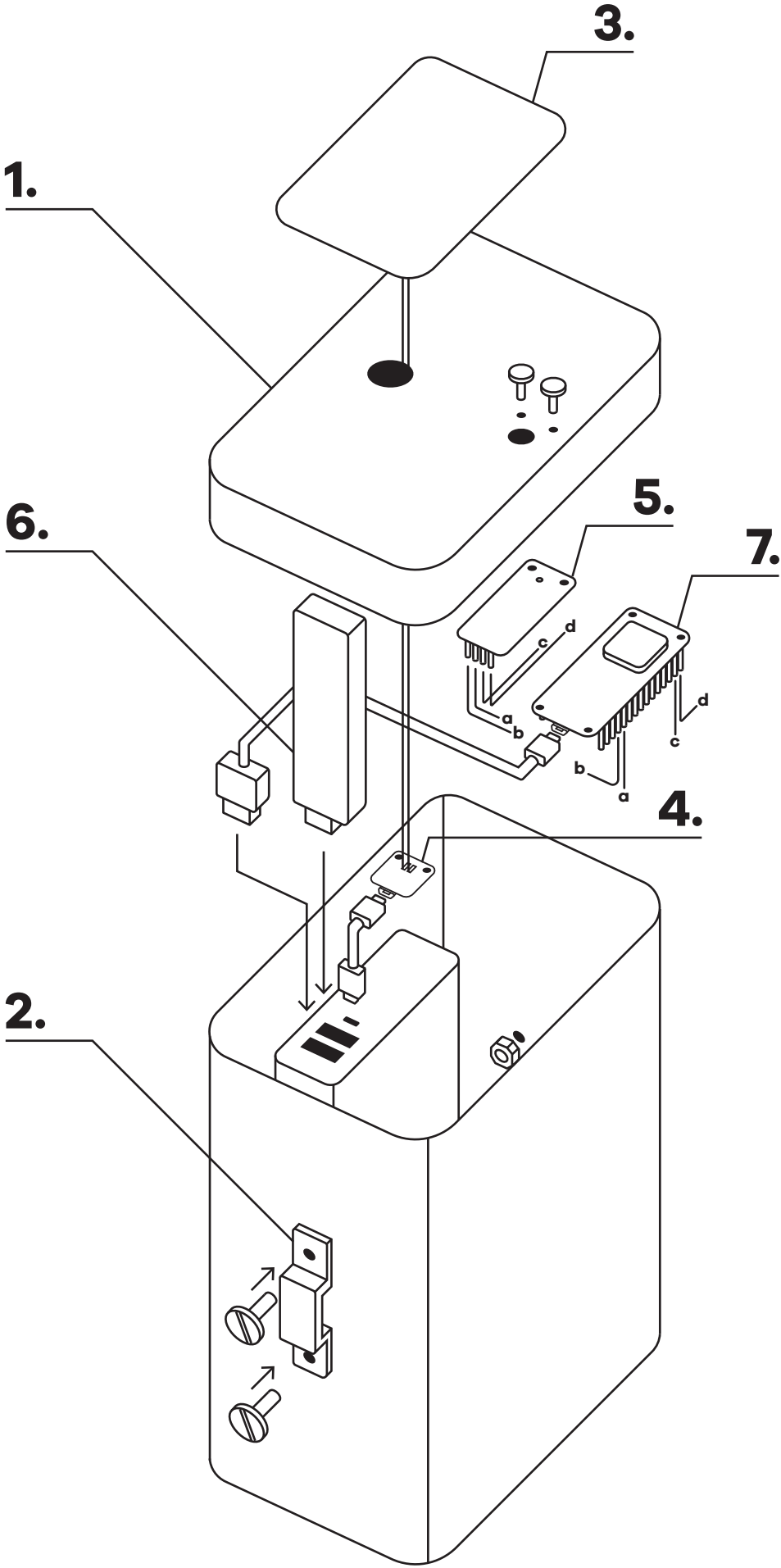


STREET LIGHTING NOTIFIER



STREET LIGHTING NOTIFIER

1. Box

Find a box made with a material strong enough to be outside (iron, plastic, etc.) with a simple but good hermetic opening system.

2. Hanging system

For the straps cannot slide out, put door bolts (of the width of the chosen straps) on both sides of the box. Place the bolts centrally on each side. Select a drill bit the size of the holes, mark the holes and drill. Then fix the bolts with screws and nuts.

3. Solar panel

Take a solar panel corresponding to the size of the top of the box with a minimum space between the edge of the panel and the end of the box of 5mm except on one side with a minimum of 20mm for the lux detector. Drill 2 holes on top, one large for the wires or larger if the converter is directly attached to the panel; and another hole in the space between the panel and the end of the box the size of the photoresistance size of the luxmeter. Place a panel on the top and place the box by passing the wires through the first drilled hole.

4. Converter 5v micro usb micro

Solder the positive of the solar panel to the positive of the converter (<https://tinyurl.com/y642btun>). connect the usb or micro usb depending on the model to the power bank's micro usb charging input.

5. Luxmeter

Drill 2 holes according to the size of those of the luxmeter (<https://tinyurl.com/y4rl3zww>) by centering the photoresistance of the luxmeter with respect to the 2nd hole drilled on top of the box in the 2nd step. Then fix with 2 screws and 2 nuts. For connection to nodemcu esp8266, connect the vcc pins on the 3v, the gnd on the gnd, the scl on the d3, the sda on the d4. If you have another esp8266 type card please refer to its own schematics, you must find where the pins dedicated to the scl and sda are located.

6. Dongle 3g

Configure your sim card, then insert it into the 3g dongle and then connect the usb of the dongle (<https://tinyurl.com/y3be9sdr>) to one of the usb ports of the powerbank (<https://tinyurl.com/y2tw5jf3>).

7. Nodemcu esp8266

Connect your nodemcu (<https://tinyurl.com/y476fkps>) to your computer.

Download the arduino application to your computer and configure it to upload the code to the nodemcu. Download the driver so that your computer can recognize the microcontroller nodemcu (<https://sparks.gogo.co.nz/ch340.html>) install it by simply double clicking (it's important to check your security preferences).

Download the booksellers, go to sketch then include a library and finally manage the libraries, look for the following libraries: BH1750, Wire, ArduinoJson, ESP8266HTTPClient and WiFiClientSecure

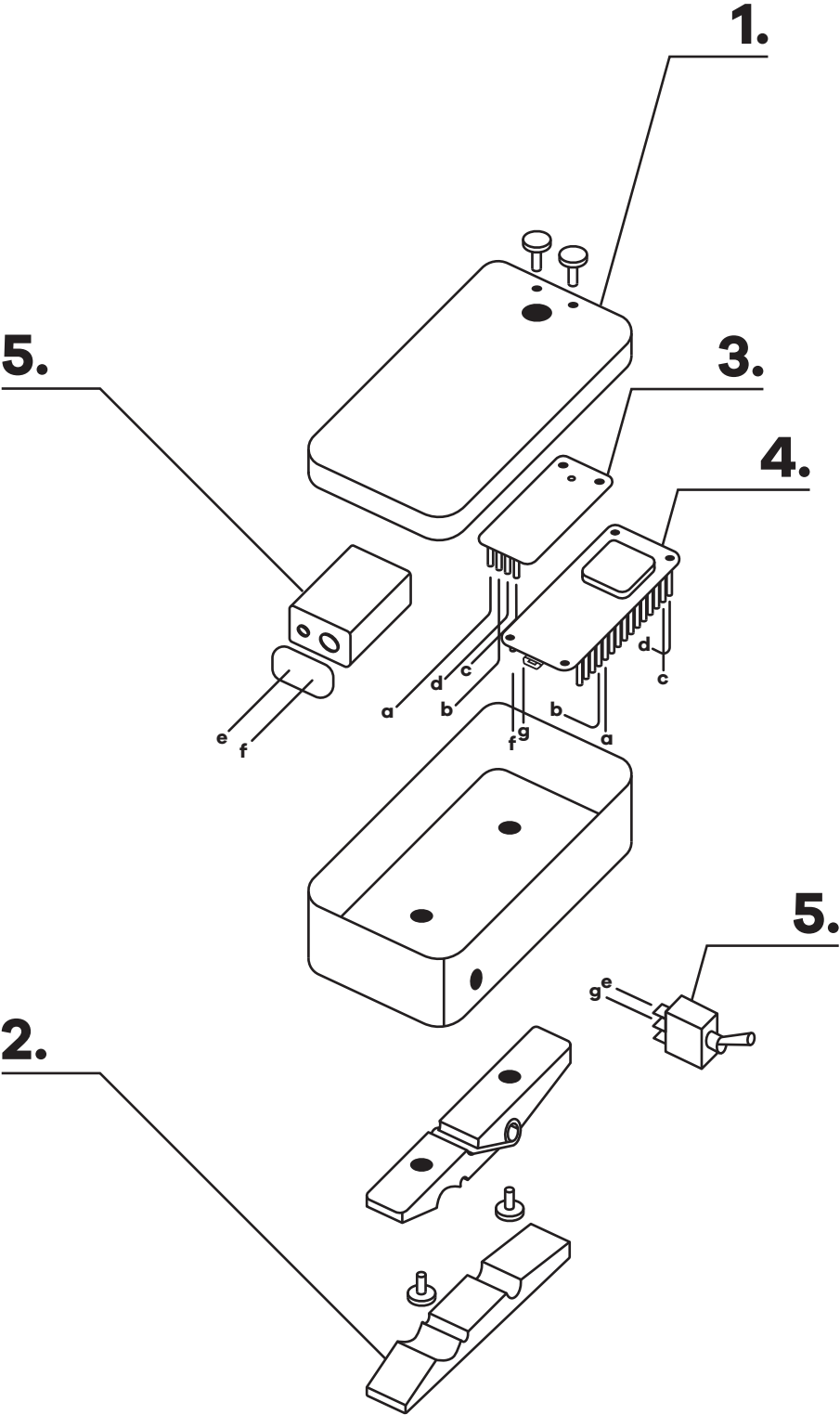
In the code change its values: put the name of the wifi in the quotation marks: `char myssid[] = "your wifi device name";` do the same for: `char mypass password[] = "your password";`

For geolocation, put your API key between the quotation marks: `String key = "your key";`

get your API key here <https://tinyurl.com/y5rtpew5>

Before uploading the code change the card in card type: tool for the NodeMcu V1.0 and the port for `/dev/cu.wchusbserial1410`. Once the code has been compiled and uploaded to the nodemcu, unplug it from your computer and plug it into the powerbank's usb port.

GEOLUXMETER



GEOLUXMETER

1. Box

Drilled a hole the size of the size of the photoresistance of the luxmeter on top of the box. Then pierced another one on the side of the switch cylinder size.

2. Clothespin

remove the clothespin take the part of the top, the one that will be attached to the bottom of the box, marked 2 points of the size of the screws (no bigger than m4) one towards the front (the place where the jaw of the clothespin closes) then another one at the back. Drill the points then center the half of the pliers under the box and mark the points through the holes. Then drill the bottom of the box, reassemble the clothespin by placing the 2 screws in each hole with the screw thread outwards, then attach it to the bottom of the box with the 2 screw threads that pass through the holes, then fix them with 2 nuts. The part of the jaw must be opposite the hole of the luxmeter.

3. Luxmeter

Drill 2 holes according to the size of those of the luxmeter (<https://tinyurl.com/y4rl3zww>) by centering the photoresistance of the luxmeter in relation to the hole drilled on top of the box. Then fix with 2 screws and 2 nuts. For connection to nodemcu esp8266, connect the vcc pins on the 3v, the gnd on the gnd, the scl on the d3, the sda on the d4. If you have another esp8266 type card please refer to its own schematics, you must find where the pins dedicated to the scl and sda are located.

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Download the arduino application to your computer and configure it to upload the code to the nodemcu. Download the driver so that your computer can recognize the microcontroller (<https://sparks.go-go.co.nz/ch340.html>) install it by simply double clicking (check your security preferences).

Download the booksellers, go to sketch then include a library and finally manage the libraries, look for the following libraries: BH1750, Wire, ArduinoJson, ESP8266HttpClient and WiFiClientSecure

In the code change its values: put the name of the hotspot of your phone in the quotation marks char myssid[] = "your wifi device name"; do the same for the char mypass password[] = "your password";

For geolocation, put your API key between the quotation marks String key = "your key"; get your API key here <https://tinyurl.com/y5rtpew5>. Before uploading the code change the card in card type tool for NodeMcu V1.0 and the port for /dev/cu.wchusbserial1410. Pair it to your phone by activating the hotspot.

5. Battery

Connect the gnd of the battery's clip connector (<https://tinyurl.com/yx9vg25a>) directly to the gnd of the nodemcu and solder the positive to one of the external pins of the switch (<https://tinyurl.com/yxspztw5>) and then to the other one in the middle.

The one in the middle connect it to the wine pine of the nodemcu. Pass the switch through the hole on the side of the box and secure it with the nut.