# **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
<		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 source	e							
>	Sourced	Power in W and energy in Wh from unknown source						
	Accumulate also 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 an	nd humidity							
	Temperature	Temperature in <sup>o</sup> C						
	Humidity	Humidity in % RH						
8. Page navigation	ו							
	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

HEMS Configurator v1.2.0								- 0
				$\square$				
			Grid D-HI	PV plant			Unknown source	energy [Wh]
				8 78			0	
				PLANT	SUN:			
e-2 (	)					0	9	timetable
								J
PV plane (	9 0			8			0	
Battery		9		9 9			0	
Other consumers 258	3 241	θ		3 17		0		
Consumer 1								
	9			8 0				
				9 9				
	9 0			8 8				
Consumer 6 Consumer 7 1132	2 1132			8 8			0	
Consumer 8 966				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										- 🗆 X
	ſ	Grid LO	Grid HI	Grid D-LO	Grid D-HI	PV plant		Battery		Unknown source	energy [Wh]
		1								Ň	
						TOTAL:	28148				
Grid	8772										
PV plant	83									0	
Battery	1622		8		9	1289				0	
	1										
Other consumers	7191										
Consumer 1											
Consumer 2											
Consumer 3	7									0	
Consumer 4	4									0	
Consumer 5	Θ									0	
Consumer 6		~									
Consumer 8	7984	<b>3</b> 7984								2	4
	10469		0	0	0	3418		628			7
Energy since: sun	00.00.0000	88:88:88									
		)									
								,			
									6nes	et all	
thu 14:59:21											

- 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

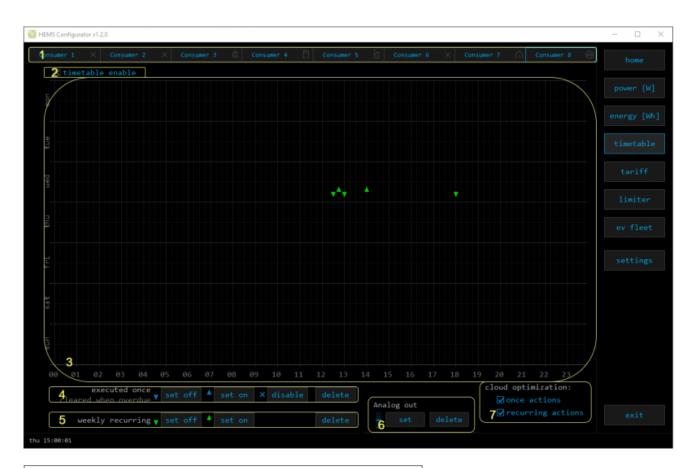
#### 6. Reset all

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

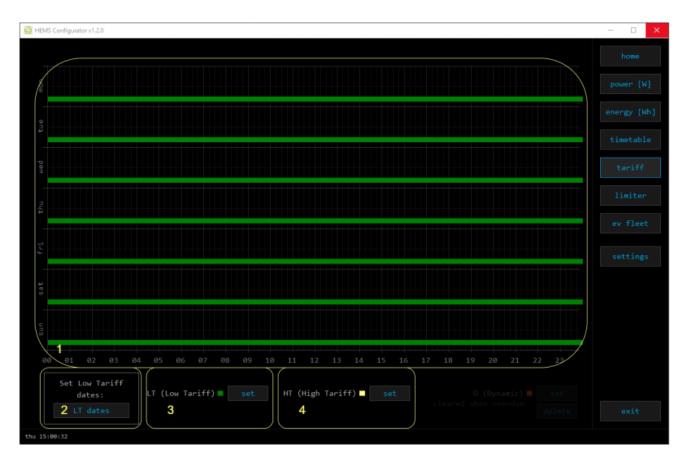
When enabled (checked) cloud optimization is enabled.

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

## tariff

Weekly tariff timetable for grid energy per tariff distribution.

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### 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

6 H	HEMS - Set I	LO tariff date	5 —		×
	Set	LO ta	riff da	ates	
/		LO tari	ff date		
	day	month	day	month	
	88	80	80	80	
	80	80	80	80	
	80	80	80	80	
	88	80	80	80	
	80	80	80	80	
	80	80	80	80	
	80	80	80	80	
	88	80	80	80	
	80	80	80	80	
	80	80	80	80	
	81	80	80	80	
$\langle$	88	80	80	80	
	2Use ea	ster mond	ays (Roma	n Catholio	:)
		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	FU1			rrent [A]			ltage [V]			(	ent limit		
	Total	L1		в	L1		L3	11 VO	L2		Phase order	L1		L3	
rid	A 1122	1106	42	-26	4.8	0.4	-1.8	231	233	234	111213	6	20	20	
V plant	°∭ -90			-90	410		-1.0			234	13				
a braile	X -36			-90			-1.0			2.34					
												1 Prá	ority	MAX [A]	
attery	i i i														
	ר														
onsumer 3				0	0.0	0.0	0.0			234				4	
onsumer 4				0 0			0.0 0.0			233 0				8	
onsumer 6							0.0			9				- 2	
		1101	42	-11	4.7	0.3	-2.1	23		234	1162113			20	
onsumer 8		976		16	4.2	0.0	0.0	231	235	234	L152 L3 L2 L3 L1	1		32	
ther consumers	960	130	42	48	3	0.4	-0.8								
cher consumers	220	130		48	010	0.4	-0.8								
GRID FREQUENCY [Hz] 50	<sup>,00</sup> 8														

1. Consumer management						
Turn consumers on or off						
2. Power						
Total power and power for ea	ch phase					
3. Current						
Current for each phase						
4. Voltage						
Voltage for each phase						
5. Phase order						
	r for grid power sensor and then set for other powers ging grid phase order will NOT apply to phase order of other					
6. Current limit						
Current limit threshold for ma	ain grid fuse					
7. Status, priority and cur	rent 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] <sup>1</sup>	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

HEMS Configurator v1.2	2.0				- 🗆 ×
1				Consumer 8	
f f				f f	
2					
				Paused (EVSE) Phase L2	
3				EV [A]: 0 MAX [A]: 32	
				Last session: 0 W	
4				11465 Wh 044 h 59 min	
ow Snip					
fri 08:56:42					

1. EV charging sta	1. EV charging station management							
Turn EV station on o	r off							
2. EV vehicle statu	IS							
GREY	Stand by							
RED	Error							
YELLOW	Charging paused							
BLUE	Charging							
GREEN	Charging ended							
3. EV charging station 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 ses	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

) mux				- 0
				power [W]
_				
	Select input/output type	out mode		
	Digital-1	normal		
	Digital-2 Digital-3	normal		
	Digital-4	normal		
	Temperature sensor	normal		
	Linker reset	normal		
1014		normal		
1015		normal		
	Toggle consumer-1	normal		
	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 role to QX0 port e.g. for 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

1. System settings		
[ autodetect ]		Click to find HEMS in local network
	c	eStore serial number (automatically detected or can be entered manually).
eStore	[] enable	When checked HEMS will read Grid, first plant and first Storage directly from eStore (so there is no need to duplicate power-sensor).
	[detect]	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		
Modbus cycle time		ns for modbus communication to complete reading of all devices.
3. Sources and Consun	ners setti	ngs table
SOURCES	Source n	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	, parame	eters
[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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