Equipment Note

Shelly Pro 1PM

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Revision: 1

Contents

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1 Background

This equipment note describes how to use an impHub to control and monitoring a Shelly Plus 1PM. It also covers the Shelly Plus 1PM Add On for temperature monitoring.

NB: This document covers only the Shelly specific device setup, refer to the impHub Configuration Guide for how to install and setup your impHub and for general concepts like the devices, device drivers, device gateways, metering-hierarchy and control blocks.

For the Shelly Pro 1PM or Shelly Plus 1PM Mini, please contact Gridimp (info@gridimp.com) to access updated firmware.

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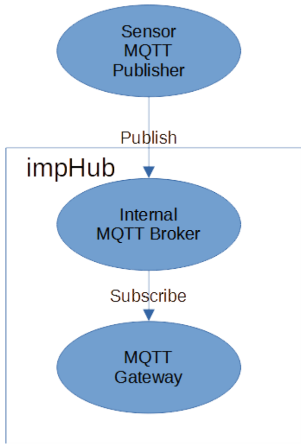
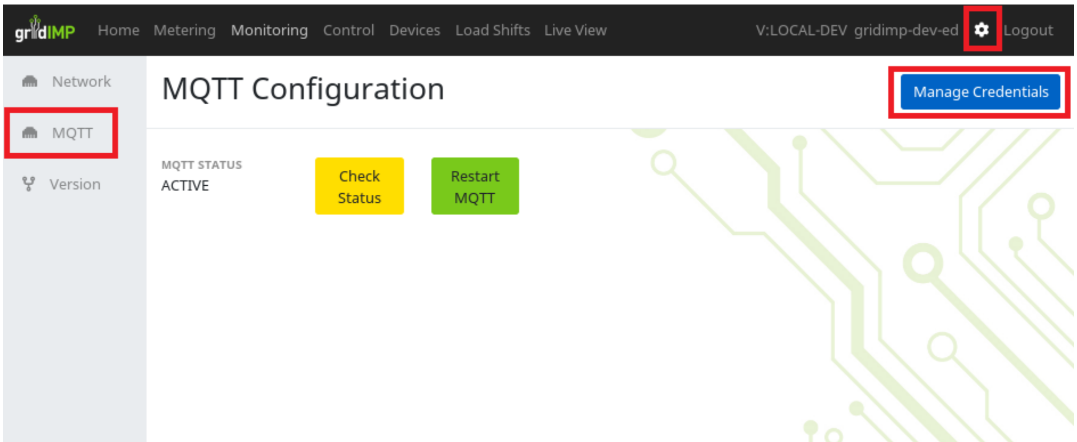
2 MQTT Broker

The Shelly devices communicate with the impHub using the MQTT protocol. The diagram to the right shows how the sensor publishes readings to the MQTT Broker and the MQTT Gateway in the impHub subscribes to the readings from the broker.



The first step is to setup an MQTT Broker. This can be an existing broker, but if you don't already have an MQTT broker the impHub provides one. To configure the impHub MQTT broker use the impHub engineering console. Goto your web browser and enter the IP address of the impHub. Then login to the impHub engineering console using the username and password printed on the side of your impHub. Once you are logged into the engineering console click on:

1. The cog icon in the menu bar
2. The MQTT left hand menu entry
3. The Manage Credentials button.



This will bring you to a dialog where you can enter the username and password for the MQTT broker. Note down the username and password in a secure location, you will need these when configuring the impHub MQTT gateway and the Shelly MQTT setup.

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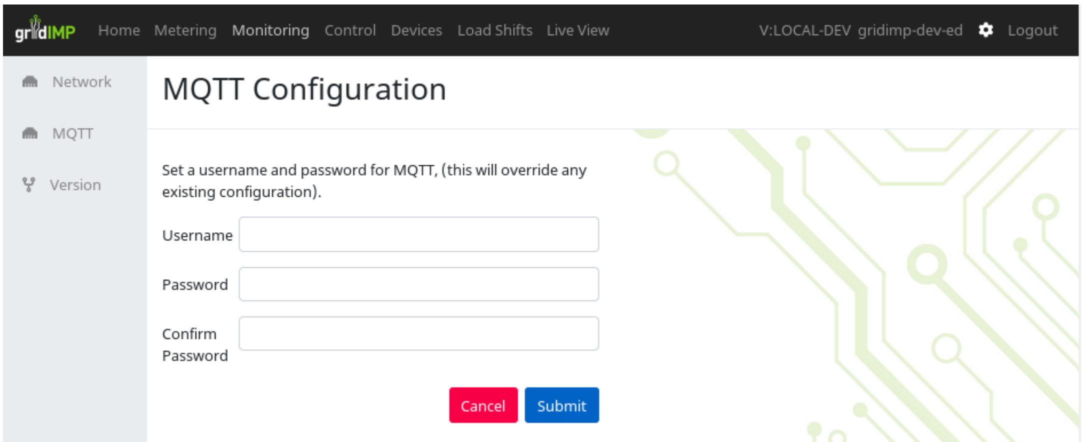
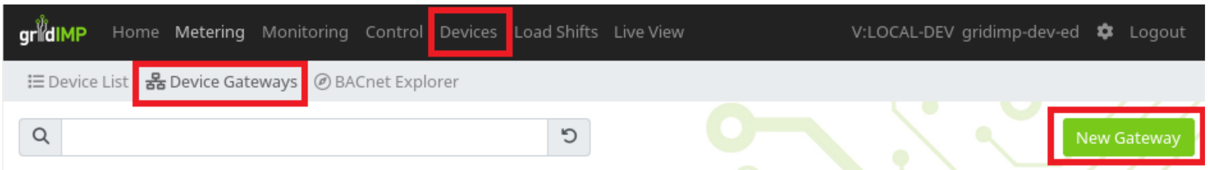
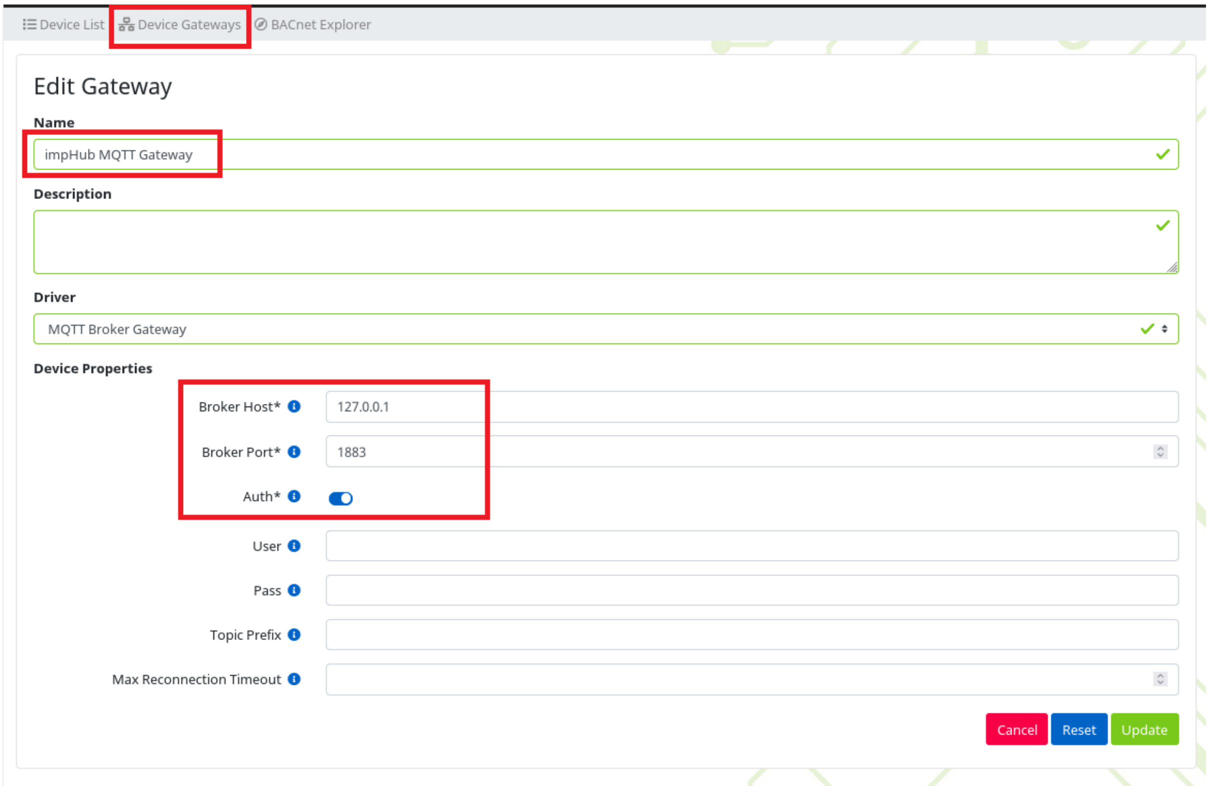


3 MQTT Gateway

Next, the MQTT gateway needs to be configured to connect to an MQTT broker. In the impHub engineering console, go to “Device Gateways” then click “Add New Gateway” and select “MQTT Boker Gateway” as the driver.



By default, the MQTT gateway connects to the impHub internal MQTT broker on 127.0.0.1, port 1883. So, if you are using the impHub internal broker, you do not need to change these settings. You will need to specify the username and password, use the one you configured for the MQTT broker in the previous step.


Device List
Device Gateways
BACnet Explorer
Edit Gateway
Name
impHub MQTT Gateway
Description
Driver
MQTT Broker Gateway
Device Properties
Broker Host*
127.0.0.1
Broker Port*
1883
Auth*
User
Pass
Topic Prefix
Max Reconnection Timeout
Cancel
Reset
Update

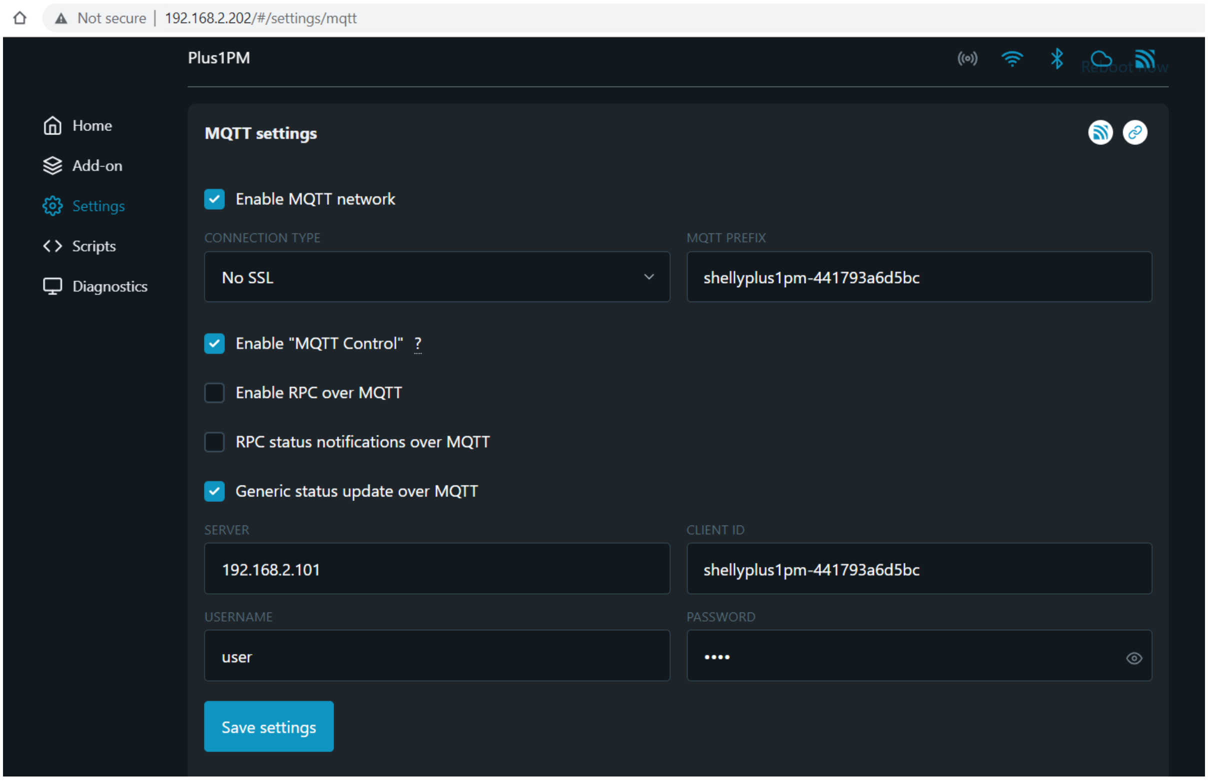
4 Shelly Device Configuration

Install and power on your shelly device, following the supplied instructions, local wiring regulations and safety considerations. Follow the instructions for the Shelly device to connect it to your network. Use a web browser to navigate to the IP address of the Shelly device.

Within the shelly web configuration navigate to the Settings page, there you need to turn on:

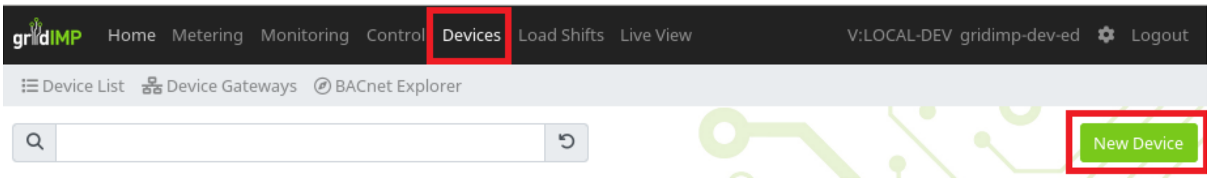
- Enable MQTT network
- Enable MQTT control
- Generic status updates over MQTT

For the "Server" set the IP of your MQTT broker. If you used the impHub broker, this will be the IP address of your impHub. Specify the username and password that you configured in the previous step. Leave the MQTT prefix and client id as the default values. Note that the MQTT prefix is based on the device id, and this must match what the hub is expecting. Note down the device id, which is shown after "shellyplus1pm-" in the MQTT prefix, in the example below its "441793a6d5bc".



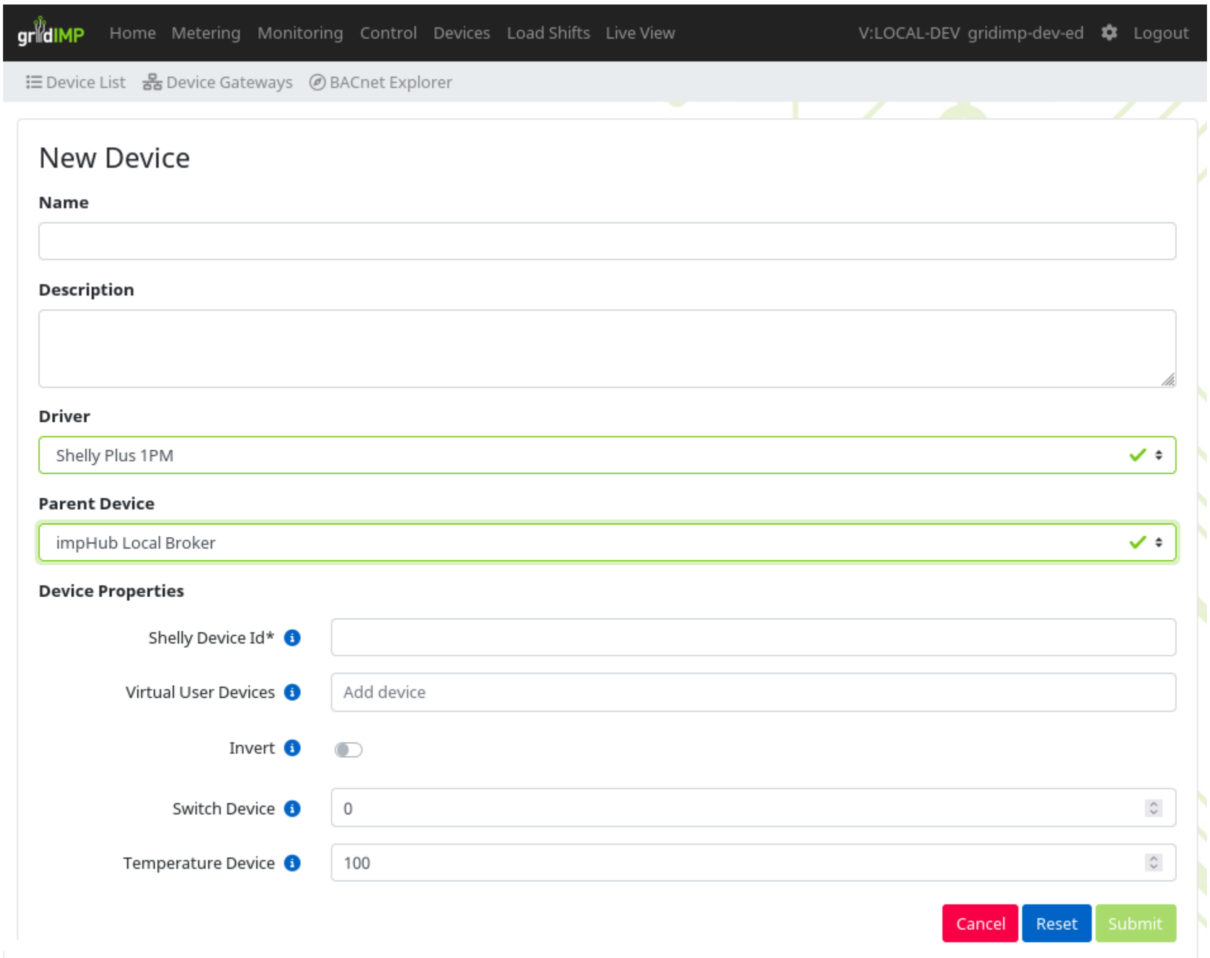
5 impHub Device Configuration

On the impHub engineering console create a new device, by clicking on “Devices” in the top menu, then “New Device”.

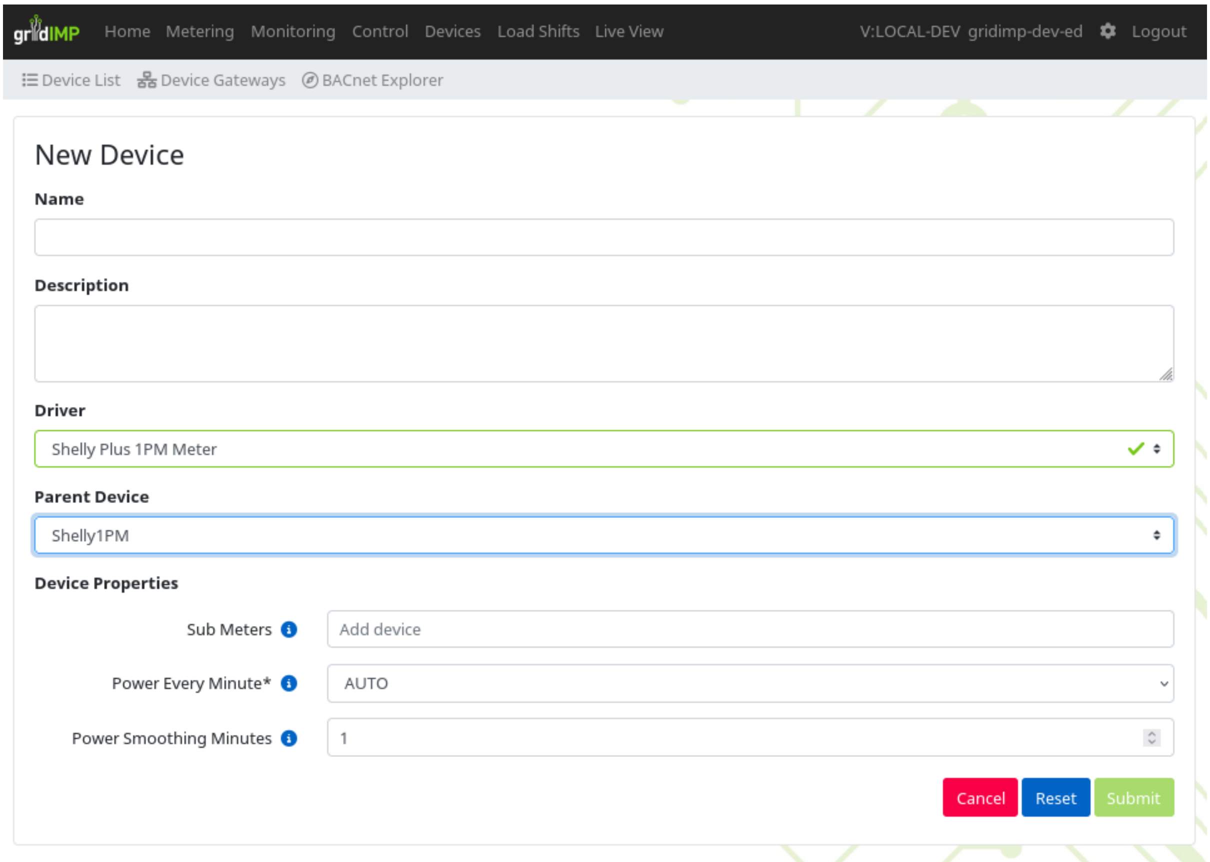


On the New Device page, give your device a name, select the driver “Shelly Plus 1PM” and select the MQTT Broker that you setup as the Parent Device. In the Shelly Device Id field type in the shelly device id, as noted down in the previous step.

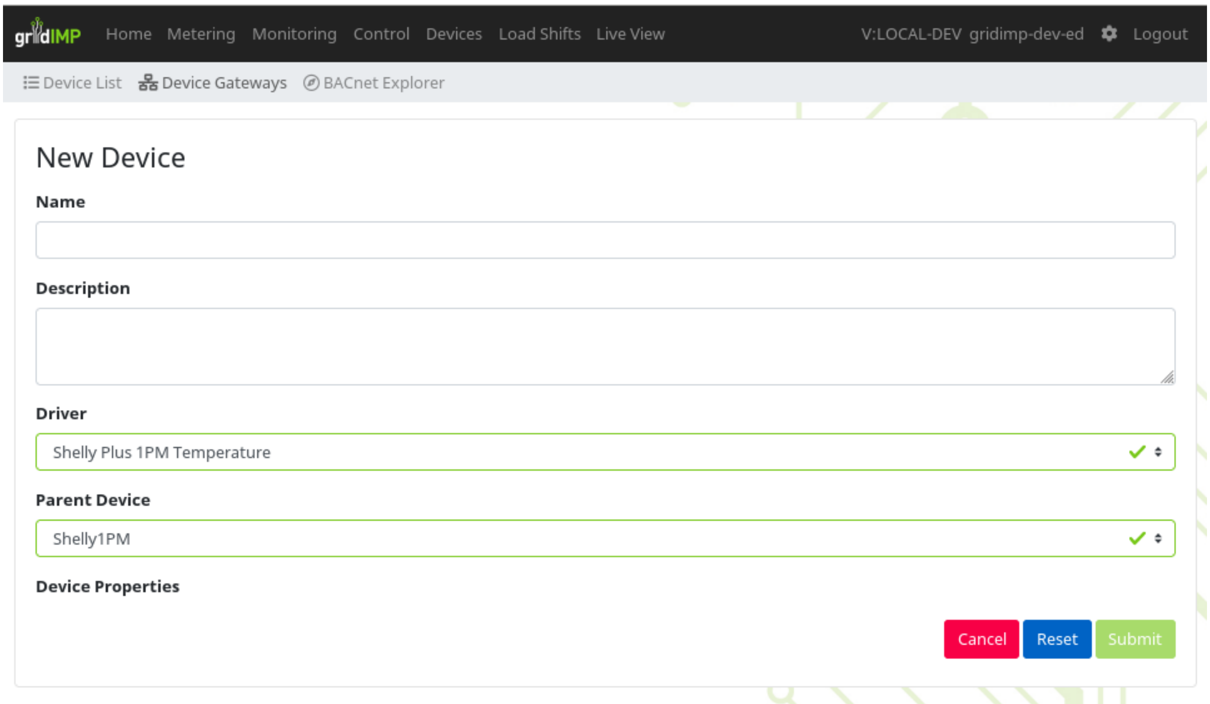
You should normally leave the invert, switch device and temperature device id parameters as their default values.



Next, add the meter as a child device. To do this, create a new device and select the “Shelly Plus 1PM Meter” driver. The parent device is the Shelly 1PM that you just created. Power every minute and power smoothing can be left on their default settings.



If you are using the Shelly Plus Temperature add on, then create another device using the driver "Shelly Plus 1PM Temperature" and set the parent device to the Shelly 1PM device that you created. There are no other options needed for this driver.



6 Control Blocks and Metering Hierarchy

You can see the data coming in from the devices in the measurements panel of the device view and in the graphs of the live view, which updates every minute.

Having configured the metering and switching they need to be configured as part of the metering hierarchy and control blocks. You should go to the Meter Hierarchy page to add the meter to the hierarchy and the control blocks page to include the switch in a control block, such as the HVAC control block. Refer to the impHub Configuration Guide for these steps.