

# 6 DISPLAY (DP C01.RS232.7)

## 6.1 Specifications and Parameters of the Display

- 36V / 48V Power Supply;
- Rated Current: 10 mA
- Maximum Operating Current: 30 mA
- Power-off Leakage Current: < 1uA
- Operating Current Supplied to the Controller: 50 mA
- Operation Temperature: -18 ~ 60 %
- Storage Temperature: -30 ~ 70 %
- Waterproof Grade: IP65
- Storage Humidity: 30 % – 70 %

## 6.2 Appearance and Dimensions

### 6.2.1 Materials and Dimensions

- The shell is made of PC. The liquid crystal display is made of hardened PMMA.

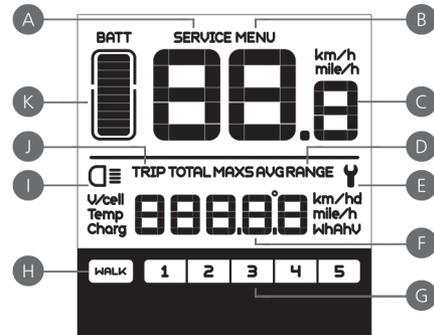


## 6.3 Function Overview and Key Definitions

### 6.3.1 Function Overview

- Use of a two-way serial communication protocol, simple operation of the display via the external 5-key keypad.
- Speed display: displaying 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 level 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.
- Automatic light-sensitive lights: The headlight, taillight and display light will be automatically turned on/ off depending on lighting conditions.
- 5 levels off display backlighting: Different levels
- 5-Level-Support: setting power Levels 1 to 5
- Trip distance indication: The maximum distance displayed is 99999. Single-trip distances TRIP or the total distance TOTAL can be displayed.
- Display of error messages
- Walk assistance
- Settings: Various parameters, e.g. mode, wheel diameter, speed limit etc., can be set on the computer via a communication cable. See the setting
- Maintenance warning (this function can be deactivated): Maintenance warning information is displayed based on battery charge cycles and riding distance. The display automatically estimates the battery life and gives warnings when the number of charge cycles exceeds the set value. A warning will also be displayed when the accumulated total riding distance exceeds the set value.

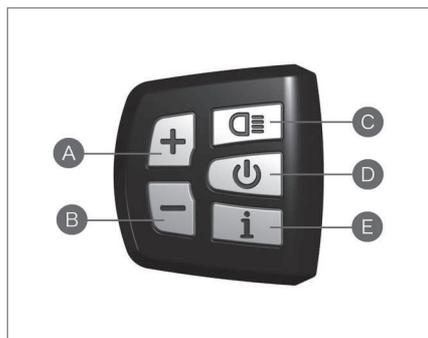
### 6.3.2 Information on the Display



- A** Maintenance warning: When there is a need for maintenance the symbol **SERVICE** will be displayed (riding distance or the number of battery charge cycles exceed the set value, function can be deactivated)
- B** Menu
- C** Speed display: display of the speed, km/h or mph
- D** Speed mode: average speed (AVG km/h), maximum speed (MAXS km/h)
- E** Error display: When a fault is detected the symbol  will be displayed.
- F** Distance indication: display of the distance depending on the setting.
- G** Level indication: The chosen level 1–5 will be displayed; if there is no numeric display, it means that there is no assistance (by the motor). If the rider is walking and pushing the e-bike, **WALK** will be displayed.
- H** Walk assistance
- I** Headlight indication: only shows when headlight or backlight are on

- J Distance mode: display of the single-trip distance TRIP and the total distance TOTAL
- K Battery level: 10-segment battery indication; the voltage that each segment represents can be customized

### 6.3.3 Key Definitions



- A up
- B down
- C headlight
- D on/off
- E mode

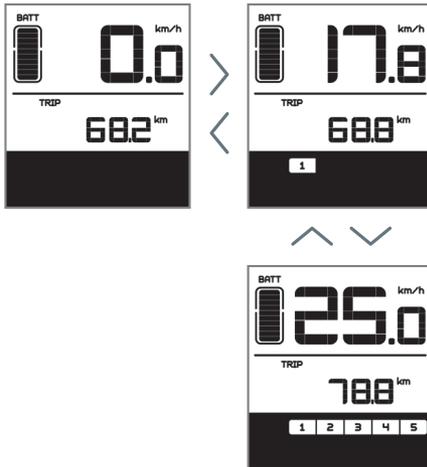
## 6.4 Normal Operation

### 6.4.1 On/Off Switch

Turn on the device. Press and hold  for 2 seconds to power on the display. Press and hold  again for 2 seconds to power off the display. If the bike is not used, after 5 minutes (time can be set) the display will be automatically turned off.

### 6.4.2 Assist Mode Selection

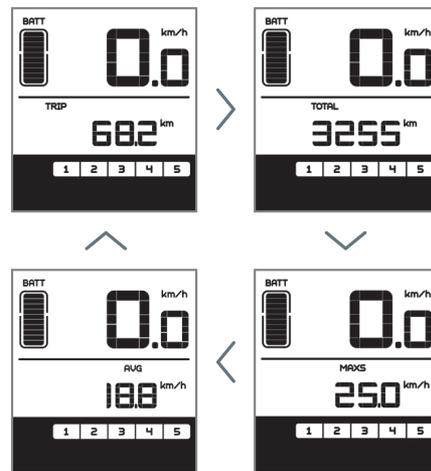
In the manual gearshift mode, press the  or  to choose the desired level of support by the motor. The lowest level is Level 1, the highest Level 5. When the display is on, the default mode is Level 1. When there is no numeric mode display, there is no power assistance.



Selecting the level for motor assistance

### 6.4.3 Switch between Distance Mode and Speed Mode

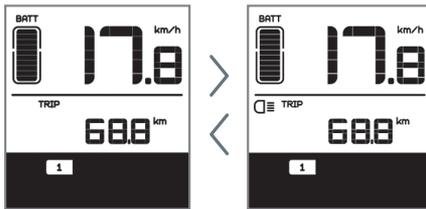
Briefly press  to switch between distance and speed. Single-trip distance (TRIP km) → total distance (TOTAL km) → maximum speed (MAXS km/h) → average riding speed (AVG km/h) are displayed in successive order.



Switching between displays

#### 6.4.4 Headlight/ Display Backlight Switch

Press  for 2 seconds. The backlight of the display as well as the headlight and taillight will be turned on. Press  again for 2 seconds to power off the display backlight/headlight/taillight. (If the display is turned on in a dark environment, the display backlight/headlight/taillight will be turned on automatically. If the display backlight/headlight/taillight are turned off manually, they also need to be turned on manually afterwards).

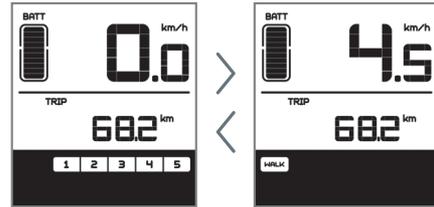


Display backlight, headlight and taillight

**There are 5 levels of backlight brightness that can be selected by the user.**

#### 6.4.5 Walk Assistance

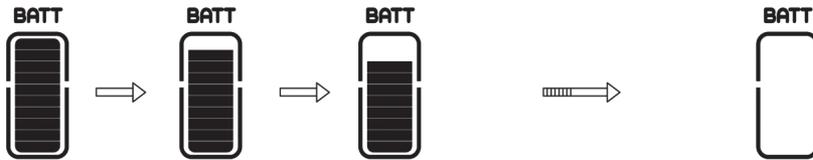
Press  for 2 seconds. The e-bike enters the walk assistance mode, and the symbol WALK is displayed. Once the key  is released, the e-bike will exit the walk assistance mode.



Switch between power assistance and walk assistance mode

### 6.4.6 Battery Status Indication

When the battery status is normal, a certain number of the battery LCD segments as well as the border light up according to the actual quantity of charge. If all of the 10 segments will black out with the border blinking, the battery needs to be charged immediately.



Battery status indication

Number of Segments	Charge in Percentage	Number of Segments	Charge in Percentage	Number of Segments	Charge in Percentage
10	$\geq 90\%$	6	$50\% \leq C < 60\%$	2	$15\% \leq C < 25\%$
9	$80\% \leq C < 90\%$	5	$45\% \leq C < 50\%$	1	$5\% \leq C < 15\%$
8	$70\% \leq C < 80\%$	4	$35\% \leq C < 45\%$	border blinking	$C < 5\%$
7	$60\% \leq C < 70\%$	3	$25\% \leq C < 35\%$		

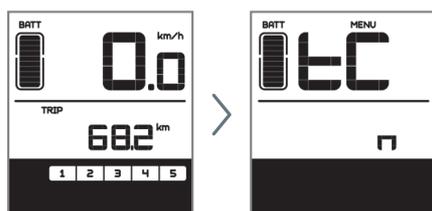
## 6.5 Parameter Setting

### 6.5.1 Items to be Set:

- 1 > Data reset
- 2 > km/mile
- 3 > Light sensitivity
- 4 > Display backlight brightness
- 5 > Automatic off time
- 6 > Maintenance warning settings
- 7 > Input of the password
- 8 > Wheel diameter selection
- 9 > Setting speed limit

### 6.5.2 Setting Preparation

When the display is active, press **i** twice (interval < 0.3 seconds). The system will enter the MENU parameter setting state, in which the display parameters can be set. Press **i** twice again (interval < 0.3 seconds) to return to the main menu.



Menu for entering the parameter settings

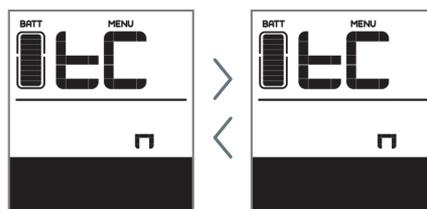
In the parameter setting state, when the parameter you want to set begins to flash, press **+**/**-** to adjust the parameter value. Briefly press **i** to switch between the parameters to be set. Press **i** twice (interval < 0.3 seconds) to exit the submenu.

If no operation is performed for 10 seconds, the display will return to the normal riding display.

### 6.5.3 Data Reset

Press **i** twice (interval < 0.3 seconds) – the display enters the MENU state. In the speed field tC is displayed. If you press **+**, a y is also displayed. Now all temporary data, e.g. maximum speed (MAXS), average speed (AVG) and single-trip distance (TRIP) can be cleared. Briefly press **i** (< 0.3 seconds) to enter the km/mile setting interface.

If the user does not reset the data, the single trip distance and the accumulated total riding time will be automatically cleared when the accumulated total riding time exceeds 99 hours and 59 minutes.

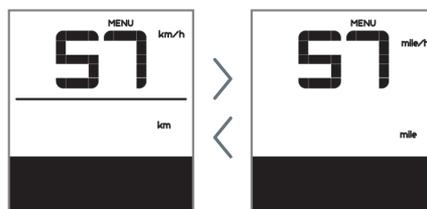


**The data will not be cleared when the display's light-sensing function is set to 0 or when it is switched off.**

### 6.5.4 km/mile

When the speed field displays S7, press **+**/**-** to switch between km/h and mph, or to set km or mile.

After this setting, briefly press **i** (< 0.3 seconds) to enter the setting interface of light sensitivity.



### 6.5.5 Light Sensitivity

When the speed field displays bL0, use / to choose a figure between 0 and 5. The higher the chosen figure, the higher the light sensitivity.

After this setting, briefly press  (< 0.3 seconds) to enter the setting interface of backlight brightness.



### 6.5.6 Display Backlight Brightness

When the speed field displays bL1, press / to choose a figure between 1 and 5. The figure 1 represents the lowest brightness while 5 indicates the highest display backlight brightness.

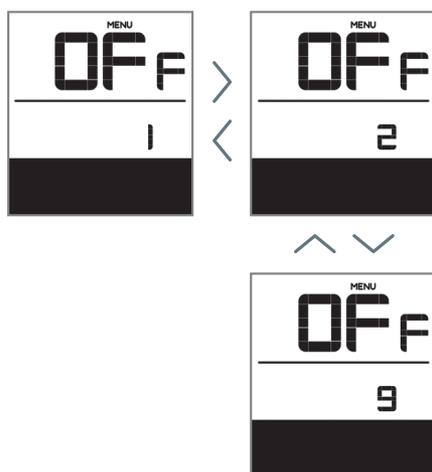
After this setting, briefly press  (< 0.3 seconds) to enter the setting interface of automatic off time.



### 6.5.7 Automatic Off Time

When the speed field displays OFF, press / to choose a figure between 1 and 9. The figures indicate the minutes that it takes to automatically shut down the display.

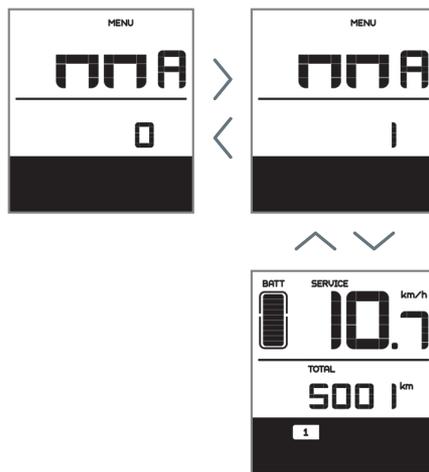
After this setting, briefly press (< 0.3 seconds) to enter the setting interface of maintenance warning.



### 6.5.8 Maintenance Warning (can be deactivated)

When the speed field displays nnA, press / to choose either 0 or 1. 0 disables the function while 1 enables it.

After this setting, briefly press (< 0.3 seconds) to enter the setting interface of password input.



#### Maintenance Warning Setting

The display will prompt maintenance necessity based on such information as the accumulated riding distance and the battery charge cycles.

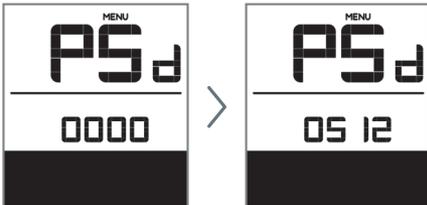
- When the accumulated total riding distance exceeds 5,000 km (can be customized by the manufacturer), the display will show the symbol **SERVICE**. When the display is started up, the sign for accumulated riding distance will flash for 4 seconds, indicating that maintenance is necessary.
- When the number of battery charge cycles exceeds 100 (can be customized by the manufacturer), the display will the symbol **SERVICE**. When the display is started up, the sign for battery will

flash for 4 seconds, indicating that maintenance is necessary.

- The maintenance alert function can be disabled: settings → maintenance alert (MA) → maintenance alert (MA) → 0. (Maintenance alert can also be set via a computer. This requires a USB connection. See also the parameter setting instructions).

### 6.5.9 Further Settings: Password Setting

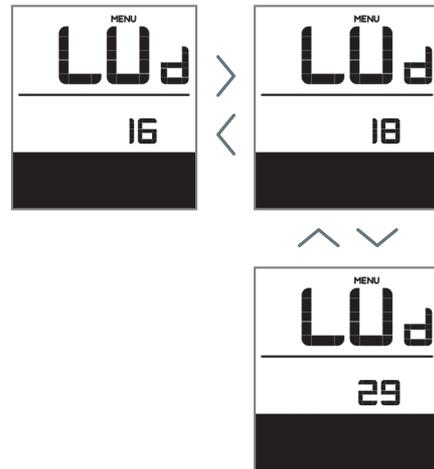
When the speed field displays PSd, it is a prompt to enter a password. Press **+**/**-** to set the four-figure password (using digits 0 to 9). Briefly press **i** to switch between the single digits of the password. The default password is "0512". Briefly press to switch between the single digits of the password. The default password is "0512". Briefly press **i** to confirm your setting. If the set password is wrong, the system automatically returns to the previous interface. If the set password is correct, the system will switch to the setting of the wheel diameter.



### 6.5.10 Wheel Diameter Selection

When the speed position displays Wd, press **+**/**-** to select the correct wheel diameter: 16/18/20/ 22/24/26, 700c, 28/29. The measurements are in inches. A wrong wheel diameter can lead to speed anomalies.

After this setting, briefly press **i** (< 0.3 seconds) to enter the setting interface of speed limit.



### 6.5.11 Speed Limit Setting

When the speed field displays SPL, the distance field displays the value of the speed limit. Press **+**/**-** **i** (< 0.3 seconds) to enter the menu of battery communication.



### 6.5.12 Battery Communication

The speed field displays b01 and the distance field displays the speed limit. Press **i** (< 0.3 seconds) to see the other information in sequence. After this setting, press **i** twice (< 0.3 seconds) to exit the menu.

- Only when communication has been established between the battery and the controller the following information will be displayed, otherwise the display will only show " - - - ".



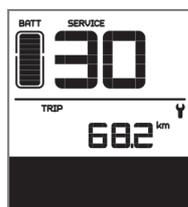
### 6.5.13 Information on the battery menu

Information Displayed in the Speed Field	Explanation
b01	current temperature
b02	maximum temperature
b03	lowest temperature
b04	total voltage
b05	current
b06	average current
b07	remaining capacity
b08	full capacity
b09	relative state of charge
b10	absolute state of charge
b11	charge/discharge cycle
b12	longest period without charge
b13	period since last charge
d01	voltage cell 1
d02	voltage cell 1
.....	.....
dn	voltage cell n

## 6.6 Error Code Definitions

The MAX-C966 display can show e-bike faults. When a fault is detected, the icon  will be displayed. In the speed field one of the following error codes will be displayed:

Error Code	Error Description	Error-shooting Method
"03"	Brake enabled	Check whether a brake cable is stuck
"04"	The throttle has not returned home	Check if throttle has returned home
"05"	Throttle fault	Check the throttle
"06"	Low voltage protection	Check the battery voltage
"07"	Overvoltage protection	Check the battery voltage
"08"	Motor hall signal cable fault	Check the motor module
"09"	Motor phase cable fault	Check the motor module
"11"	Controller temperature sensor failure	Check the controller
"12"	Current sensor failure	Check the controller
"13"	Battery temperature fault	Check the battery
"21"	Speed sensor fault	Check installation position of speed sensor
"22"	BMS communication fault	Replace the battery
"30"	Communication fault	Check the controller connection



Error display