CITYOWL

INSTALLATION MANUAL

OWL CONTROLLER PLC & RF

SLA®

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Intelligent street lighting starts here

Remote streetlight cabinet inspection and management is now done easier than ever before thanks to widest wireless network in the world. Now all streetlight information is accessible online anytime and anywhere.

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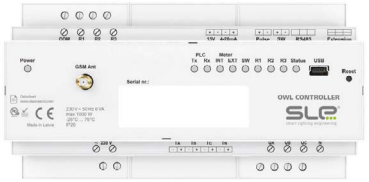
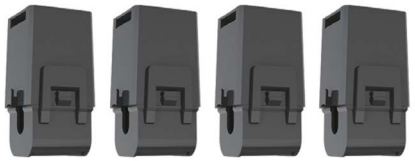


Owl Controller

GSM Antenna

RF Antenna

Door switch



Current transformers

NOTE: Pay attention to the cable diameter and maximum current of the current transformers.

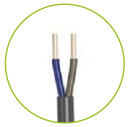
REQUIRED

Flat-headed screwdriver

Cross-headed screwdriver

DIN rail

Drill



Wires

Wrench

SAFETY AND HIGH VOLTAGE WARNING

Caution

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

Inappropriate opening of the products is prohibited.

Prior to installing and launching the OWL CONTROLLER, read these instructions carefully.

Please keep these instructions as you may need them later.

Warning

Ensure that the AC power mains are turned OFF before removing the cover, handling the wiring, or before any other activity with the Owl Controller.

DO NOT connect power to the device until you have checked all wiring connections and you have been instructed about how to connect it.

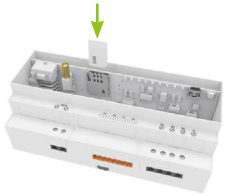
Follow all safety regulations to avoid any accidents.

INSERTING AND REMOVING THE SIM CARD

NOTE: Make sure the SIM card is activated in data transmission mode and that the PIN code is removed.

1. Remove the front cover of the device using a flat-headed screwdriver.

NOTE: When inserting the SIM card, make sure you insert it in the right direction



2. Insert the SIM card into the holder.

NOTE: To remove the SIM card, press it down.

3. Secure the SIM card into the holder by pressing on it. Put on the front cover of the device and press it to fix it in place.

4. SIM card requirements:
- data transmission GPRS
- min. 2G network (2G, 3G, 4G)
- data consumption up to 15 MB / month
- PIN code disabled

INSTALLING ON THE DIN

1. Open the fixing brackets of the Owl Controller using flat-headed screwdriver.

2. Place the Owl Controller on the DIN rail and fasten it by closing the fixing brackets.

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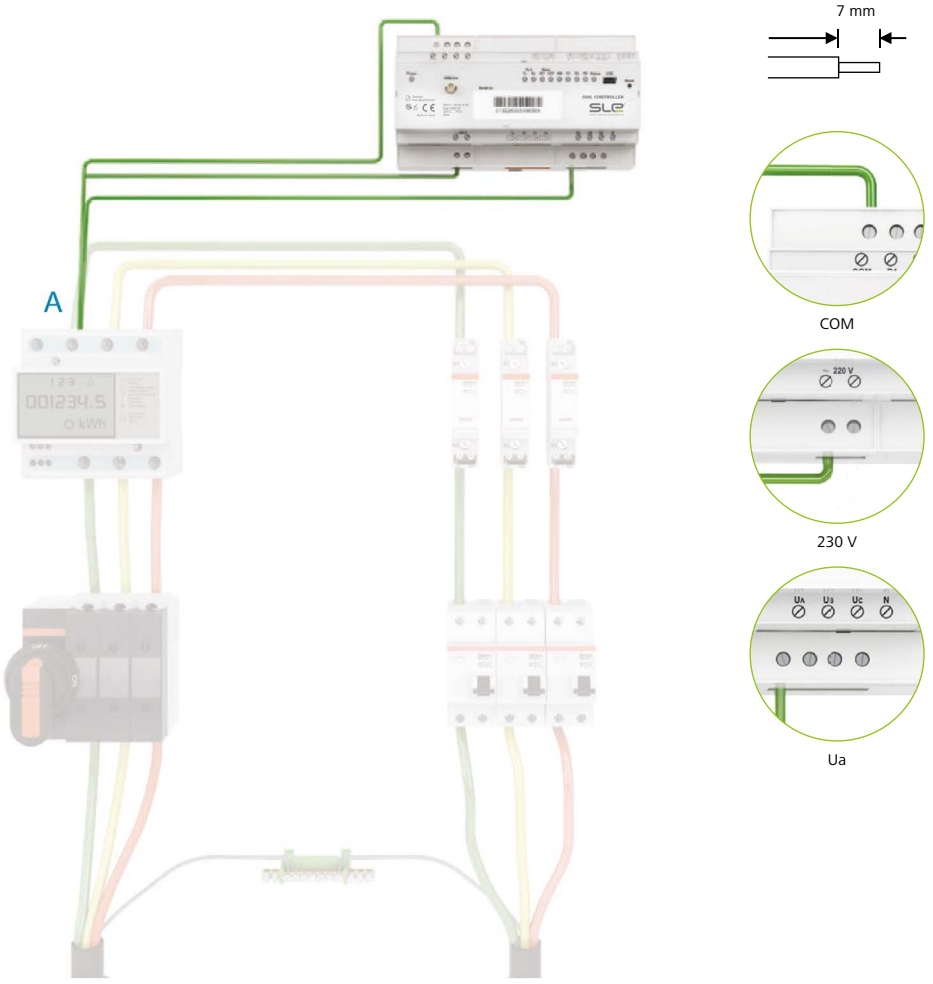
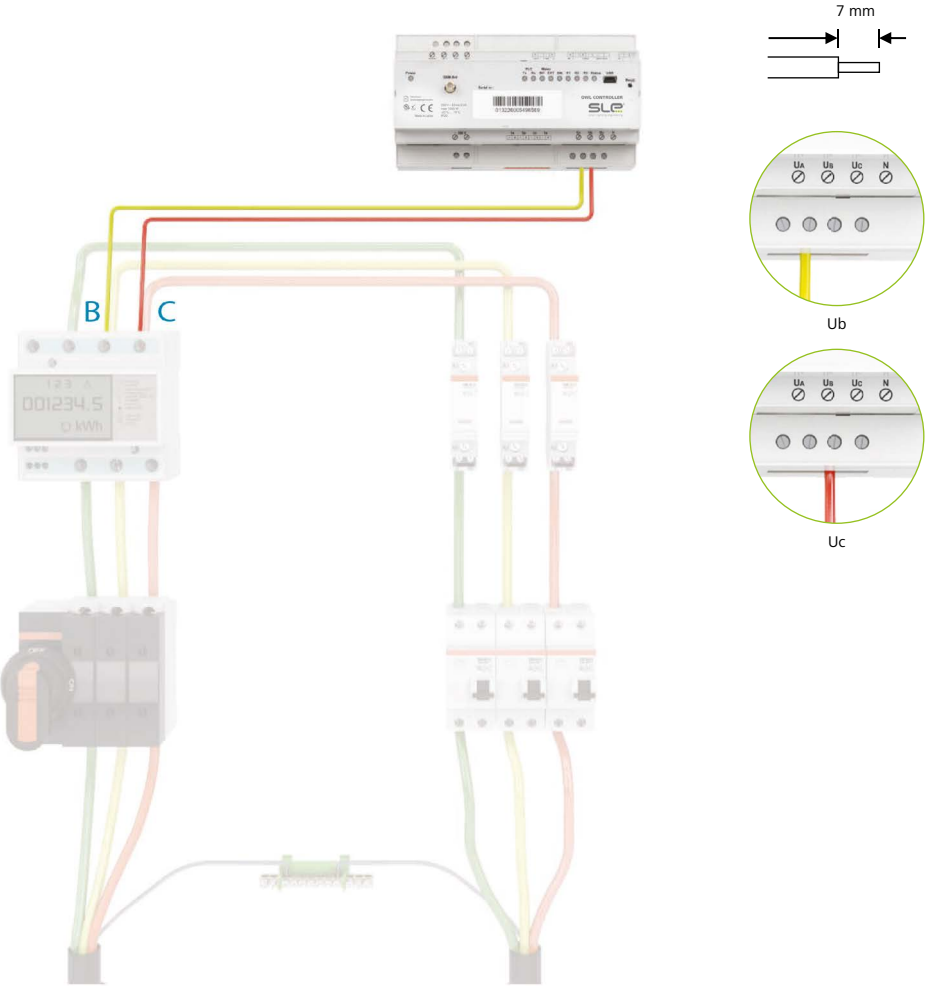
WIRING

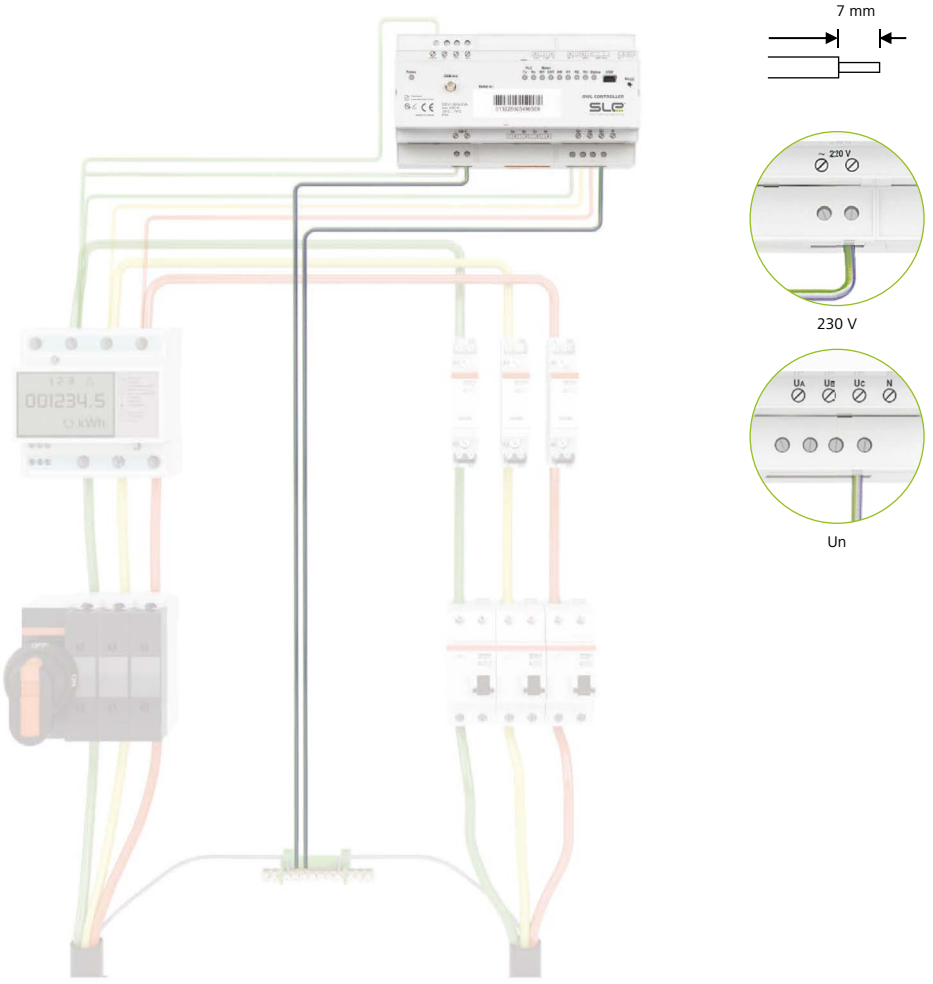


1. Connect the A phase cable to the Owl Controller mains input (230 VAC), to the relay switching (COM) and voltage measuring inputs (Ua) according to the symbols on the device.

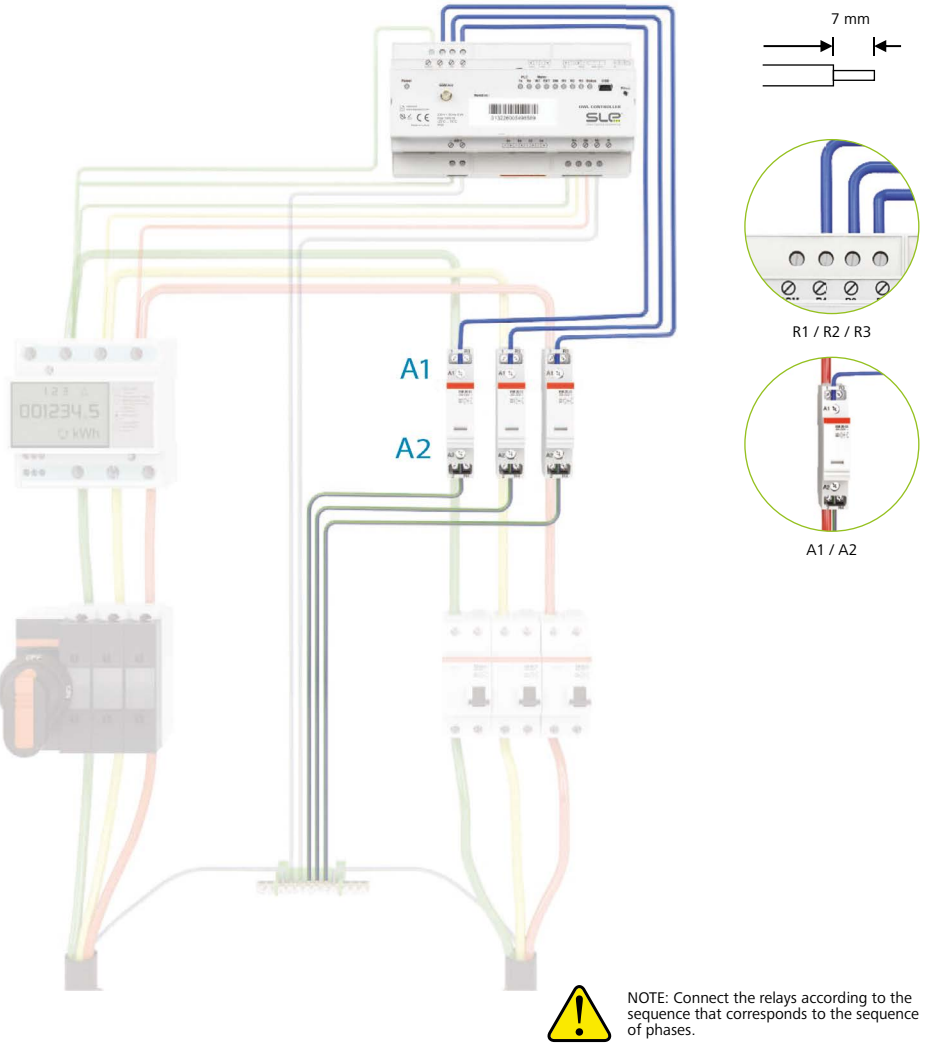


2. Connect the B and C phases to the voltage measuring inputs on the Owl Controller. Make sure the phases are connected according to the symbols (Ub and Uc).

WIRING



3. Connect the neutral cable to the Owl Controller mains (230 VAC) and voltage measuring input (N).



4. Connect the contactor signal input (A1) to the Owl Controller relay outputs. Connect the contactor signal input (A2) against the neutral cable.

INSTALLING OF THE CURRENT TRANSFORMERS

1. Remove the front cover of the device using a flat-headed screwdriver.

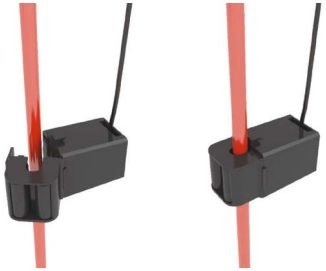
2. Place two-wire cable wires into clamps of current transformer. Fasten the clamps with cross-headed screwdriver.

3. 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.

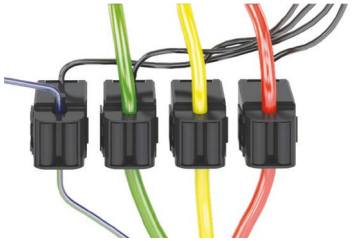
NOTE: Follow the sequence of phases according to the symbols on the Owl Controller.

4. Insert the plug into the Owl Controller.

Ia / Ib / Ic / In



5. Open the current transformer and place it on the cable.



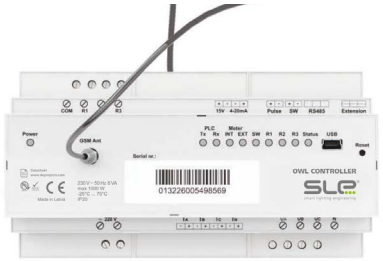
Close it and check if the current transformer has been entirely closed and fully fixed.

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

INSTALLATION OF THE GSM ANTENNA

1. Using a drill create two holes in the casing of the streetlight cabinet.

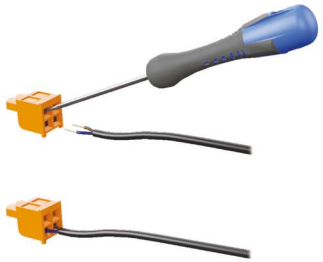
2. Insert the GSM and RF antenna and fasten it by tightening the matrix with the wrench.



3. Connect the GSM and RF antenna plug to the Owl Controller and fasten it.

INSTALLATION OF THE DOOR SWITCH

1. Fix the door sensor to the streetlight cabinet wall and its doors, so the closed state in an 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 sensor cable wires into the lower jaws. Fasten the wires by releasing the upper jaws.

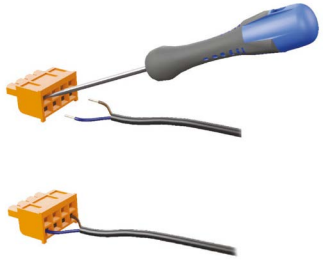
SW

3. Insert the plug into the Owl Controller.

INSTALLATION OF THE LIGHT SENSOR

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

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.

15V 4-20mA

3. Insert the plug into the Owl Controller.

DEVICE CONFIGURATION

If there is a need to change configuration of the device, it is necessary to restart the device to factory settings using button Reset (press and hold for 10 sec).

Service connection PC – This action be executed only by a properly trained person, alternatively, in special conditions it can be done by a layman who is instructed by a properly trained person.

NOTE: Contravention of this warning leads to loss of warranty.

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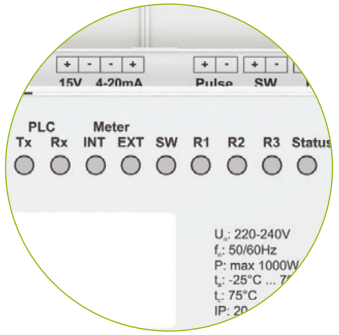
LED INDICATION



Status

● ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○	Owl Controller registered, weak coverage.
● ○ ● ○ ○ ○ ○ ○ ○ ○ ○ ○	Owl Controller registered, normal coverage.
● ○ ● ○ ● ○ ○ ○ ○ ○ ○ ○	Owl Controller registered, good coverage.
● ○ ● ○ ● ○ ● ○ ● ○ ● ○	Owl Controller registration in progress.
● ● ● ● ● ● ● ● ● ● ● ● ●	Waiting for SMS configuration. (After reset)
● ○ ● ○ ○ ○ ○ ○ ○ ○ ○ ○	Failed registration in GSM network.
● ○ ● ○ ● ○ ○ ○ ○ ○ ○ ○	Registration in GPRS failed.
● ○ ● ○ ● ○ ● ○ ○ ○ ○ ○	Failed connection to server.
● ○ ● ○ ● ○ ● ○ ● ○ ● ○	Failed registration in GSM network.
● ● ● ● ● ○ ○ ○ ● ○ ○ ○	SIM card error or PIN required.
● ● ● ● ● ○ ○ ● ○ ○ ● ○	GSM module error.

Power ○	●	Owl Controller mains connected.
	○	Owl Controller mains disconnected.
○ ○ ○ R1 R2 R3	●	Relay is in open position.
	○	Relay is in closed position.
SW ○	●	Switch is open.
	○	Switch is closed.
EXT ○	● ○ ● ○ ● ○ ● ○ ● ○ ● ○	External meter electricity consumption counting with blinking interval 1 impulse.
INT ○	● ○ ● ○ ● ○ ● ○ ● ○ ● ○	Electricity consumption counting with blinking interval 0.01 Wh.
Tx ○	● ○ ● ○ ● ○ ● ○ ● ○ ● ○	Connection with outdoor luminaire controllers is being created.
Rx ○	● ○ ● ○ ● ○ ● ○ ● ○ ● ○	Connection is created and data exchange with outdoor luminaire controllers is activated.

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SPECIFICATION

Size and Weight
Width: 160 mm Depth: 58 mm
Height: 90 mm Weight: 350 g

Enclosure
IP class 20
Mounting on DIN rail 35 mm

Environmental requirements
Operating temperature:
from -35 °C to + 65 °C
Storage temperature:
from -40 °C to 85 °C
Relative humidity: < 95%
non-condensing

Server communication
GSM
Quad-band GSM/GPRS
(850/900/1800/1900 MHz)
TCP/IP network protocol
Ethernet (Optional)

Luminaire communication
PLC (Optional)
CELENEC A (9-95 kHz) or B
(95-125 kHz) or C (125 – 140 kHz)
Dynamic mesh topology
Network size up to 350 nodes
Network depth up to 16 hops
RF (Optional)
Frequency - 868 MHz
Dynamic mesh topology
Network size up to 350 nodes
Network depth up to 14 hops

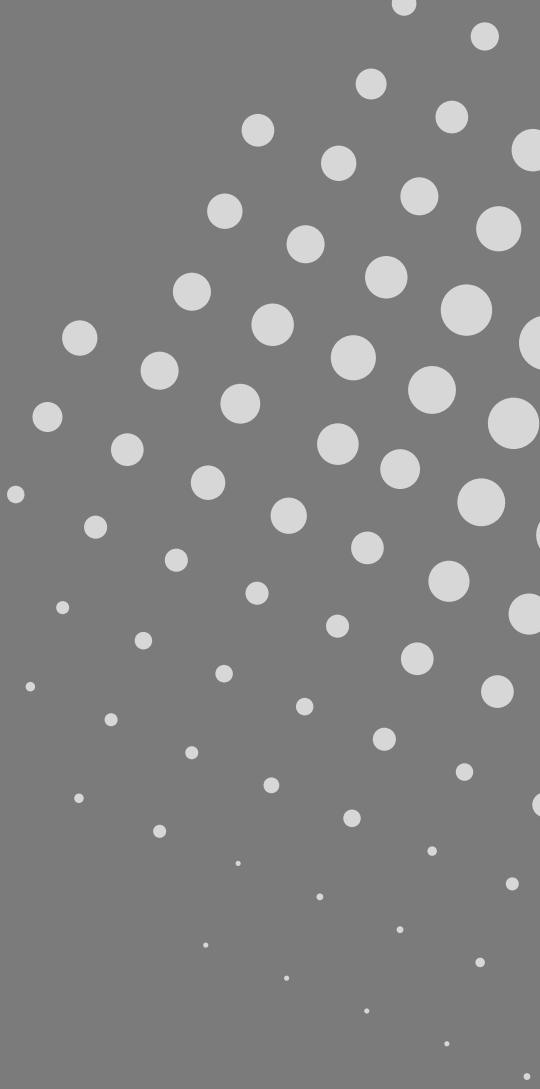
Power and battery
Mains
Voltage: 230 VAC - 15% ... + 10%
Frequency: 50/60 Hz
Peak over voltage 3000 V
Built-in fuse
Power consumption < 2 W
(Max peak 6 W)

Battery
Built-in rechargeable Li-Poly
battery (750 mAh)

Memory
Flash 8 Mb

Inputs and Outputs
1x Mains power
3x Voltage measurement
(PLC communication)
4x Current transformer input
3x Relay outputs
1x OWL Extension port
1x Serial ports (EIA-485)
1x 4-20 mA input
1x Digital input
1x Pulse interface
1x USB Service port
1x SMA external GSM/GPRS antenna
1x SMA external RF868 antenna
(only Owl Controller RF)

Firmware
Over-the-air programming



SLE
Dojč 419
906 02 Dojč
Slovakia
+421 34 694 0847
office@sleprojects.com
www.sleprojects.com