

# Software

To run RDC Charger application it is required:

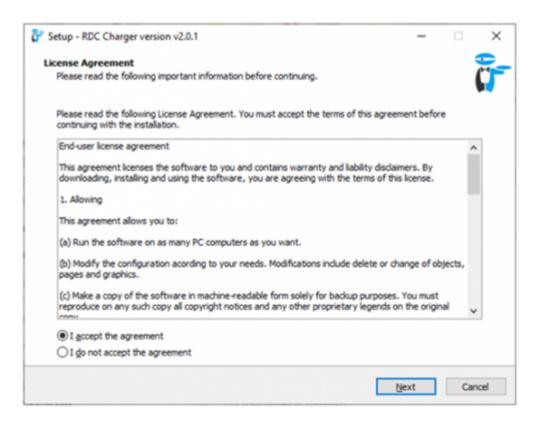
- to establish connection between charger and router by UTP cable
- to connect charger to the power supply
- download and install latest version of application for RDC Charger \*

# Once RDC Charger is configured, it does not require further connection to internet or configurator for normal operation !

\*Latest version of RDC Charger (EVSE) can be found under Downloads map.

# Installation

- run rdc\_charger .exe file from Downloads
- · select default or desired folder

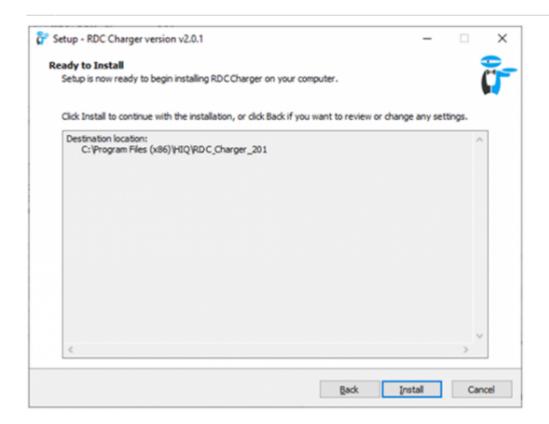


🚰 Setup - RDC Charger version v2.0.1	-		$\times$
Select Destination Location Where should RDX Charger be installed?			<b>ř</b> -
Setup will install RDC Charger into the following folder.			
To continue, click Next. If you would like to select a different folder, click Browse.			
C:\Program Files (x86)\HIQ\RDC_Charger_201	Bg	owse	
			-
At least 12,9 MB of free disk space is required.			
Back Ne	xt	Can	cel

- select charger serial number (SN), visible on sticker \*
- run install

\*if does not appear a window with SN or it is not listed it means that application at this moment did not recognize charger. Continue with installation and select SN on application later.

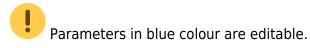
Setup - RDC Charger version v2.0.1	-	
Select RDC Charger		
Which charger should be selected when the program is installed?		
Choose one, other chargers can be selected later.		
○ 30566		^
○ 30566		
○ 31059		
○ 31059		
○ 31490		
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		*
8-4	Next	Cancel
Back	Gext	Cancel

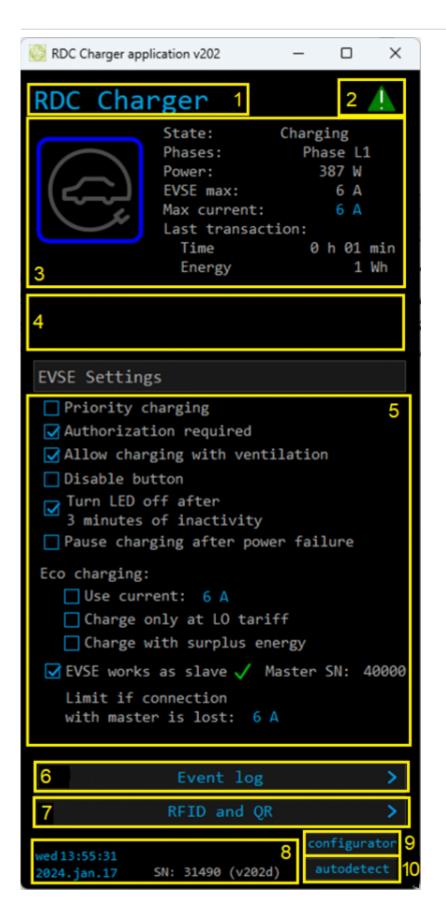


#### Installation is successful!

Setup - RDC Charger version v2.0.1	×
	Completing the RDC Charger Setup Setup has finished installing RDC Charger on your computer. The application may be launched by selecting the installed shortcuts. Click Finish to exit Setup. ☑ Start RDC Charger
	Enish

# **EVSE overview**





RDX Charger v2.0.1						
vent log					-	6
begin date	begin end	duration	energy	card nr./	Note	
12022 411 22	44.34 00.00	[h:min]	[kWh]	type		
✓ 2022.dec.22 ✓ 2022.dec.21	11:34 00:00 09:42 16:32		003.7 026.8	not locked not locked	Normal charging cycle Normal charging cycle	
✓ 2022.dec.20	08:00 16:39		032.2	not locked	Normal charging cycle	
2022.dec.19	08:11 10:21	002:09	020.6	not locked	Normal charging cycle	
✓ 2022.dec.18	17:34 19:36		022.2	not locked	Normal charging cycle	
✓ 2022.dec.18 ✓ 2022.dec.15	09:01 13:46 12:35 13:46		011.6 006.0	not locked not locked	Normal charging cycle	
✓ 0000.jan.00	08:00 08:00		000.0	88	Normal charging cycle Normal charging cycle	
√ 0000.jan.00	00:00 00:00		000.0	60	Normal charging cycle	
√0000.jan.00	00:00 00:00	000:00	000.0	60	Normal charging cycle	
/ SM: 40000 (v1.2.7b)						
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🌔 RDX Char	ger v2.0.1	- 0	· >	<		
DEID	<b>MIFARE</b> a		7			
KEID,	MILL A	nu QR				
card						
no.	card ID	manage	e card			
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01	-1	add	del			
01						
	-1 -1	add add	del del			
01 02	-1	add	del			
01						
01 02 03	-1 15891668	add add	del del			
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01 02 03 04	-1 15891668 Ø	add add add	del del del			
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01 02 03 04 05	-1 15891668 Ø -1	add add add add	del del del del			
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01 02 03 04 05	-1 15891668 0 -1 -1	add add add add	del del del del			
01 02 03 04 05 06 07	-1 15891668 0 -1 -1 -1	add add add add add add add	del del del del del del			
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## 1. EVSE Name

Name of EVSE - default is RDC Charger.

Name of EVSE - default is RDC Ch	
2. DLM sign	
××	Yellow status when DLM is enabled and active. Green status when enabled and not active. None if DLM is not set.
3. Data from ongoing charging	g session
EV charging icon with LED light	Different LED light colour is presenting charger state, while icon acts as a button. Short press toggle enable/pause charging, long press for priority charging and error reset.
State	EVSE status: Communication error; Unknown; Available; EV not connected; Starting; Charging; EV paused; EVSE paused; EV not connected; Charging ended; Charging fault; Unpausing; Unavailable; No EVSE response; Locked,no EV; Stopping; Locked, EV connected; Paused by DLM;
<b>Phases</b> - number of used phases while charging	3 phases, Phase L1, Phase L2, Phase L3, Unknown phase, 2 phases.
Power	Charging power of EV.
EVSE max	Current setting that is sent from the charging station to the electric vehicle

energy of charging session.         4. Error message(s)         Possible errors are: CP positive voltage; CP negative voltage; RCD sensor trip; Overvoltage; Undervoltage; Charge with ventilation; PS reading error (EVSE); Current is higher than allowed; RCD sensor malfunction; Internal temperature is too high; PS reading error (grid)         Note: for resolving errors please see table below.         5. EVSE settings         Priority charging       Utilize all available power to charge as fast as possible ignoring economy charging.         Locked       Disable unauthorized use of EVSE, authorization is possible with RFID tags or by cloud application.         Allow charging with ventilation       Allow/deny charging if EV requests ventilation.         Disable button       Disable functionality of button on housing.         Turn LED off after 3 minutes of inactivity       LED light is turned off after 3 minutes.         Ec charging       Use current: set desired current for charging. Charge only at LO tarriff: charging possible at low tariff only. Note: LO tarriff must be set. Charge with surplus energy: dynamically charge EV if there is surplus energy         EVSE works as slave       EVSE is a slave to master (Modbus TCP communication) EVSE with its serial number-SN. Green tick if communication is OK, red X for lost communication.         G. Event log       In case of lost communication.         Shows last 10 charging session.       Card ID used for charging session.         duration       Duration of charging session. If note "not locke		Softwar
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Card no. & card IDSupported up to 10 RFID/MIFARE/QR tags/cards.Manage cardPress Add for new card or delete existing one.Time60 seconds time frame for adding new card.8. Time & date and SW versionTime and date with software version release.9. configuratorRuns Configurator10. autodetect	7. RFID, MIFARE and QR	
Manage card       Press Add for new card or delete existing one.         Time       60 seconds time frame for adding new card.         8. Time & date and SW version       Time and date with software version release.         9. configurator       Runs Configurator         10. autodetect       Image card or delete existing one.	Add or delete RFID/MIFARE tag o	r QR code, for managing authorized access to EVSE.
Time       60 seconds time frame for adding new card.         8. Time & date and SW version         Time and date with software version release.         9. configurator         Runs Configurator         10. autodetect	Card no. & card ID	Supported up to 10 RFID/MIFARE/QR tags/cards.
<ul> <li>8. Time &amp; date and SW version</li> <li>Time and date with software version release.</li> <li>9. configurator</li> <li>Runs Configurator</li> <li>10. autodetect</li> </ul>		, in the second s
Time and date with software version release. 9. configurator Runs Configurator 10. autodetect	Time	_
9. configurator Runs Configurator 10. autodetect		
Runs Configurator 10. autodetect		sion release.
10. autodetect	9. configurator	
	-	
Click to find EVSE in local network		
	Click to find EVSE in local networ	<sup>r</sup> k

# **Error table**

RDC Charger recovers error automatically. To delete error by yourself long press button on charger housing or on application. **Charging is stopped while error is active. If red light still flashes, please read table bellow.** 

Error	Possible causes	Possible solution
CP positive voltage CP negative voltage	Measured voltage on CP pin is out of range.	Check your charging cable and plug. Reconnect your EV. If error still appears, please contact your EVSE service.
RCD sensor trip	DC current leak detected.	Please try to connect another EV, if error still appears, please contact your EVSE service. Otherwise, please contact an authorized car service department.
RCD sensor malfunction	RCD sensor is damaged or not connected.	Please contact your EVSE service.
Undervoltage Overvoltage	Supply voltage is out of range.	Please contact your EVSE installer.
Charge with ventilation	EV requests charging with ventilation and "Charging with ventilation" is not enabled on configurator	Enable "Allow charging with ventilation" if charged EV is located in ventilated area.
PS reading error	No communication with internal power sensor.	Please contact your EVSE service.
Current is higher than allowed	Vehicle draws more power than allowed.	Please try to charge another EV, if error still appears, please contact your EVSE service. Otherwise, please contact an authorized car service department.
Internal temperature is too high	Temperature inside of charger is too high.	Make sure charger is not exposed to direct sunlight. Please contact your EVSE installer.

# **HEMS Configurator**

# home

Basic system overview.

HEMS Configurator v2.0.0				Temperature -100.0°C	
					home
Grid					power [W]
LO: 0W LO: 0Wh HI: 0Wh D-LO: 0Wh D-LO: 0Wh D-LO: 0Wh					energy [Wh]
A D-HI: BWA	en ;	ewn ;	2		timetable
96wh 1					tariff
	ewh 4	ewh 4			limiter
	X outro	X on P 3			ev fleet
	Robo Charger				IO mux
	ew ewh long-press for analog set		$\times_{\rm ext}^{\rm ext}$	$\times_{\rm exh}^{\rm exh}$	settings
	$\times_{ab}^{au} \Rightarrow \times_{a}$	×			
		enh ;	enh ; · · ·	Buth : 4	
Unknown K P ew ewh 5	Background ew ewh				
					exit

1. Grid							
>	From grid	Tariff (LO, HI, D-LO, D-HI) and power from grid in W					
	5	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 % <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					
click	Toggle	Click in frame toggles managed consumers output					
5. Unknown source							
>	Sourced	Power in W and energy in Wh from unknown source					
. Accur	nulate also all di	fferences caused by power sensor inaccuracy					
6. Other consumers	5						
>	Consumed	Consumed power in W and energy in Wh by other (not measured) consumers					
7. Page navigation							

ho	ome	Home screen
рс	ower [W]	Power screen
en	nergy [Wh]	Energy screen
tir	netable	Timetable screen
ta	riff	Tariff screen
dlı	m	Limiterscreen
ev	/ fleet	EV fleet screen
IO	mux	IO mux screen
se	ettings	Settings screen
8. Exit		
ex	cit	Close appliction

 $^{\scriptscriptstyle 1}$  only for eStore

## power

Overview of current power distribution by source / consumer.

	GridLO	GridHI	GridD-LO	GridD-HI	PV			eStore		Unknown	
	0				9						
								STORAGE S			
						2342					
					8						
37	0									•	
9	9	9	8	8	9					9	
0	0										
0	9									e	
400	0	488						ę		9	
0	0										
0	0									9	
1905	0									9	
2862	е				9			6	)		
										3	4
3 Н											
	0 400 0 0 1905	0 0 37 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0         2342           0RID SUM:         0RID SUM:           0         0           37         0           37         0           0         0	0         2342         0           0         0         0         2342           0         0         0         2342           0         0         0         0           37         0         37         0           0         0         37         0           0         0         37         0           0         0         0         0           0         0         0         0         0           0         0         0         0         0         0           0         0         0         0         0         0         0           0	0         2342         0         0           0         ORID SUM:         2342         0           37         0         377         0         0           37         0         377         0         0           0         0         0         0         0           0         0         0         0         0           0         0         0         0         0           0         0         0         0         0           0         0         0         0         0           0         0         0         0         0           0         0         0         0         0           0         0         0         0         0           0         0         0         0         0           0         0         0         0         0           0         0         0         0         0           0         0         0         0         0           0         0         0         0         0	0         2342         0         0         0           GRID SUM:         2342         PLM           0         -         -         0           37         0         37         0         0           37         0         37         0         0         0           0         0         0         0         0         0         0           0         0         0         0         0         0         0         0           0	0         2342         0         0         0           GRID SUM:         2342         PLANT SUM:         2342           0         0         0         0         0           37         0         377         0         0         0           0         0         377         0         0         0         0           0         0         377         0         0         0         0         0           0	0     2342     0     0       ORID SUM:     2342     PLANT SUM:     0       37     0     37     0     0       37     0     37     0     0       0     37     0     0     0       0     37     0     0     0       0     0     0     0     0       0     0     0     0     0       0     0     0     0     0       0     0     0     0     0       0     0     0     0     0       0     0     0     0     0       0     0     0     0     0       0     0     0     0     0       0     0     0     0     0       0     0     0     0     0       0     0     0     0     0       0     0     0     0     0       0     0     0     0     0       0     0     0     0     0       0     0     0     0     0       0     0     0     0     0       0     0     0     0 <td>0         2342         0         0         0         0         0         0         0         0         0         0         5708AGE 50         5708AGE 50</td> <td><math display="block"> \begin{array}{c c c c c c c c c c c c c c c c c c c </math></td> <td><math display="block"> \begin{array}{c c c c c c c c c c c c c c c c c c c </math></td>	0         2342         0         0         0         0         0         0         0         0         0         0         5708AGE 50         5708AGE 50	$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	$ \begin{array}{c c c c c c c c c c c c c c c c c c c $

1. Sourceu 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 (Green outline)

Power meter is not part of internal circuit

#### Software

HEMS Configura	tor v2.0.1									- 0	] >
					GridD-HI	PV 1			Unknown		
						0				0	
						PLAJ TOTAL:	T SUM: 2342	STORAGE SUP			
Frid	2 0						2342	 -		timeta	
						9		 0		9	
Store	9	8	8	8		9				e limit	ten
ackground	9	8	8	0	e	9					
obo Charger	9	8	0	0	6	9				ev +1	
	400				6	0				9	
					0	0				a IO m	
					8	0				9	
	1905 2068	8				9 9		0		9	
	2068										

#### **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.

Image: set of the set of	Image: state in the state	HEMS Configurator v2.0.1								- 0
Image: state in the state	<ul> <li></li></ul>									
33724 0       3332       318       338       338       338       338       338       1 <th>i       327436       433527       0       0       2211       3380       0       0         i       0110       10101       12555       100       0</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th>	i       327436       433527       0       0       2211       3380       0       0         i       0110       10101       12555       100       0									
1000000000000000000000000000000000000	22739       0       0       0       0       2313       3300       0         010       010       0		GridLO	GridkI	GridD-LO	GridD-HI	PV	estore	Unknown	
UNULL       70333       100       1         Vi       1300       1300       1300       1         Vi       1300       1300       1300       1         Vi       1300       1300       1300       1       1         Vi       1300       1300       1300       100       100         State       1300       1300       1300       100       110       100         Viti Calabi       1300       1300       100       110       100       100         Viti Calabi       1300       100       110       100       100       100         Viti Calabi       1300       100       110       100       100       100         Viti Calabi       1300       100       110       100       100       100         Viti Calabi       1300       100       100       100       100       100 <td>vid       10741: 26529       1080       0         vid       1090       11999       7239       0       0       1</td> <td></td> <td>327434</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>0</td> <td>energy [Wr</td>	vid       10741: 26529       1080       0         vid       1090       11999       7239       0       0       1		327434						0	energy [Wr
etal       4400       100       0       3000       0       0       100       0       0       0       100       0	aria       4103       100       0			GRID SUM:				STORAGE SUM: 3380	1	
<pre>interce in the second sec</pre>	<pre>store into the store into the s</pre>	Grid 4103					3925	100	0	
astribution	sextgrowd       0       39412       -43682       0       124       2514       0 <td>PV 19001</td> <td>11098</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>0</td> <td></td>	PV 19001	11098						0	
<pre>reproduct seture 1 445655 1 154664 333331 0 0 0 12 1 99 1 99 1 10 10 10 10 10 10 10 10 10 10 10 10 1</pre>	Robo Charger       48669       134664       33114       0       0       300       7       0       0       0       1       10<	estore 3808	2450						0	
both Charger 4 55555 5 5555 4 6 6 200 7 7 0 0   Constructed energy for each source   Sourced energy for each source   Sourced energy   Total of all sourced energy   Consumed energy   Energy for each consumer   3. Energy distribution	0000 (marger       466690       354864       3311514       0       0       3000       7       0	Background @	39412							ev fleet
get       669       669       69       6       100       100         get       100       60412       100       0       0       0       0       100       100         get       100       60412       100       0 <td>Gew       669       0       667       0       0       0       10       mu         Bevis (14488       109933       65412       3382       0       0       9134       3       0       0       setting         Bevis (14488       109933       65412       3382       0       0       9134       3       0       0       setting         Bevis (14488       109933       65412       3382       0       0       0       0       4       0       0       setting         Bevis (1448       109933       65412       3382       0       0       0       0       4       0       &lt;</td> <td></td> <td>154864</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	Gew       669       0       667       0       0       0       10       mu         Bevis (14488       109933       65412       3382       0       0       9134       3       0       0       setting         Bevis (14488       109933       65412       3382       0       0       9134       3       0       0       setting         Bevis (14488       109933       65412       3382       0       0       0       0       4       0       0       setting         Bevis (1448       109933       65412       3382       0       0       0       0       4       0       <		154864							
Operations 199933 0 <	EVSE c1499       195333       63412       33382       0       9134       3       0       setting         MP       8914       0       8669       0       0       0       44       0       0       setting         MP       8914       0       8669       0       0       0       44       0       0       44       0       0       44       0       0       4       0		2							
<pre>wide case</pre>	Event 8934 0 8809 0 0 0 0 44 0 0 0 44 0 <td< td=""><td></td><td>63412</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>		63412							
Internet in the internet into the internet internet into the internet internet into the internet internet into the internet internet internet into the internet internet internet into the internet i	001       0									
there y since: sun 00.00.0000 00:00:00 S Testet all long prest 6 Testet all long prest 6 Total of all sourced energy Energy for each consumer <b>3. Energy distribution</b>	thergy since: sun 00.00.0000 00:00:00 S 3 4 exit long-press 6 exit long-press 6 Sourced energy Sourced energy for each source		0					44	0	
Liste surced energy Sourced energy for each source Sums per source type Total of all sourced energy <b>2. Consumed energy</b> Energy for each consumer <b>3. Energy distribution</b>	e 14:10:23 2022.dec.13 HERS SN: 40000 (v1.2.7b) <b>1. Sourced energy</b> Sourced energy for each source		327807	428748	8	θ	8	0	8	< <u>√</u> 4
Sourced energy for each source Sums per source type Total of all sourced energy <b>2. Consumed energy</b> Energy for each consumer <b>3. Energy distribution</b>	Sourced energy for each source	ie 14:18:23 2022.dec.13	4EMS SN: 40000	(v1.2.7b)						exit
Sums per source type Total of all sourced energy <b>2. Consumed energy</b> Energy for each consumer <b>3. Energy distribution</b>		1. Sourced	energy							
Total of all sourced energy 2. Consumed energy Energy for each consumer 3. Energy distribution	Sums per source type	Sourced ener	gy for e	ach sou	urce					
2. Consumed energy         Energy for each consumer         3. Energy distribution		Sums per sou	irce type	9						
Energy for each consumer 3. Energy distribution										
3. Energy distribution										
	Energy for each consumer			umer						
		2 Enormy di		-						
Partial distributed energy	3. Energy distribution									

## 4. Submeter (Green outline)

Power meter is not part of internal circuit

## 5. Energy since

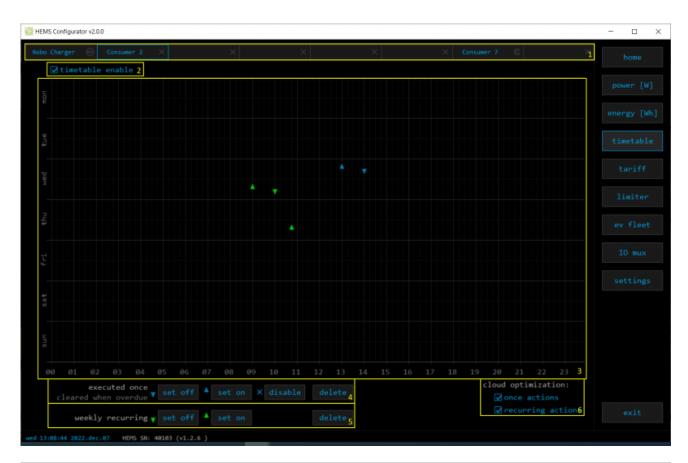
Date and time since energy is recorded

### 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)

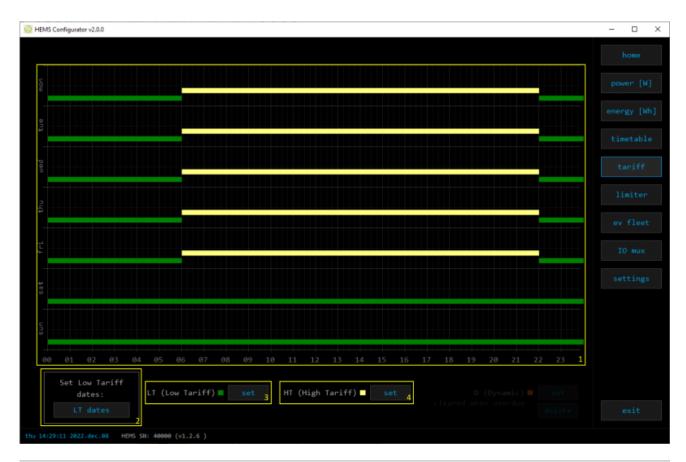
Actions are executed each week.

#### 6. Cloud optimization

When enabled (checked) cloud optimization is enabled.

# 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	HEMS - Set	t LO tariff date	s —		×					
	Set LO tariff dates									
	LO tariff date									
	day	month	day	month						
	88		80	88						
	88		80	80						
	8	88	80	80						
	53	89	80	80						
	88	85	80	80						
	82	85	80	88						
	25	86	80	80						
	85	8	80	88						
	30	00	80	88						
	88		80	80						
	25	88	80	88						
	- 26	88	80	80 <u>1</u>						
	🔲 Use e	aster mond	ays (Roma	n Catholi <mark>2</mark>	)					
		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

# **Dynamic Load Management**

# Overview and configuration of DLM

Dynamic	Loa	d Man	agen	nent											me
						Grid cur	rent lim	it [A]							
								L3							
						20	20	20							
			, N	AX currer	nt limit:										
	X Enab	le cluster	slave co	onnection											
									<u></u>						
	Limit														
	🔀 Enabi	le limiting	; from cl	Loud											
	Limi								1						
			Power	[W]		Cu	rrent [A]	1	Vo	ltage [V	1				
		Total									L3		1	Priority	
1		108	50	26	32	0,4	0,4	1,8	232	231	231	11/12/13			
		18			18			0,5			231				
		10						0,5							
re	E.														
														A late flash	
		0	0 0	9 8	0 0	0,0 0,0	0,0 0,0	0,0 0,0	232 0	231 0	231 0		-	Limit first No limiter	
		0		9		0,0	0,0	0,0	0	230	0			No limiter	
	<b>T</b>														
	De														
		0					0,0							No limiter	
	2	120		28	40	0,4	0,3	1,5	232	230	231			No limiter	
kground		90	50	26	13	0,4	0,4	1,4			5	6		7	
D FREQUENCY [H	7] 50 (*														

### 1. Grid Current limit

I. Gha Current innit	
MAX current limit	Current limit threshold for main grid fuse
Enable cluster slave connection	Current limit threshold if charger lost connection with master
Enable limiting from cloud	Current limit threshold if charger lost connection with cloud
2. Consumer management	
Turn consumers on or off	
3. Power	
Total power and power for each pha	se
4. Current	
Current for each phase	
5. Voltage	
Voltage for each phase	
6. Phase order	
	power sensor and then set for other power rid phase order will NOT apply to phase order of other
7. Status and priority	
××	Yellow status when limiter is enabled and active. Green status when enabled and not active

# Device priority group: no limiter, limit last (last to be limited), limit second, limit first (first to be limited)

#### 8. Grid frequency

Grid frequency measured on grid power meter sensor

# ev fleet

Overview and configuration of EVSE station. Up to 7 external EVSE supported.

HEMS Configurator v2.	0.1							- 0
RDX Charger	RDX 40106 🔺	A MG	RDX 31490 🔺	EVSE INCH	RDX 40001	нр 🛦	Iskra	home
$\bigcirc$								
V not connected					EV not connected			
3 phases wer: 0 W					3 phases Power: 0 W			
GE max: 0 A c current: 17 A st session:					EVSE max: 0 A Max current: 20 A Last session:			
ime 435 h 22 min hergy 51785 Wh					Time 0 h 00 min Energy 0 Wh			
Settings					Settings			
Priority charg.					Priority charg.			
Locked Allow charging					Locked Allow charging			
with ventilation Disable button					<pre>with ventilation Disable button</pre>			
Turn LED off after 3 minutes of inactivity					Turn LED off after 3 minutes of inactivity			
nomy charging: Current: 6 A					Economy charging:			
Charge only at LO tariff					Charge only at LO tariff			
Charge with surplus energy					Charge with surplus energy			
ter SN: 0					2 Slave SN: 40001 ✓			
nt log RFID_QR								
EVSE works as slave								
it if connection h master lost: 6 A <sup>1</sup>								
Lost: 6 A*	1.12 HEMS SN: 400	00 (v1.2.7b)						

#### 1. EVSE - RDC Charger

#### **RDC** charger

#### 2. Additional EVSE (charging station) linked to RDC charger

EVSE supports up to 7 charging stations. Settings are as for RDC Charger.

Slave SN: Serial number of slave charger

Green tick  $\rightarrow$  control of slave by master is allowed,

Red X  $\rightarrow$  control of slave by master is disabled.

# io mux

Overview and configuration of input/output ports IO mux

#### Software

IO	mu	х									
	1	Wireless	relay WR-1 out	out function				Slave	device IP address		
	act.	status	output fu	nction	out mode			Device	IP address	SN	
WR 1	×				normal			Grid		0	
WR 2					normal			PV		0	
WR 3	🗹 ок				inverted					Θ	
WR 4					normal					0	
WR 5					normal			eStore		Θ	timetabl
WR 6					normal					0	
WR 7					normal			Robo Charger		0	
WR 8	🗹 ок		HP 1 channel 1		inverted <sup>1</sup>			EVSE c40106		40106	
	IEMS LIN	nut and i	output function	Julnad conn	ection)			DHW		0	
					out mode			EVSE c31490		31490	
								EVSE INCH		Θ	
					normal			EVSE c101		0	
					normal			HP		e 4	ev flee
					normal			Iskra	0, 0, 0, 0	0	
					normal						
					normal						
					normal						
					normal						
					normal						
					and and a second						
					2						
1.72	loggre	consume	Heat pump :	supported op	eration mode						
						Increased +	Enter number				
		Off	Reduced	Normal	Increased	add. heater	of channels				
Heat p	ump 1						2				
Heat p	ump 2						1.000				
Heat p	ump 3						3				
Heat p	ump 4						1 3				

#### 1. Wireless relay WR-1 output function

In the left column are WR modules WR-1 (max 8) with corresponding status (active + communication status). To each WR could be assigned HEMS function (e.g. digital, linker reset, router reset, heat pump channel etc) with output mode (normal or inverted).

#### 2. HEMS input and output function (wired connection) - not for EVSE available

In the left column are MC controller ports to which could be assigned MC-230 functions (digital, linker reset, router reset, etc) with output mode (normal or inverted).

Default settings are for e.g.  $QX0 \rightarrow digital 1$  while digital 1 is defined for consumer 1 on settings page. Change to define new function role to QX0 port e.g. for linker reset

Enable consumer at input IX0,IX1 or IX2 means that dedicated consumer will be managed (ON/OFF) by input signal on IX0,IX1 or IX2. For example, if thermostat signal is wired to IXO port and "Enable consumer 1" to IX0, while thermostat is active, consumer 1 is active and otherwise.

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

#### 3. Heat pump supported operation mode

To control Heat pump by EVSE, define supported operation(control) mode based on heat pump specification. E.g. SGRHP supports external control by two channels (Off, Normal, Increased and Increased + additional heater) thus select them in table to enable functionality.

Note: Before selecting modes, heat pump must be defined in setting page!

#### 4. Slave device IP address

For device (PV inverter or external EVSE) define its IP address.

# settings

HEMS Configurat	tor v201									- 0	×
HEMS ✓ eStor × HIQ H × Virtu	e SN: 16853 ⊠ enab lome SN:0 ⊠ enab wal grid PS: ⊠ enab					Use the IP add Subnet Defaul DNS se	an IP address an following IP ad ress: 192 mask: 255 t gateway: 192	ddress (stati .168. 0.160 .255.255. 0	c IP)		]
	<pre>mal temperature: 29,9°C is (wired) cycle time: 5</pre>		ycle time: 6977m	is Mor	dbus (TCP) d	cycle t	ime: 413ms		1		
SOURCES	icon	source man	-		meter	sub		new device		tariff	
Grid PV	Grid A PV plant % /  /  X	✓ 0× ✓ 0× × / × /	ade ade ade ade		PH3-E-D PH1-E-D 1/ /	n	/			8 DLM	
eStore	Battery	× / × /	ade		1					ev fleet	
Unknown CONSUMERS	/ ×	consumer ma			meter	sub	output	man.time P n	nominal 🕑	IO mux	
ROX Charger Nain PS DHW ROX 11490 EVSE INCH RDX 40001 HP Iskra	Electric car Nome Nater boiler Electric car Electric car Electric car Heat-pump Nome	✓ 0K × / × / × / ✓ 0K ✓ 0K	ada ada ada ada ada ada ada	d del d del d del d del d del	PM3-E-D / / / / PM1-E-D PM3-I-D 6		EVSE inter. Digital-2 Digital-3 / / / HP 1 /	Omin Omin	800 X 10000 X X X X X X X	settings	
init p lon tue 09:45:52 202			10 X	Scan w-	less dev. backu allow au	p	/ WR binding resto		en idle	exit autodetect	13
modu To pair 1.Turn 2.Withi	ess WM a les pairin a new module ON target mod n 10 seconds module(s)	g (s):	e(s)"								

1. System settings		
eStore	c	eStore serial number (automatically detected or can be entered manually).
	[] enable	When selected EVSE will obtain necessary data (power, voltage) directly from battery storage system, no need to additional power sensor.
	[detect]	eStore address is cleared and new eStore can be detected.

HIQ Home       C       HIQ Home serial number (automatically detected or can be entered manually).         [] enable       When checked HEMS will read Grid power and unpicate power-sensor).         [] detect1       HIQ Home softens is cleared so new can be detected.         Virtual grid PS       [] enable       Select if system is without main grid power meters.         Internal temperature       Temperature inside of EVSE       Modbus (wireless) cycle         Modbus (wireless) cycle       Cumulative reading time of all wireless connected power sensor in ms         Modbus (wireless) cycle       Cumulative reading time of all wireless connected power sensor in ms         Modbus (wireless) cycle time       Cumulative reading time of all wireless connected power sensor in ms         IP address       IP address of EVSE         DHCP       Select for DHCP to obtain an IP address automatically → apply and save to confirm.         Note: If static IP settings are wrong, we won't be able to access RDC Charger any more!!!         Restat EVSE       Source icon         3. Device status       Status OK, Warning, Error, Detected         4. Device message       Source or consumer power sensor to source or consumer fower sensor to source or consumer power sensor to source or cons			5010
energy from HIQ Home (so there is no need to duplicate power-sensor).         [detct]       [HQ Home address is cleared so new can be detected.         Virtual grid PS       [] enable       Select if system is without main grid power meter. Energy, power and currents are calculated from other power meters.         Internal temperature       Temperature inside of EVSE       Cumulative reading time of all wireless connected power sensor in ms         Modbus (wireles) cycle time       Cumulative reading time of all wireless connected power sensor in ms         Modbus (trCP) cycle time       Cumulative reading time of all TCP connected devices in ms         Modbus (trCP) cycle time       Cumulative reading time of all TCP connected devices in ms         Modbus (trCP) cycle time       Cumulative reading time of all P address automatically → apply and save to confirm.         Note: If static IP settings are wrong, we won't be able to access RDC Charger any more!!!       Restart EVSE with jumper between IX1-GND to return RDC Charger to DHCP settings.         2. Sources and Consumers       Source or consumer power sensor management         icon       Source or consumer power sensor is connected via WM-1 module         5. Device configuration       Source or consumer power sensor form source or consumer power sensor form source or consumer power sensor form source or consumer gower sensor form source or consumer form source or consumer form source or consumer form sensor form source or consumer form source or consumer form source or consumer form source or consumer form sensor to power sensor	HIQ Home	C	
Virtual grid PS     [] enable     Select if system is without main grid power meter. Energy, power and currents are calculated from other power meters.       Internal temperature     Temperature inside of EVSE       Modbus (wirele) cycle time     Cumulative reading time of all wired power sensor in ms time       Modbus (TCP) cycle time     Cumulative reading time of all TCP connected devices in ms       IP address     IP address of EVSE       DHCP     Select for DHCP to obtain an IP address automatically -> apply and save to confirm.       Note: if static IP settings are wrong, we won't be able to access RDC Charger any more!!!       Restart EVSE with jumper between IX1-GND to return RDC Charger to DHCP settings.       2. Sources and Consumers       Status     Source name       icon     Source icon       3. Device status     Source or consumer power sensor management       management     Source or consumer power sensor to source or consumer power sensor is connected via WM-1 module       5. Device configuration     Associate new power sensor form source or consumer power sensor form source or consumer fower sensor form source or consumer & configure it as new power-sensor       6. Device type     Source or consumer power sensor form source or consumer fower sensor form source or consumer & configure it as new power-sensor       6. Device type     Source or consumer power-sensor type       6. Device type     Source or consumer power-sensor form source or consumer & configure it as new power-sensor		[] enable	energy from HIQ Home (so there is no need to
Internal temperature       Temperature inside of EVSE         Modbus (wired) cycle time       Cumulative reading time of all wired power sensor in ms         Modbus (trop) cycle time       Cumulative reading time of all wireless connected power sensor in ms         Modbus (TCP) cycle time       Cumulative reading time of all morels connected devices in ms         Modbus (TCP) cycle time       Cumulative reading time of all TCP connected devices in ms         IP address       IP address of EVSE         DHCP       Select for DHCP to obtain an IP address automatically → apply and save to confirm.         Static IP settings are wrong, we won't be able to access RDC Charger any more!!!         Restart EVSE with jumper between IX1-GND to return RDC Charger to DHCP settings.         2. Sources and Consumers       Source icon         3. Device status       Source or onsumer power sensor management         message       Source or consumer power sensor to source or consumer power sensor from source or consumer power sensor from source or consumer power sensor from source or consumer management         Source configuration       add       Associate new power sensor from source or consumer power sensor from source or consumer for sensor from source or consumer fore configure it as new power-sensor		[detect]	
Modbus (wired) cycle time       Cumulative reading time of all wired power sensor in ms         Modbus (TCP) cycle time       Cumulative reading time of all wireless connected power sensor in ms         Modbus (TCP) cycle time       Cumulative reading time of all TCP connected devices in ms         Modbus (TCP) cycle time       Cumulative reading time of all TCP connected devices in ms         IP address       IP address of EVSE         DHCP       Select for DHCP to obtain an IP address automatically → apply and save to confirm.         Static IP       Set static IP to EVSE → apply and save to confirm.         Note: If static P settings are wrong, we won't be able to access RDC Charger any more!!!       Restart EVSE with jumper between IX1-GND to return RDC Charger to DHCP settings.         2. Sources and Consumers settings table       Source con         SOURCES       Source name         source and consumers       Source or consumer power sensor management         message       Source or consumer power sensor is connected via WM-1 module         S. Device configuration       add       Associate new power sensor from source or consumer power sensor from source or consumer         Configuration       add       Associate new power sensor from source or consumer & configure it as new power-sensor         6. Device type       meter       Source or consumer & configure it as new power-sensor         6. Device type       Check if this p	Virtual grid PS	[] enable	meter. Energy, power and currents are
time         Second status           Modbus (wireless) cycle time time         Cumulative reading time of all wireless connected power sensor in ms           Modbus (TCP) cycle time time         Cumulative reading time of all TCP connected devices in ms           IP address         IP address of EVSE           DHCP         Select for DHCP to obtain an IP address automatically → apply and save to confirm.           Static IP         Set static IP to EVSE → apply and save to confirm.           Note: If static IP settings are wrong, we won't be able to access RDC Charger any more!!!         Restart EVSE with jumper between IX1-GND to return RDC Charger to DHCP settings.           2. Sources and Consumers settings table         Source con           SOURCES         Source name           Source status         Status OK, Warning, Error, Detected           4. Device message         Source or consumer power sensor management           message         Messages related to source or consumer power sensor is connected via WM-1 module           Source configuration         add         Associate new power sensor from source or consumer del is a new power-sensor           6. Device type         Source or consumer & configure it as new power-sensor           6. Device type         Source or consumer & configure it as new power-sensor           7. Submeter option         Check if this power meter or device is not part of internal circuit. Energy division for this device is	Internal temperature	Temperatu	re inside of EVSE
time         sensor in ms           Modbus (TCP) cycle time         Cumulative reading time of all TCP connected devices in ms           IP address         IP address of EVSE           DHCP         Select for DHCP to obtain an IP address automatically → apply and save to confirm.           Static IP         Set static IP to EVSE → apply and save to confirm.           Note: If static IP settings are wrong, we won't be able to access RDC Charger any more!!! Restart EVSE with jumper between IX1-GND to return RDC Charger to DHCP settings.           2. Sources and Consumers settings table         Source name           SOURCES         Source icon           3. Device status         Status OK, Warning, Error, Detected           4. Device message         Source or consumer power sensor management           management         message         Messages related to source or consumer power sensor to source or consumer power sensor is connected via WM-1 module           5. Device configuration         add         Associate new power sensor to source or consumer for source or consumer           6. Device type         del         Disassociate power sensor to source or consumer & configure it as new power-sensor           7. Submeter option         in/ex         Power plant connection <sup>1</sup> 7. Submeter option         in/ex         Power plant connection <sup>1</sup> 8. New device         Check if this power meter or device is not part of i	-	Cumulative	e reading time of all wired power sensor in ms
IP address       IP address of EVSE         DHCP       Select for DHCP to obtain an IP address automatically → apply and save to confirm.         Static IP       Set static IP to EVSE → apply and save to confirm.         Note: If static IP settings are wrong, we won't be able to access RDC Charger any more!!! Restart EVSE with jumper between IX1-GND to return RDC Charger to DHCP settings.         2. Sources and Consumers settings table       Source icon         SOURCES       Source icon         3. Device status       Status OK, Warning, Error, Detected         4. Device message       Source or consumer power sensor management management         Source and consumer management       Source or consumer power sensor is connected via WM-1 module         5. Device configuration       Source or consumer power sensor to source or consumer         6. Device type       add       Associate new power sensor to source or consumer         6. Device type       Source or consumer power sensor to source or consumer         6. Device type       Source or consumer power sensor type         configuration       in/ex       Power plant connection <sup>1</sup> 7. Submeter option       Check if this power meter or device is not part of internal circuit. Energy division for this device is ignored and outlined in grave rolor.         8. New device       Detected new power sensor.       Source or         9. Device output       Evene	-		-
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Restart EVSE with jumper between IX1-GND to return RDC Charger to DHCP settings.         2. Sources and Consumers settings table         SOURCES       Source name         icon       Source icon         3. Device status       Status OK, Warning, Error, Detected         4. Device message       Source or consumer power sensor management         management       Source or consumer power sensor is connected via WM-1 module         5. Device configuration       Messages related to source or consumer power sensor is connected via WM-1 module         5. Device configuration       add       Associate new power sensor to source or consumer         6. Device type       del       Disassociate power sensor from source or consumer & configure it as new power-sensor         7. Submeter option       in/ex       Power plant connection <sup>1</sup> 7. Submeter option       Check if this power meter or device is ind part of internal circuit. Energy division for this device is ignored and outlined in green color.         8. New device       Detected new power sensor.         9. Device output       Usision for this device is ignored and outlined in green color.	Static IP	Set static II	P to EVSE $\rightarrow$ apply and save to confirm.
SOURCES       Source name         icon       Source icon         3. Device status       Status OK, Warning, Error, Detected         4. Device message       Status OK, Warning, Error, Detected         source and consumer management       Source or consumer power sensor management         message       Messages related to source or consumer power sensor         Source configuration       New sensor is connected via WM-1 module         5. Device configuration       add       Associate new power sensor to source or consumer         Configuration       add       Disassociate power sensor from source or consumer         6. Device type       or submer power power sensor type         meter       Source or or sumer power power sensor type         soubmeter option       in/ex       Power plant connection <sup>1</sup> 7. Submeter option       Source or color.       Source is ignored and outlined in green color.         8. New device       Check if this power meter or device is not part of internal circuit. Energy division for this device is ignored and outlined in green color.         9. Device output       Uter to the top	-	-	• •
icon       Source icon         3. Device status       Status OK, Warning, Error, Detected         4. Device message       Status OK, Warning, Error, Detected         source and consumer management       Source or orsumer power sensor management         management       Source or or orsumer power sensor or consumer power sensor         Source configuration       Messages related to source or consumer power sensor is connected via WM-1 module         5. Device configuration       add       Associate new power sensor to source or consumer         Configuration       add       Associate new power sensor from source or consumer         del       Disassociate power sensor from source or consumer & configure it as new power-sensor         6. Device type       Source or orsumer power sensor type         configuration       in/ex       Power plant connection <sup>1</sup> 7. Submeter option       in/ex       Power plant connection <sup>1</sup> 8. New device       Check if this power meter or device is not part of internal circuit. Energy division for this device is ignored and outlined in green color.         8. New device       Jetected new power sensor.       Jetected new power sensor.	2. Sources and Consumers	settings tabl	e
3. Device status       Status OK, Warning, Error, Detected         4. Device message       Source or consumer power sensor management         source and consumer management       Source or consumer power sensor management         message       Messages related to source or consumer power sensor         2       Power sensor         2       Power sensor is connected via WM-1 module         5. Device configuration       add       Associate new power sensor to source or consumer         6. Device type       del       Disassociate power sensor from source or consumer & configure it as new power-sensor         6. Device type       Source or consumer power power sensor type         configuration       in/ex       Power plant connection <sup>1</sup> 7. Submeter option       Check if this power meter or device is not part of internal circuit. Energy division for this device is ignored and outlined in green color.         8. New device       Detected new power sensor.         9. Device output       U	SOURCES	Source nan	ne
Status       Status OK, Warning, Error, Detected         4. Device message       Source or consumer power sensor management         source and consumer management       Source or consumer power sensor management         message       Messages related to source or consumer power sensor         message       Power sensor         Source configuration       Image and a sociate new power sensor to source or consumer consumer         Configuration       add       Associate new power sensor to source or consumer         del       Disassociate power sensor from source or consumer & configure it as new power-sensor         6. Device type       source or consumer power power sensor type         configuration       in/ex       Power plant connection <sup>1</sup> 7. Submeter option       Source or color.       Power plant connection internal circuit. Energy division for this device is ignored and outlined in green color.         8. New device       Etected new power sensor.       Source or color.         9. Device output       Etected new power sensor.       Source or color.	icon	Source icor	l
4. Device message         source and consumer management         message       Source or consumer power sensor management         message       Messages related to source or consumer power sensor         source configuration <ul> <li>Power sensor is connected via WM-1 module</li> </ul> 5. Device configuration <ul> <li>add</li> <li>Associate new power sensor to source or consumer</li> <li>consumer</li> <li>del</li> <li>Disassociate power sensor from source or consumer &amp; configure it as new power-sensor</li> </ul> 6. Device type <ul> <li>meter</li> <li>Source or consumer power power sensor type</li> <li>configuration</li> <li>in/ex</li> <li>Power plant connection<sup>1</sup></li> </ul> 7. Submeter option <ul> <li>Check if this power meter or device is not part of internal circuit. Energy division for this device is ignored and outlined in green color.</li> <li>8. New device</li> <li>Detected new power sensor.</li> </ul> 9. Device output <ul> <li>Use output</li> <li>Use output</li> </ul>	3. Device status		
source and consumer management         Source or consumer power sensor management           message         Messages related to source or consumer power sensor           Imagement         Imagement           Imagement         Power sensor           Imagement         Imagement           Imagement         Power sensor           Imagement         Imagement           Imagement         Power sensor           Imagement         Imagement           Imagement	Status	Status OK,	Warning, Error, Detected
management         message         Messages related to source or consumer power sensor           Image imag	4. Device message		
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5. Device configuration       add       Associate new power sensor to source or consumer         Configuration       add       Disassociate power sensor from source or consumer         del       Disassociate power sensor from source or consumer & configure it as new power-sensor         6. Device type       Source or consumer power-sensor type         meter       Source or consumer power-sensor type         configuration       in/ex       Power plant connection <sup>1</sup> 7. Submeter option       Check if this power meter or device is not part of internal circuit. Energy division for this device is ignored and outlined in green color.         8. New device       Detected new power sensor.         9. Device output       Energy division for this device is ignored and coutlined in green color.	management	message	
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6. Device type       consumer & configure it as new power-sensor         meter       Source or Jumer power-sensor type         configuration       in/ex       Power plant connection <sup>1</sup> 7. Submeter option       Check if this power meter or device is not part of internal circuit. Energy division for this device is ignored and outlined in green color.         8. New device       Detected new power sensor.         9. Device output	Configuration	add	
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configuration       in/ex       Power plant connection1         7. Submeter option       Check if this power meter or device is not part of internal circuit. Energy division for this device is ignored and outlined in green color.         8. New device       Energy division for this device is ignored and outlined in green color.         9. Device output       Energy division for this device is ignored and outlined in green color.	6. Device type		
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Detected new power sensor. 9. Device output	sub	circuit. Ene	rgy division for this device is ignored and
9. Device output	8. New device		
-	· · · · · · · · · · · · · · · · · · ·		
output Select consumer output type	-		
	output	Select cons	sumer output type

Managed consumer manual override timer
Enter power for device in case where power sensor is not assigned to device.
Enable timetable
ameters
Init all parameters to default values
Save all parameters to permanent memory
Read all parameters from permanent memory
Parameters will be automatically saved to permanent memory in 15 minutes after last parameter change
Press to start scanning for power sensors wirelessly connected via WM-1 module as well as for WR-1 relay. Scanning is active for 5 minutes.
Press to pair new WM-1 or/and WR-1.
Backup all parameters to PC
Restore all parameters from PC backup <sup>2</sup>
Click to find EVSE in local network.

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

<sup>2</sup> older versions of backup files may be used. Any unsuccessfully backup or restored parameters will be displayed but operation will end successfully if you use **continue**.

# **RDC Charger Update**

RDC Charger application will detect update automatically.

🔯 RDC Charger v201	1	-	- ×
RDX Char	State: Phases: Power: EVSE max: Max current: Last session: Time Energy		A SE paused shases 0 W 0 A 2 A 01 min 055 Wh
Disabpres	Please updat harger appli ting with venti s OK to cont of after of inactivity		1
□ Charge w ■ EVSE works Limit if co	nly at LO tarif ith surplus enr OK as slave V Pa	ngy <b>1</b> ister S	N: 31490
			> > flgurator
2023.mar.14	SN: 40105 (v127b)	au	todetect

			Please update												
			RDC Ch	arger	appli	cation									
			press	OK to	cont	inue.									
											1	ок			
											-				



😳 HEMS Configurator v201	- 0	×
Update required	home	
Rdc Charger firmware version: 128 HEMS configurator version: 127		
DDC Changes analization is not up to date		
RDC Charger application is not up to date.		
Go to download page and update RDC Charger application to version 128		
2 Go to download page Remind me later		
tue 12:24:20 2023.mar.14 HEMS SN: 40105 (v127b)	autodetect	J

### Procedure to update RDC Charger application is as follows:

- press OK and **make sure to follow** further instructions on page (1) (2)
- hit the button Go to download page (2) which will open internet browser on download page, download and install
- hit the button Remind me later to postpone update for 5 minutes