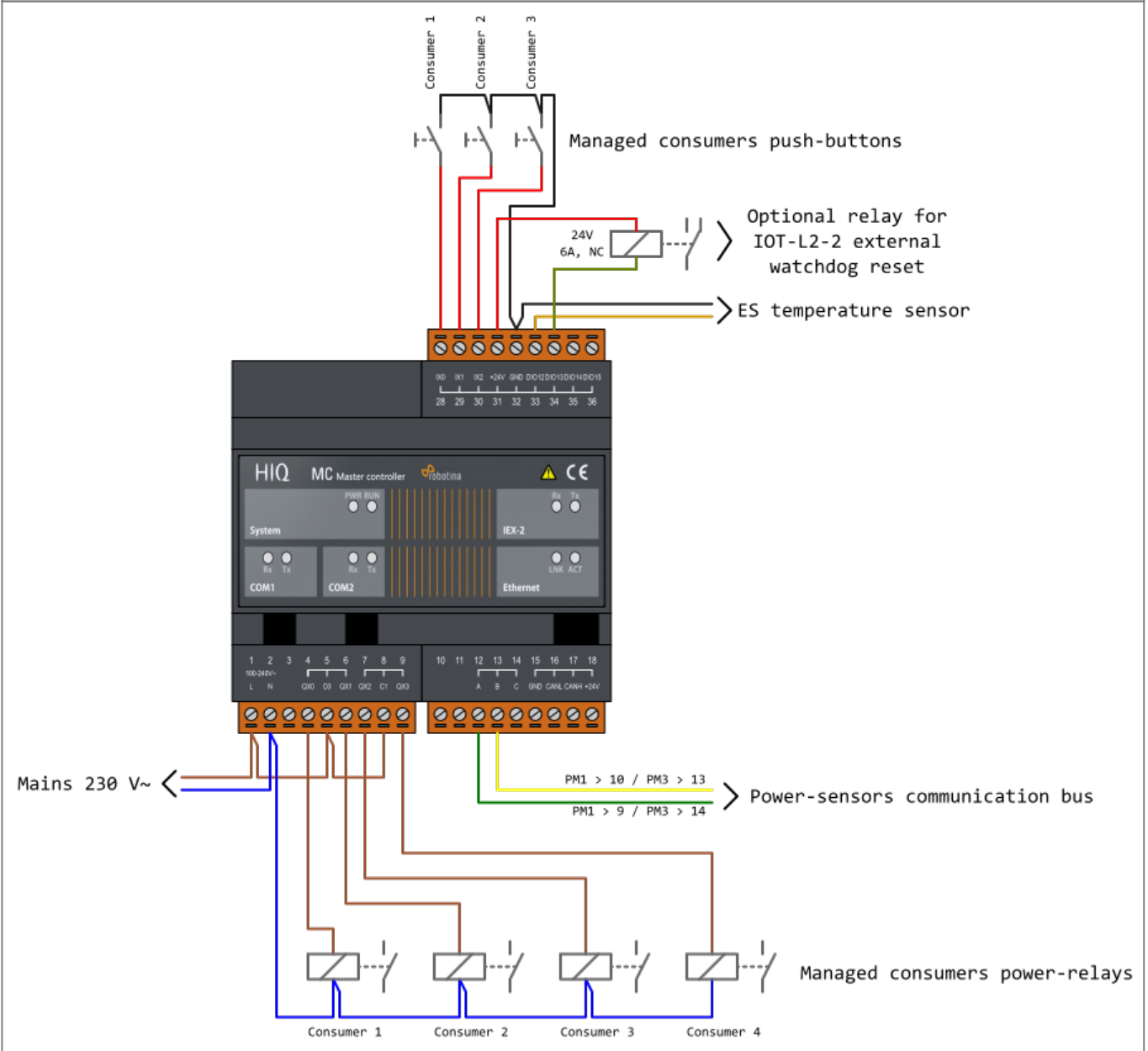


# HEMS v1.2.x wiring

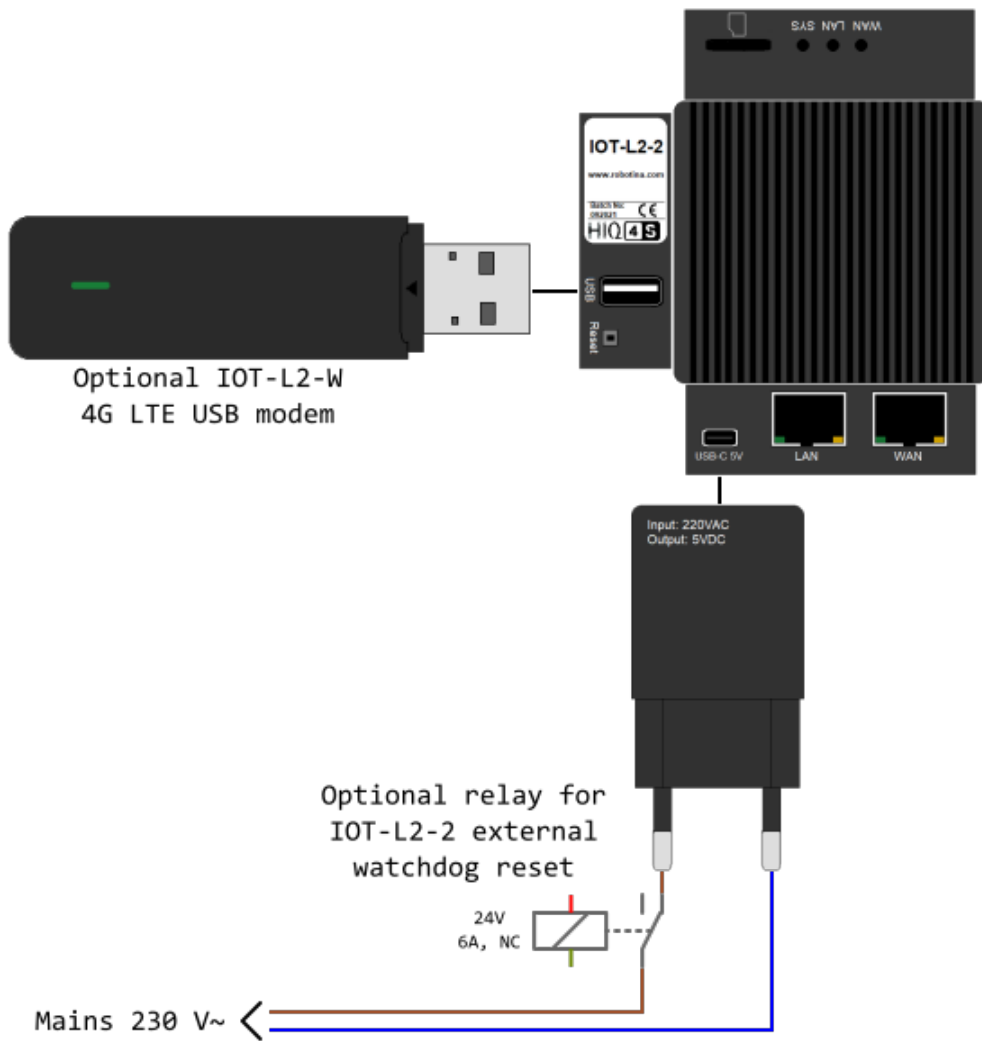
## MC-230

Wiring of default configuration.

NOTE: several different configurations can be configured with [HEMS Configurator](#).



## IOT-L2-2



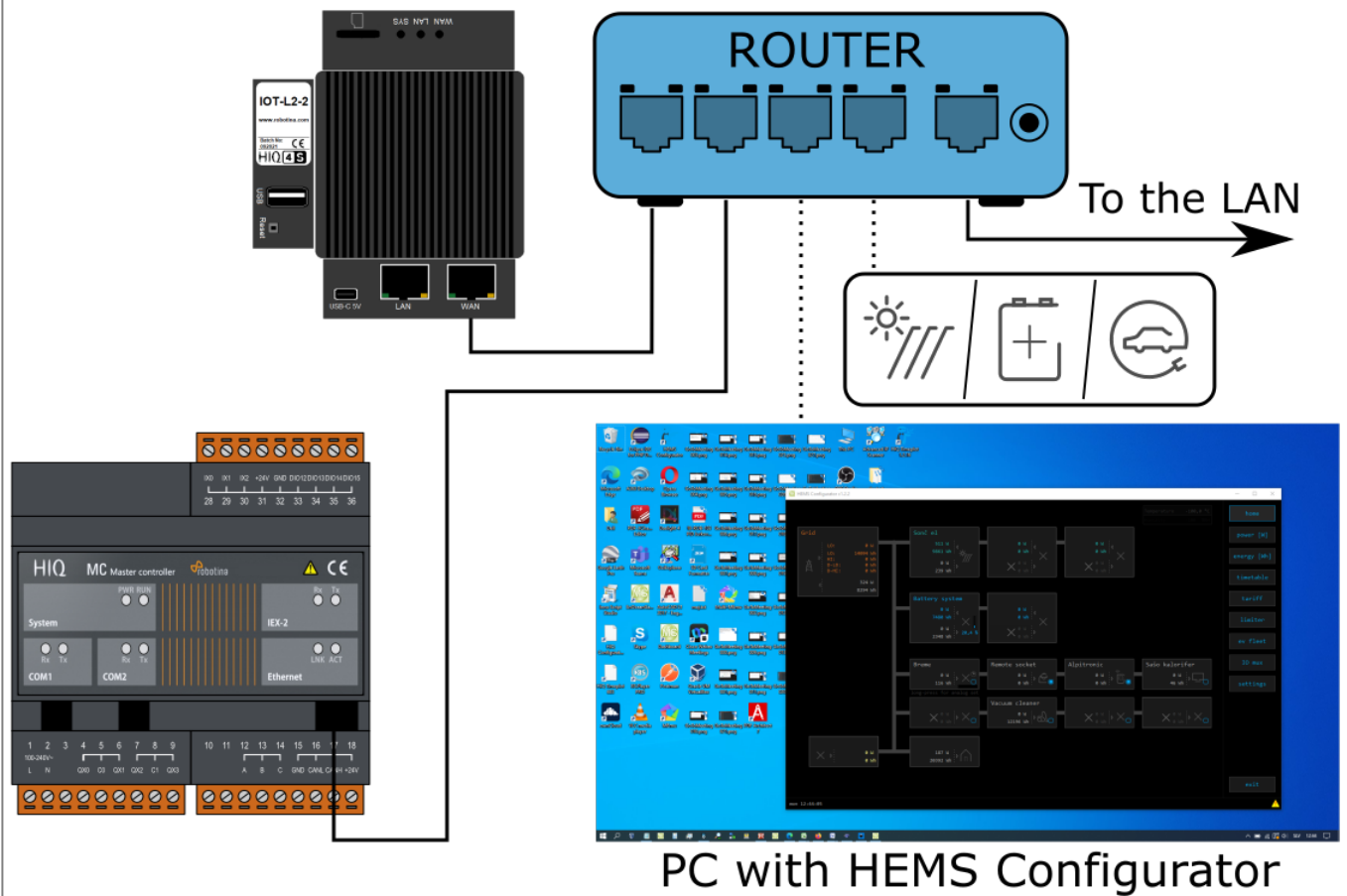
**Network (LAN or LTE 4G modem) → MC-230 and IOT-L2-2**

**Optionally:**

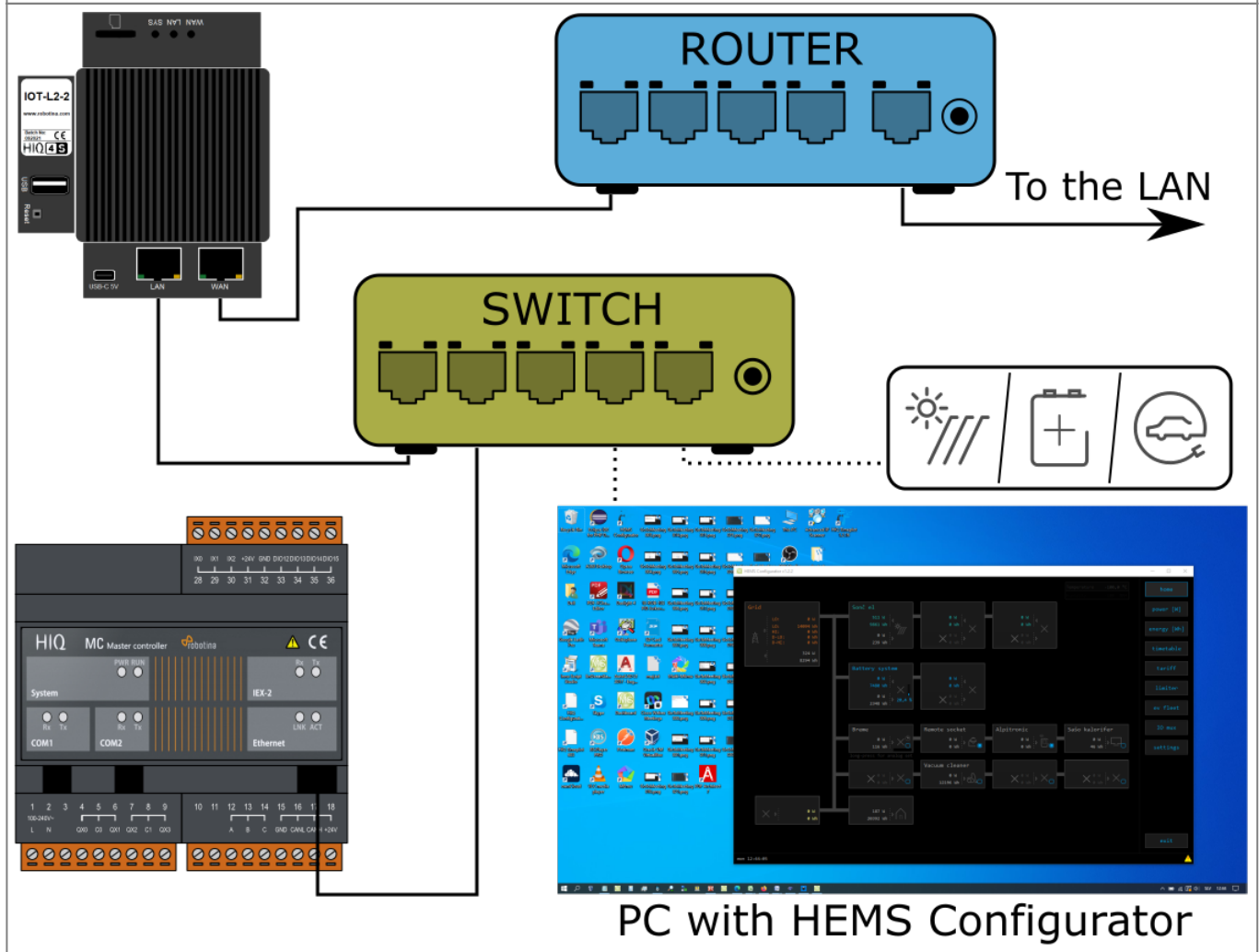
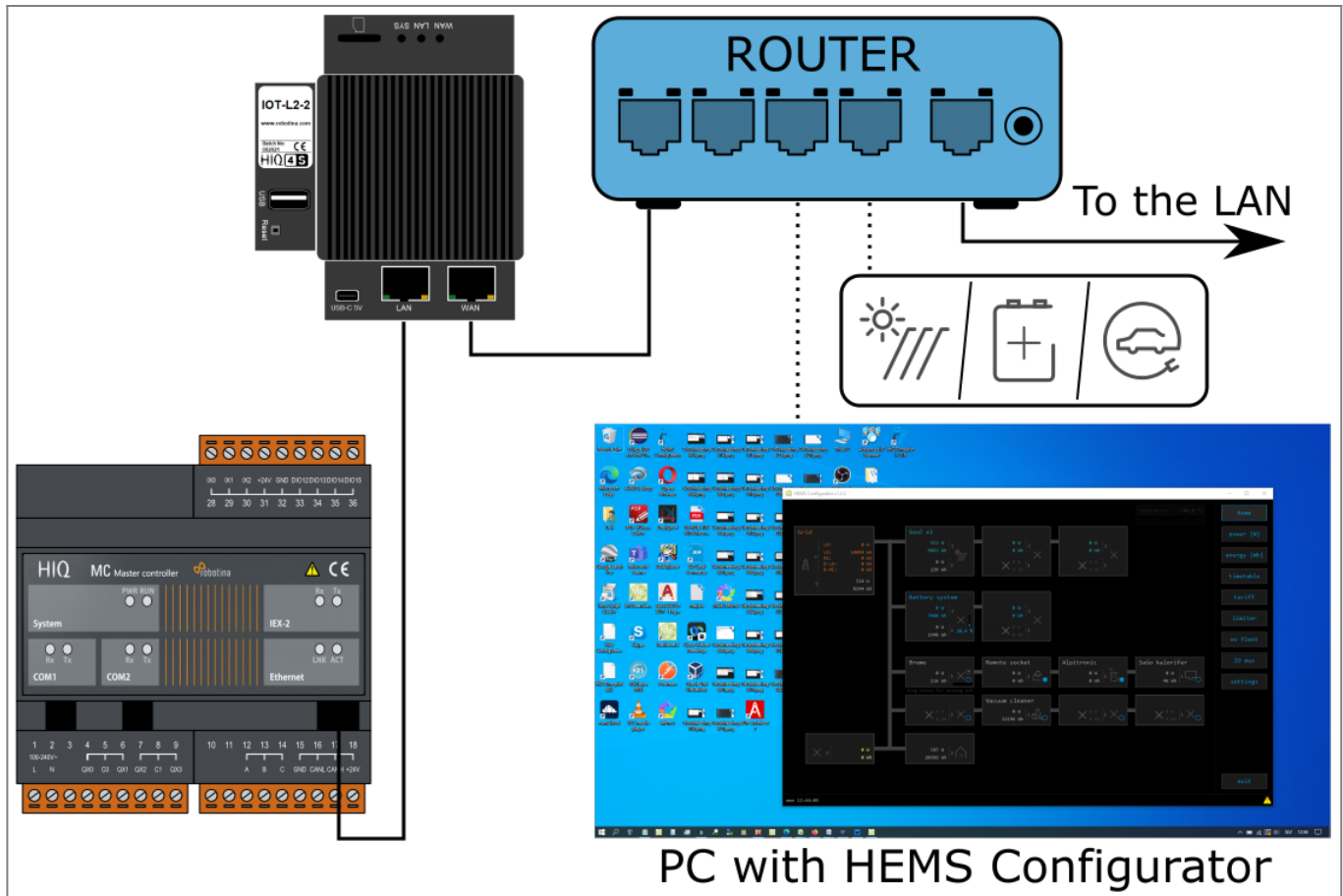
- PC with HEMS configurator
- PV inverter
- Hybrid inverter (battery storage system)
- EV charger

**NOTE: When you change network configuration, MC-230 and IOT-L2-2 must be reset.**

Default connection to the LAN network:

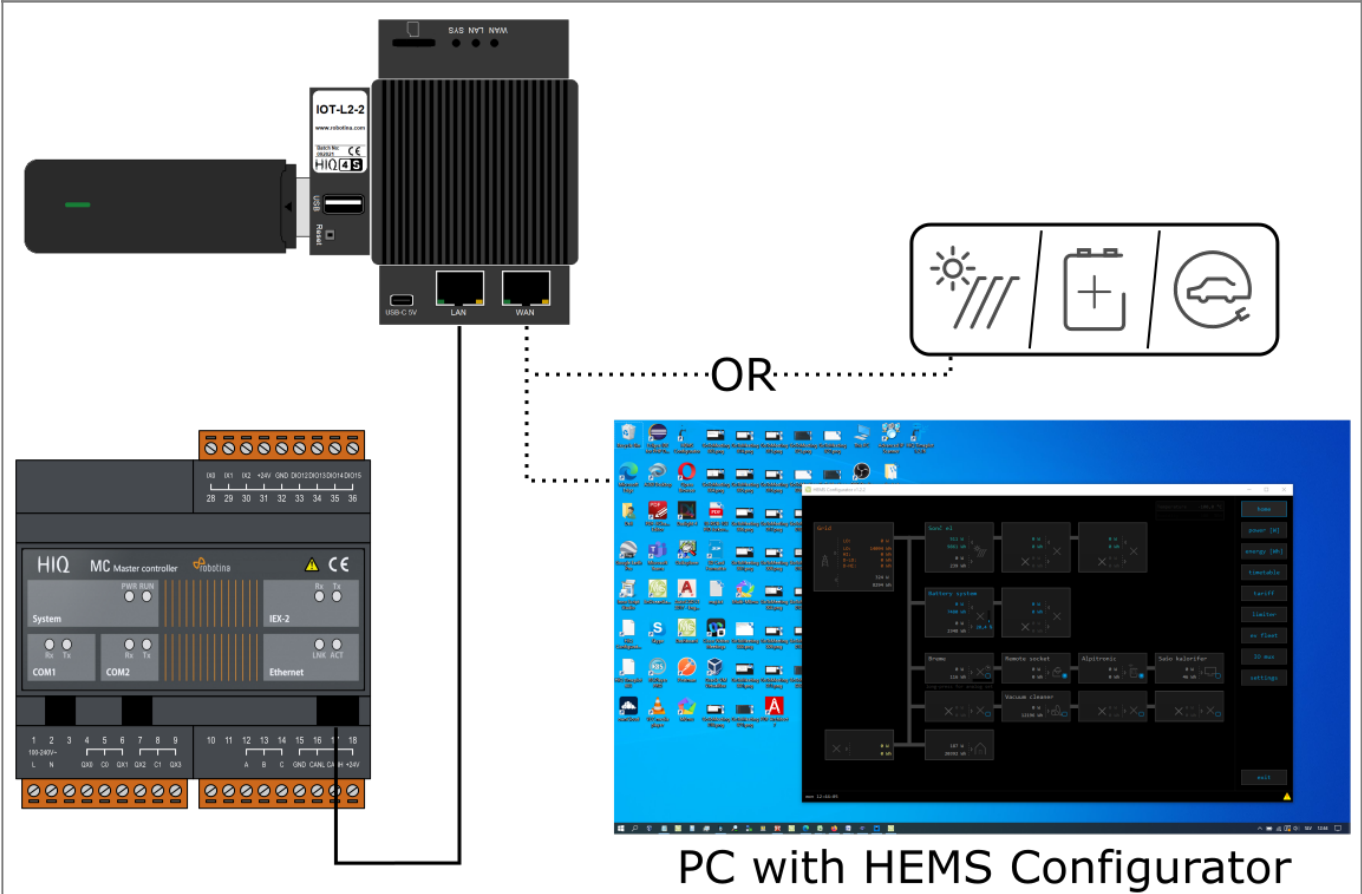


Optional LAN connections:

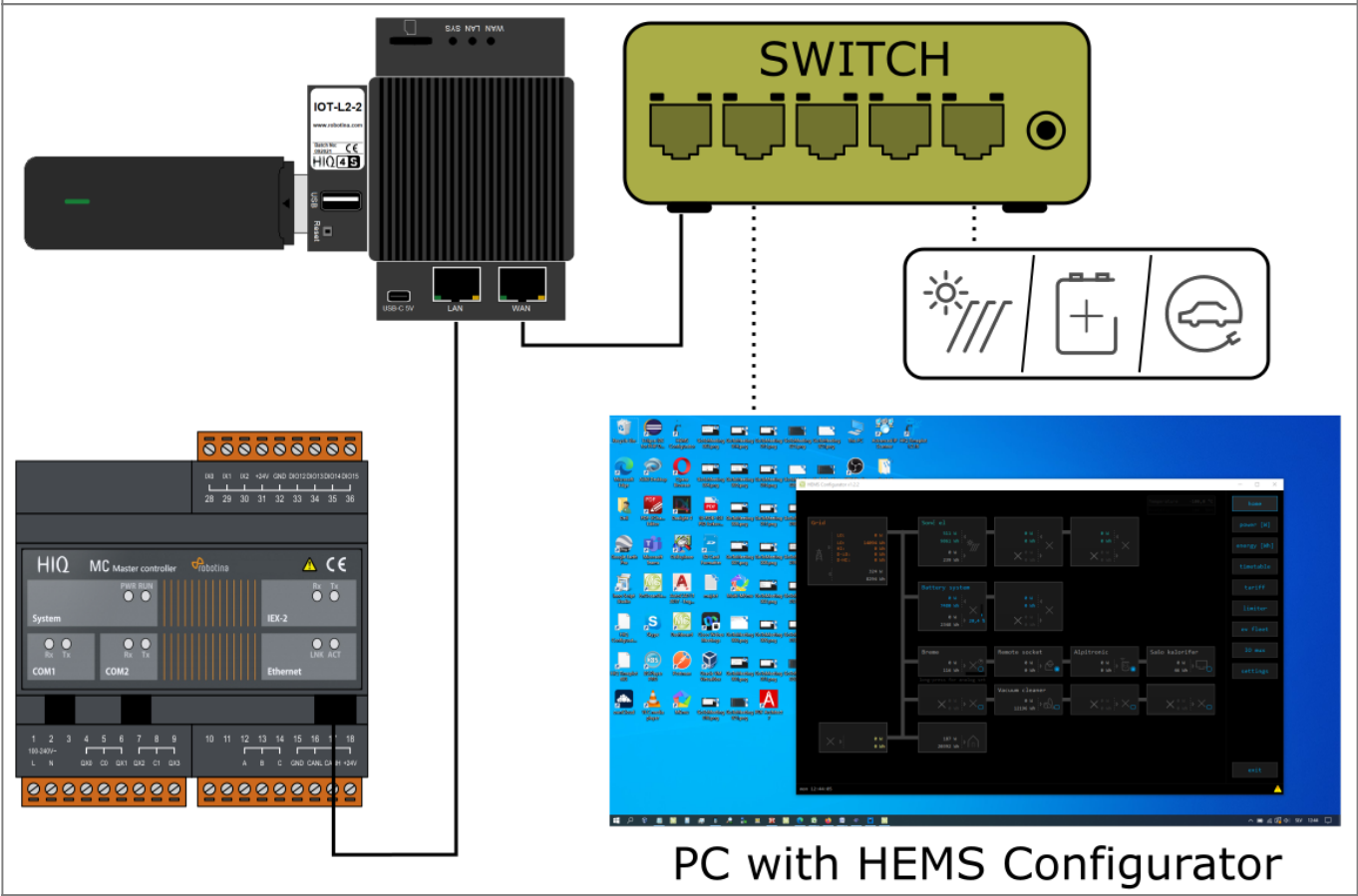


Default connection via LTE 4G modem:

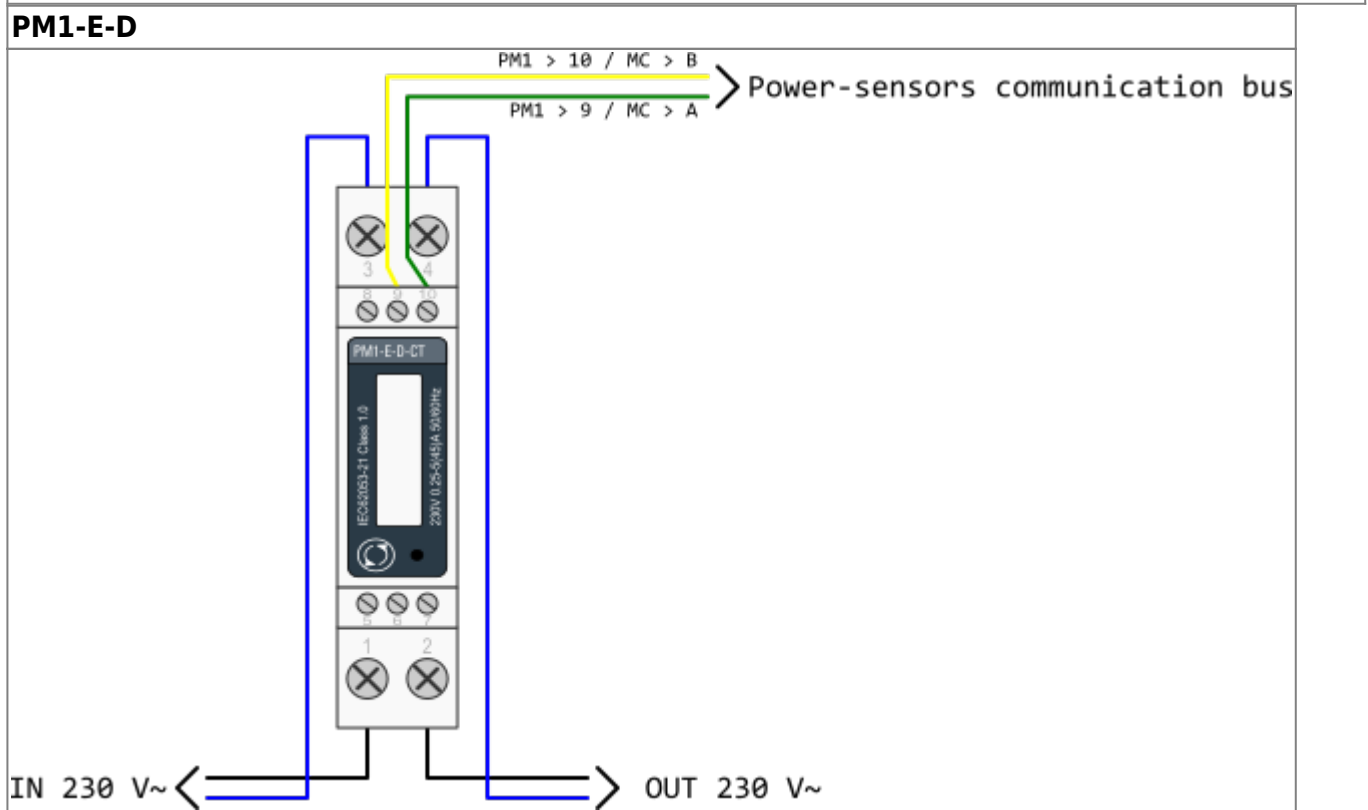
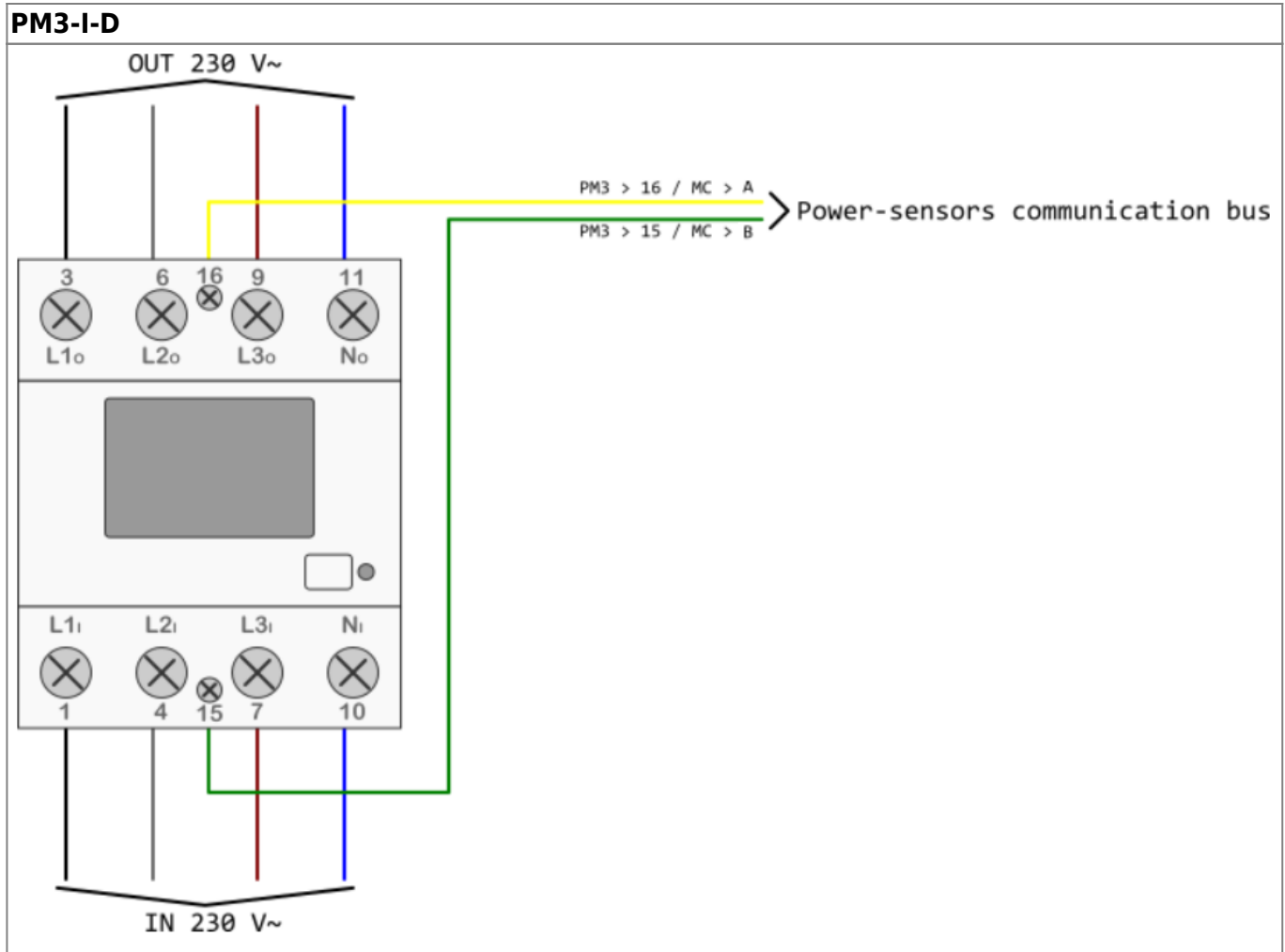
**NOTE:** All connected devices will have internet access via LTE modem which can result in high costs on your LTE account.



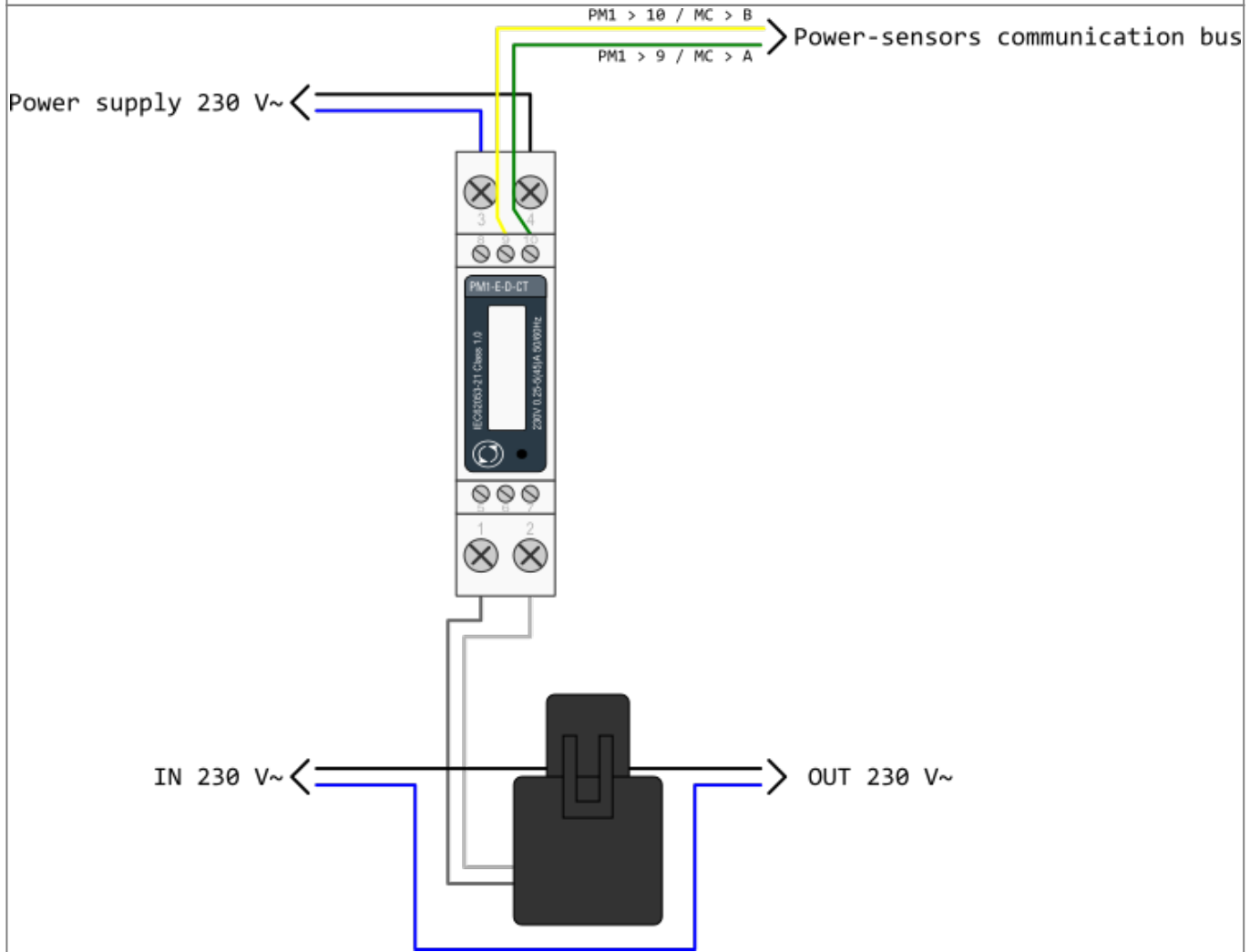
Optional LTE 4G modem connection:



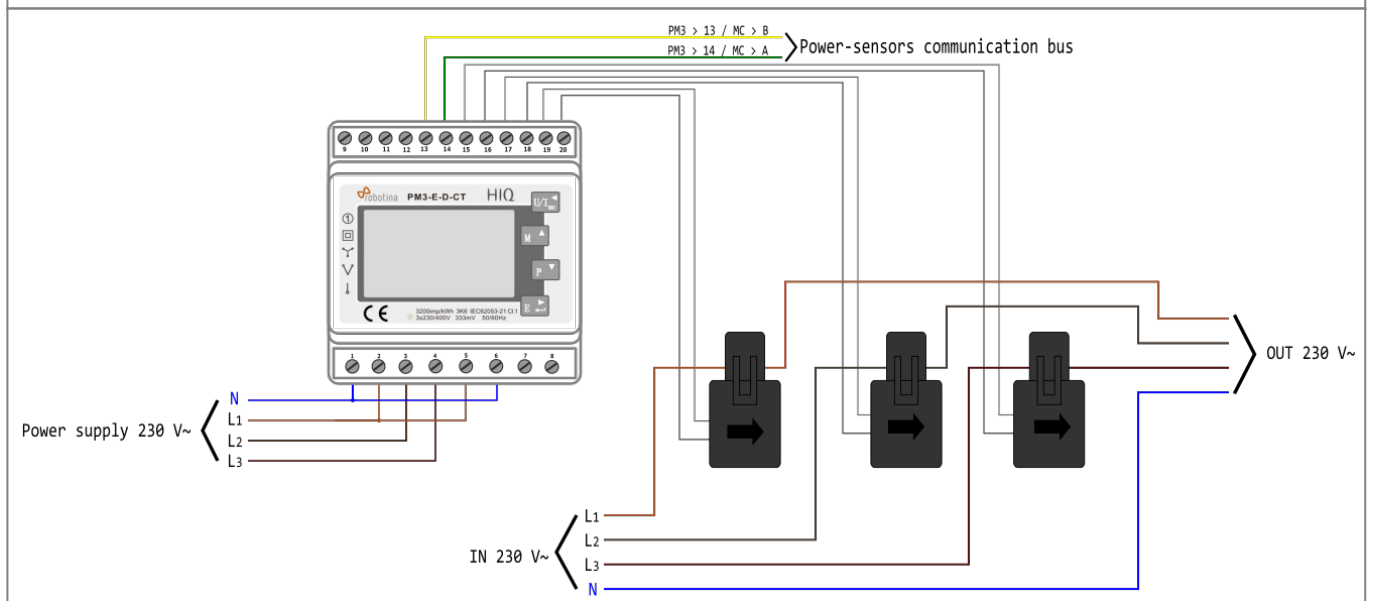
**NOTE:** Specific network requirements, i.e. static IP address can be configured on the cloud service. Please contact [support](#).



### PM1-E-D-CT



### PM3-E-D-CT







## Control consumer by external signal

Connect external source to control device, e.g. thermostat signal on IX0 to control temperature by enabling/disabling connected device on QX0.

### HEMS configurator

Using HEMS configurator settings page, set Digital 1 for consumer in this case water heater.

CONSUMERS	icon	output	man.time	P nominal
Water heater	Water heater	Digital-1	0 min	2500 W

Using HEMS configurator IO mux page, set QX0 to Digital 1 and IX0 to Enable consumer 1:

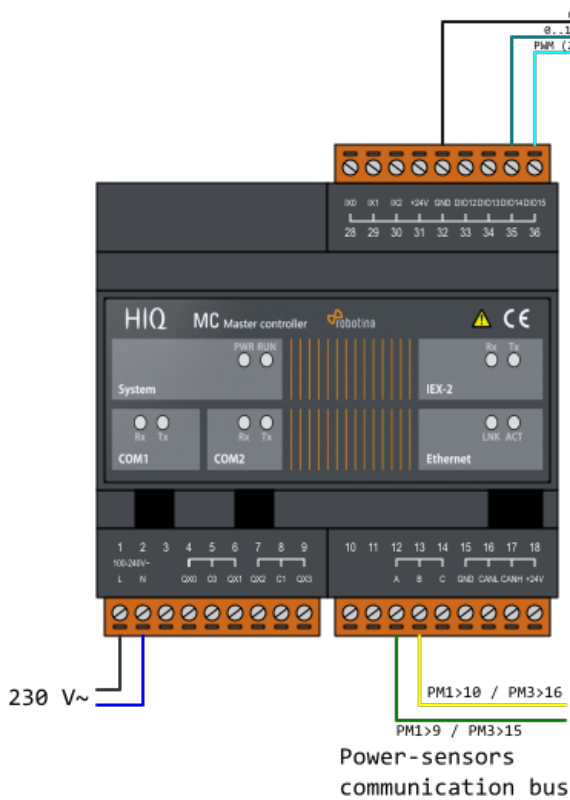
	Select input/output type	out mode
QX0	Digital-1	normal
QX1	/	normal
QX2	/	normal
QX3	/	normal
IO12	/	normal
IO13	/	normal
IO14	/	normal
IO15	/	normal
IX0	Enable consumer-1	normal
IX1	/	normal
IX2	/	normal

PM1 > 10 / PM3 > 16  
PM1 > 9 / PM3 > 15 > Power-sensors communication bus

Power relay for Water heater

### Set analog for consumer 1

Connect analog device to IO14 for analog signal 0-10V or to IO15 for PWM signal (f=1kHz). Analog load is possible to set in configurator for consumer 1 only and reserved outputs are on IO14 & IO15.



Managed consumer 1 analog outputs

### HEMS configurator

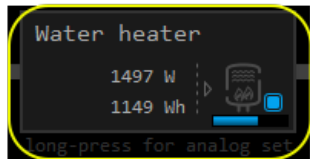
Using HEMS configurator settings page, set Analog for consumer in this case water heater.

CONSUMERS	icon	output	man.time	P nominal
Water heater	Water heater	Analog	0 min	2500 W

Using HEMS configurator IO mux page, set IO14 to Analog output 0-10V and IO15 to PWM output

	Select input/output type	out mode
QX0	/	normal
QX1	Digital-2	normal
QX2	Digital-3	normal
QX3	/	normal
IO12	Digital-6	normal
IO13	/	normal
IO14	Analog output 0-10V	normal
IO15	PWM output	normal
IX0	Toggle consumer-1	normal
IX1	Toggle consumer-2	normal
IX2	Toggle consumer-3	normal

On home page, set consumer 1 (water heater) to desired % of power.



**NOTE:** analog signal is available for consumer 1 on IO14 and IO15 only.

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