

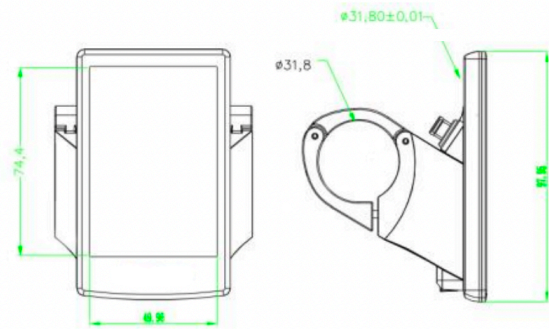
# DUST

## Product Details: Intelligent Coloured LCD Display for E-bike (Model: D1)

### Specifications:

- Power Supply: 36V/48V
- Rated Working Current: 10mA
- Maximum Working Current: 30mA
- Off-state Leakage Current:  $<1\mu\text{A}$
- Operating Temperature:  $-20^{\circ}\text{C}$  to  $60^{\circ}\text{C}$
- Storage Temperature:  $-30^{\circ}\text{C}$  to  $70^{\circ}\text{C}$

### Appearance and Size:



### Display Unit Dimensions (mm):

#### Function Summary:

- Intelligent Battery SOC Indication
- Motor Power Indication
- Assist-Level Indication and Selection
- Speed Indication (Real-time, Max. speed, Ave. speed)
- Odometer and Trip Distance
- Push-assistance Control and Indication
- Trip Time Indication
- Backlight On/Off and Indication
- Error Code Indication
- USB Connection Indicator
- Various Parameters Settings (e.g., wheel size, speed limit, battery voltage segmented value, power assist parameters, etc.)

### General Operation:

#### Switching the E-bike System On/Off

- Briefly press the power button to switch on the E-bike system.
- When the display is on, hold the power button for 2 seconds to switch off the E-bike system, conserving battery power.
- When turning off the E-bike system, the leakage current is less than  $1\mu\text{A}$ .
- Note: The E-bike system will automatically switch off when parked for more than 5 minutes.

## Display Interface

- After switching on the E-bike system, the default display shows real-time speed and trip distance
- Press the "i" button to cycle between the following elements:
  - Trip (Km) → ODO (Km) → Max. Speed (Km/h) → Avg. Speed (Km/h) → Time (Min.)
- This allows you to view various information on the display as per your preference.

## Switching the Lighting On/Off

- To activate the bike light, press and hold the "+" button.
- The backlight brightness is automatically reduced for efficiency.
- Hold the "+" button again to switch off the lighting when not needed.

## Assist Level Selection

- To adjust the motor's power output, briefly press the "+" or "-" button to switch between assistance levels.
- The default assistance levels range from "0" to "5," with "0" providing no power output, and "5" delivering maximum power.
- When at level "5," pressing the "+" button again will keep it at "5," and it will blink to indicate the highest power setting.
- To decrease power levels, press the "-" button until "0" is reached, and it will blink at "0" to indicate the minimum power.
- The default value is level "1."
- This operation is done through the Assist Level Toggling Interface.

## Battery SOC Indicator

- The battery SOC (State of Charge) is indicated by five battery bars.
- When the battery is at high voltage, all five battery segments are brightly lit.
- If the battery percentage reaches 0%, it indicates that the battery needs immediate recharging.
- This information is displayed through the Battery SOC Indicator Interface.

## Motor Power Indicator

- The motor's power output can be read from the Motor Power Indicator Interface.
- It provides information on the current power being delivered by the motor.

## USB Connection Indication

- When the display is connected to a USB external device, the interface will display the USB connection status.
- This is indicated through the USB Connection Indication Interface.

## Error Code Indication

- The E-bike system continuously and automatically monitors its components.
- When an error is detected, the respective error code is displayed in the text indication area.
- For detailed explanations of error codes, refer to the attached list (List 1).
- If an error code appears, it is advisable to have the display repaired to ensure normal bike operation. Always contact DUST's customer support at [hello@dustbike.com](mailto:hello@dustbike.com) in such cases.

## Settings

- To turn on the display on a stationary E-bike, press the On/Off button.
- To access the Settings page, simultaneously hold both the "+" and "-" buttons for 2 seconds.
- All settings are configured on a stationary E-bike (no speed).

### **Wheel Diameter Settings**

- The wheel diameter setting allows you to specify the wheel size.
- To adjust the wheel diameter, use the "+" or "-" buttons to increase or decrease the value until the desired size is displayed.
- The default value is 26 inches.
- To save your changes, press the "i" button to confirm.

### **Speed-limit Settings**

- Speed Limit settings determine the maximum speed at which the E-bike can operate.
- The speed limit range is from 15 Km/h to 40 Km/h, with a default value of 25 Km/h.
- To modify the speed limit, use the "+" or "-" buttons to increase or decrease the value as needed.
- Confirm your changes by pressing the "i" button.

### **Backlight Brightness Settings**

- Brightness settings control the display's backlight intensity.
- Level 5 is the highest brightness setting, and lower levels correspond to reduced brightness.
- Adjust the backlight brightness by pressing the "+" or "-" buttons to choose the desired percentage.
- To save your adjusted setting, briefly press the "i" button.

### **Battery Power Bar Settings**

- The Voltage setting represents segmented values for battery voltage, which can be switched between 36V and 48V.
- There are 5 bar-voltage values for either 36V or 48V, and they should be entered one by one.
- For example, if using 48V, "1-" represents the first bar voltage value, and the default value is 41.2V.
- To adjust the battery power bar value, use the "+" or "-" buttons to increase or decrease the voltage values.
- To save the modified setting and proceed to the next bar voltage setting, press the "i" button.
- After entering all 5 bar-voltage values, press the "i" button to confirm.

### **Advanced Settings**

- Advanced settings involve configuring PAS (Power Assist Sensor) parameters.

#### **Speed Sensor**

- The Speed Sensor setting allows you to specify the number of magnets on the e-bike spoke.
- The range is from 1 to 5 magnets, with a default value of 1.
- Use the "+" or "-" buttons to set the desired number of magnets.
- To save your adjustment, press the "i" button to confirm.

#### **Power Assistant Sensor Magnets**

- Assistant num represents the number of magnets on the PAS disk.
- The settable range is from "5" to "24," with a default value of 12.
- To change the number of magnets for the power assist sensor, use the "+" or "-" buttons to select the desired number.
- To save the adjusted setting, press the "i" button to confirm.

#### **Assist Level Settings**

- Power Set represents assist level settings.
- There are 8 modes for your choice in assist level mode settings: 0-3, 1-3, 0-5, 1-5, 0-7, 1-7, 0-9, and 1-9.
- The default mode is 0-5.
- To change the assist level mode, use the "+" or "-" button to select the desired mode.
- Confirm the selection by pressing the "i" button, which will also allow access to assist level ratio settings automatically.

### **Current Limit Settings**

- Current Limit represents controller over-current cut settings.
- The current value can be changed in the range from 7.0A to 25.0A, with a default value of 15A.
- To modify the current limit settings, use the "+" or "-" buttons to increase or decrease the current value.
- To save your adjusted setting, press the "i" button to confirm.

### **Sensitivity**

- Sensitivity represents the sensitivity of a power assist sensor. It determines when the motor assist should start based on the number of magnets passing the power assist sensor.
- The default value is customisable.
- To change the sensitivity value, use the "+" or "-" buttons to select the desired value.
- Confirm the change by pressing the "i" button.

### **Slow Start**

- Slow start represents slow start-up settings, specifying a duration before power assistance kicks in when pedalling.
- The range is from "0-3," with "3" being the slowest setting. The default value is "1."
- Adjust the slow start settings by choosing the desired value using the +/- buttons.
- Confirm your selection by pressing the "i" button, which will store the change.

### **SOC View Settings**

- SOC V represents two display modes for battery SOC (State of Charge).
- One mode shows the SOC as a percentage value, and the other mode displays it as Voltage.
- To switch between these display modes, use the "+" or "-" button.
- The default view mode is by the percentage.
- To save the changed setting, briefly press the "i" button to confirm.

### **Auto-off Time Settings**

- Dormancy represents display auto-off time settings.
- To adjust the display's automatic shutdown time, press "Dormancy" and use the "+" or "-" buttons to select the desired duration.
- The default auto-off time is 5 minutes.
- To save the adjusted setting, briefly press the "i" button.

### **Unit km/mile Toggling**

- Unit represents unit toggling settings.
- To switch between units (e.g., metric "km" and imperial "mile"), use the "+" or "-" button to select the desired unit.
- The default unit is "Metric (km)."
- Confirm your choice by briefly pressing the "i" button.

### **Password Settings**

- Password settings are used for display power-on password configuration.
- To access the power-on password setting page, select 'Password' in the menu, and press the "i" button to confirm.
- PassWord Set refers to configuring a 4-digit power-on password, with the default password being '1314.'
- To enable or disable the power-on password, use the "+" or "-" button to select "ON" or "OFF."
- To set or reset the password, press the "i" button to confirm.

### **Power-on Password Disable/Enable**

- To enable or disable Start PassWord settings, use the "+" or "-" button to select "ON" or "OFF."
- "ON" means enabling a power-on password, while "OFF" means disabling it. The default value is "OFF."

- To enable a power-on password, choose "ON," and press the "i" button to confirm.
- Input the current password or default password "1314". Use the "+" or "-" button to change the numbers, and confirm each digit by pressing the "i" button until the correct password (current or default) is entered.
- To disable the current password, choose "OFF," and press the "i" button to confirm.
- If done correctly, the screen displays 'PassWord Canceled Successfully.' The display password is then reset to the default code "1314."

### **Power-on Password Reset**

- From the last interface, press the "+" or "-" button to select "Reset PassWord," and press the "i" button to confirm the power-on password reset interface.
  - The password reset process consists of 3 pages:
  - In the first page, enter the current password or default password "1314" correctly.
  - Move to the second page to input a new password. Use the "+" or "-" button to adjust the numbers and press the "i" button to confirm digits one by one until a new 4-digit password is set.
  - The third page is for re-entering the new password for confirmation. The screen displays 'PassWord Reset Successfully.'
- When switching on the E-bike system next time, please enter the new password to power on the display.

### **Factory Settings**

- Factory settings involve restoring the display to default settings.
- To reset to defaults, use the "+" or "-" button to choose "YES" or "NO." The default is "NO."
- Confirm the change by pressing the "i" button.

### **Display Settings**

- Display settings are used for configuring basic parameters, such as trip reset and more.
- Access the display settings menu.
- Make changes to various display-related parameters.
- To save the changes, briefly press the "i" button to confirm.

### **Trip Distance Clearance**

- Trip Reset represents the trip distance clearance setting.
- To clear the trip distance, use the "+" or "-" button to select "Yes" or "No."
- "Yes" means clearing a single ride's distance, while "No" means not clearing it.
- Confirm your choice by briefly pressing the "i" button.

### **Exit Settings**

- "Exit" means returning to the home screen from the settings pages.
- If there are no operations for one minute, the display will exit the settings state automatically.

### **Quality Assurance and Warranty Scope**

#### **Warranty:**

- The warranty is valid for 12 months after the shipment or delivery to customers.
- The warranty covers products used in normal usage conditions.

#### **The following cases do not belong to our warranty scope:**

- The display is demolished.
- The damage of the display is caused by wrong installation or operation.
- Shell of the display is broken when the display is out of the factory.
- Wire of the display is broken.
- The fault or damage of the display is caused by force majeure (e.g., fire, earthquake, etc.).
- Beyond Warranty period.

### Connection Layout

- Standard connector wiring diagram.

Wire no.	Color	Function
1	Red(VCC)	Display power cable
2	Blue(K)	Controller power control cable
3	Black(GND)	Ground/earth
4	Green(RX)	Display end- RX
5	Yellow(TX)	Display end-TX

### Wire Connection Note

- Some displays have wire connections with waterproof connectors, making it impossible for users to identify the colour of lead wires in the harness.

### Warnings:

- Use the display with caution. Do not attempt to release or link the connector when the battery is on.
- Avoid hitting the display.
- Do not modify system parameters to prevent parameter disorder.
- Have the display repaired by a professional when an error code appears.

### Attached list 1: Error code definition

Error Code	Definition
21	Current Abnormality
22	Throttle Abnormality
23	Motor Phase Abnormality
24	Motor Hall Signal Abnormality
25	Brake Abnormality
30	Communication Abnormality