

CBOX

Equipped with high speed cellular LTE Category 4 communication module optimised for IOT applications and retaining the best technical characteristics from the models of previous generations CBOX is next generation streetlight cabinet controller. Multiple communication interfaces, like LoRa, PLC and DALI delivers fast communication with on street luminaires.



RF / PLC / DALI

FEATURES



LTE CAT4



ALARM



ETHERNET COMMUNICATION



VOLTAGE MEASUREMENTS



RELAY CONTROL



CURRENT MEASUREMENTS



COMPACT DESIGN



DUAL SIM



TOUCHSCREEN



RF / PLC / DALI GATEWAY

HOW IT WORKS



SPECIFICATION

DIMENSIONS AND WEIGHT

Width: 160.2 mm
Height: 110 mm
Depth: 53.5 mm
Weight: 600g

ENCLOSURE

IP class: IP20
Material: ABS plastic
Electrical protection: Class II

MOUNTING

Cabinet: DIN rail 35mm

SERVER COMMUNICATION

MOBILE NETWORK

2G/3G/4G
SIM card type: Standard SIM
Secondary SIM type: Embedded MFF2
Network protocol: TCP/IP
Antenna connector type: SMA (female)

Data speed:

LTE FDD : Max. 50 (Mbps)
DC-HSPA+ : Max. 5.76 (Mbps)
WCDMA : Max. 384 (Kbps)
EDGE : Max. 236.8 (Kbps)
GPRS : Max. 85.6 (Kbps)

Frequency Bands:

LTE FDD: B1/B3/B7/B8/B20/B28A
WCDMA: B1/B8
GSM/EDGE: B3/B8

Receiver (Antenna):

VSWR:

700/850/900 (MHz): -1.9:1
1700/1800/1900/2100 (MHz): -2.2:1
2600 (MHz): -1.3:1

Average gain (dB):

700/850/900 (MHz) --2.8
1700/1800/1900/2100 (MHz) --3.3
2600 (MHz): --3.3

Polarisation: Linear

Antenna connector type: SMA (male)

ETHERNET

Communication speed: 10-100 Mbps
(1 Gbps optional)
Network type: Ethernet
Network protocol: TCP/IP (supports DHCP)
Connector RJ45

LUMINAIRE COMMUNICATION

RADIO FREQUENCY (OPTIONAL)

Radio frequency: 868 MHz
Sensitivity: - 148 dBm
Efficiency PA: +14 dBm

Modulation: LoRa
Point-to-Point range: 1500m
Number of hops: 15
Number of end devices: 250
Antenna connector type: SMA

POWER LINE COMMUNICATION (OPTIONAL)

Frequency: CELENEC B (95-125 kHz),
CELENEC A and C bands optional.
Network type: Dynamic mesh topology
Modulation: DCSK
Point-to-Point range: up to 300m
Number of hops: 12
Number of end devices: 250

DALI (OPTIONAL)

DALI bus
Type: DALI-Master
Range: 300m (1.5 sq.mm cable)
Addressing: up to 64 devices
Output current: 250mA
Output voltage: 12-22.5 VDC

ELECTRICAL PARAMETERS

POWER SUPPLY

Input voltage: 230 VAC -15% ...+15%
Frequency: 50/60 Hz
Power consumption: 5W
Electrical safety: Galvanic isolation
Surge protection: 6kV

BACKUP POWER SUPPLY

Super capacitor
Capacity: 5.0F

DISPLAY

Type: LCD TFT
Size: 3.5 inch
Touchscreen: Resistive

MEMORY

Flash Memory: 8 Mb
EEPROM: 521 kbit

ENVIRONMENTAL REQUIREMENTS

Ambient temperature: from -40° to +85° C
Relative humidity: < 95% non-condensing

INTERFACES

VOLTAGE MEASUREMENT

Number of sockets: 3
Connector type: terminal plug
Range: 0-350V (1% accuracy)
Surge protection: 3 kV

CURRENT MEASUREMENT

Inputs: 4+20, 4 - 1% accuracy, 20-3%
Range: depends on current transformer
Current transformer type: 0.333V

LUMINAIRE COMMUNICATION MODULE

Number of sockets: 1

FUSE

Socket type: replaceable
Load: 1 A (changeable)

ALARM OUTPUT

Voltage: 12 V

DIGITAL INPUTS

Number of sockets: 4
Type: Dry contact
Voltage: 5V

RELAY OUTPUT

Number of sockets: 4
Type: Switch over
State: Normally open
Load: 1A (max 5A)

ANALOG INPUT

Type: 4-20 mA

SERIAL INTERFACE

Type: RS485

OTHER

ENCRYPTION AND FIRMWARE

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

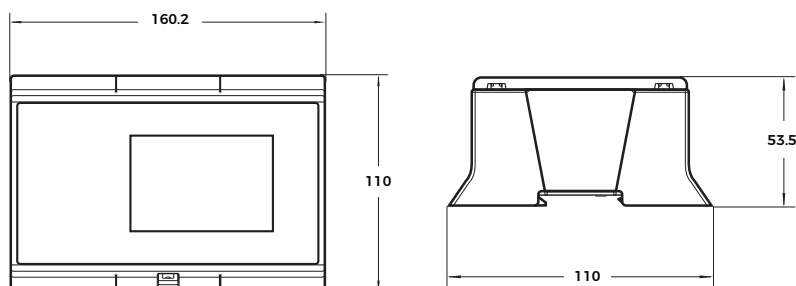
MANUFACTURED

Manufactured: EU
Designed: EU

SAFETY

Directive 2014/35/EU Low Voltage Directive (LVD)
EN 62311: 2008
EN 62368-1:2014/AC:2015
EN 60529
EN 61037
EN 50065-1
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 61000-4-3:2006+A1:2008+A2:2010
EN 61000-4-6:2014
EN 61000-4-4:2013
EN 61000-4-11:2004
EN 61000-4-5:2014
EN 61000-4-2:2009
EN 61000-4-8:2010
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

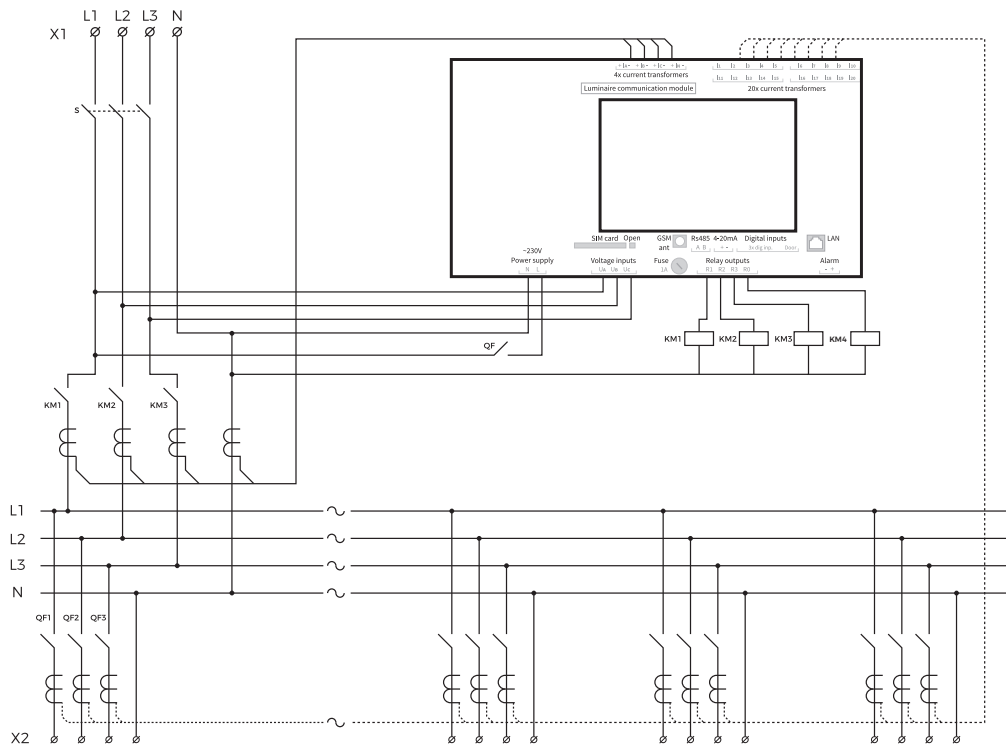
DIMENSIONS



WARNING

This equipment is compliant with Class A of EN55032. Operation of this equipment in a residential environment could cause radio interference.

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

INSTALLATION INSTRUCTIONS



Please download the full installation manual from:
www.citylight.net/cbox10/installation_manual