GoFlex HEMS Configurator

HW setup guide

Document	HW setup guide
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I. Before start

- All HW has to be wired and powered as specified in electrical diagrams provided by Robotina:

  https://app.box.com/folder/49556955497

- Before start with SW configuration have to be all HW verified with table in attachment “Equipment validation”.

II. Preparing the PC

- Download Goflex HEMS configurator from Robotina wiki page:

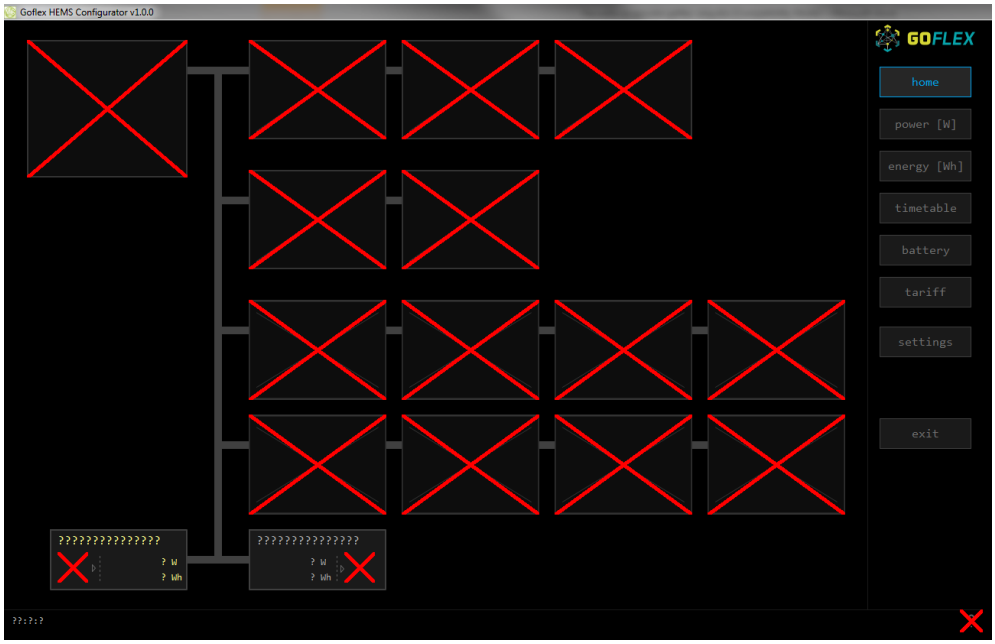
  http://wiki.hiq-home.com/doku.php?id=hiq_energy:goflex_hems:downloads

- Connect your computer in a LAN network (connection with router is mandatory).

- Run “Goflex HEMS Configurator v1.0.0.exe”

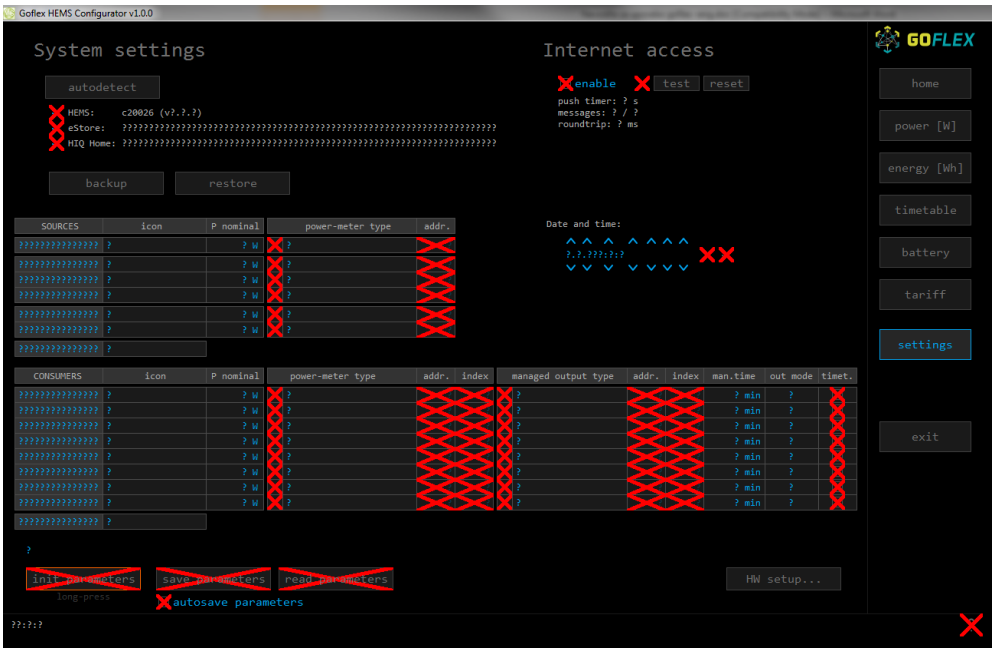
⚠ *Checking point*

- At this point you should see the screen as below:



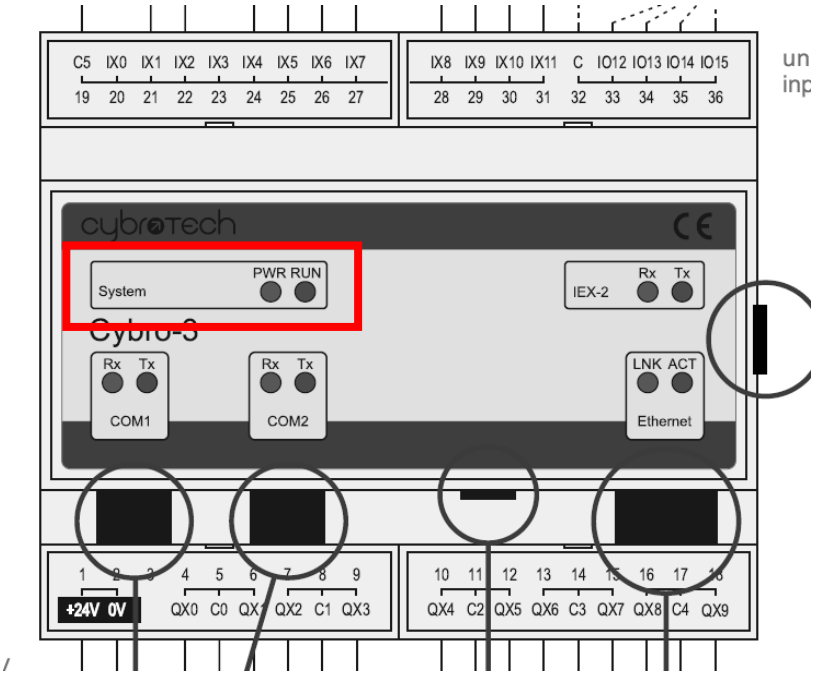
III. Connecting to controller

- Continue to page “Settings” and press “Autodetect”. In a pop-up window select founded controller and confirm it with ok.



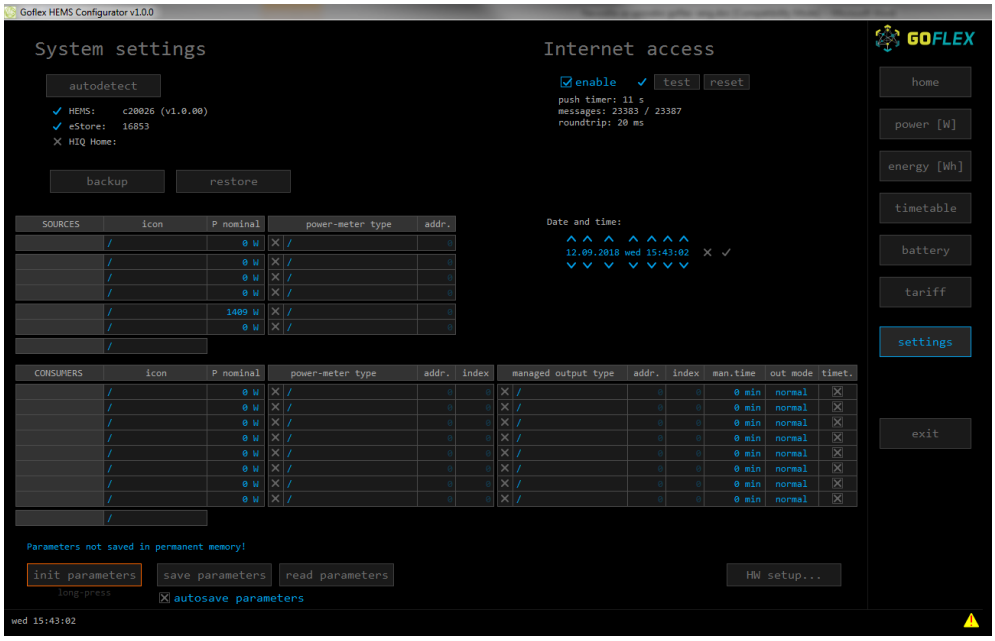
TROUBLE SHOOTING

- Check if “RUN” LED on the controller is always “ON”. In case of blinking restart controller with power disconnection.



⚠ *Checking point*

- After the connection is established will red Xes disappear and you can start with configuration.

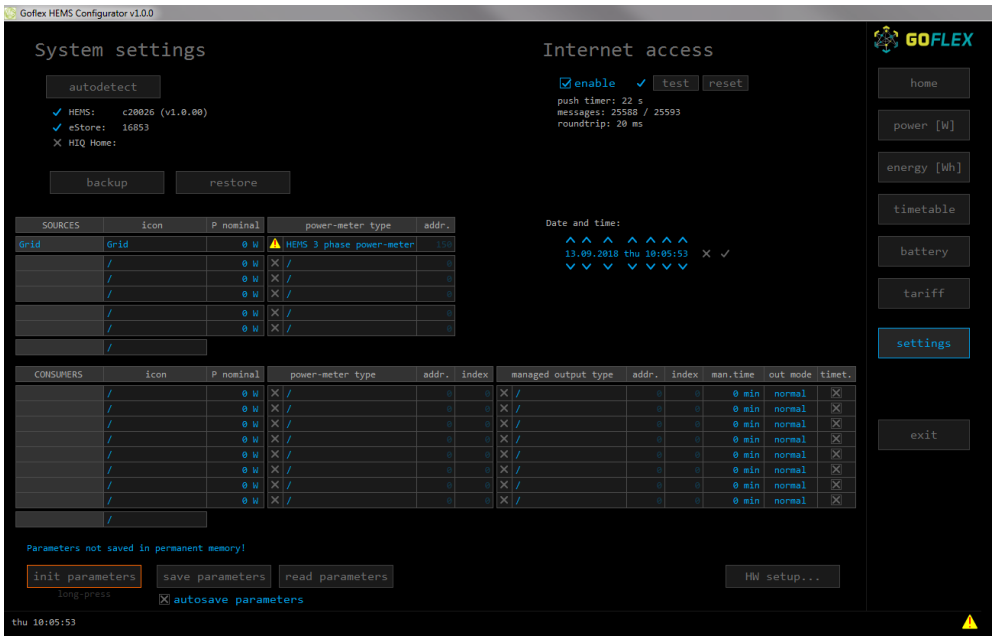


IV. “Home screen” configuration

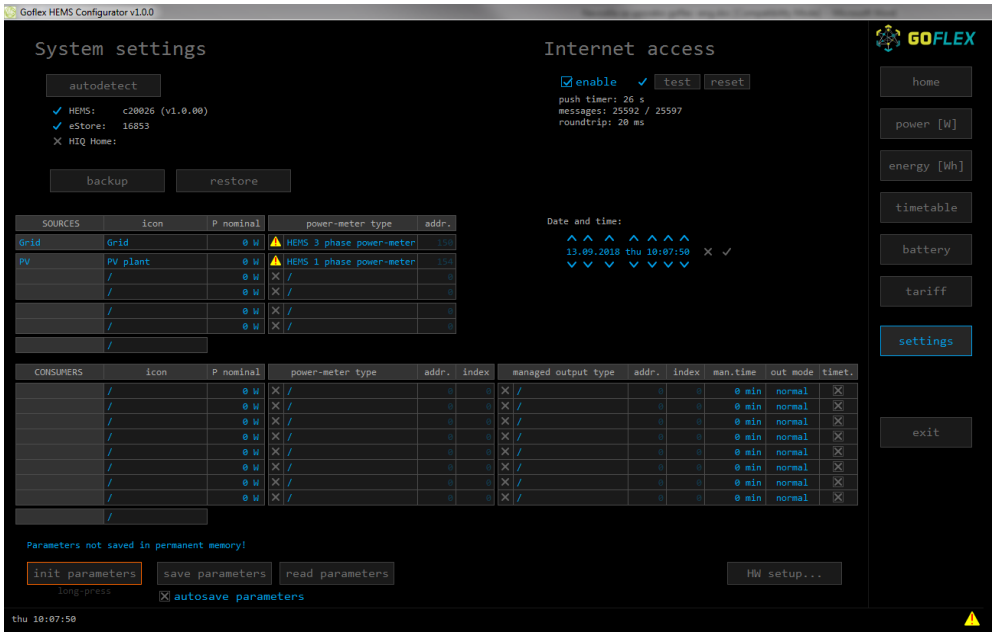
- Before continue click on a button “init parameters”

Then follow:
- Click on a box under the text “Sources” and write “Grid”
- Click on a slash under the text “icon” and choose “Grid”
- Click on box under the text “power meter type” and based on installed HW in a pop-up window select between single power meter and tree phase power meter

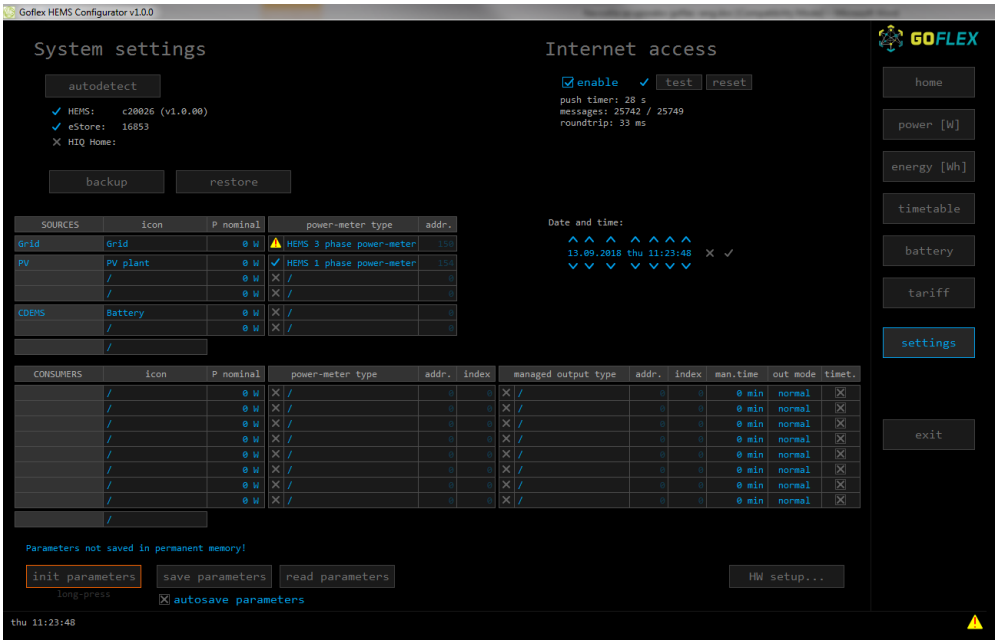
⚠ *Checking point*
At this point you should see the screen as below:



- **Adding PV power meter:** click on the boxes in a second row and add PV plant as an additionally source.

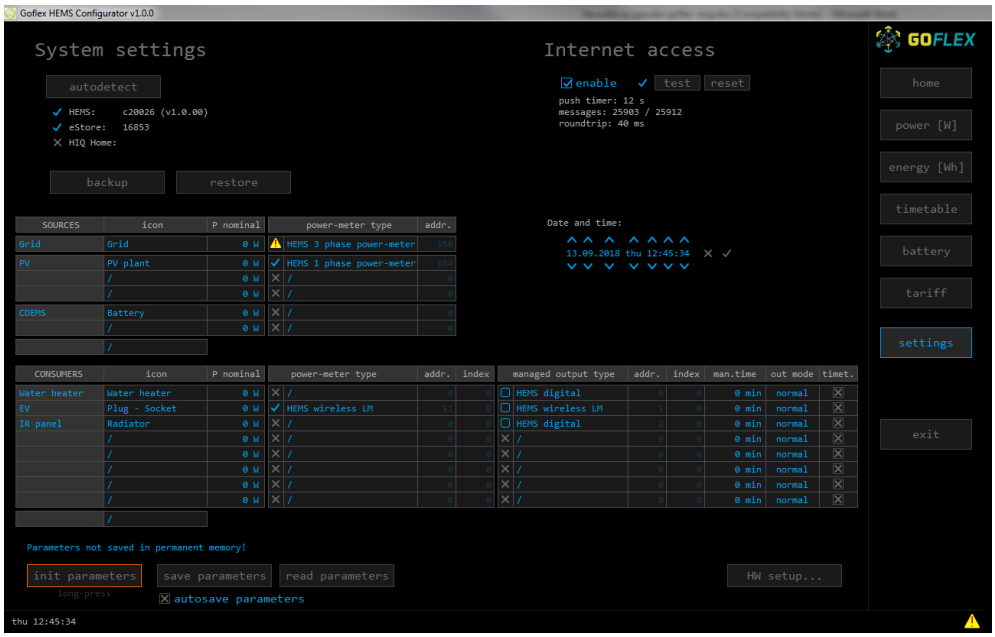


- **Adding CDEMS:** click on the boxes in fifth row and add CDEMS plant as a battery system.



- **Adding Consumers:**
- Below “Consumer” click and name all consumer that are under the HEMS control
- Procced with selecting icons for specific load
- Where consumer is controlled by a wireless device click on a box under “Power-meter type” and chose “HEMS Wireless LM”.
- Under “managed output type” select between:
    - “HEMS digital” for loads that are controlled with digital outputs from controller
    - “HEMS Wireless LM” for wireless accessories (socket, relay)

⚠ *Checking point*



V. Addressing accessories

- In a “settings page” click on “HW Setup”

⚠ *Checking point*
- On top of Configurator will appear “HiQ HEMS HW Setup” menu

- **Power meters:**
- In case of more than one power meter:
    - Connect communication bus (to only one power-sensor)
    - In HIQ Configurator counter should appear as “new power-sensor”
    - Press and hold the push-button on the power-sensor until it appears -SEt- on display
    - In HIQ Configurator click on the “add” button next to the source or consumer that the sensor is measuring
    - Setting address:
        - Click on power meter “A: 149”.
        - Change address to “A: 150” or “A: 154” (for a second power meter)

- In case of trouble follow the text under “refresh” button

- **Adding ZigBee gateway:**
  - Click on “rebuild” button
  - follow the instruction under the button “close”.

⚠ *Checking point*

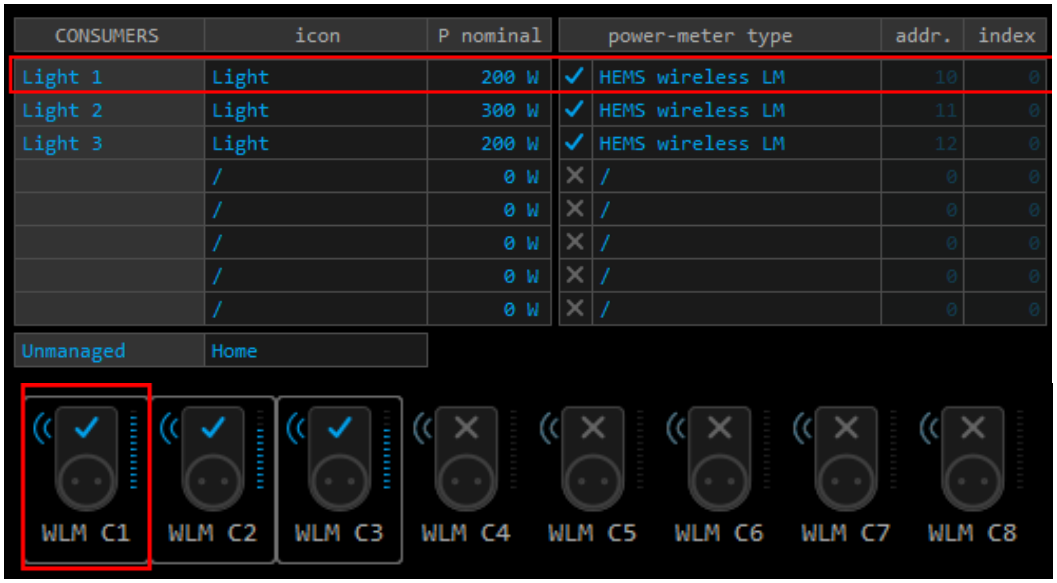
- Gateway icon has to be as shown below. If not follow the text under button “close”

- **Adding wireless plugs/ wireless relay**
- Procedure is same for all wireless devices:
  - restart device from the power supply
  - press and hold small button on device until the red light turns on.
  - in a configurator click on a smart plug icon (also valid for smart relays)
  - Important notice:

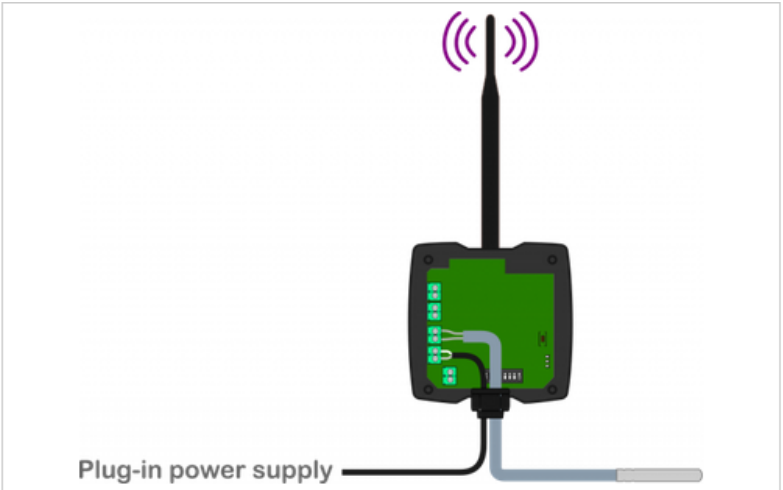
    When we add sockets or relays, we have to take into consider order on consumer list:

    WLM C1 - > First consumer

    WLM C2 -> Second consumer

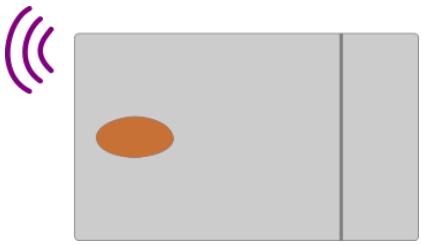


- **Adding temperature sensors (for water boiler)**
- Address of temperature sensors has to be done manually on device as described below:



TDI-WN-W	on wall
1, 2 (from top)	Digital input 1
3, 4	Digital input 2
5, 6	NTC temperature probe input 1
7, 8	NTC temperature probe input 2
+, -	Plug-in power supply
DIP setting	Address setting: [1=lsb, 8=msb]
	- sensor 1, address 60 = 0011 1100
	- sensor 2, address 61 = 1011 1100
	- sensor 3, address 62 = 0111 1100
	- sensor 4, address 63 = 1111 1100
	- sensor 5, address 64 = 0000 0010
	- sensor 6, address 65 = 1000 0010
	- sensor 7, address 66 = 0100 0010
	- sensor 8, address 67 = 1100 0010

- **Adding temperature sensors (for room temperature)**



- Adjust sensor address with DIP-switches according table below
- HIQ HEMS Configurator click on sensor which will be added
- Wait for network open - waiting device status
- Power on and press button on sensor
- Wait until sensor is configured
- Procedure can be interrupted with “close network” button.

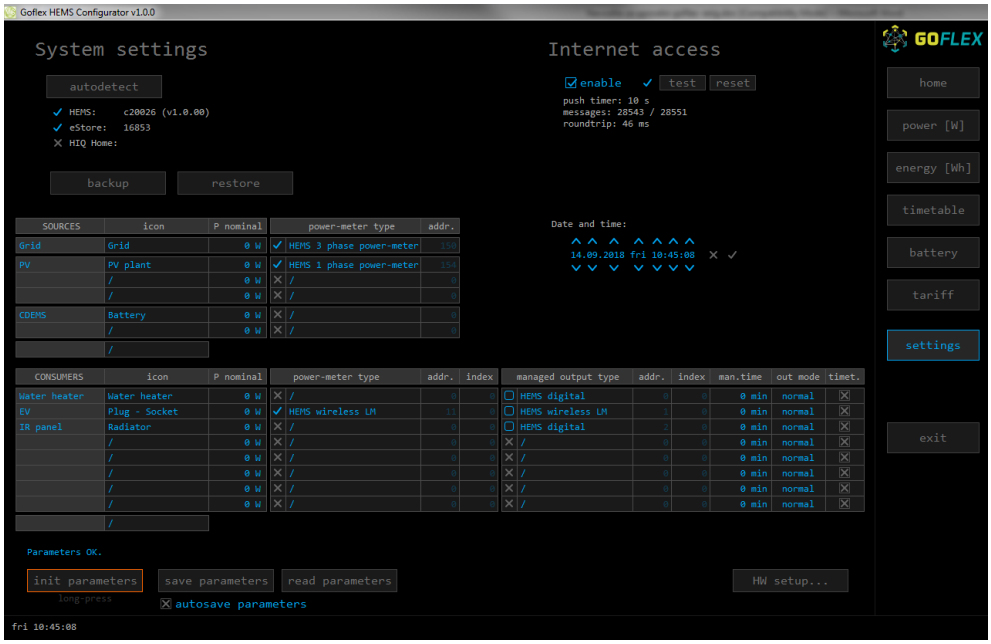
Sensor	Address	DIP switch settings
S1	60	
S2	61	
S3	62	
S4	63	
S5	64	
S6	65	
S7	66	
S8	67	

VI. Before leaving

- After the configuration is done go back to “settings” page and click on “Save parameter”
- Check if there is no “exclamation” sign in the right bottom corner
- Verify system with “System validation” enclosed in attachment.

⚠ *Checking point*

- If everything is done correctly sign “⚠” in a right bottom corner will disappear.



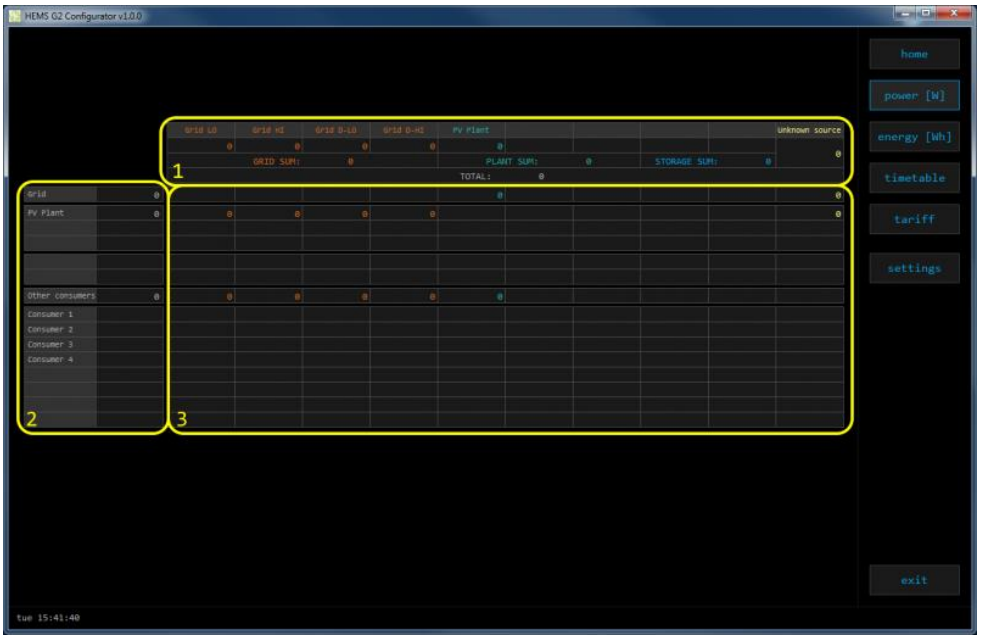
VII. Walk through Screens

1. Grid		
›	From grid	Tariff (LO, HI, D-LO, D-HI) and power from grid in W
		Imported energy by tariff in Wh
‹	To grid	Power exported to grid in W
		Exported energy in Wh
2. Plants		
‹	Produced	Produced power in W and energy in Wh
›	Consumed	Consumed power in W and energy in Wh
3. Storage systems		
‹	Sourced	Power in W and energy in Wh sourced from storage (battery)
›	Stored	Power in W and energy in Wh stored (to battery)
bargraph and %[1]	SOC	Battery State Of Charge
4. Consumers		
›	Consumed	Consumed power in W and energy in Wh
[]	Status	Output status for managed consumers
bargraph[2]	Analog out	Analog output value
click	Toggle	Click in frame toggles managed consumers output
long-press[2]	Set analog	Long press on first consumer pops-up dialog for analog value set
5. Unknown source		
›	Sourced	Power in W and energy in Wh from unknown source

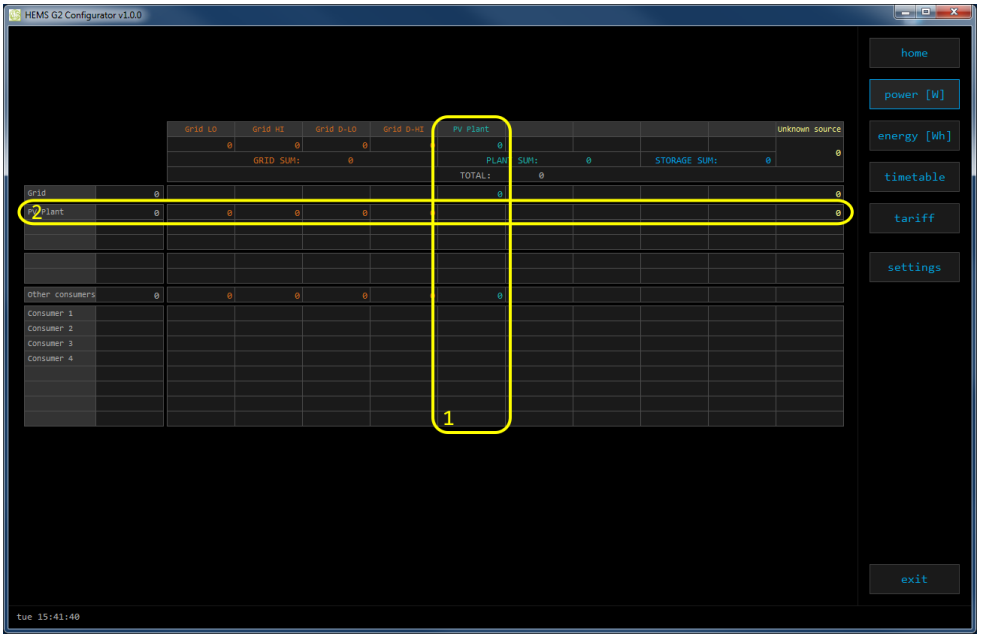
Accumulate also all differences caused by power-sensor inaccuracy		
6. Other consumers		
›	Consumed	Consumed power in W and energy in Wh by other (not measured) consumers

[1] only for eStore

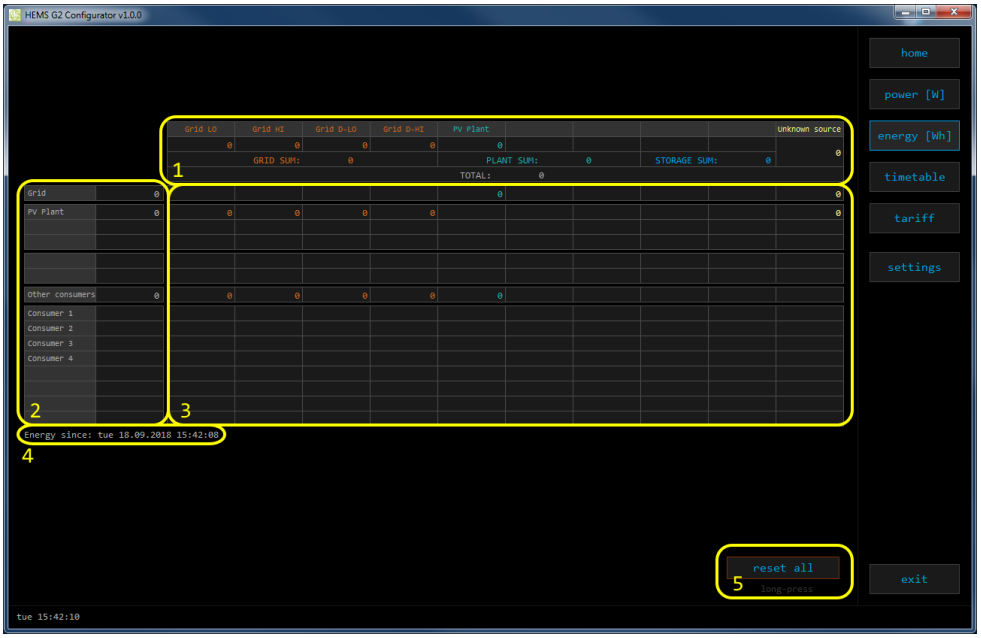
[2] only for first managed consumer



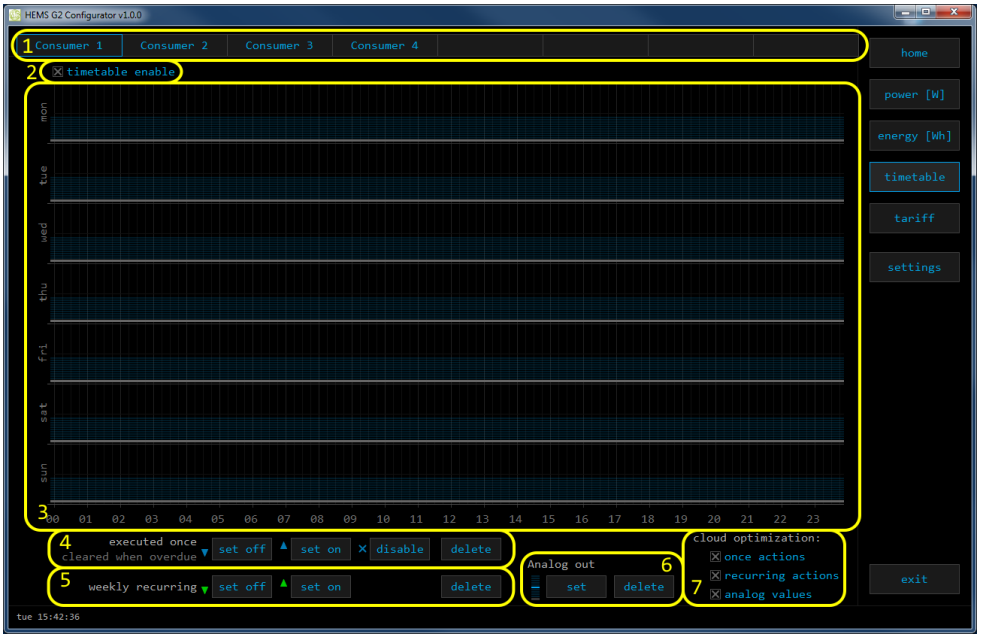
1. Sourced power	
Sourced power for each source	
Sums per source type	
Total of all sourced power	
2. Consumed power	
Power for each consumer	
3. Power distribution	
Partial distributed power	



1. Sourced power distribution
How sourced power is consumed by each consumer
2. Consumed power distribution
Who sources consumed power



1. Sourced energy
Sourced energy for each source
Sums per source type
Total of all sourced energy
2. Consumed energy
Energy for each consumer
3. Energy distribution
Partial distributed energy
4. Energy since
Date and time since energy is recorded
5. Reset all
Long-press to reset all energy counters



1. Managed load menu
Switch between managed loads
2. Enable checkbox (NOT SUPPORTED)
When un-checked timetable is not executed
3. Events grid
Events displayed in weekly grid (15 min resolution)
Click to select time and set event by clicking buttons below
4. Once actions (top priority timetable actions)
Actions are executed and then automatically cleared.
“Disable” action will just disable recurring action.
5. Recurring actions (low priority actions)
Actions are executed each week.
6. Analog out
Action to set analog output. Analog actions are recurring.
7. Cloud optimization
When enabled (checked) cloud optimization is enabled.

VIII. Support

- Please visit https://app.box.com/folder/49556955497
  - HEMS Electrical diagram
  - Data sheet – HEMS controller
  - Data sheet – Home Linker
  - Data sheet – Power meter
  - Data sheet – ZigBee gateway
  - Data sheet – Smart socket
  - Data sheet –Temperature sensor
  - Data sheet – CDEMS

- Or check Robotina wiki page:
  http://wiki.hiq-home.com/doku.php?id=hiq_energy:goflex_hems:hardware

ATTACHEMENT: Equipment validation

No.	Objective	Test procedure	Acceptance Criteria	Test equipment	Test result
1	HEMS Equipment validation	HEMS is connected as specified in electrical diagram provided by Robotina.	Power light on power supply module is ON	Visual check	
2			Power light on HEMS Controller is ON	Visual check	
3			Power light on Home Linker is ON	Visual check	
4			Power light on Power meter is ON	Visual check	
5			Power light on ZigBee Gateway is ON	Visual check	
6			Power light on Smart socket is ON	Visual check	
7			Power light on Temperature sensor is ON	Visual check	
8	CDEMS Equipment validation	Turn CDEMS main switch ON	Power light on CDEMS controller is ON	Visual check	
9		Push button on the battery front	Power light on CDEMS battery is ON	Visual check	

ATTACHEMENT: Graphic interface validation

No.	Objective	Test procedure	Acceptance Criteria	Test equipment	Test result
1	Graphic interface validation	Run “HEMS CONFIGURATOR”	All pages fully functional	HEMS CONFIGURATOR	

ATTACHEMENT: System validation

No.	Objective	Test procedure	Acceptance Criteria	Test equipment	Test result
1	HEMS Data integrity and collection	Power meter – readings are done automatically, no additional action is needed	Energy and power displayed in HEMS CONFIGURATOR are equal to values displayed on power meter screen	HEMS CONFIGURATOR	
2		Smart Socket – readings are done automatically, no additional action is needed	Energy and power measurement are displayed in HEMS CONFIGURATOR	HEMS CONFIGURATOR	
3		Temperature & Humidity sensor – readings are done automatically, no additional action is needed	Temperature and humidity measurements are displayed in HEMS CONFIGURATOR	HEMS CONFIGURATOR	