# **HEMS v1.2.3 Configurator**

Latest version of HEMS Configurator can be found under download folder.

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## home

Basic system overview.



1. Grid							
	From grid	Tariff (LO, HI, D-LO, D-HI) and power from grid in W					
>	From grid	Imported energy by tariff in Wh					
	To grid	Power exported to grid in W					
<	To grid	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 system	S						
<	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 % <sup>1</sup>	SOC	Battery State Of Charge					
4. Consumers	·						
>	Consumed	Consumed power in W and energy in Wh					

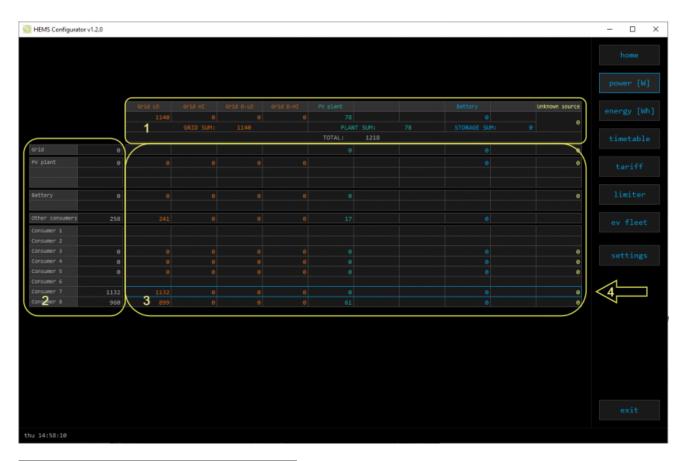
[]	Status	Output status for managed consumers
bargraph <sup>2</sup>	Analog out	Analog output value
click	Toggle	Click in frame toggles managed consumers output
long-press <sup>2</sup>	Set analog	Long press on first consumer pops-up dialog for analog value set
5. Unknown sourc	e	
>	Sourced	Power in W and energy in Wh from unknown source
		all differences caused by power-sensor inaccuracy
6. Other consume	rs	
>	Consumed	Consumed power in W and energy in Wh by other (not measured) consumers
7. Temperature ar	nd humidity	
	Temperature	Temperature in <sup>o</sup> C
	Humidity	Humidity in % RH
8. Page navigation	า	
	Home	Home screen
	Power [W]	Power screen
	Energy [Wh]	Energy screen
	Timetable	Timetable screen
	Tariff	Tariff screen
	Limiter	Limiterscreen
	EV fleet	EV fleet screen
	IO mux	IO mux screen
	Settings	Settings screen
9. Exit		
	Exit	Close appliction

<sup>1</sup> only for eStore

<sup>2</sup> only for first managed consumer

## power

Overview of current power distribution by source / 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

## 4. Submeter (Blue outline)

Power meter is not part of internal circuit

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	· · · · · · · · · · · · · · · · · · ·								
HEMS Configurator v1.2.0									- 0
				Grid D-HI	PV plant			Unknown source	energy [Wh]
	1140				3 78			0	energy [wn
					PLANT				
2	-				TOTAL	1218	 		timetable
e- <b>2</b>	0				0			9	
PV plant	0 0	0	0 0		8		0	0	tariff
	0 0				9 0				
Other consumers 25	8 241		0 0		3 17				
	0 0				8 6				
	0 0 0 0				9 9 9 9			8	
	0 0				0 0			0	
Consumer 7 113	2 1132				9 8			0	
Consumer 8 96					a 1 61			0	

### 1. Sourced power distribution

How sourced power is consumed by each consumer

2. Consumed power distribution

Who sources consumed power

## energy

Energy overview of a given time distributed by sources / consumers.

HEMS Configurator v	1.2.0										
	ſ	Grid LO 16229	Grid HI Đ	Grid D-LO 8	Grid D-HI 0	PV plant		Battery 1638		Unknown source	
		16229								0	
						TOTAL :	28148				
Grid	8772					7344		1427			
	83	82								0	
Battery	1622		8	0	0	1289				9	
Other consumers	7191	5108	0	8	0	1855		227			
Consumer 1 Consumer 2											
Consumer 3	7									0	
	4									9	
	0									0	
Consumer 6	7984	3 7984								e	
Consumer 8 Energy since: sun	10469	6421	0					628			7
hu 14:59:21									6res	et all	

- 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. Submeter (Blue outline)

Power meter is not part of internal circuit

## 5. Energy since

Date and time since energy is recorded

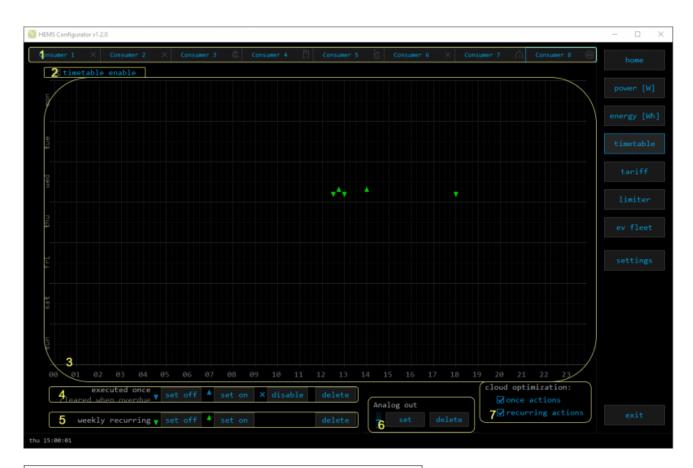
#### 6. Reset all

Long-press to reset all energy counters

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## timetable

Weekly timetable for managed consumers.



#### 1. Managed load menu

Switch between managed loads

2. Enable checkbox

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 <sup>1</sup>

Action to set analog output. Analog actions are recurring.

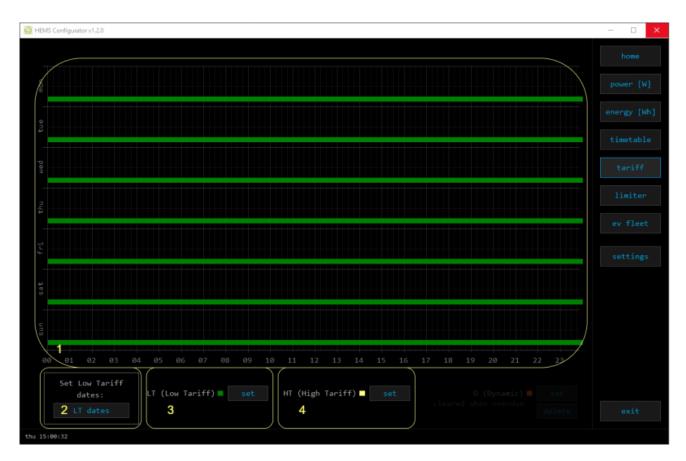
#### 7. Cloud optimization

When enabled (checked) cloud optimization is enabled.

<sup>1</sup> only for Consumer 1

## tariff

Weekly tariff timetable for grid energy per tariff distribution.



### 1. Tariff grid

Graphical weekly timetable with tariffs.

Click to select term, click-and-drag to select multiple terms.

## 2. Low tariff dates

Set low tariff dates for holidays.

### 3. Low tariff

Set low tariff for selected terms.

### 4. High tariff

Set high tariff for selected terms.

## lo tariff dates

Holiday dates when tariff is low

C I	📴 HEMS - Set LO tariff dates 🛛 🗖 🗙								
	Set	LO ta	riff da	ates					
/		LO tari	ff date		$\mathbf{N}$				
	day	month	day	month					
	88	80	88	88					
	80	80	80	80					
	80	80	80	80					
	88	80	88	88					
	80	80	80	80					
	80	80	80	80					
	80	80	80	80					
	88	80	88	80					
	80	80	80	80					
	80	80	80	80					
	81	80	80	80					
	80	80	80	80					
	2Use ea	ster mond	ays (Roma	n Catholio	c)				
		ex	it						

### 1. Date table

Up to 24 days when tariff is low on holiday

### 2. Use easter mondays

Use preprogrammed roman-catholic easter monday holidays

## limiter

## Overview and configuration of limiter

HEMS Configurator v1.2.0															- 0
	_				_			_				_			power [W]
	(	POWER	EN1		C.11	rrent [A]		Va	ltage [V]			Curr	rent limit	I FAT	
	Total			В			L3			, L3	Phase order	L1		L3	
rid	A 1122	1105	42	-26	4.8	0.4	-1.8	231	233	234	L1 L2 L3	6	20	20	
V plant	°∭ -90			-90			-1.0			234	B				
paurie				- 90			-1.0								
												1 Pr	iority	MAX [A]	tariff
attery	œ.														
nsumer 1															ev fleet
onsumer 2			9	0	0.0	0.0	0.0		0	234				4	
onsumer 4		0	ø	0	0.0	0.0	0.0	9		234				8	
onsumer 5				8			0.0			0					
										-					
	1129	1101		-11	4.7	0.3	-2.1	23		234	L1 2 L3	17		20	
onsumer 8 🛛 🧧	960	976	9	16	4.2	0.0	0.0	231	235	234	1152 13 12 13 11	No		32	
ther consumers	960 22	130	42	48	3	0.4	-0.8								
GRID FREQUENCY [Hz] 50															
and a second	8														

1. Consumer manageme	nt
Turn consumers on or off	
2. Power	
Total power and power for	each phase
3. Current	
Current for each phase	
4. Voltage	
Voltage for each phase	
5. Phase order	
	der for grid power sensor and then set for other powers anging grid phase order will NOT apply to phase order of other
6. Current limit	
Current limit threshold for	main grid fuse
7. Status, priority and c	urrent setpoint
<u>▲</u> ▲	Yellow status when limiter is enabled and active. Green status when enabled and not active
Priority	Device priority group (no limiter, limit last, limit second, limit first)
Max [A]1	Device expected current draw
8. Grid frequency	

Grid frequency measured on grid power meter sensor

<sup>1</sup> parameter is dynamically set for all devices, except for the EV charging stations

## ev fleet

## Overview and configuration of EV charging stations

BEMS Configurator v1.2	.0				- 🗆 X
1				Consumer 8	
f f				f f	
2					
				Paused (EVSE)	
3				Phase L2 EV [A]: 0 MAX [A]: 32	
				Last session:	
4				0 W 11465 Wh	
				044 h 59 min	
low Snip					
fri 08:56:42					

1. EV charging station management							
Turn EV station on or off							
2. EV vehicle statu	IS						
GREY	Stand by						
RED	Error						
YELLOW	Charging paused						
BLUE	Charging						
GREEN	Charging ended						
3. EV charging sta	tion status						
Status	Status of EV charging station						
Phase detection	Detection of utilized phases						
EV [A]	EV charger max allowed current						
MAX [A]	User set MAX charging current						
3. EV charging see	sion						
Power	Actual power draw						
Energy	Energy delivered to EV						
Duration	Session charging duration						

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## io mux

#### Overview and configuration of input/output ports IO mux

	2			- 0
) mux				
	Select input/output type	out mode		
QXB QX1	Digital-1 Digital-2	normal normal		
QX1 QX2	Digital-3	normal		
QX3	Digital-4	normal		
1012	Tenperature sensor	normal		
1013	Linker reset	normal		
1014	/	normal		
1015		normal		
IX0	Toggle consumer-1	normal		
DX1	Toggle consumer-2	normal		
IX2	Toggle consumer-3	normal 2		

#### 1. Select input/output type

On the left side there are defined MC controller (MC-230) ports to which could be assigned MC-230 functions (digital, linker reset, router reset, etc).

Default settings are for e.g. QX0  $\rightarrow$  digital 1 while digital 1 is defined for consumer 1 (settings page). It could be changed in a way to define new function to QX0 (linker reset)

If it is selected Enable consumer at input IX0,IX1 or IX2 it means that dedicated consumer will be managed (ON/OFF) by input signal on IX0,IX1 or IX2. For example, thermostat signal is wired to IXO port and via IO mux defined "Enable consumer 1" to IX0. While thermostat is active, it is consumer 1 active as well and vice versa.

Limitations: one temperature sensor is allowed, one consumer could be managed by one input only

#### 2. out mode

Managed consumer input/output mode (normal or inverted)

## settings

## Easy and intuitive system setup.

C HEMS Configurator v1.2.3									- 🗆 X
System settings    autodetect    HEMS: c20171 (v1.2.3 )    estore: c17456 enable									home power [W] energy [Wh]
× HIQ Home: c0 ⊠ enable detect									
X Virtual grid PS: Reable 1 Modbus cycle time: 4638 ms 2									
SOURCES icon source management	Υ		meter	sub		new devic	:e		
Grid Grid \Lambda 🗸 🕶	add		PM3-E-D		1				tariff
/ 🛛 🗸 🗸 ок.	add	del	PM1-E-D in	X					
/ × × /	add		1	X					limiter
energia de la contractión 🗙 🗙 🖊 de la contractión de la contrac	add		1	$\times$					limiter
Battery 🗍 🗸 OK.	add		eStore	$\mathbf{X}$					
en e	add		1	$\times$					ev fleet
					9			ting	
CONSUMERS icon consumer management			meter	sub	output	man.time	P nominal	0	IO mux
Washing machine	add		1	$\mathbf{X}$	Digital-1			$\mathbf{X}$	
ter de la sector de la companya de l	add		1	$\times$	Digital-2			×	settings
/ Х И К.	add		PM3-E-D	$\mathbf{X}$	Digital-3			×	Ľ
Heat-pump 💦 🗸 OK.	add		PM1-E-D	X	Digital-4			X	
Wireless plug   G   × /     Socket   ☑   ✓ 0K	add add	del del	/ PM3-I-D	X	/	0 min 0 min		X	
Electric car	add		EVSE NOON	R	/ EVSE MOON	0 min 0 min		X	
Electric car	add		INCH clust	X	INCH clust			X	
3 Hone 4 5	16		<b>7</b>	8	10				
Permanent memory parameters init parameters save parameters read parameters long-press @ autosave parameters		12	backup		res	tore			
fri 11:25:32									

## 1. System settings

eStore		Click to find HEMS in local network eStore serial number (automatically detected or can be entered manually). When checked HEMS will read Grid, first plant and first Storage directly from eStore (so there is no need to duplicate power-sensor).				
eStore	[] enable	entered manually). When checked HEMS will read Grid, first plant and first Storage directly from eStore (so there is no need to duplicate power-sensor).				
		Storage directly from eStore (so there is no need to duplicate power-sensor).				
	[detect]	a Charles and drages is also used and now a Charles some has detected				
		eStore address is cleared and new eStore can be detected.				
	C	HIQ Home serial number (automatically detected or can be entered manually).				
HIQ Home	[] enable	When checked HEMS will read Grid power and energy from HIQ Home (so there is no need to duplicate power-sensor).				
	[detect]	HIQ Home address is cleared so new can be detected.				
Virtual grid PS	[] enable Check if system is without main grid power meter. Energy, power and currents are calculated from other power meters.					
2. Modbus cycle time						
		ns for modbus communication to complete reading of all devices.				
3. Sources and Consume	ers setti	ngs table				
SOURCES	Source na	ame				
icon	Source ic	on				
4. Device status						

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Status	Status OK, Warning, Error, Detected	
5. Device message		
source and consumer	Source or consumer power-sensor management	
management	message Messages regarding source or consumer power-sensor	
6. Device configuration		
Configuration	add	Associate new power-sensor to source or consumer
	del	Disassociate power-sensor from source or consumer & configure it as new power-sensor
7. Device type		
meter	Source or consumer power-sensor type	
configuration	in/ex	Power plant connection <sup>1</sup>
8. Submeter option		
sub	Check if this power meter or device is not part of internal circuit. Energy division for this device is ignored and outlined in blue border.	
9. Wireless settigs		
new device	Power-sensor configured as new one detected or wireless module configuration <sup>2</sup>	
Wireless setting	Setting up wireless modules: pairing, adding and delete the wireless modules and setting repeater level	
10. Device output		
output	Select consumer output type	
	<<>>	Set repeater level <sup>3</sup>
man. time	Managed consumer manual override timer	
P nominal	Enter consumer's power in Watts. It is disabled if there is assigned power sensor to this consumer.	
clock	Enable timetable	
11. Permanent memory parameters		
[init parameters]	Init all parameters to default values	
[save parameters]	Save all parameters to permanent memory	
[read parameters]	Read all parameters from permanent memory	
[] autosave parameters	Parameters will be automatically saved to permanent memory in 15 minutes after last parameter change	
12. Backup / Restore to PC		
[backup]	Backup all parameters to PC <sup>4</sup>	
[restore]	Restore all parameters from PC backup <sup>₄</sup>	

<sup>1</sup> only for the first power plant

<sup>2</sup> wireless setting must be enabled

<sup>3</sup> only for wireless modules and wireless setting must be enabled

<sup>4</sup> older versions of backup files may be used. Any unsuccessfully backed or restored parameters will be displayed but operation will end successfully if you use **continue**.

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