



CBOX-10

**THE SMARTEST
STREET LIGHTING
CONTROL DEVICE
IN TOWN**

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SAFETY AND WARNINGS

CAUTION

Only qualified persons are allowed to install and start up Citylight products.

Inappropriate opening of the products is prohibited.

Prior to installing and commissioning the CBOX-10, read these instructions carefully.

Please keep these instructions as you may need them later.



WARNINGS

Ensure that the AC power mains are turned OFF before removing the cover, handling the wiring, or any other work is carried out on CBOX-10.

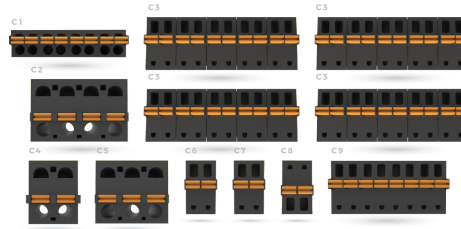
DO NOT apply power to the device until you have checked all wiring connections and you are instructed to apply power.

Observe all the applicable safety and accident prevention regulations.

WHAT'S IN THE SET



CBOX-10



GSM ANTENNA



CURRENT TRANSFORMERS

REQUIRED

FLAT-HEADED SCREW-DRIVER



3mm

DIN RAIL



WIRES



0,2...2,5
mm²

WRENCH



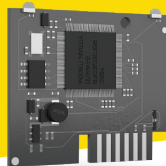
22mm

DRILL



19mm

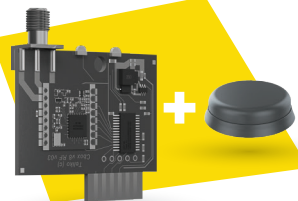
OPTIONAL



PLC

CBOX-10-PLC

or



RF

CBOX-10-RF

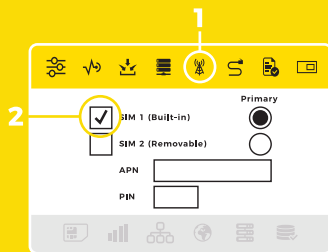
COMMUNICATION

Select one of the connection types. To provide the service, even if the primary connection is not working, multiple connections can be used simultaneously. If a LAN connection is used, it is used as the primary one.

BUILT-IN SIM

A built-in SIM card is provided by Citylight.net as an option. The service fee is charged according to the price list:

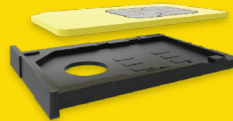
www.citylight.net/subscription



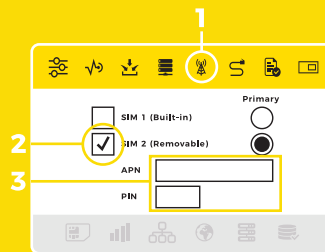
1. Press the “GSM” button on the screen.

2. Choose the SIM 1 built-in option.

SIM



Insert the SIM card in the SIM card holder and insert the holder in the CBOX-10.

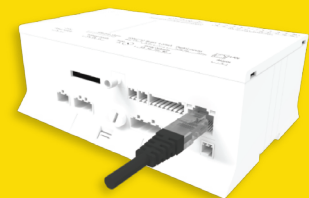


1. Press the “GSM” button on the screen.

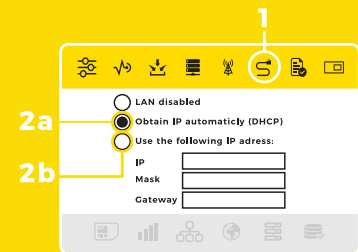
2. Choose the SIM 2 removable option.

3. Enter your APN and PIN number. If the PIN code is removed you can leave the PIN field blank.

LAN



Insert the LAN cable in the cable socket.



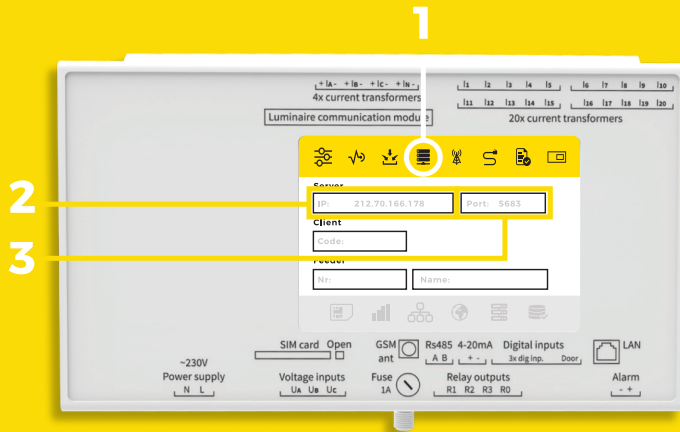
1. Press the “LAN” button on the screen.

2a. Choose “Obtain IP” automatically.

2b. Or use the option to add your IP, mask and gateway manually.

ADDING CBOX TO THE SYSTEM

SERVER



1. Press the “SERVER” button on the screen.

2. Enter the server address.

3. Enter the port number.

Default settings for Teliko server:
IP: 212.70.166.178
Port: 5684

SETTING UP FEEDER TO THE SYSTEM



1. Press the “System overview” button on the screen.

2. Write down the CBOX-10 unique ID number.

3. Login www.citylight.net

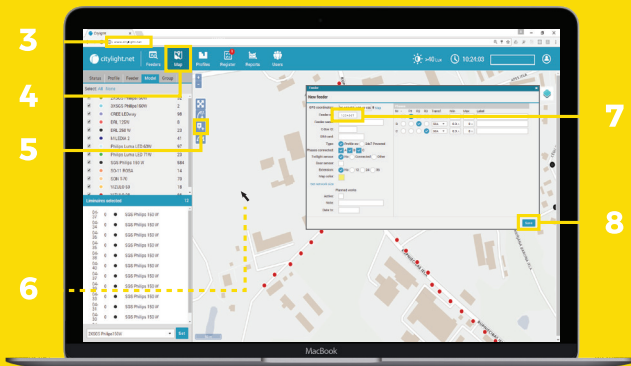
4. Click the “Map” icon.

5. Press the “Add feeder” icon.

6. Click on the map (the place where the feeder is located).

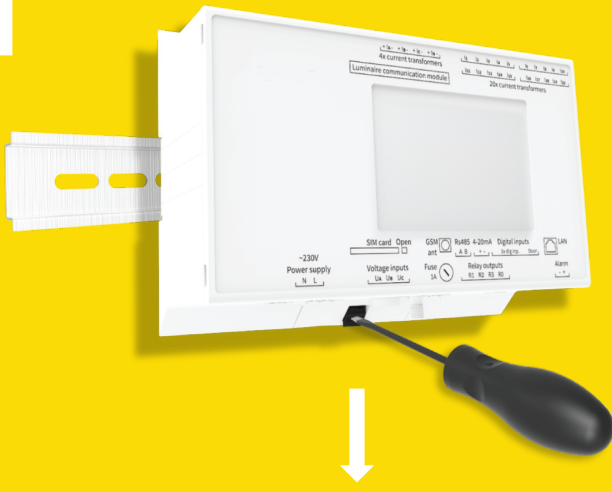
7. On the pop-up panel enter the unique CBOX-10 ID.

8. Click “Save”.



INSTALLING ON THE DIN

1



Open the fixing brackets of the CBOX-10 using flat-headed screwdriver.

2



Place the CBOX-10 on the DIN rail.

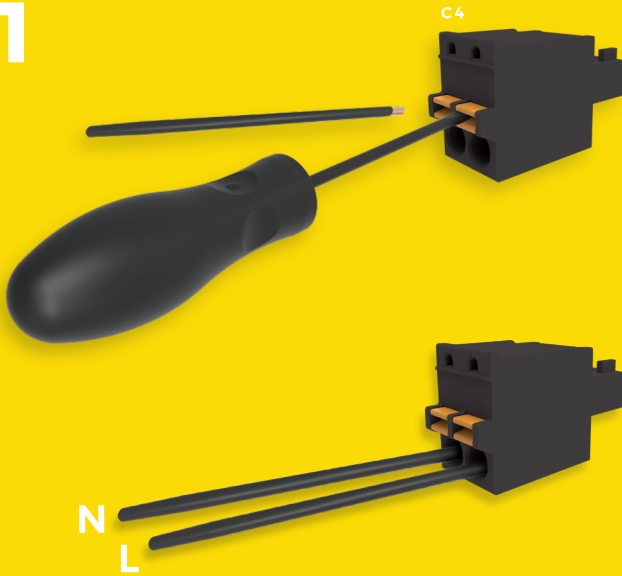
3



Fasten CBOX-10 by closing the fixing brackets.

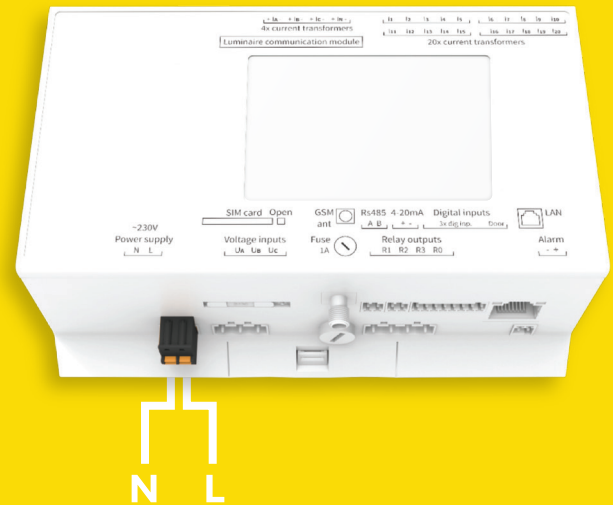
MAINS (230V)

1



Using a flat-headed screwdriver, press down the upper jaws of the plug and insert the sensor cable wires into the lower jaws. Fasten the wires by releasing the upper jaws.

2

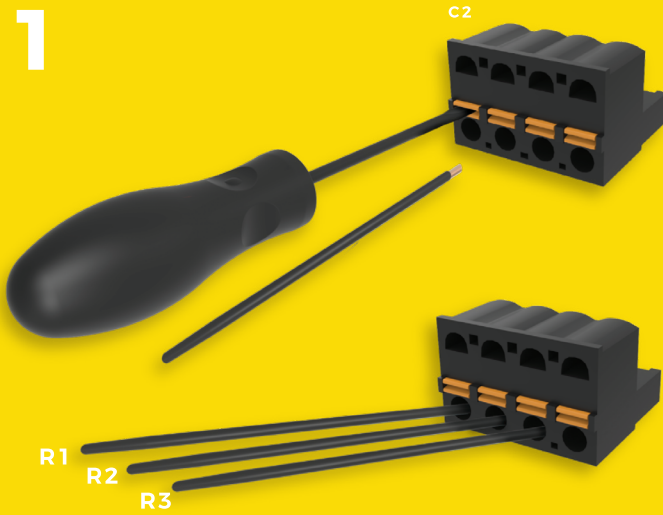


Insert the plug into the CBOX-10



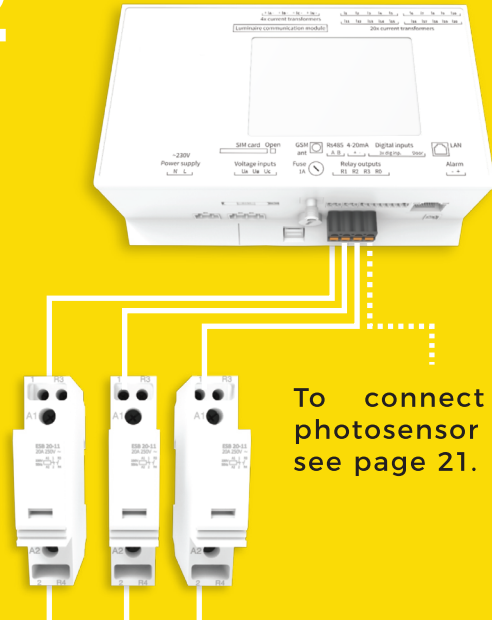
NOTE: Pay attention to wiring labels and connect them properly!

1



Using a flat-headed screwdriver, press down the upper jaws of the plug and insert the sensor cable wires into the lower jaws. Fasten the wires by releasing the upper jaws.

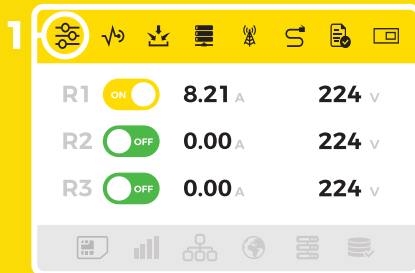
2



To connect with photosensor please see page 21.

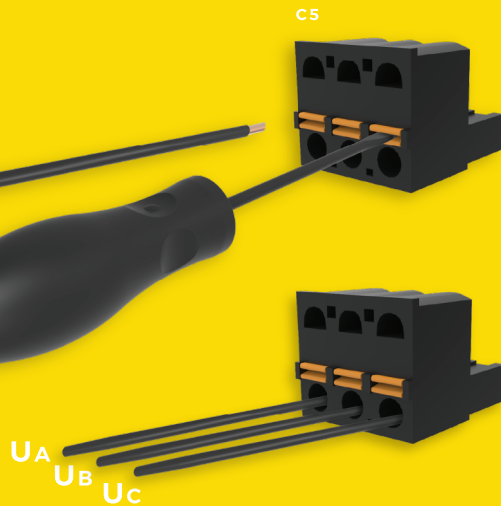
Insert the plug into the CBOX-10 and connect the relays to the wires as shown above. Connect the R0 to the photosensor.

3



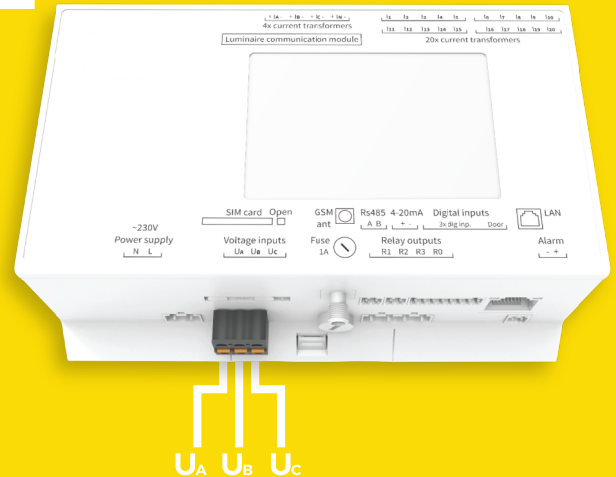
Check if the relays are turned on and are working properly.

1



Using a flat-headed screwdriver, press down the upper jaws of the plug and insert the sensor cable wires into the lower jaws. Fasten the wires by releasing the upper jaws.

2



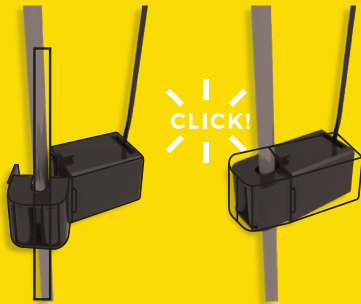
Insert the plug into the CBOX-10.



NOTE: Voltage input should be connected to continuous power supply (before the contactor).

CURRENT TRANSFORMERS

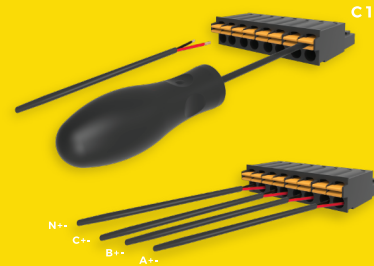
1



Open the current transformer and place it on the cable. Close it and check if the current transformer has been entirely closed and fully fixed.

NOTE: Choose the right size and power current circuit and make sure that you have the proper length cable.

2



Using a flat-headed screwdriver, press down the upper jaws of the plug and insert the sensor cable wires into the lower jaws. Fasten the wires by releasing the upper jaws. Current transformer for N is used to detect leakage.

NOTE: Sequentially connect the current transformers according to the sequence of the phases.

3



Insert the plug into the CBOX-10.

4

1. Click the "Current transformer settings" button.

2. Choose the size of current transformers (50A or 100A) at the control panel.

3. Click "Detect wiring", to set phases to corresponding relays.

	Voltage	I(A)	R1	R2	R3	I(A)	R1	R2	R3	I(A)	R1	R2	R3
A	0	0				1	0			11	0		
B	0	0				2	0			12	0		
C	0	0				3	0			13	0		
						4	0			14	0		
						5	0			15	0		
						6	0			16	0		
						7	0			17	0		
						8	0			18	0		
						9	0			19	0		
						10	0			20	0		

C.transformer: 50A 100A

Leakage (Norm.IA):

Detect wiring

▲ Relays will be switched automatically

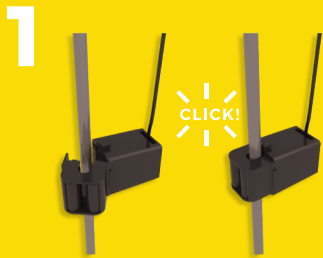
Min. current (A): 0.5

1. Click the "Current transformer settings" button.

2. Choose the size of current transformers (50A or 100A) at the control panel.

2. Click "Detect wiring", to set phases to corresponding relays.

EXTENSION CURRENT TRANSFORMER



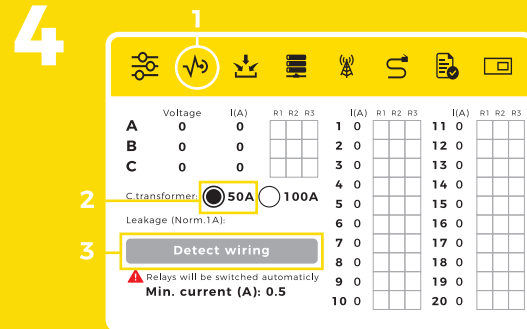
Open the current transformer and place it on the cable. Close it and check if the current transformer has been entirely closed and fully fixed.



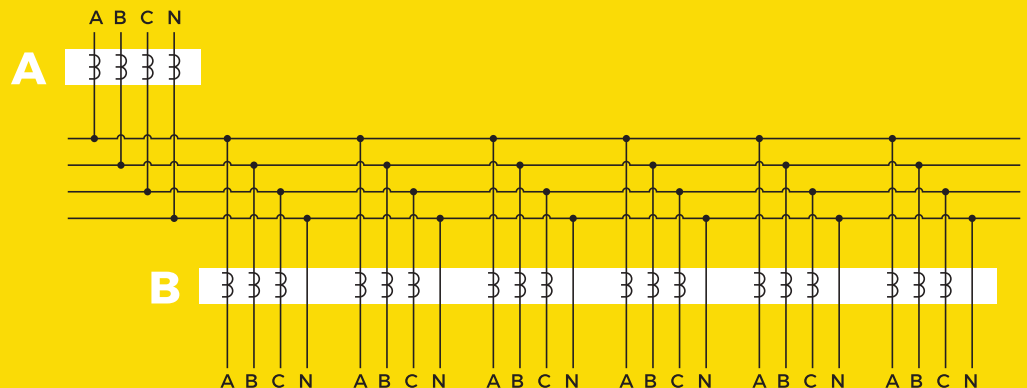
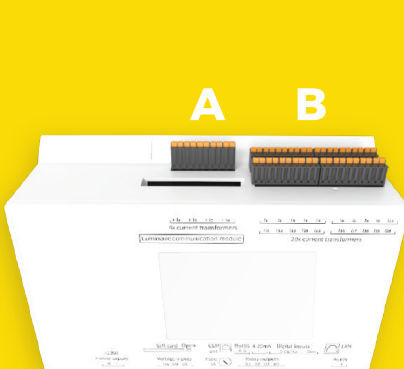
Using a flat-headed screwdriver, press down the upper jaws of the plug and insert the sensor cable wires into the lower jaws. Fasten the wires by releasing the upper jaws.



Insert the plug into the CBOX-10.



1. Press the “Current transformer settings” button.
2. Choose the 50A C.transformer.
3. Click “Detect wiring”, to set cables to corresponding relays.



GSM ANTENNA

1



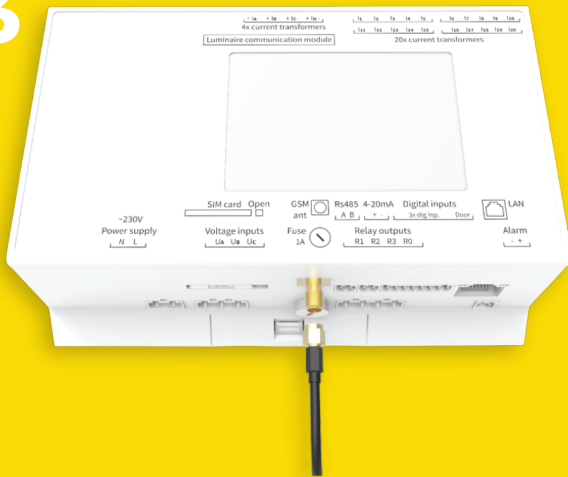
Using a drill create a hole in the casing of the streetlight cabinet.

2



Insert the antenna and fasten it by tightening the nut with the wrench.

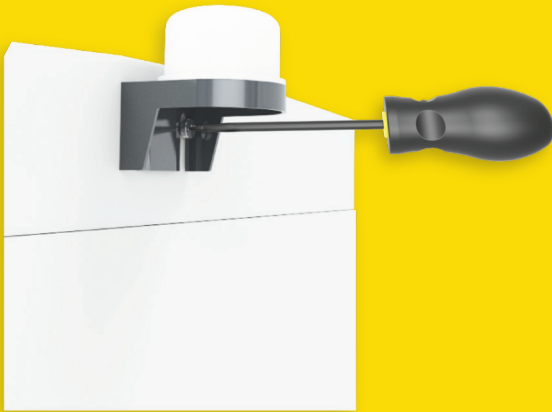
3



Connect the antenna plug to the CBOX-10 and fasten it.

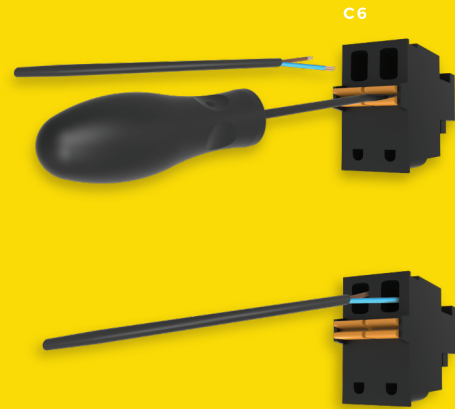
TWILIGHT SENSOR

1



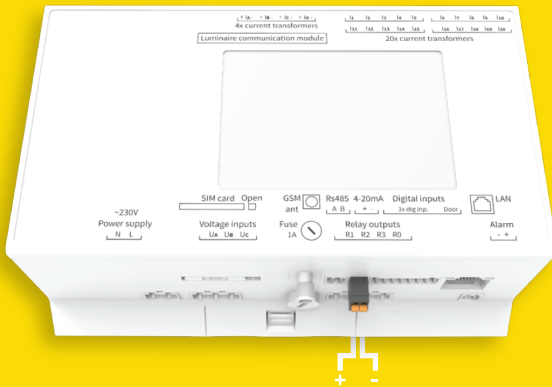
Fasten the light sensors to the wall or pole using screws.

2



Using a flat-headed screwdriver, press down the upper jaws of the plug and insert the sensor cable wires into the lower jaws. Fasten the wires by releasing the upper jaws.

3



Insert the plug into the CBOX-10.



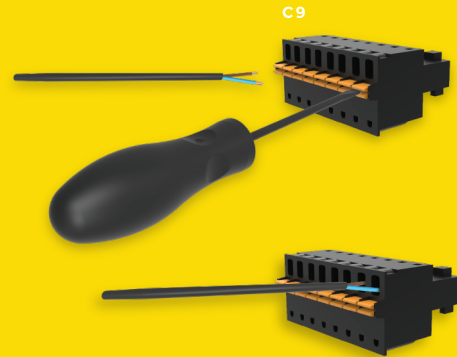
NOTE: Place light sensor so that artificial lighting does not shed light onto it.

DOOR SWITCH/ DIGITAL



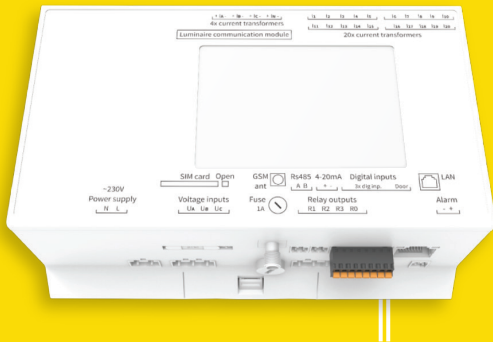
Fix the door sensor to the streetlight cabinet wall and its doors, so that in a closed state the distance between the sensors does not exceed 10 mm.

2



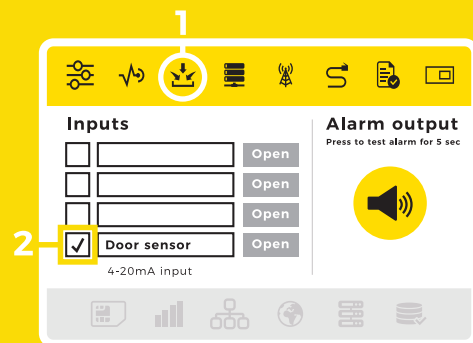
Using a flat-headed screwdriver, press down the upper jaws of the plug and insert the cable wires into the lower jaws. Fasten the wires by releasing the upper jaws.

3



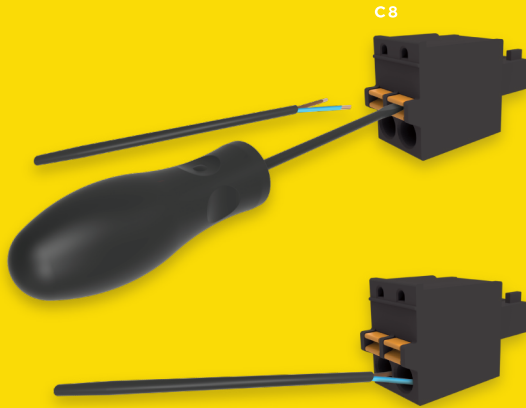
Insert the plug into the CBOX-10.

4



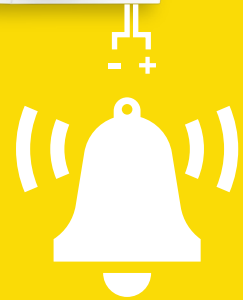
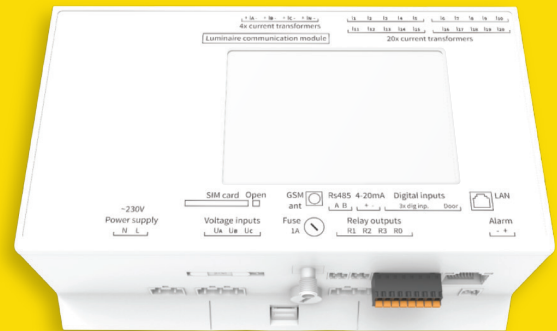
1. Press the "Input/Output" button.
2. Make sure that door switch is activated in the "input" panel.

1



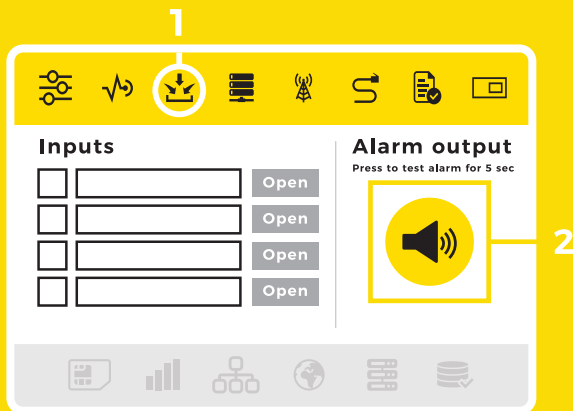
Using a flat-headed screwdriver, press down the upper jaws of the plug and insert the cable wires into the lower jaws. Fasten the wires by releasing the upper jaws.

2



Connect the cable wires to your choice of alarm (12V).

3



1. Press the "Input/Output" button.
2. To make sure the alarm is connected properly, please hold down the "check sound" icon on the right for 5 sec.

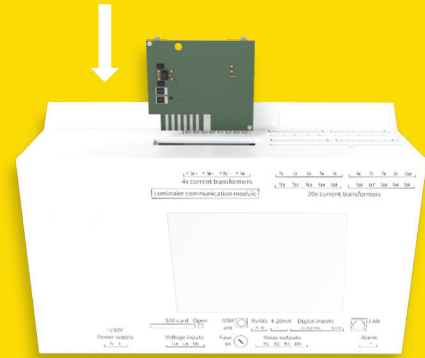
POWER LINE COMMUNICATION MODULE (PLC)

1



1. Make sure that CBOX-10 is disconnected from the power supply and wait 30 sec.

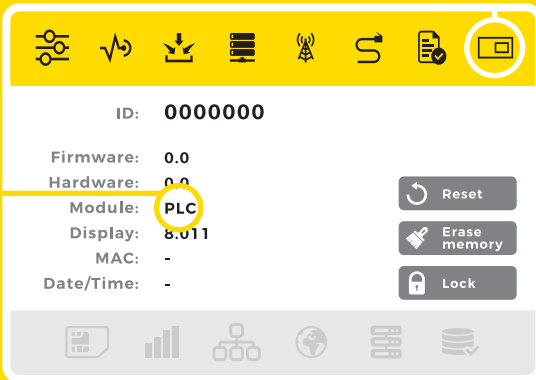
2



Insert the PLC module into the CBOX-10.

3

1



1. Press the “System overview” button.
2. Make sure that PLC module is installed properly and is connected to the server.

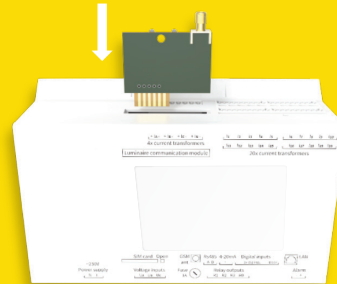
RADIO FREQUENCY MODULE (RF)

1



1. Make sure that CBOX-10 is disconnected from the power supply and wait 30 sec.

2



Insert the RF module into the CBOX-10.

3



Using a drill create a hole in the casing of the streetlight cabinet.

4



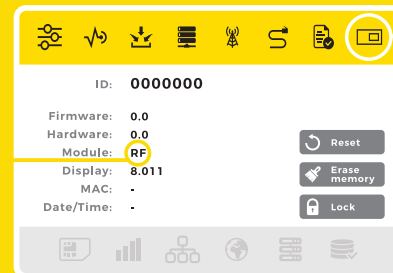
Insert the antenna and fasten it by tightening the nut with a wrench.

3



Connect the antenna plug to the CBOX-10 and fasten it.

2



1. Press the "CBOX-10" button.









2. Make sure that the RF module is installed properly and is connected to the server.








NOTE: Make sure that the lights are equipped with a light control system PLC. Don't forget to check and turn on the relays.

MAIN MENU

R1	<input checked="" type="checkbox"/>	8.21 A	224 V
R2	<input type="checkbox"/>	0.00 A	224 V
R3	<input type="checkbox"/>	0.00 A	224 V

-  PHASE OVERVIEW
-  CURRENT TRANSFORMER SETTINGS
-  INPUT/OUTPUT
-  SERVER SETTINGS
-  GSM SETTINGS
-  LAN SETTINGS
-  LOG
-  SYSTEM OVERVIEW

-  BUILT-IN SIM CARD
-  REMOVABLE SIM CARD
-  SIM OK (ACTIVE)
-  SIM ERROR
-  SIM CARD OK (IN RESERVE)

-  3G GSM COVERAGE
-  2G GSM COVERAGE
-  GSM COVERAGE - EXCELLENT
-  GSM COVERAGE - GOOD
-  GSM COVERAGE - NORMAL
-  GSM COVERAGE - POOR
-  NO GSM COVERAGE

-  LAN OK
-  LAN ERROR

-  INTERNET OK
-  INTERNET ERROR

-  CONNECTED TO SERVER
-  CONNECTION TO SERVER ERROR

-  CONNECTION WITH DATA BASE OK
-  DATABASE DOESN'T RESPOND OR CBOX ID DOESN'T EXIST IN DATABASE

UNABLE TO CONNECT TO THE SERVER

Make sure the CBOX-10 is connected to the power source. Check if the antenna is connected and working properly. Make sure the CBOX-ID is entered precisely.

CAN'T COLLECT POWER COMPUSUMPTION MEASUREMENTS

Make sure all current transformers (R1, R2, R3 and N) are connected properly. Check if all of the current transformers have been entirely closed and fully fixed.

WHY CBOX8 ISN'T WORKING PROPERLY WITH MY REMOVABLE SIM CARD

Check if the APN configuration has been made properly or contact our support team.

IF CBOX-10 HAS "FROZEN"

Try resetting the CBOX-10 manually by pressing the restart button on the device once for a short period of time.

1 LAN - no PHY link

2 LAN - socket init error

3 LAN - socket establish error

5 LAN - DHCP error

6 LAN - DHCP error

7 LAN - DHCP error

8 LAN - DHCP error

9 LAN - DHCP error

11 GSM - PIN error

12 GSM - module error

13 GSM - module error

14 GSM - module error

20 GSM - IMSI error

21 GSM - no APN

22 GSM - IMEI error

23 GSM - GSM network registration error

24 GSM - GSM network registration error

25 GSM - GPRS registration error

26 GSM - GPRS registration error

27 GSM - GPRS registration error

28 GSM - GPRS registration error

29 GSM - GPRS registration error

30 GSM - APN error

31 GSM - connect to internet error

32 GSM - connect to server error

33 GSM - connect to server error

34 GSM - connect to server error

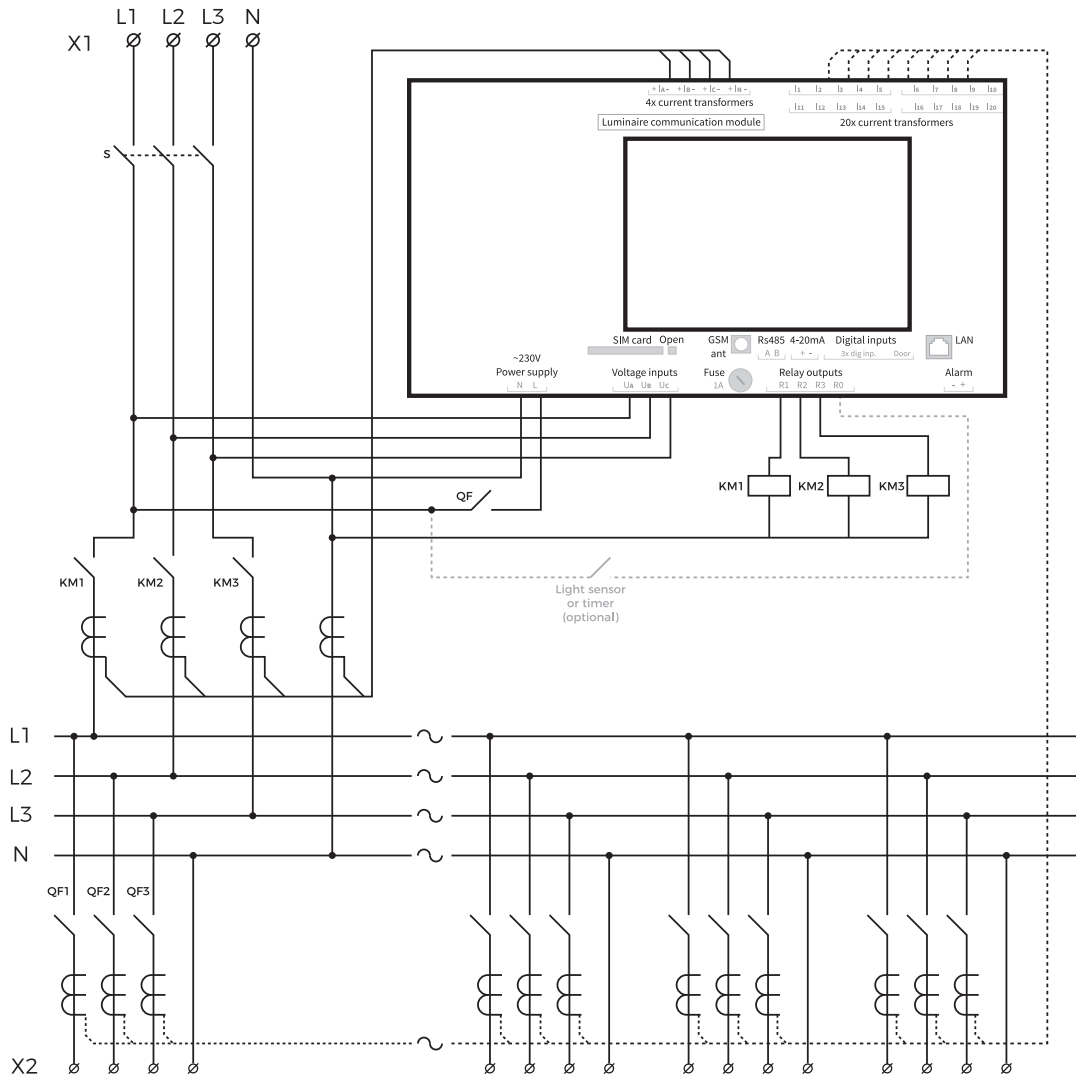
FOR MORE INFORMATION VISIT THE FOLLOWING LINK:

wiki.citylight.net

OR CONTACT OUR SUPPORT TEAM:

support@citylight.net

WIRING DIAGRAM



S - Main isolator switch 3 phase

QF - Circuit breaker

KM - Contactor 3 phase 230V/AC

X1 - Power supply terminals Phase L1, Phase L2, Phase L3 cable

X2 - Light terminals Phase L1, Phase L2, Phase L3 cable

K1 - Door position switch

**A COMPLETE ECOSYSTEM
FOR INTELLIGENT
STREETLIGHT MANAGEMENT**



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