

DP C18.UART



CONTENT

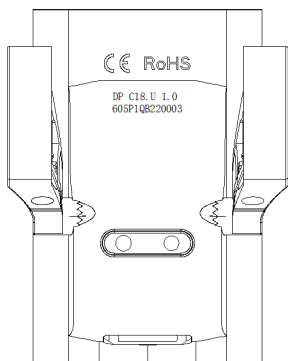
Content.....	1	Normal indication area.....	6
Introduction.....	2	Button definition.....	7
Appearance overview.....	3	Normal operation.....	7
Specifications.....	4	User setting.....	10
Functions overview.....	5	Error code definition.....	17

INTRODUCTION

- Name: Intelligent display
- Model: DP C18.UART
- Scope: electrical power assistance cycle
- Appearance: the housing is made of PC; The liquid crystal display is made of hardened PMMA



- Laser numbering on the back of the display
Number in the middle of display back, number is divided into two lines:



A. First line (as below)

DP C18.U 1.0

- ① DP C18.U: BAFANG display model
- ② 1.0: hardware version number

B. Second line (as below)

605P1QB220003

- ① 605: Wire length and connector type is 230mm M5.2
- ② P1: Internal Identity number
- ③ QB220003: Production date is 21st Nov. 2016; SN is 0003

- P type cable label number rule

Number is divided into two lines and QR code is at right side (as shown in the below figure)



Content of QR code:

DPC18P10101.0

PD2528051505

DP C18.U 1.0

605P1QB220003

The first line:

DPC18P10101.0 - Software version

The second line:

PD2528051505 - Parameter code

The last two lines:

DP C18.U 1.0 / 605P1QB220003 - SN

APPEARANCE OVERVIEW



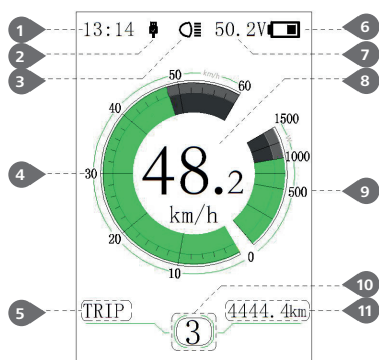
SPECIFICATIONS

- Rated voltage: 36V/43V/48V DC
- Rated current: 10mA (as shown in the figure)
- Maximum operating current: 30mA
- When power off, leak current is : $\leq 1\mu\text{A}$
- Operating current supplied to controller: 50mA
- Operation temperature: $-20\text{ }^{\circ}\text{C}\sim 45\text{ }^{\circ}\text{C}$
- Storage temperature: $-30\text{ }^{\circ}\text{C}\sim 70\text{ }^{\circ}\text{C}$
- IP level: IP65
- Storage humidity: 30%-70%

FUNCTIONS OVERVIEW

- Use of a two-way serial communication protocol, simple operation via the additional 5-button keypad.
- Speed indication: Indicate the real-time speed as SPEED, the maximum speed as MAXS and the average speed as AVG.
- Km or mile: The user can choose between km and mile.
- Intelligent battery capacity indication: With an optimization algorithm, a stable display of the battery level is ensured, and the problem of fluctuant battery level indication common with other displays is avoided. The user can define display mode of battery level as voltage or percentage.
- Automatic light-sensitive lights: The headlight, taillight and display backlight will be automatically turned on/ off depending on lighting conditions.
- 5 levels off backlighting: 10% is most dark, 100% is highest light.
- Support levels mode selection: 0-3/0-5/0-9.
- Trip distance indication: The maximum distance displayed is 99999. Single-trip distances TRIP or the total distance TOTAL can be displayed.
- Indication of error messages
- Push assistance
- Intelligent display: including motor's output power W for riding, output current A, Remaining miles RANGE, consumption of energy CALORIES.
- Set access password: user can set access password by himself.
- Set parameters: Power assistance level, wheel diameter, speed limit etc., can be set on the computer via a communication cable. Please see the detailed in the description of the computer parameter configuration.

NORMAL INDICATION AREA



1 Time indication:

The time is represented in the 24-hour system and show the current time, time can be set in the "Set clock".

2 USB charge indication:

When external connect into the display, it display the symbol.

3 Headlight indication:

Only shows when headlight is on.

4 Speed scale display:

the scale value is in accordance with the digital value.

5 Mode selection:

single-trip distance (TRIP) → total distance ODO → maximum speed (MAX) → average speed (AVG) → remaining distance (RANGE) → energy consumption (CALORIES) → time (TIME).

6 Battery indication:

Indicate current battery level value.

7 Voltage indication/percentage indication:

Indicate actual battery level value, display mode can be set in the "Soc View".


8 Speed digital indication:

Display current speed value, speed unit can be set in "Unit".

9 Power scale indication/current scale indication:

Display current output value, output unit can be set in "Power View".

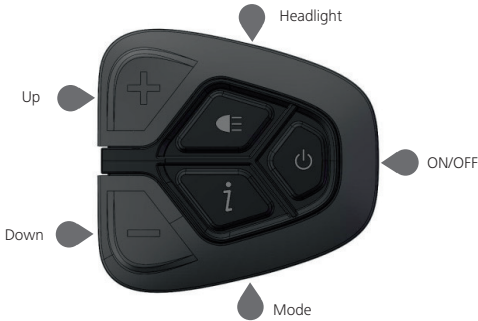
10 Power assistance level indication/push assistance:

Briefly press (0.5S) **+** or **-** to switch the level. Touch and hold (2S) **-** to start the mode "push assistance", display  symbol.

11 Mode data indication:



Display current data corresponding to the mode.

BUTTON DEFINITION





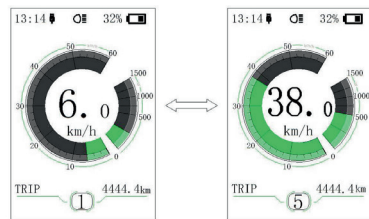
NORMAL OPERATION

- ON/OFF switch

Turn on the power, press and hold (>2S)  to power on the display, the display begin to operate. Press and hold (>2S)  again to power off the display. If the bike is not used, after 5 minutes (time can be set in "Auto Off") the display will be automatically turned off. If the password function of the display is activated, need to input the correct password to enter into the normal display interface.

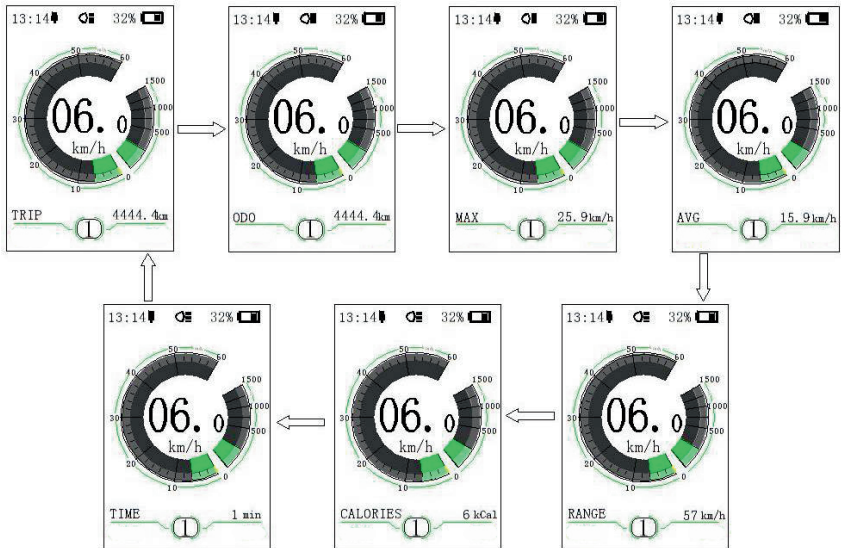
- Power assistance level selection

In the manual gearshift mode, briefly press (<0.5S)  or  to switch the level to change the assistance power, The lowest level is Level 0, the highest Level 5. When the display is on, the default mode is Level 1, "0" means no power assistance.





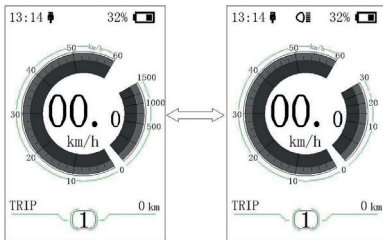
- Multiple function interfaces switch

Briefly press (0.5s) **I** to switch to different data interface, circularly show signal-trip distance (TRIP) → total distance (ODO) → maximum speed (MAX) → average speed (AVG) → remaining distance (RANGE) → energy consumption (CALORIES) → time (TIME). Energy consumption unit CALORIES means kCal.






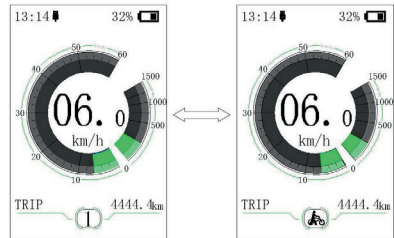
- Headlight / Display Backlight Switch

Press and hold (>2S)  to turn on the display backlight as well as headlight. Press and hold (>2S)  again to turn off the display backlight and the headlight. There are 5 levels of backlight brightness that can be selected by the user (can be set in the "Brightness"). (If the display is turned on in a dark environment, the display backlight/headlight will be turned on automatically. If the display backlight/headlight are turned off manually, they also need to be turned on manually afterwards)



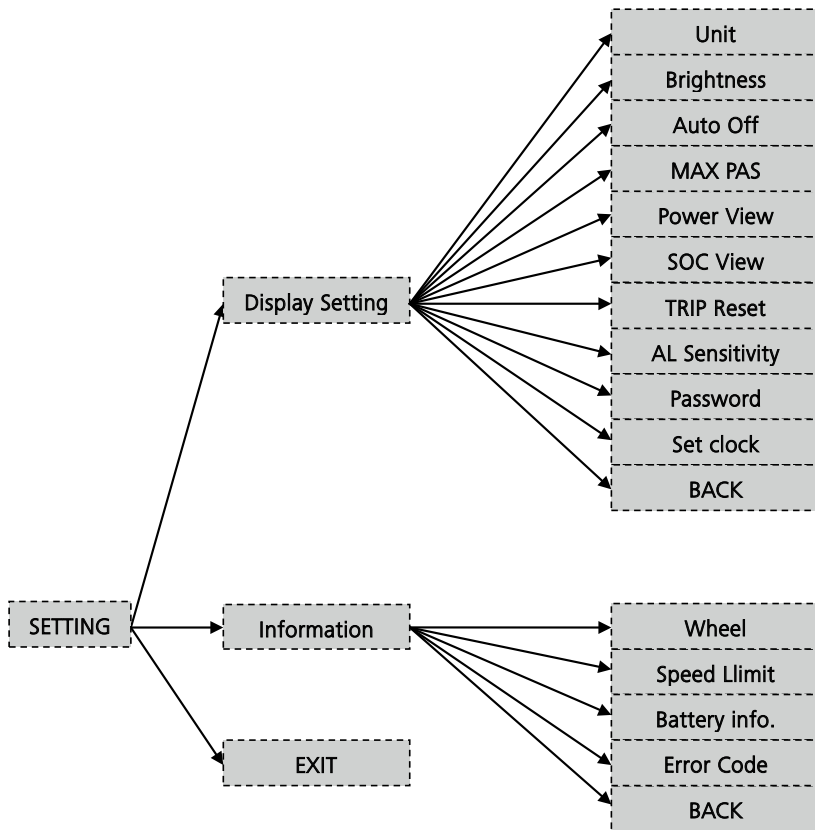
- Push assistance mode

Press and hold (>2S)  to enter into push assistance mode, the symbol  is displayed, when release key , will exit the push assistance mode.



USER SET

- Operating process in the setting interface



Enter into "SETTING" interface.

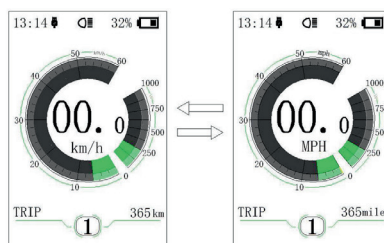
After switching on the display, briefly press (<0.5S) **[i]** for two times to enter into the "SETTING" interface. The interface includes the three options as "Display setting", "Information" and "EXIT". Briefly press (<0.5S) **[+]** or **[-]** to switch the options and then briefly press (<0.5S) **[i]** to confirm and enter into the option. Select "EXIT" and briefly press (<0.5S) **[i]** to exit the interface or briefly press (<0.5S) **[i]** for two times in any interface to exit the set interface. The set dates are saved for the two exit mode. If there is no any operation within 20s and then exit the set interface, no any dates are saved.

- Enter into "Display setting" interface

In "SETTING" interface, briefly press (<0.5S) **[+]** or **[-]** to select "Display setting" and then briefly press (<0.5S) **[i]** to confirm and enter into "Display setting". There are thirteen set options in the interface.

(1) "Unit"--- unit switch between the km and mile

Briefly press (<0.5S) **[+]** or **[-]** to select "Unit", and then briefly press (<0.5S) **[i]** to enter into the set interface. Briefly press (<0.5S) **[+]** or **[-]** to select "Metric"/ "Imperial", and then briefly press (<0.5S) **[i]** to save the set and exit back to "Unit" interface. Briefly press **[i]** for two times (interval time is less than 0.5S) to exit back to main interface, or select "BACK" → "EXIT" to exit back to the main interface.



(2) "Brightness"--- set display brightness

Briefly press (<0.5S) **[+]** or **[-]** to select "Brightness" and then briefly press (<0.5S) **[i]**. This moment, briefly press (<0.5S) **[+]** or **[-]** to switch the percentage as "100%" / "75%" / "50%" / "30%" / "10%". 100% is the highest brightness, 10% is lowest brightness. After select the brightness percentage, briefly press (<0.5S) **[i]** again to save the set and exit back to "Brightness". Briefly press **[i]** for two times (interval time is less than 0.5S) to exit back to main interface, or select "BACK" → "EXIT" to back the main interface.

(3) "Auto Off"--- set automatic Off time

Briefly press (<0.5S) **+** or **-** to select "Auto Off", and then briefly press (<0.5S) **i**. This moment, briefly press (<0.5S) **+** or **-** to switch automatic Off time as "OFF"/"9"/"8"/"7"/"6"/"5"/"4"/"3"/"2"/"1".

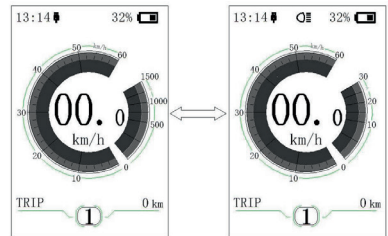
The unit is minute. After selection, briefly press (<0.5S) **i** to save the set and exit back to "Auto Off". Briefly press **i** for two times (interval time is less than 0.5S) to exit back to main interface or select "BACK" → "EXIT" to exit back to main interface.

(4) "MAX PAS"---set riding mode for starting up

Briefly press (<0.5S) **+** or **-** to select "MAX PAS", and then briefly press (<0.5S) **i**. This moment, briefly press (<0.5S) **+** or **-** to select support mode: 3/5/9. After confirmation, briefly press (<0.5S) **i** again to save the set and exit back to "MAX PAS". And then briefly press **i** for two times (interval time is less than 0.5S) to exit back to main interface, or select "BACK" → "EXIT" to exit the main menu.

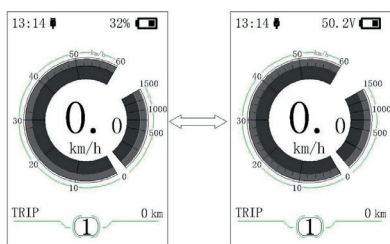
(5) "Power View"--- set output display mode

Briefly press (<0.5S) **+** or **-** to select "Power View", and then briefly press (<0.5S) **i**. This moment, briefly press (<0.5S) **+** or **-** to switch the output display mode as "Power"/"Current". After confirmation, briefly press (<0.5S) **i** again to save the set and exit back to "Power View". Briefly press **i** for two times (interval time is less than 0.5S) to exit back to the main interface, or select "BACK" → "EXIT" to exit back the main interface.



(6) "SOC View" --- set indication mode for battery capacity

Briefly press (<0.5S) **+** or **-** to select "SOC View", and then briefly press (<0.5S) **i**. This moment, briefly press (<0.5S) **+** or **-** to switch display mode for output as "Percent"/"Voltage". After confirmation, briefly press (<0.5S) **i** to save the set and exit back to "SOC View". Briefly press **i** for two times (interval time is less than 0.5S) to exit back to the main interface, or select "BACK" → "EXIT" to exit back to the main menu.



(7) "TRIP Reset" --- set reset function for single-trip distance

Briefly press (<0.5S) **+** or **-** to select "TRIP Reset", and then briefly press (<0.5S) **i**. This moment, briefly press (<0.5S) **+** or **-** to switch between "NO" and "YES". TRIP Reset includes maximum speed (MAXS), average speed (AVG), single-trip distance (TRIP). After confirmation, briefly press (<0.5S) **i** again to save the set and exit back to the "TRIP Reset". Briefly press **i** for two times (interval time is less than 0.5S) to exit the main interface, or select "BACK" → "EXIT" to exit back to the main interface. The data is not reset automatically when turn off the display or turn off the power of the bicycle.

(8) "AL Sensitivity" --- set light sensitivity

Briefly press (<0.5S) **+** or **-** to select "AL Sensitivity", and then briefly press (<0.5S) **i**. This moment, briefly press (<0.5S) **+** or **-** to switch level of the light sensitivity between "0"/"1"/"2"/"3"/"4"/"5"/"OFF". "OFF" means close the function. Level 1 is the weakest light sensitivity and level 5 is the strongest light sensitivity. Select the level desired and briefly press (<0.5S) **i** again to save the setting and exit back to "AL Sensitivity". Briefly press **i** for two times (interval time is less than 0.5S) to exit back to main interface or select "BACK" → "EXIT" to exit back to main interface.

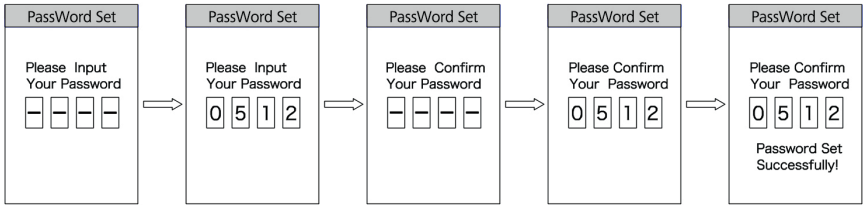
(9) "Password" --- access password setting

Briefly press (<0.5S) **+** or **-** to select "Password" and then briefly press (<0.5S) **i**. This moment, briefly press (<0.5S) **+** or **-** to select "Start PassWord" and then briefly press (<0.5S) **i** again. Briefly press (<0.5S) **i** or to switch between "OFF"/"ON", the below is the specific way of switching.

Starting password:

Enter into "Start PassWord" interface and select "ON". Briefly press (<0.5S) **i**, and then it show input password in the interface. This moment, briefly press (<0.5S) **+** or **-** to switch numbers "0-9", and then briefly press (<0.5S) **i** to confirm input number. After input, it show input password again in the interface. Repeat the above step to input password again. If the password is same with the previous time, the system will prompt it is successful to set password, otherwise it need to repeat the first step to input the new password and then re-confirm.

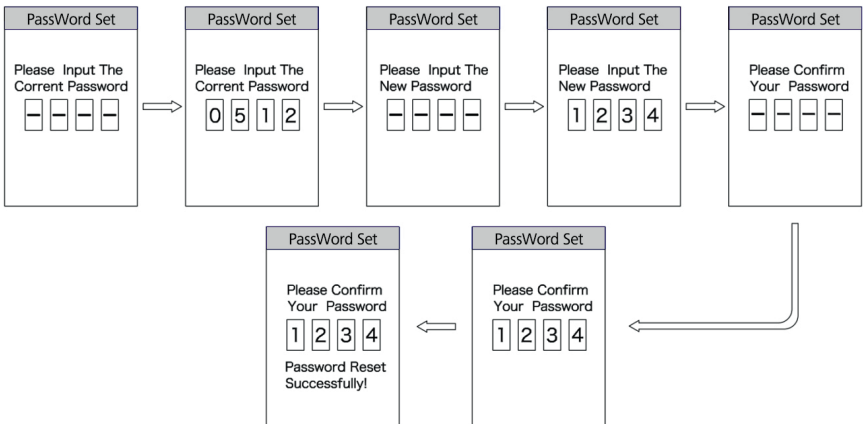
After setting the password, the interface exit back automatically to original interface within two seconds. Briefly press **F1** for two times (interval time is less than 0.5S) to exit back to main interface or select "BACK" → "EXIT" to exit back to main interface.



Reset password:

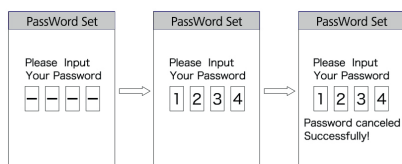
After setting the password, the interface "Password" will add option "Reset Password". Briefly press (<0.5S) **F2** or **F3** to select "Reset Password", and then briefly press (<0.5S) **F1**. This time it prompt input current password in the interface. If inputing wrong password for ten tiems, the display will turn off automatically. When inputing right password, it prompt input new password in the interface. The following step is same with starting password. After changing the password, it will exit automatically back to the original interface within two seconds.

Briefly press for **F1** two times (interval time is less than 0.5S) to exit back to the main interface or select "BACK" → "EXIT" to exit back to main interface.



Cancel password access:

Enter into "Start PassWord" interface to select "OFF" and then briefly press (<0.5S) **F1**. This moment, it prompt input password in the interface. If inputing wrong password for ten times, the display will turn off automatically. After inputing right password, it prompt it is successful to close password in the interface. Two seconds later, it exit back automatically to the original interface. Briefly press **F1** for two times (interval time is less than 0.5S) to exit back to the main interface or select "BACK" → "EXIT" to exit the main interface.



(10) "Set Clock"--- time setting

Briefly press (<0.5S) **+** or **-** to select "Set Clock" and then briefly press (<0.5S) **F1**. The time is represented in the 24-hour system. Cursor stays at the first digit of the clock. Briefly press **+** or **-** to select "0-2" and then briefly press (<0.5S) **F1** to confirm the selection. This moment, the cursor switch to the second digit of the clock. Briefly press **+** or **-** to select "0-9", and then

briefly press (<0.5S) **F1** to confirm the selection. And the cursor will switch to the first digit of the minute. Briefly press **+** or **-** to select "0-5", and then briefly press (<0.5S) **F1** to confirm the selection. The cursor will switch the second digit of the minute, and then briefly press (<0.5S) **+** or **-** to select "0-9". Briefly press (<0.5S) **F1** to save the selection and exit back to "Set Clock". Briefly press **F1** for two tiems (interval time is less than 0.5S) to exit back to the main interface or select "BACK" → "EXIT" to exit back to the main interface.

- Enter into "Information" interface
Enter into "SETTING" interface and briefly press (<0.5S) **+** or **-** to select "Information" and briefly press (<0.5S) **F1** to confirm and enter into the interface. It can check all content in the interface "Information", but can't use the display to modify the content.

(1) "Wheel"and"Speed Limit"check

Enter into "Information"interface and it display the data of "Wheel" and "Speed Limit". User can use BAFANG's BESST tool to connect the display and PC to modify the data. Briefly press (interval time is less than 0.5S) **F1** for two times to exit back to the main interface or select "BACK" → "EXIT" to exit back to the main interface.

(2) "Battery Info." check

Briefly press (<0.5S) **+** or **-** to select "Battery Info." and briefly press (<0.5S) **i** to enter into information display interface. This moment, select "Nest Page" and briefly press (<0.5S) **i** to switch the display interface. If detecting no data, it display "--". See the content and corresponding explanation shown in the table below:



Display content	Explanation	Display content	Explanation
TEMP	Current temperature	Cycle Times	Cycle Times
TotalVolt	Battery voltage	Max Uncharge Time	Max Uncharge Time
Current	current	Last Uncharge Time	Last Uncharge Time
Res Cap	remaining battery capacity	Total Cell	The number of cell
Full Cap	Battery capacity of Full charged	Cell Voltage 1	Voltage Cell 1
RelChargeState	Relative Charge in percentage	Cell Voltage 2	Voltage Cell 2
AbsChargeState	Absolute Charge in percentage	Cell Voltage n	Voltage Cell n

Briefly press **i** for two tiems (interval time is less than 0.5S) to exit back to main interface or select "BACK" → "BACK" → "EXIT" to exit back to the main interface.

(3) "Error Code" history check

Briefly press (<0.5S) **+** or **-** to select "Error Code" and briefly press (<0.5S) **i** to enter into the interface. "E-CODE" indicate the error information for last ten times. "E-CODE 1" represents the error content for the last time. "E-CODE 10" represents the error content up to the tenth time. The maximum ten records can be kept. Error code "00" means no error. Please see the error code table to know about the definition of the other codes.

ERROR CODE DEFINITION

 DP C18.UART display can show e-bike faults. When a fault is detected, the icon  will be indicated. One of the following error codes will be indicated.

Error	Explanation	Troubleshooting
03	Brakes enabled	Check whether a brake cable is stuck.
07	High voltage protection	Bring your Pedelec to your dealer or to a specialist to have the error fixed.
08	Fault with motor hall sensor inside	Bring your Pedelec to your dealer or to a specialist to have the error fixed.
10	The motor temperature reaches to the max protection value	Stop the e-bike for a rest.
12	Fault with current sensor inside controller	Bring your Pedelec to your dealer or to a specialist to have the error fixed.
13	Fault with temperature sensor inside battery	Bring your Pedelec to your dealer or to a specialist to have the error fixed.
21	Fault with wheel speed detecting sensor	Bring your Pedelec to your dealer or to a specialist to have the error fixed.
22	BMS communication fault	Bring your Pedelec to your dealer or to a specialist to have the error fixed.
25	Torque sensor torque signal fault	Bring your Pedelec to your dealer or to a specialist to have the error fixed.
26	Torque sensor speed signal fault	Bring your Pedelec to your dealer or to a specialist to have the error fixed.
30	Communication fault	Bring your Pedelec to your dealer or to a specialist to have the error fixed.

Note: Error Code 10 will probably appear on the display when the e-bike is climbing for a long time. This indicates that the motor temperature has reached the protection value, in which case the user needs to stop the e-bike for a rest. If the user continues to run the e-bike, the motor will automatically cut off the power.

NOTES

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