

Changzhou Mantis Vehicle Co., Ltd.

S5 LCD Display (Scooters Only)

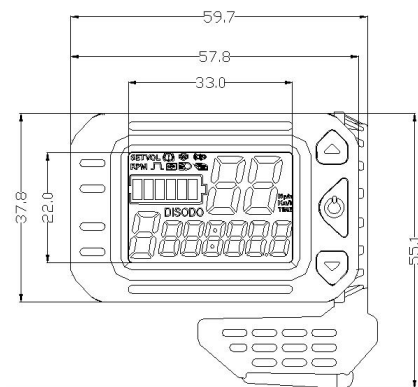
User Manual V. 2016



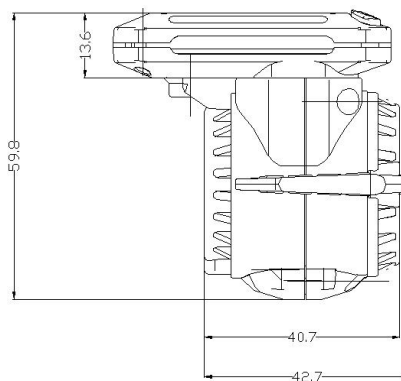
1. Exterior Parameters

Casing Material: ABS

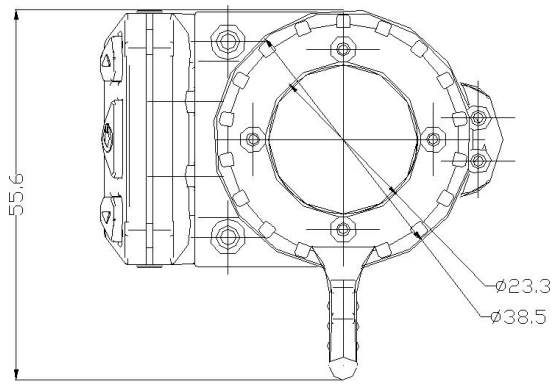
Display Material: High Hardness Acrylic (the same hardness value as tempered glass).



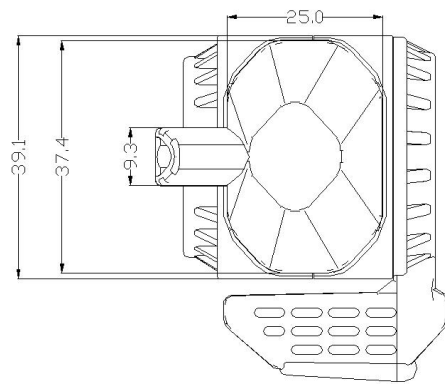
Front View



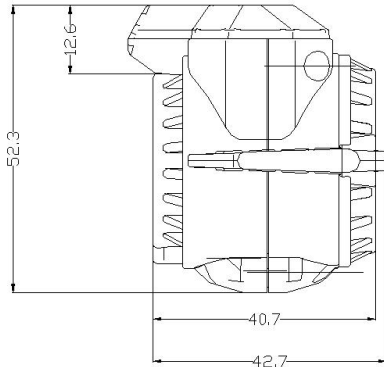
Side View



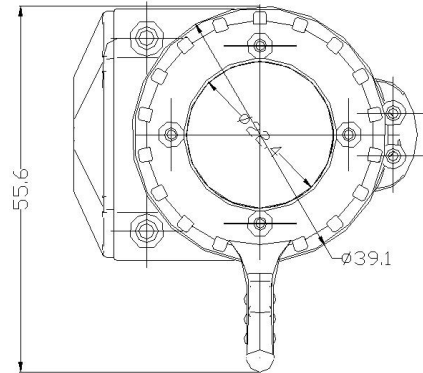
Throttle View



Brake Front View



**Brake Side View
880 Supporter**



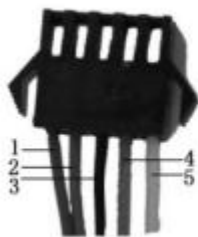
Brake Throttle View

2. Operating Voltage and Connectors

a. **Operating Voltage:** DC24V / 36V Compatible, 36/48V Compatible (set by the control panel), 60V. Other operating voltage can be customized.

b. **Connectors:**

Standard connector sequence



Controller Connector



Panel Outlet Terminal



Wire Connector

Standard Connector Sequence Table

Sequence No.	Wire Colour	Functions
1	Red (VCC)	Panel Power Cord
2	Blue (K)	Controller Power Cord
3	Black (GND)	Panel Ground Wire

4	Green (RX)	Panel Data Receiving Wire
5	Yellow (TX)	Panel Data Sending Wire

Some displays use waterproof connectors, the customer may not be able to identify the internal wire color.

3. Functions

a. Display

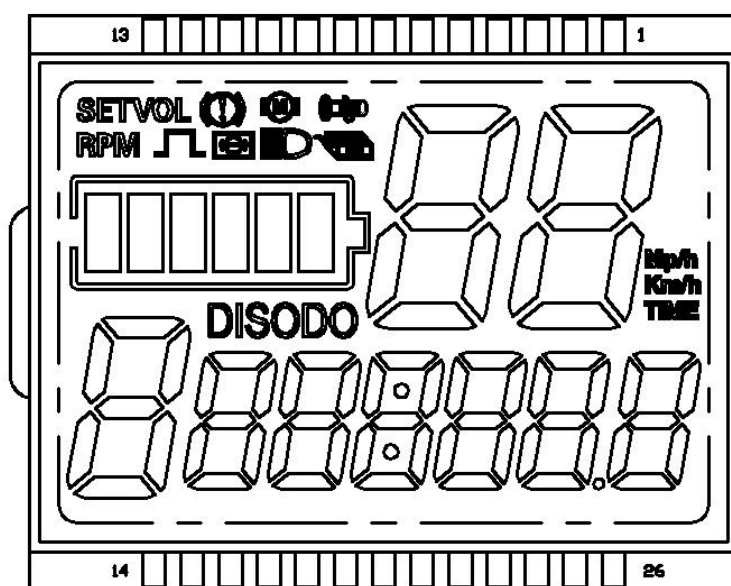
Speed Display, Battery Level Display, Error Indication, Total Mileage, Single Mileage

b. Control and Settings

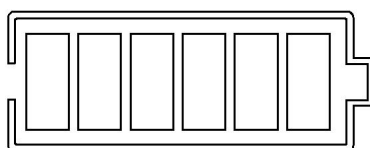
Power Switch, Wheel Diameter Setting, Idleness Time Setting for Auto-Hibernation, Backlight Brightness Setting, Start Mode Setting, Drive Mode Setting, Voltage Level Setting, Controller Current Limit Setting

c. Communications Protocol: UART

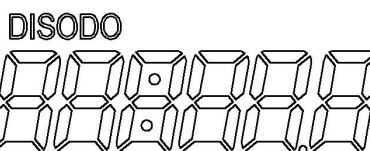
Display Readings (display at start for 1 second)



Display Details



3.1 Battery Level



3.2 Multi-Functions Display

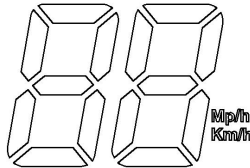
Total Mileage: ODO

Single Mileage: DIS (Unit: MILE/KM)

Code (Decimal)	Indication	Note
0	Normal	
1	Reserved	

2	Brake	
3	Power Sensor Error (riding mark)	Not realizable
4	Cruise at 6km/h	
5	Real-time Cruise	
6	Low Battery Voltage	
7	Motor Error	
8	Handlebar Error	
9	Controller Error	
10	Communications Receiving Error	
11	Communications Sending Error	
12	BMS Communications Error	
13	Light Error	

3.3 Speed Display

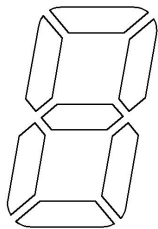


Measuring Unit: MPH or KM/H

The speed signal is generated from the Hall signal in the motor and is sent to the panel by the controller.

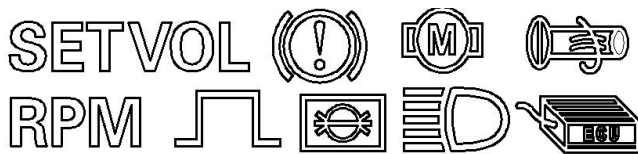
The panel will calculate the actual travelling speed based on the wheel diameter and signal data (number of magnet steel is needed for Hall motors).

3.4 PAS Level



Power Assist Level 1 / 2 / 3.

3.5 Vehicle Status Display



SET :Setting Mode VOL:Digital Voltage (!):Brake Indicator

(M): Motor Failure (Throttle):Throttle Failure (D):Wheel Diameter

(Light):Light (Controller):Controller Failure

8. Settings

P01: Backlight Brightness (1: darkest; 3: brightest)

P02: Mileage Unit (0: KM; 1: MILE)

P03: Voltage Class: 24V (default) /36V / 48V

P04: Hibernation Time (0: never, other figures refer to the hibernation time)

Unit: minute

P05: Power Gear – 0/3 Gear Mode: Gear 1: 2V Gear 2: 3V Gear 3: 4V
1/5 Gear Mode: Gear 1: 2V Gear 2: 2.5V Gear 3: 4V
Gear 4: 3.5V Gear 5: 4V

P06: Wheel Diameter Unit: inch Precision: 0.1

P07: Magnet Steel Number for Speed Test Range: 1-100

P08: Speed Limit

Range: 0-50km/h, parameter 50 indicates no speed limit.

1. Non-communications status (panel-controlled)

When the current speed exceeds the speed limit, the PWM output will be shut down; when the current speed falls to lower than the speed limit, the PWM output will be activated and the driving speed will be set as the current speed ± 1 km/h (only applies to assist power speed, not applicable to the handlebar speed).

2. Communications status (controller-controlled)

The driving speed will be kept constant as the limited value.

Error Value: ± 1 km/h (applicable to both the assist power/handlebar speed)

Note: The above-mentioned values are measured by metric unit (kilometers). When the measuring unit is switched to imperial unit (mile), the speed value displayed on the panel will be automatically switched to corresponding imperial unit, however the speed limit value in the imperial unit interface won't change accordingly.

P09: Zero / Non-zero Start Setting:

0: Zero Start

1: Non-zero Start

P10: Drive Mode Setting

0: Power Drive – The specific gear of the assist drive decides the assist power value. In this status the handlebar does not work.

1: Electric Drive – The vehicle is driven by the handlebar. In this status the power gear does not work.

2: Power Drive + Electric Drive – Electric drive does not work in zero-start status.

P12: Assist Power Intensity Range: 0-5

P13: Power Magnet Steel Number: 5 / 8 / 12pcs

P14: Current Limit Value: 12A by default; Range: 1-20A

P15: Unspecified

P16: ODO Zero-Out: Long press the upper key for 5 seconds and ODO will zero out.

4. Introduction of Keys

1. Short press ON/OFF to turn on the panel when it's off. Short press ON/OFF to switch the interface in ODO/TRIP/RM/TM/ERRO mode when the panel is on.

2. Long press ON/OFF to turn off the panel when it's on. Short press the up key + to increase the PAS level, short press the down key - to decrease the PAS level.

3. Long press up key + to adjust the parameter.

In the setting interface, short press ON/OFF to switch parameters, and long press MODE to add ("A" on the left side) /minus ("d" on the left side) the value.

After the change, short press on/off to switch to the next parameter and save the last parameter, or long press MODE and the parameter will stop blinking and be saved. Long press ON/OFF+MODE to exit parameter setting interface, or wait for 10 seconds and automatically exit the mode.

4. The throttle is used to adjust the motor rotational speed. Turn it from top down and the motor will accelerate, release the lever the motor will decelerate.

Note: Due to product upgrade, the product you purchased may be slightly different from the descriptions in this user manual, and this won't affect normal usage.