

GoFlex HEMS Configurator

HW setup guide



Document	HW setup guide
Version	01.2
Туре	project documentation - GoFlex
Date	22.10.2018

Content

Cor	ntent 2	:
I.	Before start	•
II.	Preparing the PC 3	;
III.	Connecting to controller 4	ł
IV.	"Home screen" configuration6	,
v.	Addressing accessories	;
VI.	Before leaving14	ŀ
VII.	Walk through Screens 15	,
VIII	. Support 20)
AT	ACHEMENT: Equipment validation 21	•
AT	ACHEMENT: Graphic interface validation 22	:
АТ	ACHEMENT: System validation 22)

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.

Goflex HEMS Configurator v1.0.0				Sec. 10	and the second sec	de l'angelie	and the second division of	
System sett	ings			Interne	t access			🕸 GOFLEX
	(v?.?.?)	****		inter: push timer: messages: ? roundtrip: ?	? s / ?			
HIQ Home: ?????? backup								
SOURCES icc	on P nominal	power-meter type	addr.	Date and time:				
222222222222222222222222222222222222222	2 W	? ? ?	\ge			×		
······································	5 W 5 M	2	8					
22222222222222222222222222222222222222	5 M 5 M	2 2	X					
CONSUMERS ic	on P nominal	power-meter type	addr. index	managed output type	addr. index	man time o	ut mode timet.	
****************	2 W	2 2	XXX	X :		? min	? X	
	5 W	? ?		2			· ·	
	? W	2		2			2	
	2 W	?		? ;				
	5 W	2		2			2 8	
55555555555555 5	2 W	?		2			? 🔀	

init parameters	save parameters	read parameters						
long-press	Xautosave param	eters						

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. -

Goflex HEMS Config System		ings				Interne	t ac	Cess		-	- Marriel	🖄 GOFLEX
autodetect Internate test reset ✓ HENS: c.20026 (v1.0.00) messages: 2383 / 2387 roundtrip: 20 ms ✓ HENS: c.30026 (v1.0.00) messages: 2383 / 2387 roundtrip: 20 ms ✓ HENS: c.30026 (v1.0.00) messages: 2383 / 2387 roundtrip: 20 ms												
ba												
						Date and time:						
SOURCES	ico /	n P nominal 0 W		addr. 0		Date and time:						
						× × ×						
		0 W 0 W										
	, 1	1409 W										
												settings
CONSUMERS	ic	on P nominal	power-meter type	addr.	index	managed output type	addr.	index	man.time	out mode	timet.	
		0 W 0 W							0 min 0 min	normal normal		
		0 W							0 min	normal		
		0 W							0 min			
init param	ieters	permanent memory! save parameters	s read parameters									
			meters									
wed 15:43:02												<u> </u>

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:

	gurator v1.0.0											
System	n setting					Interne	t ac	ces				🖄 GOFLEX
HEMS:	c20026 (v1.0.0	0)				push timer: messages: 25		593				
<pre> eStore</pre>	: 16853					roundtrip: 2						
× HIQ Ho	ome:											
SOURCES	icon	P nominal	power-meter type	addr.		Date and time:						
irid			A HEMS 3 phase power-meter			13.09.2018			× ./			
						× × ×						
CONSUMERS	icon	P nominal	power-meter type	addr.	index	managed output type	addr.	index	man.time	out mode	timet.	
			× /									
			× / × /									

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

📀 Goflex HEMS Configura	ator v1.0.0					Sec. 10	-	-		-	-	P. Band
System	settin	gs				Interne	t ac	ces				🖄 GOFLEX
autodet ✓ HEMS:	tect c20026 (v1.0					✓ enable push timer: messages: 25						
✓ EStore: X HIQ Home:	16853					roundtrip: 2						
back												
SOURCES	icon	P nominal	power-meter type	addr.		Date and time:						
Grid G			A HEMS 3 phase power-meter			13.09.2018			× ./			
PV P			A HEMS 1 phase power-meter			× × ×						
/												
/		0 W 0 W	× /									
/		0 W 0 W										
/												settings
CONSUMERS	icon	P nominal	power-meter type	addr.	index	managed output type	addr.	index	man.time	out mode		
1												
/												
/		0 W 0 W							0 min 0 min	normal normal		
1												
1												
/												
1												
/ Parameters not su init paramet			read parameters									
long-press			meters									
thu 10:07:50												<u>^</u>

- 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:
 - \circ "HEMS digital" for loads that are controlled with digital outputs from controller
 - o "HEMS Wireless LM" for wireless accessories (socket, relay)

Δ	Checking point	
---	----------------	--

Goflex HEMS Confi	gurator v1.0.0					Teacher State	-	-	and the Person of	-	-	a disease
System	n setting	S				Interne	t ad	ces				🖄 GOFLE
					✓ enable ✓ test reset							
 ✓ HEMS: c20025 (v1.0.00) ✓ eStore: 16853 × H1Q Home: 					messages: 25903 / 25912 roundtrip: 40 ms							
SOURCES	icon	P nominal	power-meter type	addr.		Date and time:						
Grid	Grid		A HEMS 3 phase power-meter									
					13.09.2018 thu 12:45:34 × ✓							
	/											
CONSUMERS	icon	P nominal	power-meter type	addr.	index	managed output type	addr.	index	man.time	out mode	timet.	
later heater												
		0 W 0 W							0 min 0 min			
		0 W							0 min			
		0 W							0 min			
	1											
Parameters no												
init param			read parameters									

V. Addressing accessories

- In a "settings page" click on "HW Setup"

▲ Checking point

- On top of Configurator will appear "HiQ HEMS HW Setup" menu

B HIQ HEMS HW Setup	Receiving sprate print may be Compatible, Name Manual	F Read
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	PICL PIC2 PIC3 PIC4 PIC5 PIC6 PIC7 PIC6 A: 169 A: 161 A: 162 A: 163 A: 164 A: 165 A: 166 A: 167	exit
Wireless rebuild open close Wireless GN BR 1 BR 2 BR 3 BR 4 Close Wireless Close		
Network status: normal (network closed). Click on active WLM to toggle output. Click on inactive device to	add it or on "error" device to delete it.	
TS-H	X X	
Aik Enocean Gu-Emo Click on active push-button to delete it or on inactive push-button	TP C1 TP C2 TP C3 TP C4 TP C5 TP C6 TP C7 TP C8	
HC-IQ HEMS	$ \begin{array}{ c c c c c c c c c } \hline \bigcirc & \bigcirc$	

- 1phase 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"
 - o 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

- 3phase Power meters:

- o Communication bus with the power-sensor should already be connected
- Press and hold the push-button on the sensor until it appears "COnF Add" on display
- o In HIQ Configurator counter should appear as "new power-sensor"
- Click on the "add" button next to the device 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

TROUBLE SHOOTING

- 3 phase power meter
 - o Check if the A and B wires are connected as below:



- CAD-232-A2-IQ,
- $\,\circ\,$ Terminate DIP switch as below (1 and 2 toward ON):



Adding ZigBee gateway:

- Click on "rebuild" button
- \circ follow the instruction under the button "close".

$\underline{\Lambda}$ Checking point

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



- TROUBLE SHOOTING

• Check if the DIP settings are as specified below (1=ON, 2-8 OFF)



- Adding wireless plugs/ wireless relay

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

CONSUMERS	icon	P nominal	power-meter type	addr. index
Light 1	Light	200 W	✓ HEMS wireless LM	10 0
Light 2	Light	300 W	✓ HEMS wireless LM	11 0
Light 3	Light	200 W	✓ HEMS wireless LM	12 0
	1	0 W	× /	0 0
	1		× /	0 0
	1		× /	0 0
	1		× /	0 0
	1		× /	0 0
Unmanaged	Home			
	✓ (✓ (✓ (✓ (✓ (✓ (✓ (✓ (✓ (✓ ((X) (() () () () () () () () () () () () (WLM C8

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

Plug-ir	n power supply
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=Isb, 8=msb]
	- sensor 1, address 60 = 0011 1100
	- sensor 2, address 61 = 1011 1100
	- sensor 3, address 62 = 0111 1100
	- sensor 3, address 62 = 0111 1100 - sensor 4, address 63 = 1111 1100
	- sensor 4, address 63 = 1111 1100
	- sensor 4, address 63 = 1111 1100 - sensor 5, address 64 = 0000 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	ON T 2 3 4 5 6 7 8
S4	63	ON 1 2 3 4 5 6 7 8
S5	64	ON T 2 3 4 5 6 7 8
S6	65	OM 1 2 3 4 5 6 7 8
S7	66	0M 1 2 3 4 5 6 7 8
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.

\bigwedge Checking point

- If everything is done correctly sign " Λ " in a right bottom corner will disappear.

Goflex HEMS Config	gurator v1.0.0								_	-	against Transport		_	
System	n setting	S						Interne	t ad	cces				🕸 GOFLEX
								☑ enable push timer: :						
✓ HEMS: ✓ eStore X HIQ Ho		0)						messages: 28 roundtrip: 44						
SOURCES	icon	P nominal		power-meter type	addr.			Date and time:						
Grid	Grid	0 W	~	HEMS 3 phase power-meter	150									
PV	PV plant		~					14.09.2018						
			×											
CDEMS	Battery		×											
														settings
CONSUMERS	icon	P nominal		power-meter type	addr.	index		managed output type	addr.	index	man.time	out mode	timet.	
Water heater														
EV	Plug - Socket						С							
IR panel			×											
			×											
			×											
		0 W 0 W	××								0 min 0 min			
		0 W	Â								0 min 0 min			
	, ,													
			5											
fri 10:45:08														

VII. Walk through Screens

18 HEMS G2 Configurator v1.0.0		
	Temperature -100.0 °C	home
Grid : LO: • W : • • • • • • • • • • • • • • • •		
3 × 0 th 1"		
Consumer 1 Consumer 2 Consumer 3	Consumer 4	
$\underbrace{\overset{\circ}{\underset{\scriptstyle \text{def}}{\times}}}_{4_{\text{uppress}},\text{press}} \xrightarrow{\circ} \underset{\scriptstyle \text{def}}{\overset{\circ}{\underset{\scriptstyle \text{def}}{\times}}} \xrightarrow{\circ} \xrightarrow{\circ} \xrightarrow{\circ} \underset{\scriptstyle \text{def}}{\overset{\circ}{\underset{\scriptstyle \text{def}}{\times}}} \xrightarrow{\circ} \xrightarrow{\circ} \xrightarrow{\circ} \xrightarrow{\circ} \xrightarrow{\circ} \xrightarrow{\circ} \xrightarrow{\circ} \xrightarrow$	× ₀ № ▷ © □	
Unknown source А .: Оther consumers Оther volumers		
tue 15:41:03		

1. Grid		
>	From grid	Tariff (LO, HI, D-LO, D-HI) and power from grid in W
	 To grid To grid Produced Consumed Sourced Stored Stored SOC Status 	Imported energy by tariff in Wh
۲	To grid	Power exported to grid in W
		Exported energy in Wh
2. Plants		
۲	Produced	Produced power in W and energy in Wh
>	Consumed	Consumed power in W and energy in Wh
3. Storage systems		
۲	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	2	
>	Sourced	Power in W and energy in Wh from unknown source

	🕛 Accum	ulate also all differences caused by power-sensor inaccuracy
6. Other consumer	S	
>	Consumed	Consumed power in W and energy in Wh by other (not measured) consumers
¹ only for eStore		·

² only for first managed consumer

	0					Unknown source	energy [
	1					°,	timetab
	0		0			0	
	8						tarif
							1 automatica m
	1 L						settin
ter consulters	0 0						
	3						

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						

IEMS G2 Configurator v	1.0.0									home
		Grid LO	Grid HI	Grid D-LO	Grid D-HI	PV Plant			Unknown source	
						0 PLAN	SUM:			
						TOTAL:	0			
Srid P <mark>⊘</mark> Plant	0 0	0	0	0		9			 9	
- VI IONC	0	0	0	0						
Other consumers	0					0				
Consumer 1 Consumer 2										
Consumer 3										
						1				

1. Sourced power distribution

How sourced power is consumed by each consumer

2. Consumed power distribution

Who sources consumed power

HEMS G2 Configurator v1.0.0	0									
	Grid LO	Grid HI	Grid D-LO	Grid D-HI					Unknown source	energy [Wh]
	0								. 0	
Srid					TOTAL:	0			\rightarrow	timetable
Srid PV Plant	0 0			0					8	
										tariff
										settings
onsumer 1	0 0									
Consumer 1										
Consumer 3										
2	3									
2										
nergy since: tue 18.0	9.2018 15:42:08									
									set all	exit
								5 la	ong-press	exit

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

HEMS 62 Configurator v1.0.0	
1 Consumer 2 Consumer 3 Consumer 4	home
2(Xtimetable enable)	power [W]
	energy [Wh]
g and a second	timetable
	tariff
	settings
the second se	
3 00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23	
(4 executed once vertice set off ▲ set on × disable delete Analog out 6 cloud optimization: Cleared when overdue vertice set off ▲ set on × disable delete	T
5 weekly recurring vet off ▲ set on delete 7 ⊠ analog values	s exit
tue 15:42:36	

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 <u>https://app.box.com/folder/49556955497</u>
 - HEMS Electrical diagram
 - $\circ~$ Data sheet HEMS controller
 - Data sheet Home Linker
 - Data sheet Power meter
 - $\circ~$ Data sheet ZigBee gateway
 - Data sheet Smart socket
 - Data sheet –Temperature sensor
 - $\circ~$ 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	Power meter – readings are done automatically,	Energy and power displayed in HEMS	HEMS CONFIGURATOR	
	collection	no additional action is needed	CONFIGURATOR are equal to values displayed on		
			power meter screen		
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	