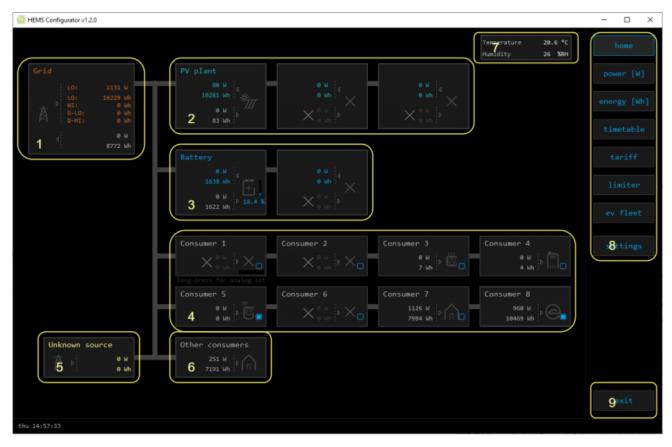
HEMS v1.2.2 Configurator

Last 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 % ¹	SOC	Battery State Of Charge
4. Consumers	·	
>	Consumed	Consumed power in W and energy in Wh

00.32		
[]	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 sourc	ce	
>	Sourced	Power in W and energy in Wh from unknown source
		all differences caused by power-sensor inaccuracy
6. Other consume	ers	
>	Consumed	Consumed power in W and energy in Wh by other (not measured) consumers
7. Temperature a	nd humidity	
	Temperature	Temperature in ^o C
	Humidity	Humidity in % RH
8. Page navigatio	n	
	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

¹ only for eStore

² 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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Grid L0 Grid D-L0 Grid D-L0 Grid D-L0 Grid D-L0 Grid D-L0 Battery Unknown source energy [1140 0 0 78 78 5TORAGE SLM: 0 0 1 <												
1140 0 0 78 0 <th></th>												
1140 0 0 78 0 <th></th> <th></th> <th></th> <th></th> <th>Grid D-LO</th> <th>Grid D-HI</th> <th>PV plant</th> <th></th> <th></th> <th></th> <th>Unknown source</th> <th></th>					Grid D-LO	Grid D-HI	PV plant				Unknown source	
ORID SUR: 1140 PLANT SUR: 78 STORAGE SUR: 0 2 0			1140				3 78					energy [Wh
2 0 0 0 0 0 0 0 0 y plant 0 0 0 0 0 0 0 0 0 attery 0 0 0 0 0 0 0 0 0 attery 0 0 0 0 0 0 0 0 0 attery 0 0 0 0 0 0 0 0 0 onswers 258 241 0 0 0 0 0 0 0 onswer 1 0 0 0 0 0 0 0 0 0 onswer 4 0 0 0 0 0 0 0 0 0 onswer 5 0 0 0 0 0 0 0 0 0 onswer 7 1132 1132 0 0 0 0 0 0 0												
v plant 0 </th <th>2</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th>TOTAL</th> <th>1218</th> <th></th> <th>_</th> <th></th> <th>timetable</th>	2						TOTAL	1218		_		timetable
attery 0 <td>Z</td> <td>0</td> <td>$r \in \mathbb{C} \times \mathbb{R}^{n}$</td> <td></td> <td></td> <td></td> <td>Θ</td> <td></td> <td>0</td> <td></td> <td>9</td> <td></td>	Z	0	$r \in \mathbb{C} \times \mathbb{R}^{n}$				Θ		0		9	
ther consumers 258 241 0 0 17 0 0 insumer 1 ev flee insumer 2 insumer 3 0 0 0 0 0 0 0 insumer 4 0 0 0 0 0 0 0 0 insumer 5 0 0 0 0 0 0 0 0 insumer 6 0 0 insumer 7 1132 1132 0 0 0 0 0 0	/ plant	0	0	0	0		3		0		9	
ther consumers 258 241 0 0 17 0 0 onsumer 1 0 0 0 17 0 0 0 onsumer 2 0 0 0 0 0 0 0 onsumer 3 0 0 0 0 0 0 0 onsumer 4 0 0 0 0 0 0 0 onsumer 5 0 0 0 0 0 0 0 onsumer 6 0 0 0 0 0 0 0 1132 1132 0 0 0 0 0 0												
ther consumers 258 241 0 0 17 0 0 ansumer 1 ansumer 2 ansumer 3 0 0 0 0 0 0 0 ansumer 4 0 0 0 0 0 0 0 0 ansumer 5 0 0 0 0 0 0 0 0 ansumer 6 ansumer 7 1132 0 0 0 0 0 0 0	abbam.											
Image: 1 Image: 2 Image: 3 Image: 4 Image	secces y	0					0				9	Timiter
Answer 1 O <	ther consumers	258	241		٥		3 17					
Insumer 2 Image: Construction of the			241		•		11					
Answer 4 0<												
Insumer 4 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		0					9 0					
risurer 6		0					9 0				e	
visurer 7 1132 1132 0 0 0 0 0 0		0					8 0					
		44.72										

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.

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🔯 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	3 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

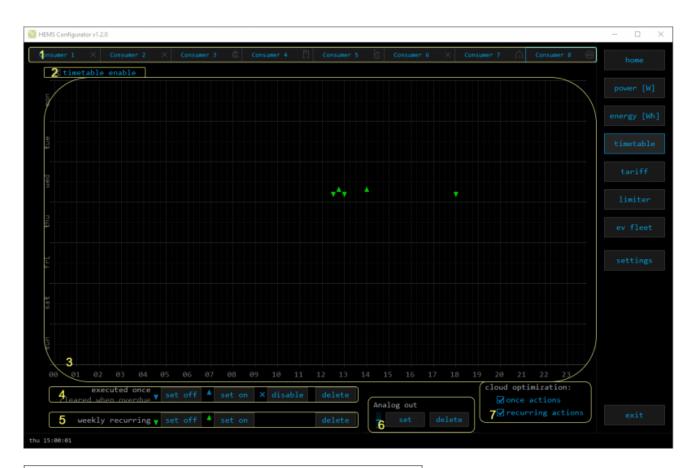
Date and time since energy is recorded

6. Reset all

Long-press to reset all energy counters

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 ¹

Action to set analog output. Analog actions are recurring.

7. Cloud optimization

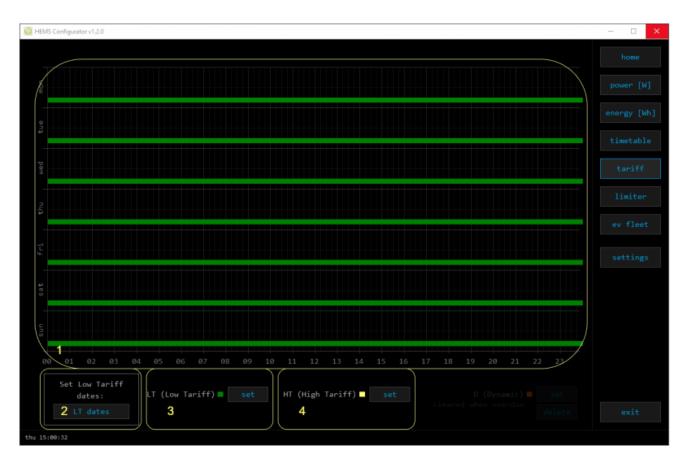
When enabled (checked) cloud optimization is enabled.

¹ 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

G	HEMS - Set l	LO tariff date	s —		×
	Set	LO ta	riff da	ates	
/		LO tari	ff date		
	day	month	day	month	
	88	80	88	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	88	80	
	88	80	80	80	
	80	80	80	80	
	81	80	80	80	
	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

POMER [W] Current [A] Voltage [V] Phase order Current limit [A] Current [A] Phase order Current limit [A] L1 L2 L3 L3 L2 L3 L3 L3 L2 L3 L3 <thl3< th=""><th>HEMS Configurator v1.2.0</th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th>- 0</th></thl3<>	HEMS Configurator v1.2.0															- 0
POMER [W] Current [A] Voltage [V] Phase order Current limit [A] Current [A] Phase order Current limit [A] L1 L2 L3 L3 L2 L3 L3 L3 L2 L3 L3 <thl3< th=""><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th></thl3<>																
Total L1 L2 L3 L1 L2 L3 L1 L2 L3 Phase order L1 L2 L3 L3 <th></th> <th></th> <th></th> <th></th> <th></th> <th>_</th> <th></th> <th></th> <th>_</th> <th></th> <th></th> <th></th> <th>_</th> <th></th> <th></th> <th></th>						_			_				_			
Total L1 L2 L3 L1 L2 L3 Phase order L1 L2 L3 reid 1122 1166 42 -26 4.6 0.4 -1.8 231 233 234 L1 L2 L3 L1 L2 L3 L3 L1 L2 L3 L3 L3 L3 L3 L3 L4 L4 L3 L4 L3 L3 L3 L3 L3 L4 L4 L4 L4 L3 L4 L4 <thl4< th=""> L4 <thl4< th=""></thl4<></thl4<>			POWER	1 FW1		Cu	rrent [A]		Vo	ltage [V]			Cur	rent limi	t FAT	
v plant -90 -90 -1.0 234 U3 attery X I Priority MAX (A) timetal attery X I Priority MAX (A) timetal answer 1 I I Priority MAX (A) timetal answer 2 I I Image: Conserver 2		Total										Phase order	L1 _			
v plant -90 -90 -90 -1.0 234 L3 Limit timetal attery 1 Priority MAX (A) Limit first attery 1 Priority MAX (A) Limit first Limit first 4 1 Imit first 4	rid	A 112	1106	42	-26	4.8	0.4	-1.8	231	233	234	L1 L2 L3	<u>,6</u>	20	20	
attery Image: 1 model Image: 2 mode	V plant	ý	1		-98			-1.0			234					
attery																
attery x <td></td> <td>! Pr</td> <td>iority</td> <td>MAX [A]</td> <td>taniff</td>													! Pr	iority	MAX [A]	taniff
onsumer 1 0	attery	Ē														
onsumer 1 0		X														
onswer 2 0<	_	_														
misurer 2 0	nsumer 1															
Onsumer 3 O 0 0 0 0 0 0 0 0 0 0 0 234 L2[L3]L1 Limit first 4 Limit second 8 Onsumer 4 0																ev fleet
onsumer 4 0 0 0 0.0 233 L3 Limit second 8 onsumer 5 0 0 0.0 0.0 0 0 0 13 Limit second 2 111 152 153 152 153 152 153 152 153 152 153 152 153 152 153 152 153 152 153					0	0.0	0.0	0.0			234				4	
onsumer 6 0 1129 1101 42 -11 4.7 0.3 -2.1 234 233 234 1152/1.3 17 1imiter 20 onsumer 8 960 976 0 16 4.2 0.0 0.0 251 235 234 1.152/1.3 17 1imiter 20 ther consumers 2.0 130 42 48 0.0 0.4 -0.8 251 235 234 1.21.3/L1 No limiter 32 RID FREQUENCY [Hz] 50.00 8 0.4 -0.8 0.4 -0.8 0.4		0 (0			0.0			233				8	
ansumer 7 1129 1101 42 -11 4.7 0.3 -2.1 233 234 1152 12 17 1imiter 20 ansumer 8 968 976 0 16 4.2 0.0 0.0 231 235 234 12 13 12 160 1imiter 32 ther consumers 220 130 42 48 0.6 0.4 -0.8 0.4 <		16 (8			0.0			0				2	
ther consumers 22 130 42 48 03 0.4 -0.8																
ther consumers 22 130 42 48 03 0.4 -0.8									234			L152 L3	7			
RID FREQUENCY [Hz] 50,00		966	976	_	16	4.2		_	231	235	234	12/13/11	, No		32	
	ther consumers	22			48	6%6	0.4	-0.8								
	RID FREQUENCY [Hz] 50	9,09 <mark>0</mark>														
		0														

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1. Consumer management	
Turn consumers on or off	
2. Power	
Total power and power for each	n phase
3. Current	
Current for each phase	
4. Voltage	
Voltage for each phase	
5. Phase order	
	or grid power sensor and then set for other powers ng grid phase order will NOT apply to phase order of other
6. Current limit	
Current limit threshold for mair	grid fuse
7. Status, priority and curre	nt 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

¹ 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 stat	tion management
Turn EV station on or	⁻ off
2. EV vehicle statu	S
GREY	Stand by
RED	Error
YELLOW	Charging paused
BLUE	Charging
GREEN	Charging ended
3. EV charging stat	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 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

HEMS Config	jurator v1.2.2			- 0
TO T	1112			
IO m	ux			
	Select input/output type	out mode		
	QX0 Digital-1 QX1 Digital-2	normal normal		
	QX2 Digital-3	normal		
	QX3 Digital-4	normal		
	1012 Tenperature sensor	normal		
	I013 Linker reset	normal		
	I014 / I015 /	normal normal		
	IX0 Toggle consumer-1	normal		
	IX1 Toggle consumer-2 IX2 Toggle consumer-3	normal normal 2		
12:42:38				
S	elect input/output type	out mode		
	igital-2	normal		
	igital-5			
	igital-3	normal		
	igital-6			
	emperature sensor			
1013 L	inker reset	normal		
.014 /				
1015 /		normal		

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

IX0 IX1 IX2

Managed consumer input/output mode (normal or inverted)

settings

Easy and intuitive system setup.

😳 HEMS Configurat	tor v1.2.3												- 0 X
Syster	n settin	gs											
J HEMS:	c20171 (v1.	2.3)											
✓ eStor	e: c17456 🗸	enable	detect										
× нід н			detect										
× Virtu	al grid PS: 🔀	enable	1										
Modbu	s cycle time: 463	8 ms	2					_					
SOURCES	icon	γ		source management	Ϋ́		meter	sub		new devic	e		
Grid		- A 🗸	ок		add		PM3-E-D		1				
			ок.		add		PM1-E-D in	\times					
		$\times \times$	1		add		/	X					limiter
	/	XX	/		add	del	/	\times					
			ок.		add		eStore	X					ev fleet
	/	· X X	/		add		/	\mathbf{X}	9			ting	ev fleet
		X							Ĺ		1033 300	C AND	
CONSUMERS	icon			consumer management			meter	sub	output	man.time	P nominal	1	
	Washing machine				add		1	X	Digital-1		5000 M	X	
		× ×	-		add		1	×	Digital-2			×	
			ок.		add		PM3-E-D	X	Digital-3			X	
			ок. /		add add	del del	PM1-E-D	X	Digital-4	0 min 0 min		X	
			/ ОК		add	del	/ PM3-I-D	Ê.	/	0 min		×	
			ок.		add		EVSE MOON	Ř	EVSE MOON			X	
		e 🗸	ок.		add		INCH clust	$\overline{\mathbf{X}}$	INCH clust			×	
3		64	5		L6		., Հ	8)	10				
Perma init p		iory par	parameter rameters read			12	backup		res	tore			
11		autosa	ve panameters]									

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]	[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 Consum	ners setti	ngs table						
SOURCES	Source n	ame						
icon	Source ic	on						
4. Device status								

- http://wiki.hiq-universe.com/

management me 6. Device configuration		r consumer power-sensor management		
management me 6. Device configuration		· · · · · · · · · · · · · · · · · · ·		
6. Device configuration Configuration 7. Device type meter So configuration i 8. Submeter option sub Ch En 9. Wireless settigs new device Por col Wireless setting Sec mod	essage			
Configuration Configuration Configuration Configuration Configuration Configuration Configuration Configuration Sub Ch En O Sub Ch En O Sub Ch En O Sub Ch En Configuration Configuratio		message Messages regarding source or consumer power-sensor		
Configuration Image: Configuration 7. Device type So meter So configuration i 8. Submeter option i sub Ch Sub Ch 9. Wireless settigs Por new device Por Wireless setting See		·		
7. Device type So meter So configuration i 8. Submeter option Ch sub Ch 9. Wireless settigs Por new device Por Wireless setting See	add	Associate new power-sensor to source or consumer		
meter So configuration i 8. Submeter option Ch sub Ch 9. Wireless settigs new device Por Wireless setting Se	del	Disassociate power-sensor from source or consumer & configure it as new power-sensor		
configuration i 8. Submeter option K sub Ch Sub Ch 9. Wireless settigs Por new device Por Wireless setting See Wireless setting See		·		
8. Submeter option sub Ch En 9. Wireless settigs new device Wireless setting See mc	Source or consumer power-sensor type			
sub Ch En 9. Wireless settigs new device Po col Wireless setting Se mo	in/ex	Power plant connection ¹		
Sub En 9. Wireless settigs Porcol new device Porcol Wireless setting Sec Wireless setting Sec		·		
new device Por col Wireless setting Se mo	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.			
Wireless setting				
wireless setting mo	Power-sensor configured as new one detected or wireless module configuration ²			
10. Device output	Setting up wireless modules: pairing, adding and delete the wireless modules and setting repeater level			
To bence output				
Se	Select consumer output type			
output	<<>>	Set repeater level ³		
man. time Ma	anaged	l consumer manual override timer		
	Enter consumer's power in Watts. It is disabled if there is assigned power sensor to this consumer.			
clock En	Enable timetable			
11. Permanent memory pa	arame	ters		
[init parameters] Init	Init all parameters to default values			
[save parameters] Sa	Save all parameters to permanent memory			
[read parameters] Re	Read all parameters from permanent memory			
	Parameters will be automatically saved to permanent memory in 15 minutes after last parameter change			
12. Backup / Restore to PC	C			
[backup] Ba	Backup all parameters to PC ⁴			
· ·	Restore all parameters from PC backup ⁴			

¹ only for the first power plant

² wireless setting must be enabled

³ only for wireless modules and wireless setting must be enabled

⁴ 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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