Smart E-bike Display

Model: T154-1/2/3

Catalog

1 About the Manual

★ This manual contains important safety, performance. Read it carefully and completely before taking the first ride.

★ This manual is based on the general purpose. some of the content may not be applicable due to software updates or customization.

★ *Important safety instructions:*
Do not try to connect with E-bike controller which is incompatible with this display, otherwise , will damage the display or controller.

★ *Shut the battery off on time and stop the bike if some ERROR info show on screen.*

★ *The copyright of all the APPs related with display are belong to us, get permission from us first before running these APPs, Any damage caused by the use of illegal APPs will out of warranty.*

★ There have 3 sub models for T154 series display , T154-1 ,T154-2, T154-3; all the functions is similiar except the screen interface ;

| T154-1 | T154-2 | T154-3 |

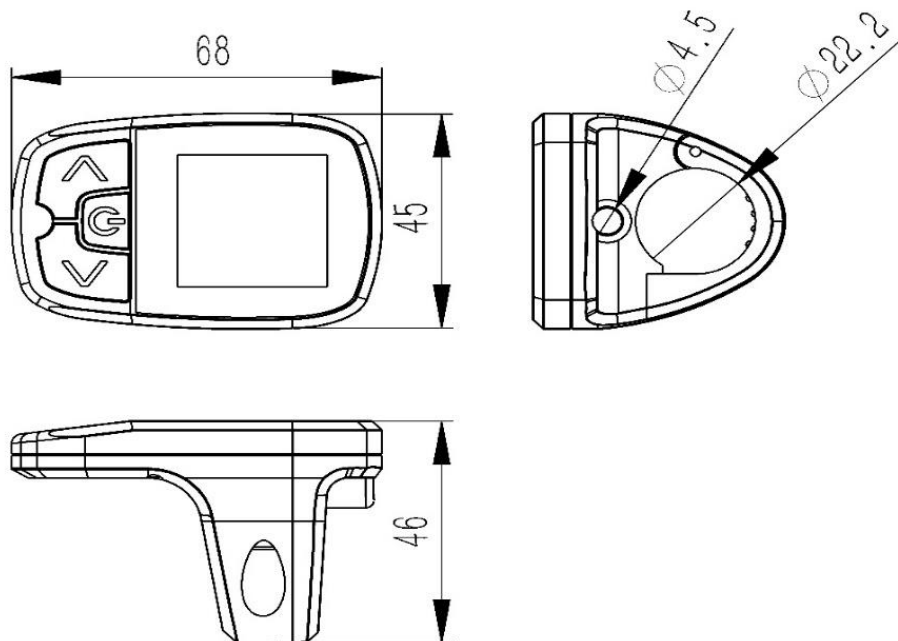# 2   Technical Parameters

- ◆   Power: 24 - 48VDC /10 ma
- ◆   Screen: 1.54" Colorful TFT
- ◆   Button: Transparent silicon rubber
                          with LED Backlight
- ◆   Fix Position: Left or right of handlebar
- ◆   Communication: UART/TS232/CAN
- ◆   Material: ABS
- ◆   Ingress Protection: IP64
- ◆   Customization :Valiable
- ◆   Size:

3   Installation Instruction

The display can be fixed either left or right on the handlebar of bike.

Check the **FIX POSITION** menu item first (**see 8. Setting menu),** change this setting according to the position you want to fix ; adjust to an appropriate visual angle. Tighten all the connectors. And connect it with controller.

4 Features

TFT-154   is a centre control panel   with a TFT colorful screen for ebike ，   transparent silicon rubber button with LED back-light, GUI interface ,digital communicating interface . 3 font color solution and 3 colorful skins are presented, a built-in light sensor   and auto adjust the screen back light , and   power on or off   the light according to ambient intensity;.
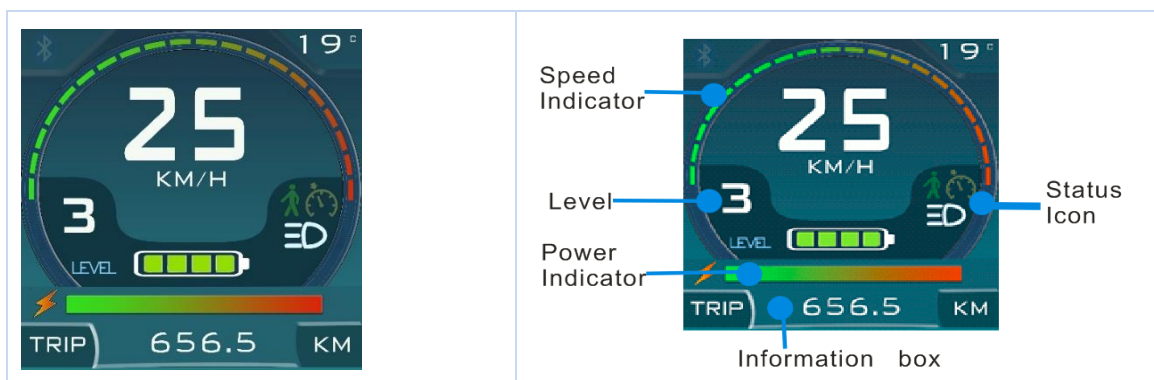
Plenty setting menu items are available for users to set the parameters for different application.

Different screens can be switched by pressing button to check the info come from E-bike, such as below:

◆ Speed (Real-time speed, Average speed and Max speed)
◆ PAS Level.
◆ Battery Voltage and Battery Capacity.
◆ Trip, ODO, and the Accumulative energy consumption.
◆ Real time Current and Power.
◆ Motor Speed.
◆ Temperature.
◆ PAS speed.
◆ Throttle real time voltage
◆ Working status such as brake, gear sensor, speed sensor ,Hall   sensor or motor .Light
◆ Warning and Error info
◆ Ambient Light Sensor

5 Display Interface

➢ **Working Screen interface**

ODO 16258 KM TRIP 656.5 KM MAX 26 KM/H AVG 21 KM/H ⌃ TEST ⌄ ABOUT	Different Information box such as ODO, TRIP, Max speed , Average speed , and Test sub screen and About sub screen can be show after short press <POWOER > button.

➤ Test Screen interface

These messages show on screen can assist user to check the status of all the electric devices connected with E-bike. And it also can change the main working skin or   color of the text

Switched the sub screen by POWER button, Turn back to main working screen by UP button

CONTROLLER	MOTOR	BATTERY

VOLTAGE
       36.5   V
CURRENT
       0.0   A
POWER
       0.0   W
	SPEED
	       0 RPM
	
	REDUCTION RATIO
	       4.3
	HALL
	     AVAILABLE
		TOTAL CONSUME
		       0.0 AH
		SINGLE CONSUME
		       0.0 AH
		TIMER
		       0 MIN

THR & PAS	SENSOR	TEMPERATURE

THROTTLE
       0.0   V
PAS SPEED
       0.0   RPM
DRIVE VALUE
       0   %
	BRAKE
	       OFF
	SPEED
	       OFF
	SHIFT
	       OFF
		AMBIENT
		       25.2 °C
		CONTROLLER
		       38.5 °C
		MOTOR
		       48.5 °C

SCREEN SKIN 19° **25** KM/H 3 ≡⊃ LEVEL TRIP 656.5 KM UP <+> DOWN <-> POWER <BACK>	FONT COLOR 19° **25** KM/H 3 ≡⊃ LEVEL TRIP 656.5 KM UP <+> DOWN <-> POWER <BACK>	

➢ About & Demo Screen interface

About Screen -- It can Show Product info   Switched the sub screen by POWER button, turn back to main working screen by DOWN button;

Demo Screen – at this screen ,all the features can be demonstrated and show on screen ,   this function is very useful for user   to understand quickly how to operate and how many info can be showed on screen;
Also can enter this screen when seller take part in some shows , it can make visitor understanding display easily within a short time;
Notice :
There have another way to enter Demo Screen (*see <15 Appendix D (How To Enter Demo Mode>)*

6 Normal Operation

➢ Power On

Long press the Power button 3 seconds to turn on the display released button till screen start to show;
long press POWER and UP button if you want to Enter Menu setting interface ,   , if not , it will auto enter working interface after 3 seconds

➢ PAS Level change

Press UP or DOWN button can change the PAS level, bike will stop if Level come to Zero;
Notice: at test or about screen, Press UP or DOWN button will never change level value , only enter or exit test or about screen

➢ Display interface switch

Press POWER button can switch Display interface

➢ Cruise On/Off

Long press DOWN button, system will start 6km/h walk assist function when bike is IDEL,   stop 6km/h walk assist function when released the DOWN button
Long press DOWN button when bike is moving with more than cruise started limited speed   (*see menu item*) system will start cruise , cruise will stop   when rider   press any key on display or take brake or throttle or PAS changed;
Notice: at   about screen, Press DOWN button will never   start cruise function

➢ Light On/off

Long press UP button, turn the light on, the LIGHT indicator will blink, Long press again, turn the light off;

Notice: Long press UP button cant turn-on or off the light if auto light menu item set as AUTO

***at Test   screen,   Press UP   button cant turn-on or off the light***

➢ Power Off

Long press the Power button 3 seconds to turn on the display, display will shut the power off.

Notice: Display will automatically shut the power off when bike is idle for some minutes,;

FOR YOUR SAFETY, SHUT THE BATTERY OFF WHEN POWER THE DISPLAY OFF.

7 Display Copy

This is a quick and efficient way when user want to transfer the settings   from Display A to Display B.

Before start, user should build a cable (COPY CABLE) or buy one from us . the cable as below:
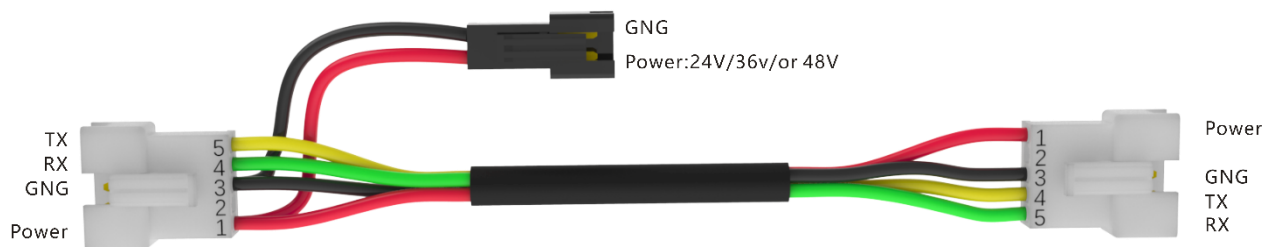
(Copy Cable)

step 1: Connecting both the 2 displays with COPY CABLE

Step 2: Connecting the COPY CABLE with 24v or 36v or 48v battery or other power supply

Step 3: Power on display A or display B, some guide message will show on screen, follow it as the guide.

Step 4: Long press DOWN button will receive settings from other, Long press UP will send settings to other

8 What is the Setting Synchro

There are 2 same copies of key bike settings stored in controller and display memory, controller and display will automatically verify each other on power period, if the key bike settings are different, controller or display will start a process to exchange parameters.

Setting Synchro：Controller

      Controller will send bike settings to display

Setting Synchro：Display

      Display will send bike settings to controller

Setting Synchro：Display Once

      Display will send bike settings to controller only once

9 DEBUG APP

For some professional users, they can download an APP from our website, get permission from us firstly before run this APP,

User can rest all the settings related with the display   include   color of screen or font

*Notice: The copy right of this APP is belong to   us , user should get **permissions from us before run this APP. Otherwise, maybe some unpredictable problems will happen on the display ;***

10 Colorful Picture Load   APP

There have 2 default pictures can be shown when display power-on or off , User can load some personalized pictures to replace these   original   pictures   by this APP;;

11 Quality assurance and Warranty scope

- The warranty time is 18 months from the shipping time.
- Responsible for all problems arising during normal operation that are caused by a quality defect.
- The following will either void or fall outside the scope of the warranty
  - ➤ If the display is disassembled
  - ➤ Damage due to incorrect installation or operations
  - ➤ Housing or cable is broken
  - ➤ Outside of the warranty period

12 Appendix A (Menu)

This is a full   menu item table preset in the display , some of the menu items may not be applicable due to software updates or customization;

Notice: incorrect set will cause system can't work, you can select DEFAULT menu item to restore all the setting;

Main Menu	Menu Item	Value range	Default	Remark
Normal	Wheel Size	4"—30"	26"	Define the size of wheel
	Unit	Metric, British	Metric	Speed measurement unit
	Fix Postion	Right, Left	Left	Accord to fix position on handle bar
	Riding Mode	Smooth, Sport, Extreme	Smooth	Ride mode
	Auto Light	Disable , Enable	Disable	***Need extra hardware***
	Max Speed	10km/h-40km/h	25km/h	Max speed of bike
	Max Push Speed	4km/h-10km/h	6km/h	The max walk assist speed
	Password	Disable ,PowerON ,Menu Only	Menu Only	
	SpeedAutoTrace	Disable, Enable	Disable	***Auto Trace the speed***
	Auto Power Off Time	5-20Minutes	5	
	Warning Mode	Disable, Enable	Enable	Warning message show
	Display Copy	Slave, Master, Demo ,Client	Slave	***See 8. Display copy*** Demo- display will enter demo mode when power on first Client – Receiving all the settings and picture from server display
	Synchro Mode	Controller, Display, Display Once	Controller	***See 9 whats the Setting Synchro mode***
	Max Current	5-50A	15A	
	AtuoBackLight	10-80	35	***0- Auto adjust the brightness of screen according to the light sensor*** ***>0 Set the brightness of screen as this value***
Battery	Voltage	24V,36V,48V. or others	36V	nominal voltage of battery
	Empty	These	35V	
	20%Cap	settings are	37.3V	
	40%Cap	related with the	37.9V	

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	60%Cap	battery equipped on bike;	38.7V	
	80%Cap		40V	
	Full		42V	
Controller	Max Current	10A-30A	15A	
	Low Cut Voltage	18V-50V	34V	
	TEMP Sensor	Disable, Enable	Disable	
Motor	Motor Hall	Hall Less,Hall		
	Motor Gear	Gear Less, Gear		
	Pole Pairs			
	Reduction Ratio			
	Speed Sensor	0-60	0	The speed sensor built-in motor 0-No speed sensor inside the motor 1-60, the number of signals when motor rotate one circle
	TEMP Sensor	Disable, Enable	Disable	
Display	Enable	Disable, Enable	Enable	
	Level Count	3-6	5	
	Auto Level	Disable, Enable	Disable	Invalid
	Level1_Speed	5-40km/h	10 km/h	Limit the speed according to the PAS Level
	Level2_Speed	5-40km/h	15 km/h	
	Level3_Speed	5-40km/h	18 km/h	
	Level4_Speed	5-40km/h	20 km/h	
	Level5_Speed	5-40km/h	25 km/h	
	Level6_Speed	5-40km/h	30 km/h	
PAS Sensor	Enable	Disable, Enable	Enable	
	Magic Count	4-64	24	
	Direction	Auto , Low , High		
	Max Speed	10-300RPM		
	Start Count	1-50		
Throttle	Driving Mode	Disable, Enable	Enable	
	Mini Voltage	500mv – 3500mv	1300mv	
	Max Voltage	500mv – 3500mv	3300mv	
Accessory	Braking Type	Low, High	Low	
	Speed Sensor	0-60		0-No speed sensor 1-60, the number of signals per circle

	Shit sensor	Disable, Enable	Disable	
Screen	Warning Show	Disable, Enable	Enable	Enable or disable the message box show
	Trip	Disable, Enable	Enable	
	Timer	Disable, Enable	Enable	
	Max Speed	Disable, Enable	Enable	
	AVG Speed	Disable, Enable	Enable	
	Bat Capacity	Disable, Enable	Enable	
	Test	Disable, Enable	Enable	
	About	Disable, Enable	Enable	
	Controller Test	Disable, Enable	Enable	
	Motor Test	Disable, Enable	Enable	
	Battery Test	Disable, Enable	Enable	
	Throttle &PAS Test	Disable, Enable	Enable	
	Accessory test	Disable, Enable	Enable	
	Temperature	Disable, Enable	Disable	
	Light Sensor	Disable, Enable	Disable	
	Screen & Color	Disable, Enable	Enable	
Default	Restore the default settings			
SAVE	Save all setting to display			
ABOUT	Show serial number			

13 Appendix B (Warning message)

These message will blink show on screen when warning event happen, users can cancel it by press any button

WARNING COMMUNICATION INTERRUPTED ⚠	Lose communication between display and controller Solution: Check the communication cable between display and controller		
WARNING OVER CURRENT ⚠	Current is above the limited value. Usually at the start-up stage when drive bike with throttle only. Solution: Pedal bike first and use throttle after bike moving	WARNING LOW VOLTAGE ⚠	Battery is empty Voltage is low than limited value. Solution: recharge the battery
WARNING SPEED SENSOR BROKEN ⚠	The speed sensor is broken Solution: change a new one or enter menu and set the motor speed senor or extra speed sensor value to 0	WARNING MOTOR HALL BROKEN ⚠	Hall inside the motor is broken Notice: System can auto switch to no hall mode to drive motor if controller is on double mode.
WARNING CONTROLLER OVERTEMP ⚠	Temperature is above the limited value	WARNING MOTOR OVERTEMP ⚠	Temperature is above the limited value

14 Appendix C (Error message)

Bike will stop work if these kind of errors happen, the icons show on screen can help users to find the common faults out.

ERROR VERSION DISMATCH ❌	It means communication protocol, between controller and display is different. you can check the version num at <About screen interface> ,and must make sure the version num of display is same as controller, otherwise , system will not work. More info contact servicer.
ERROR SYNCHRO FAIL ❌	System will auto verify the parameters which stored in display and controller memory. If the parameters are different, system will create a synchro process, system will verify again after this process, this error will show if verify process failed. Solution: check the communication cable and power on again
ERROR CONTROLLER BROKEN ❌	It means there have a short circuit problem in the controller. user should stop using bike and power off the battery immediately
ERROR CONTROLLER MEMORY FAIL ❌	It means the controller memory is fail Solution: change a new controller

ERROR DISPLAY MEMORY FAIL ❌	It means the display memory is fail Solution: change a new display
ERROR GALLOP THROTLE FAIL ❌	there have 3 possibilities if this error happened 1. User grip the throttle during on power-on period , 2. Throttle or the interface on controller are broken
ERROR MOTOR DISCONNECTED ❌	It means phase cable is disconnected
ERROR MOTOR BLOCKED ❌	There have short circuit problem in the motor or the current is too bigger when start-up a motor

15 Appendix D (How To Enter Demo Mode)

Demo mode can show all the performance and characteristic of the display and help user to understand how its working, there have 2 way to enter this mode;

1. Enter demo mode when power-on

    Step1: enter menu

    Step2: Select   menu item NORMAL

    Step3: Select   submenu item DISPLAY COPY

    Step4: Change this item value to DEMO

    Step4: Save settings and power off

2. Enter demo mode at working interface

    Step1: press power button till the symbol as below appeared

    Step2 Press DOWN button

    Step3 Press POWER button

    Press any key can exit DEMO mode

16 Appendix E (FAQ)

Q：Why can not turn on the display even press the POWR button with long time?

A：Make sure battery is power on , then check the cable is well connected with the controller.

Q：How to deal with ERROR message ?

A：Power off the system and try to Contact the e-bike maintenance station in time.

Q: Why system can not work after changing some settings?

A: Enter Menu and select the DEFAULT item , then will restore factory settings;