elemex

USERS GUIDE

EX808X

Model : **EX808X**

Protocol: **Lithium II**

Version : **V7.03**

Contents

I. Safety Notes

Please read these instructions carefully before using your display.

- **Do not connect or disconnect the display while the eBike battery is powered on.**
  Always turn off the main power before installing, removing, or adjusting the display unit.

- **Avoid impacts, shocks, or excessive vibration to the display.**
  Strong impacts may cause internal damage or affect the screen's performance.

- **Do not operate the display in heavy rain, snow, or under direct sunlight for prolonged periods.**
  Extended exposure to moisture or heat may cause the display to fail or reduce its lifespan.

- **Take care when setting a passcode in settings P21 and P22 (Setting Passcode).**
  If you accidentally set or forget the settings menu passcode, there is no master code or recovery option, and you may be permanently locked out of the settings menu.
  If you forget your display settings passcode, you can still use your Tags to turn on the display; however, this will not unlock the settings menu passcode.

- **Do not disassemble, modify, or attempt to repair the display yourself.**
  Unauthorised repair or modification may cause malfunctions or void the warranty.

- **Use only compatible controllers, batteries, and communication cables as specified by the manufacturer.**
  Incompatible components may cause communication errors or damage the system.

- **Ensure all connectors are securely fastened and free from moisture or corrosion before use.**

II. Overview

1. Product Name and Model

Product Name: eBike Display

Product Model: EX808X

2. Product Introduction

The EX808X display features a high-brightness, anti-glare colour LCD with an intuitive interface. It provides a reliable human–machine interface (HMI) for EN15194-compliant electric bicycles.

3. Specifications

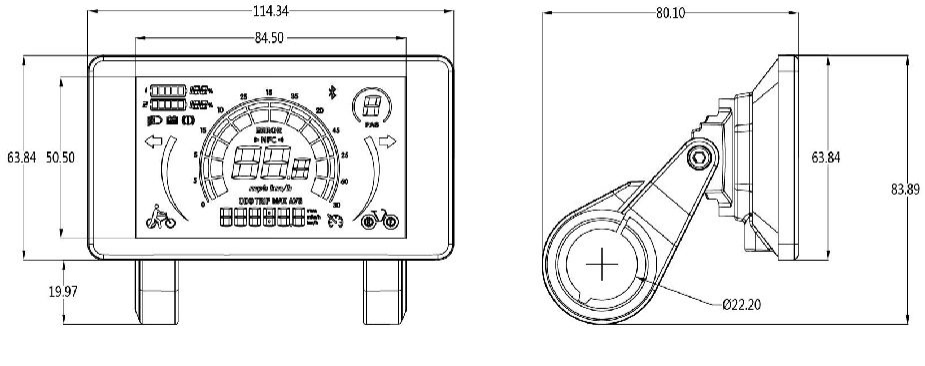
- Working Voltage: DC 24V/36V/48V/60V/72V
- Rated Working Current: 12mA
- Leakage current: <1uA
- Screen Size: 4.0” LCD
- Communication Type: UART (by default) / CAN (optional)
- Optional Functions: Bluetooth, NFC
- Working Temperature: -20°C ~ 60°C
- Storage Temperature: -30°C ~ 70°C
- Waterproof Rating: IP66

4. Functions

- Boot password
- System unit switch (km/h or mph)
- Assist Level Control and Display
- Battery indication: battery level percentage, low voltage indication
- Speed display: (in km/h or mph)
  real-time speed (SPEED), max speed (MAX), average speed (AVG)
- Distance: single-trip distance (TRIP), total travel distance (ODO)
- Assist Mode Control and Display (3/5/9 levels)

- Front light indication: Shows the front light status if supported by the controller.
- Error code indication
- Riding info: Braking status, front light status, cruise control, and low voltage.
- NFC function

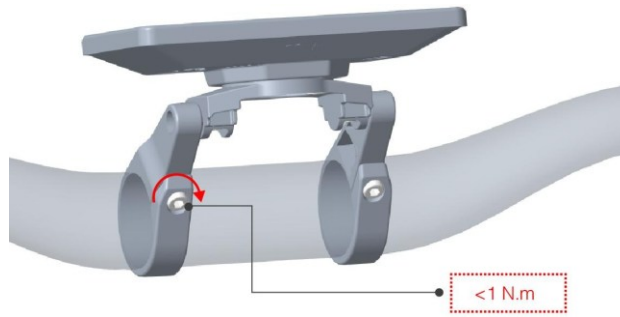
5. Size



6. Assembly

① Remove the screw on the holder ring/rubber spacer of the display and mount the display on the handlebar. Adjust it to the correct facing angle, then use an M4 hex wrench to secure and tighten the screws. **Standard fixing torque: 1 N·m.**

** Damage caused by excessive fixing torque is not covered by the warranty.*



② Remove the holder ring/rubber spacer of the keypad and mount it on the handlebar. Adjust it to the correct facing angle, then use an M3 hex wrench to secure and tighten the screws. **Standard fixing torque: 1 N·m.**

**Damage caused by excessive fixing torque is not covered by the warranty.*

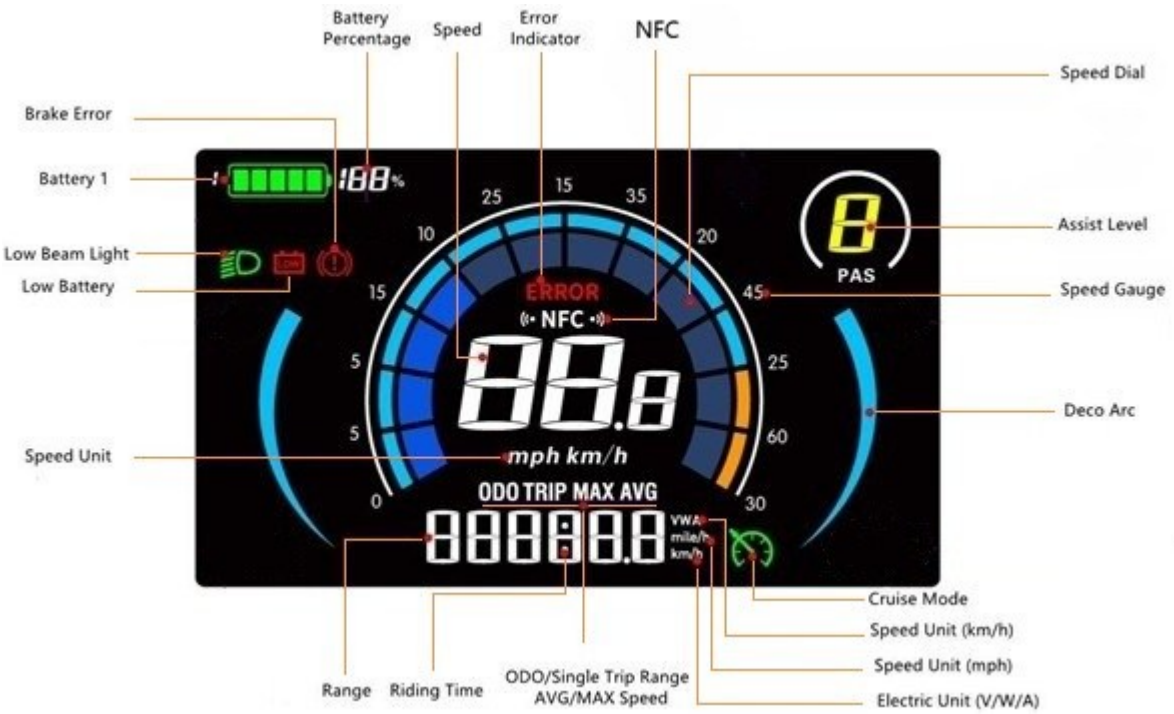
③ Plug the 5-pin display connector into the controller's coupling connector.

III. Operation

1. Display Interface

1.1 Riding Interface

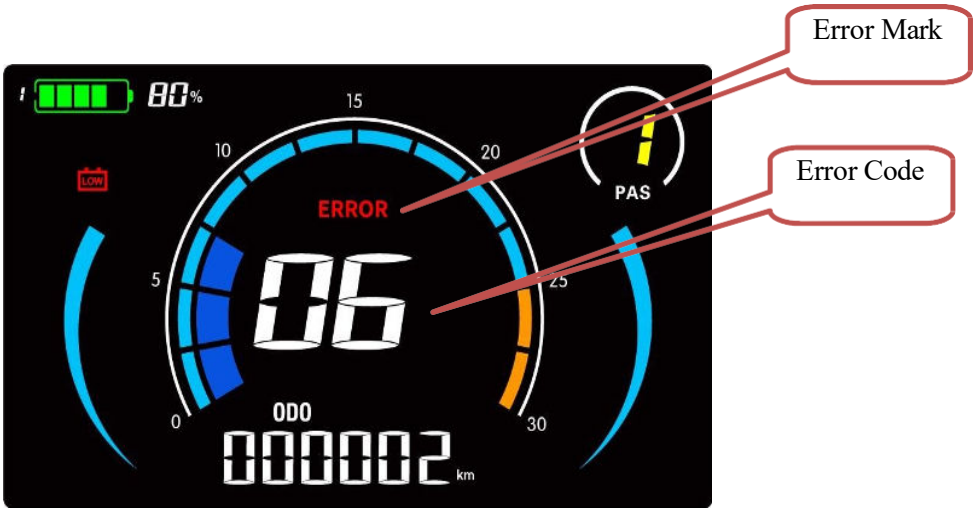
- Status: Real-time riding status - front light, low voltage, cruise control, drive status, etc.
- Battery status: Remaining battery percentage
- Multi-function section: ODO (total distance), TRIP (single-trip distance), MAX (max. speed), AVG (average speed), TIME (riding time), VOL (battery voltage), Wh (motor power), CUR (current), etc.
- Assist level mode: 3,5 or 9 levels available.



1.2 Setting Interface

Example: In the above interface the setting item is **P01**, with the parameter value of **02**.

1.3 Error Interface



Example: In the above interface the error indicator shows **ERROR**, with the error code 06.

2. Keypad Functions

Keypad illustration:

There are five keys on the keypad, which are referred to as follows:

+ Plus Key

⏻ ON/OFF key

Minus/Walk Assist Key

Light Key

i Info Key

3. Key Operations

Key operation guide as follows:

Press and Hold: Press and hold the key(s) for more than 2 seconds.

Press: Press the key(s) for less than 0.5s.

Double Tap: tap the key(s) twice within 0.3 seconds.

3.1 ON/OFF

Turn on the Display: When the display is off, press and hold the ON/OFF key to turn it on. The boot interface will appear, and then the display will enter the riding interface. (If the boot passcode is activated, enter the passcode at startup).

Turn off the Display: When the display is on, press and hold the ON/OFF key to turn it off. If there is no operation for 10 min (0 km/h), the display will turn off automatically. The auto-off time can be adjusted in the settings.

3.2 Assist Level

Press the **Plus key** or **Minus / Walk-assist key** to switch assist levels. There are five levels by default: 0, 1, 2, 3, 4, 5, where 0 means no assist power.

3.3 Toggle Displays

When the display is on, press the **Info key** to toggle between ODO (total distance), TRIP (single-trip distance), TIME (riding time), and other display options.

3.4 Light ON/OFF *(If supported by the controller)*

Turning on the front light: When the front light is off, press the **Light key** to turn it on, and the light icon will appear on the riding interface. (To disable this function, reconfigure the controller.)

Turn off the Front Light: When the front light is on, press the **Light key** to turn it off, and the light icon will turn off on the riding interface.

3.5 Walk-Assist Mode

Engaging walk-assist mode: On the riding interface, press and hold the **Minus / Walk-assist key** to enter walk-assist mode. While holding the key, the walk-assist icon will appear on the riding interface, and the real-time speed will be shown in the speed section.

Disengaging walk-assist mode: Release the **Minus/Walk-assist key** to disengage walk-assist mode. The walk-assist icon will disappear.

3.6 Dual Drive Control *(If supported by the controller)*

On the riding interface, press and hold the **Plus key** to switch the drive mode. The mode will toggle in the following sequence: Rear Drive → Front Drive → Dual Drive, and the corresponding wheel on the icon in the bottom-right corner will blink (e.g. the rear wheel of the icon will blink in Rear Drive mode).

4. Settings

4.1 Setting Operations

① **Enter the Settings:**

When the display is on, press and hold the **Plus key** and the **Minus / Walk-assist key** together to enter the settings. Available setting items include system voltage, wheel size (inches), number of magnets for the speed sensor, speed limit, and other options *(please refer to section 4.2, Setting Items).*

② **Adjust Settings:**

On the settings interface, press the **Plus key** or the **Minus / Walk-assist key** to adjust the values for each item. The value will blink after being changed. Press the **ON/OFF key** to save the value and move to the next item.

③ **Save and Exit Settings:**

To save and exit the settings, press and hold **ON/OFF (Red) button, t**he

system will save the changes and exit automatically.

4.2 Setting Items

- **P01: Backlight Brightness** – 1: darkest; 3: brightest.
- **P02: System Unit** – 0: km (metric); 1: mile (imperial).
- **P03: System Voltage:** 24V/36V/48V/60V/72V.
- **P04: Auto-Off Time**

0: Never, any other value sets the auto-off time interval. (Unit: minutes)

- **P05: Pedal-Assist Level**
  - 0-3 Level Mode; 1-3 Level Mode (no Level 0)
  - 0-5 Level Mode; 1-5 Level Mode (no Level 0)
  - 0-9 Level Mode; 1-9 Level Mode (no Level 0)
- **P06: Wheel Size.** Unit: inch; Increment: 0.1.
- **P07: Motor Magnets Number for Speed Gauge.** Range: 1-100

P08: Speed Limit. *(If supported by the controller)*

Range: 0–100 km/h, communication status (controller-controlled). The maximum speed will be maintained at the set value.

Error value: ±1 km/h (applicable to both PAS and throttle modes)

Note: The above values are measured in metric units (km/h). When the system unit is set to imperial (mph), the displayed speed will automatically switch to the corresponding imperial value; however, the speed limit value in the imperial interface will not change.

- **P09: Direct Start / Kick-to-Start**
  - 0: Direct Start (Throttle-on-demand);
  - 1: Kick-to-Start.

Note: The motor will not spin using the throttle unless a pedal-assist system is installed and the motor hub wheel is rotating.

- **P10: Drive Mode Setting**
  - **0: Pedal-Assist** – The pedal-assist level determines the motor power output. (In this mode, the throttle will be deactivated.)

- **1: Electric Drive** – The eBike is controlled only by the throttle. (In this mode, the pedal-assist function will be deactivated.)
- **2: Pedal-Assist + Electric Drive** – In this mode, both pedal-assist and throttle can be used, but the throttle becomes active only after you start pedalling.

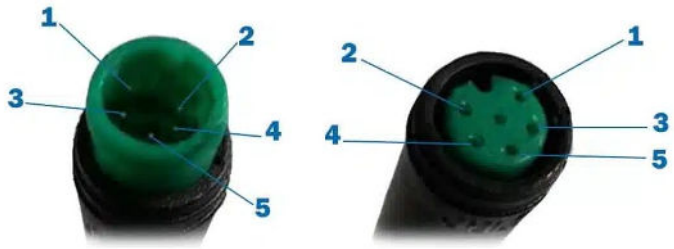
- **P11: Pedal-Assist Sensitivity** - Range: 1-24.
- **P12: Pedal-Assist Starting Intensity** - Range: 0-5.
- **P13: Magnets Number in Pedal-Assist Sensor** - 3 Types: 5/8/12pcs.
- **P14: Current Limit Value** - default: 12A. Range: 1-20A.
- **P15: Display Low Voltage Value** - Battery cutoff voltage.
- **P16: ODO Clearance** - Press and hold the **Plus key** for 5s to clear/reset the ODO value.
- **P17: Cruise control** - 0: cruise function deactivated; 1: cruise function activated.
- **P18: Throttle Level Control** - 0: throttle speed is not divided into different levels; 1: throttle speed is set to match the pedal-assist levels.
- **P19: Auto-Light** - *(if supported by the controller)* - 0: Auto-light deactivated; 1: Auto-light activated.
- **P20: Light Sensor Sensitivity** - Range: 20-100
- **P21: Boot Passcode** - 4-Digit. (set by user).
- **P22: Passcode for Advanced Settings** - 4-Digit. (set by user).

Caution: A code may be set accidentally, so use this function carefully. If the code is forgotten, the settings menu will be permanently locked with no recovery option.

5. Error Code

Error Code (decimal)	Status	Definition
E00	Normal	-
E01	Reserved	-
E02	Brake Error	Loose brake connections
E03	PAS Sensor Error (Riding Mark)	PAS not identified
E04	Walk Assist Mode	-
E05	Real-Time Cruise	-
E06	Low Voltage Protection	Check for loose connection/Bad battery or unmatched battery voltage
E07	Motor Error	Damaged motor cable/Motor cable loose connection
E08	Throttle Error	-
E09	Controller Error	Faulty controller/Loose connection
E10	Communications Error	-
E12	BMS Communications Error	Over current/Overheated or bad battery
E13	Front Light Error	Dead Light/Loose light connection

6. Connection



Display to Controller Controller to Display

IV. Warranty

Elemex provides a 12-month limited warranty from the date of purchase, covering defects in materials and workmanship under normal use.

The warranty does not cover:

- Products that have been opened, modified, or repaired without authorisation
- Connector damage
- Cosmetic damage (housing, screen, buttons, etc.) after delivery
- Damaged or cut wires and cables after delivery
- Damage caused by accidents, fire, lightning, or natural disasters
- Units outside the warranty