

C-BOX Tiny

CBOX Tiny is a low cost solution for efficient remote streetlight cabinet control in real time. Using latest LTE communication technologies and built-in relays allows to switch ON/OFF streetlights remotely and adjust contactor switching schedules to achieve maximum energy saving. Voltage detection sensors indicate voltage loss on up to 2 lines. In unlikely event of communication loss CBOX Tiny will operate in standalone mode according to customer predefined switching schedules.



Features



LTE CAT1



COMPACT DESIGN



OUTPUT SWITCHING
SCHEDULES



PULSE COUNTER

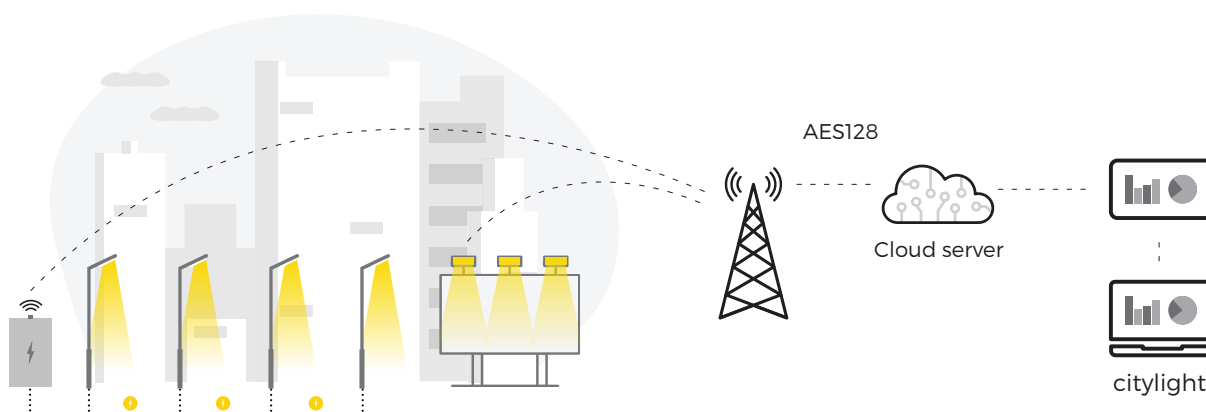


VOLTAGE DETECTION



STANDALONE OPERATIONS

How it works



SPECIFICATION

PRODUCT CODE

CBXT

DIMENSIONS AND WEIGHT

Width: 35 mm
Height: 86 mm
Depth: 59 mm
Weight: 100 g

ENCLOSURES

IP class: IP20
Material: ABS Plastic
Flame classification: UL 94 V-0
Electrical protection: Class II

MOUNTING

Installation type/mounting: DIN rail 35 mm
Size: 2M (module)

SERVER COMMUNICATION

MOBILE NETWORK

2G/4G

SIM card type: Micro SIM
Network protocol: TCP/IP
Antenna connector type: SMA (female)

Data speed:

LTE FDD: Max. 10 (Mbps)

EDGE: Max. 236.8 (Kbps)

GPRS: Max. 85.6 (Kbps)

Frequency Bands:

LTE-FDD: B1/B3/B7/B8/B20

GSM: EGSM900/DCS1800

ELECTRICAL PARAMETERS

POWER SUPPLY

Operating voltage: 85V AC - 265V AC
Frequency: 50/60 Hz
Power consumption: 2.5 W
Surge protection: 2.5 kV
Electrical safety: Galvanic isolation

ENVIRONMENTAL REQUIREMENTS

Ambient temperature: from -25° to +85° C
Relative humidity: < 95% non-condensing

INTERFACES

RELAY OUTPUT

Number of sockets: 2
Type: Thyristor
State: Normally closed
Load: 300 W on socket

DIGITAL INPUTS

Number of sockets: 1
Type: Switch/Pulse counter
Switch type: Dry contact
Voltage: 5V

VOLTAGE IDENTIFICATION

Number of sockets: 2
Voltage input: 230 VAC

IDENTIFICATION:

Dig In: LED
Out 2: LED
Out 1: LED
In 2: LED
In 1: LED
Status: LED (2 color)
Power: LED

OTHER

ENCRYPTION AND FIRMWARE

Encryption: AES 128
Firmware update: Over-the-Air (OTA)

DEBUG PORT

Type: USB Type-C

MANUFACTURED

Manufactured: EU
Designed: EU

SAFETY

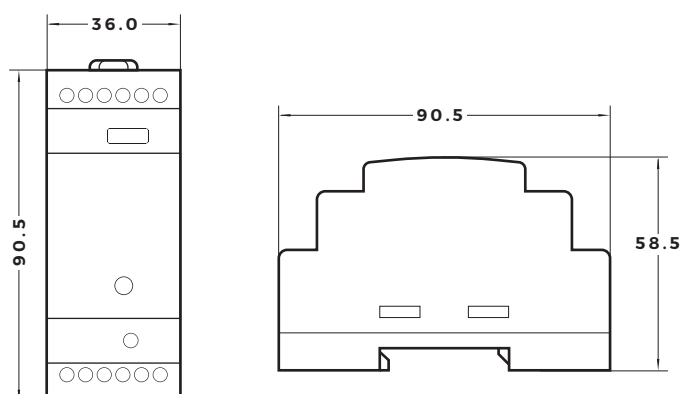
Directive 2014/35/EU Low Voltage Directive (LVD)
EN 62311:2008
EN 62368-1:2014/AC:2015
EN 60529

Directive 2014/30/EU Electromagnetic compatibility(EMC)
EN 301-489-1 V2.1.1
EN 61000-3-2:2014
EN 61000-3-3:2013
EN 61000-4-2:2009
EN 61000-4-3:2006+A1:2008+A2:2010
EN 61000-4-4:2013
EN 61000-4-5:2014
EN 61000-4-6:2014
EN 61000-4-8:2010
EN 61000-4-11:2004
EN 301 489-3 V2.1.1
EN 55015:2013+A1:2015
EN 61547:2009

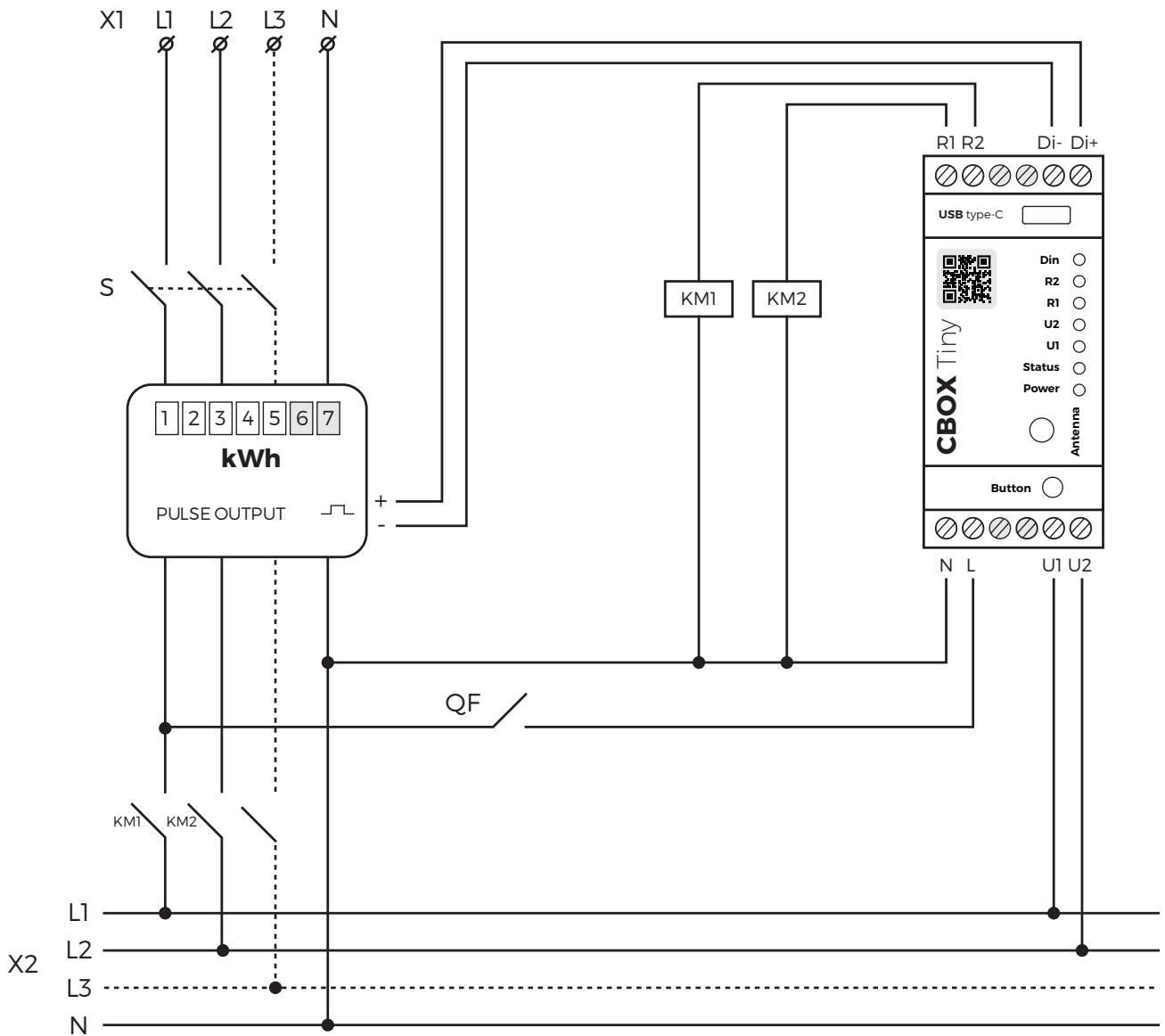
Directive 2014/53/EU Radio Equipment (RED)
EN 300 440 V2.1.1
EN 301 511 V12.5.1
EN 300 220-2 V3.1.1

Directive 2011/65/EU RoHS directive
Directive 2012/19/EU WEEE directive

DIMENSIONS



WIRING DIAGRAM



S - Main isolator switch 3 phase

QF - Circuit breaker

KM - Contactor 1-3 phase 230V/AC

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

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

INSTALLATION INSTRUCTIONS

- CAUTION:**
Only qualified persons are allowed to install and start up Citylight products.
Inappropriate opening of the products is prohibited.
- WARNINGS:**
Ensure that the AC power mains are turned OFF before handling the wiring, or any other work is carried out on CBOX Tiny.
- DO NOT** apply power to the device until you have checked all wiring connections and you are instructed to apply power.

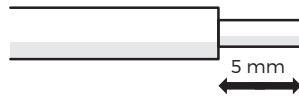
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Observe all the applicable safety and accident prevention regulations.

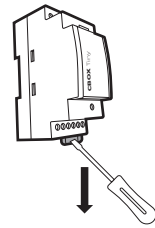
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Wire requirements and before preparation.



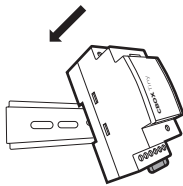
Power cables
0.35 - 2.5mm

3



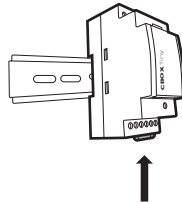
Open the fixing brackets of the CBOX using flat-headed screwdriver.

4



Place the CBOX on the DIN rail.

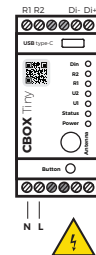
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Fasten CBOX by closing the fixing brackets.

6

Connecting MAIN power supply (230V)



Using a flat-headed screwdriver, loosen the terminal screws, and then insert the cable wire into the terminal. Complete the connection by tightening the terminal screw firmly.

7

Connecting Voltage input



Using a flat-headed screwdriver, loosen the terminal screws, and then insert the cable wire into the terminal. Complete the connection by tightening the terminal screw firmly.

8

Connecting Relay output



Using a flat-headed screwdriver, loosen the terminal screws, and then insert the cable wire into the terminal. Complete the connection by tightening the terminal screw firmly.

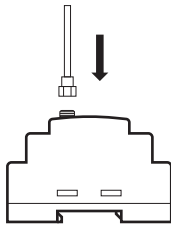
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Connecting Digital input



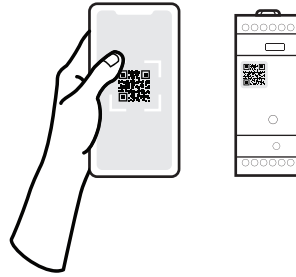
Using a flat-headed screwdriver, loosen the terminal screws, and then insert the cable wire into the terminal. Complete the connection by tightening the terminal screw firmly.

10



Connect the antenna plug to the CBOX and fasten it.

11



Scan the CBOX Tiny unique ID number using QR scanner.

12



Upload device ID number

Upload device ID numbers to citylight.net system.

MANUAL FUNCTIONS

Press 



R1 + R2 - R1 - R2 - Off

Long press  (5s)

Reset



LED INDICATION

Power:

-  CBOX main power source connected.
-  CBOX main power source disconnected

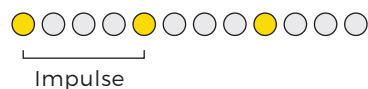
Din:

SWITCH



-  Switch state Open
-  Switch state Closed

PULSE COUNTER



(1 blinks = each impulse)



R1 / R2:

-  Relay output is in open position.
-  Relay is in closed position.

U1 / U2:

-  Input has detected voltage
-  Input hasn't detected voltage

Status:

CBOX registered, weak coverage



CBOX registered, normal coverage



CBOX registered, good coverage



CBOX registration in progress



USB connection mode



Waiting TCP connection



GSM module Error



SIM Error



APN Error

