

WM-E LCB® - Quick Installation Guide

INTERFACES

Power supply – AC power input, 2-pins terminal block

Relay 1..2 – latching relay, 16A 250V AC, switch modes: NO, NC, COM, terminal block

Relay 3..4 – latching relay, 16A 250V AC, switch mode: NC, COM, terminal block

RJ45 connector features:

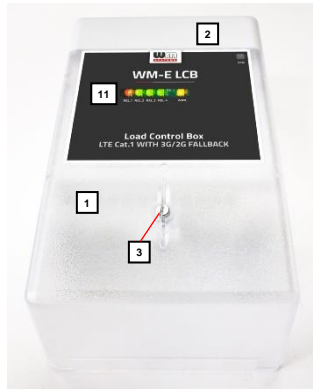
- **Ethernet** – 10/100Mbit, RJ45 port, by UTP Cat5 cable
- **RS485** – for external devices by Y-shaped cable
- **P1 interface** – for smart meters by Y-shaped cable

LED1..LED4/WAN – Status LEDs

SIM – Push insert SIM card slot (mini SIM, type 2FF)

micro-SD card slot – for memory cards (max. 32 GByte)

Internal LTE Antenna – adhesive, surface mountable



CURRENT & CONSUMPTION / OPERATING CONDITIONS

Power input: ~100-240V AC, +10% / -10%, 50-60Hz +/- 5%

Consumption: Minimal: 3W / Average: 5W / Max: 9W (0.25A)

Cellular module options:

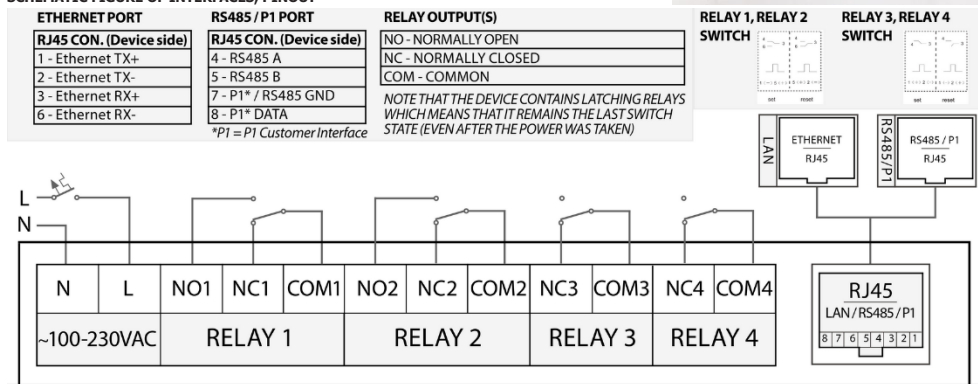
- LTE Cat.1: Telit LE910C1-EUX (LTE Cat.1: B1, B3, B7, B8, B20, B28A / 3G: B1, B3, B8 / 2G: B3, B8)
- LTE Cat.M / Cat.NB: Telit ME910C1-E1 (LTE M1 & NB1 B3, B8, B20)

Operating / storage temperature: between -40°C and +85°C, 0-95% rel. humidity

Size: 175 x 104 x 60 mm / **Weight:** 420gr

Enclosure: IP52 ABS plastic with transparent terminal cover, can be mounted on rail / to wall

SCHEMATIC FIGURE OF INTERFACES, PINOUT



CAUTION! DO NOT CONNECT ~100-240V AC POWER SOURCE to the pigtail AC CONNECTOR (24) OR THE POWER INPUT (12) OF THE DEVICE until you did not finish with the wiring! WHEN OPEN THE ENCLOSURE, ALWAYS ENSURE THAT THE PCB IS NOT CONNECTED TO THE POWER SOURCE and the supercapacitors are exhausted (LED SIGNALS ARE INACTIVE) BEFORE TOUCH THE PCB!

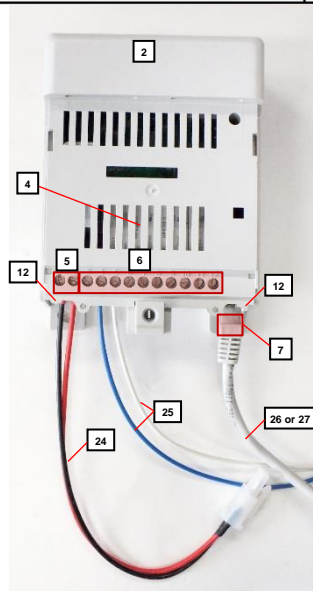
INSTALLATION STEPS

1. Remove the plastic, transparent port top cover protector (1) by releasing the screw (3) from the top of the enclosure.
2. Slide up the plastic part (1) carefully at the bottom side of the base (2), then remove the top cover (1).
3. Now you can free to connect wires and cables to the ports and interfaces. Carefully open up the plastic hooks (12) of the base enclosure (2) by a screwdriver.
4. Now the plastic base can be seen with the assembled PCB (4) inside. Open up the PCB (4) and remove from the base (2), then turn the PCB upside down. Now you can see the bottom side of the PCB.
5. Insert a mini SIM card (activated with APN) into the the SIM holder (23). Check the figure on next page: the SIM's cutted edge must be oriented to the PCB and the SIM chip looks down. Insert and push the SIM until it will be fastened (you will hear a click sound).
6. You can use a micro-SD card if you want (optional). Then insert the memory card into the mini-SD card slot (22) and push until it will be fastened securely.
7. Now turn back the PCB and place back into the enclosure base (2).
8. Check on the PCB that the LTE antenna cable (16) is connected to the Antenna RF connector (15).
9. Place back the removable white ABS plastic top part to the base (2) – check that the hooks (12) are closing.
10. Do the wiring according the needs – based on the schematic figure (above).
11. Connect the AC power chord (AC pigtailed connector) wires (24) to the first two pins (5) of the device (from left to right): **black** to N (neutric), **red** to L (line).
12. Connect the lighting unit relay wires (25) of the street light cabinet box - to the required relay outputs (6).

Note that the RELAY 1..2 are latching relays, which allows the NO, NC, COM connection and switching modes, while the RELAY 3..4 having only NC, COM connection and switching mode.

13. Connect the Y-shaped UTP cable (27) – for Ethernet / RS485 / P1 - or a direct UTP cable (26) – for Ethernet only - to the RJ45 port (7) – according to the needs. The other side of the Ethernet cable should be connected to your PC or the external device you want to connect.

Note, that RS485 / P1 interface wires are standalone sleeve swing wires (28).



14. Connect the RS485 to the external device. The P1 interface is available for connecting an electricity meter / smart metering modem.
15. Place back the plastic transparent terminal top cover (1) to the base (2).
16. The device enclosure contains a two-type of fixation, which are to be intended to mount to rail or using a 3-point fixation by screws, or using the hook (in hanging position to a wall / into the street light cabinet box).
17. Plug the 100-240V AC power supply to the pigtail connector of the AC power cable (24) and to the external power source / electricity plug.
18. The device has a pre-installed system. The current status of the device is indicated by its LED lights (11).

LED LIGHTS - Check the *Installation manual* for more info.

REL.1: Relay#1 (mode: NO, NC, COM) SET/RESET available

REL.2: Relay#2 (mode: NO, NC, COM) SET/RESET available

REL.3: Relay#3 (mode: NC, COM) no RESET pin, SET negated

REL.4: Relay#4 (mode: NC, COM) no RESET pin, SET negated

WAN LED: for network connection (LAN/WAN activity)

Note, that the device has supercapacitor component inside, which provides safe shutdown in case of power outage. In case of a power outage - due to the supercapacitors - has enough power to provide a safe disconnection and shutdown (before the supercapacitors will be exhausted). The supercapacitor can be exhausted after an outage or if you store the device for months without connecting power. It must be charged before usage!

STARTING THE DEVICE

1. When powering on the device, the recharge of the supercapacitor will be started automatically. The device's system will be started only after the end of the charge process.
2. Connect the Ethernet (UTP) cable between the device's **RJ45** interface or its **Y-shaped cable adapter** and your PC's Ethernet port. (The RS485 device should be connected to the Y-shaped cable's other port.)
3. Configure the **Ethernet** interface's on your PC for TCP/IPv4 protocol for setup the **IP address:** 192.168.127.100 and **subnet mask:** 255.255.255.0
4. Start the device by adding the **AC power** to the power input (5).
5. **All the four LEDs** will be **blank** for a few seconds – its normal. (If the device was not used since long time, the supercapacitors must be charged before the microcontroller could start the device.)
6. After a few seconds only the **WAN LED** will be lighting continuously by **red** until the supercapacitors will be charged (the device still not started). It could take about 1-4 minutes.
7. When the charge has been finished, the device will be started. It will be signed by **red** lighting of all the relay LEDs (**REL.1..4**) for 3 seconds and by the **WAN LED** which is lighting by **green** shortly. This means that the device has been started.
8. Very soon, when the **WAN LED** will be **blank** and all the relay LEDs (**REL.1..4**) will be continuously lighting by **red***, that means the device is currently booting. It takes about 1-2 minutes. *Remember, if you already connected a relay, that will sign the current status of the relay by its right status (**red** means switched OFF, **green** means switched ON).
9. At the end of the boot process the device can be reached on its network interfaces (**LAN** and **WAN**) if they were already configured. If the current network interface is available, it is signed by the **WAN LED** signal.
10. When the device is accessible on the configured **LAN** interface, the **WAN LED** will be lighting continuously by **green**. (If it is flashing fastly, it signs network activity on the interface.)
 - When **WAN** interface was already configured, and APN is connected, the **WAN LED** will be lighting by **red**. (If it is flashing fastly, it signs network activity.)
 - If **LAN** and **WAN** are accessible, the **WAN LED** will active by bi-color (**red** AND **green** at the same time), apparently by **yellow**. Flashing signs network activity.

CONFIGURING THE DEVICE

1. Open the device's local website in **Mozilla Firefox** browser, where the default web user interface (LuCI) address on **Ethernet** port is: <https://192.168.127.1:8888>
2. Login with the **Username: root**, **Password: wmrpww** and push to the **Login** button.
3. Configure the SIM card's **APN** settings: open the **Network / Interfaces** menu, **WAN** interface, **Edit** button.
4. Fill the **SIM #1 APN** (APN setting of your SIM card). If you have **PIN** code on the SIM card that you are using, add the right **PIN** here. (Ask your Mobile Operator.)
5. Click to the **Save & Apply** button to store the settings and configuring the cellular module. Soon (~10-60 seconds) the cellular module will be configured regarding the new settings.
6. Then the device will try to connect and register the SIM to the network. The availability of the mobile network will be signed by the **WAN LED** (lighting / flashing by **green** – together with the **Ethernet** LED, apparently **yellow** (**red** + **green** LED activity at the same time). When the module has been successfully registered to the APN, it will be having data traffic on the **WAN** interface - check at **Rx/Tx** values. You can check **Status / Overview** menu, **Network** part for more details.
7. To configure **RS485 settings**, read the *User manual*.

DOCUMENTATION & SUPPORT

The documentations can be found on the product website: <https://m2mserver.com/en/product/wme-lcb/>
In case of product support request, ask our support at the olsupport@wmsystems.hu email address or check our support website for the further contact opportunities please: <https://www.m2mserver.com/en/support/>

This product is marked with the CE symbol according to the European regulations. The crossed out wheeled bin symbol means that the product at the end of its life cycle should be disposed of with general household waste within the European Union. Only discard electrical/electronic items in separate collection schemes, which cater for the recovery and recycling of materials contained within. This refers not only to the product, but also to all other accessories marked with the same symbol.

