P3	1	Throttle Assist Level Control Setting
P4	0	Throttle Activation Setting
P5	15	Battery Voltage/Capacity Monitoring
C1	4 or 7	Number of Magnets in Pedal Assist Disc • Torque Sensor - 4 • V12L PAS - 7
C2	0	Motor Phase Classification
C3	0	Pedal Assist Level Initialization
C4	2 **32**	Throttle Function Settings
C5	8	Controller Maximum Current Adjustment
C6	3	Backlight Brightness Adjustment
C7	0	Cruise Control Function
C8	0	Motor Operating Temperature Displayed
C9	0	Password Setting
C10	n	Restore Defaults
C11	0	TF01 System Version
C12	4	Controller Maximum Voltage Adjustment
C13	0	ABS Brakes and Anti-Charge Control
C14	2	Pedal Assist Tuning Setting • Weaker PAS - 1 • Stronger PAS - 3
C15	6	Power Walk/Push Speed
L1	0	Automatic Under-Voltage Control
L2	0	Super High-Speed Motor (ONLY) Setting
L3	1	Hall Control System
L4	20	Delay Time of Automatic Shutdown