



RDC Charger

User manual



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EV fleet 5

EV fleet

RDC charger supports connection of up to 8 RDC Chargers - EV fleet.

In such configuration only one RDC Charger (master) is in charge of other connected chargers (slave). Master RDC Charger monitors:

- current draw by other slave chargers and in real time allocates (limits) available capacity allowing them to charge without overloading,
- data from slaves such as power, energy & settings and synchronize them with cloud service, therefore no need for extra [IOT linker](#) on slave RDC Charger.

Note: If there is no grid power sensor, master charger enables limiting of complete ev fleet by virtual grid power sensor.



Only one RDC charger is master in ev fleet !

Procedure to set RDX Charger as slave is as follows:

- [RDC Charger](#) → set Max current (1)
- RDC Charger → enable “EVSE works as slave” (2) Master SN presents serial number of master charger, it will appear once connection is established.
- RDC Charger → set current if connection with master is lost (3)
- [HEMS Configurator](#) → settings → set static IP (it's recommended) (4)
- HEMS Configurator → limiter → set “No limiter” for RDX Charger (5)

The image shows four screenshots illustrating the configuration steps for setting an RDX Charger as a slave:

- RDX Charger v2.0.1**: The 'EVSE Settings' section shows 'EVSE max' set to 0 A and 'Max current' set to 20 A (marked with a yellow box and '1').
- RDX Charger v2.0.1**: The 'EVSE Settings' section shows 'EVSE works as slave' checked and 'Master SN: 40000' entered (marked with a yellow box and '2').
- RDX Charger v2.0.1**: The 'EVSE Settings' section shows 'Limit if connection with master is lost' set to 6 A (marked with a yellow box and '3').
- HEMS Configurator v2.0.1**: The 'System settings' screen shows 'Use the following IP address (static IP)' checked with IP address 192.168.0.124 (marked with a yellow box and '4').
- HEMS Configurator v2.0.1**: The 'Dynamic Load Management' screen shows the 'No limiter' option selected for the RDX Charger (marked with a yellow box and '5').

		L1	L2	L3
Used current limit:		25	25	25
MAX current limit:		25	25	25
Enable cluster slave connection				
Master current limit:		0	0	0
Limit if connection with master is lost:		0	0	0
Enable limiting from cloud				
Cloud current limit:		1200	1200	1200
Limit if connection with cloud is lost:		1200	1200	1200

	Total	Power [w]			Current [A]			Voltage [v]			Phase order	Priority
		L1	L2	L3	L1	L2	L3	L1	L2	L3		
Grid	7424	2541	2320	2563	11,1	10,9	11,2	230	230	230	L1 L2 L3	
RDX Charger	7424	2541	2320	2563	11,1	10,9	11,2	231	232	233	L1 L2 L3	No limiter
Oil radiator	0	0	0	0	0,0	0,0	0,0	230	230	230	L1 L2 L3	No limiter

Procedure to set RDC Charger as master is as follows:

- HEMS Configurator → settings → output column → select “EVSE RDC external” at desired position (1). Note that “EVSE inter.” is reserved and can't be changed!

The screenshot shows the HEMS Configurator v2.0.1 interface. The 'System settings' screen is active, displaying various configuration options. The 'CONSUMERS' table is the primary focus, showing the 'RDC Charger' entry. The 'output' column for this entry is set to 'EVSE inter.' and '1'. A red arrow points to the 'EVSE inter.' text. A dialog box for IP address settings is also visible in the top right, showing the IP address 192.168.0.231 and other network parameters.

SOURCES		icon		source management		meter	sub	new device	
Grid	Grid	✓	OK	add	del	VIRTUAL PH		/	
/	/	×	/	add	del	/		/	
/	/	×	/	add	del	/		/	
/	/	×	/	add	del	/		/	
/	/	×	/	add	del	/		/	
Unknown	/	×	/	add	del	/		/	

CONSUMERS		icon		consumer management		meter	sub	output	man.time	P nominal
RDC Charger	Electric car	✓	OK	add	del	PM3-E-D	×	EVSE inter.	1	0min
/	/	×	/	add	del	/	×	/	0min	0min
/	/	×	/	add	del	/	×	/	0min	0min
/	/	×	/	add	del	/	×	/	0min	0min
/	/	×	/	add	del	/	×	/	0min	0min
/	/	×	/	add	del	/	×	/	0min	0min
/	/	×	/	add	del	/	×	/	0min	0min
El.heater	Water boiler	×	/	add	del	/	×	Digital-8	0min	2500W
Background	Home	×	/	add	del	/	×	/		

- HEMS Configurator → settings → enter name and select icon (2). Message “Error - device is not responding” may appear as IP address is not defined yet.

HEMS Configurator v2.0.1

System settings

autodetect

HEMS SN: 31498 (v1.2.7b)

✓ eStore SN: 16853 enable

✗ HIQ Home SN:0 enable

✓ Virtual grid PS: enable

Internal temperature: 41,6°C

Modbus (wired) cycle time: 721ms Modbus (wireless) cycle time: 266ms Modbus (TCP) cycle time: 1415ms

IP address: 192.168. 0.231

Obtain an IP address automatically (DHCP)

Use the following IP address (static IP)

IP address: 192.168. 0.231

Subnet mask: 255.255.255. 0

Default gateway: 192.168. 0. 1

DNS server: 8. 8. 8. 8

long-press

SOURCES	icon	source management	meter	sub	new device
Grid	Grid	✓ OK			
/	/	add del	VIRTUAL PH		/
/	/	add del			
/	/	add del			
/	/	add del			
Unknown	/	add del			

Error: no response from device.
[add]
[del] - clear type

CONSUMERS	icon	consumer management	meter	sub	output	man.time	P nominal
RDX Charger	Electric car	✓ OK	PM3-E-D		EVSE Inter.	0min	<input checked="" type="checkbox"/>
/	/	add del			/	0min	<input checked="" type="checkbox"/>
/	/	add del			/	0min	<input checked="" type="checkbox"/>
/	/	add del			/	0min	<input checked="" type="checkbox"/>
40105	Electric car	⚠ Error - device is not responding	EVSE RDX ex		EVSE RDX ex	2	0min <input checked="" type="checkbox"/>
/	/	add del			/	0min	<input checked="" type="checkbox"/>
40001	Electric car	⚠ Error - device is not responding	EVSE RDX ex		EVSE RDX ex		0min <input checked="" type="checkbox"/>
/	/	add del			/	0min	<input checked="" type="checkbox"/>
El.heater	Water boiler	add del			Digital-8	0min	2500W <input checked="" type="checkbox"/>
Background	Home						

Permanent memory parameters

long-press

autosave parameters

Fri 12:05:16 2023.feb.10 HEMS SN: 31498 (v1.2.7b)

- HEMS Configurator → limiter:
- (3) enter allowed current value of grid fuses in case of connected grid power sensor, or max current limit of complete ev fleet if there is virtual grid active
- (4) make sure to configure phase order for grid and RDC Chargers correct as dynamic load management may not work properly. **Double check!**
- (5) select limiter priority for chargers: no limiter, limit last (last to be limited), limit second, limit first (first to be limited)

Dynamic Load Management

		Grid current limit [A]		
		L1	L2	L3
Used current limit:		20	20	20
MAX current limit:		20	20	20

Enable cluster slave connection
 Master current limit: 0 0 0
 Limit if connection with master is lost: 0 0 0

Enable limiting from cloud
 Cloud current limit: 3200 3200 3200
 Limit if connection with cloud is lost: 3200 3200 3200

	Total	Power [W]			Current [A]			Voltage [V]			Phase order	Priority
		L1	L2	L3	L1	L2	L3	L1	L2	L3		
Grid	8739	3159	2780	2800	13,7	12,1	12,3	230	230	230	L1 L2 L3	4
RDX Charger	389	389	0	0	1,7	0,0	0,0	228	0	0	L1 L2 L3	No limiter
40105	8350	2770	2780	2800	12,0	12,1	12,3	231	232	233	L1 L2 L3	Limit first
40001	0	0	0	0	0,0	0,0	0,0	231	234	231	L1 L2 L3	No limiter
El.heater	0	0	0	0	0,0	0,0	0,0	230			L1	No limiter
Background	0	0	0	0	0,0	0,0	0,0					

GRID FREQUENCY [Hz] 0,00

Fri 12:30:48 2023.feb.10 HEMS SN: 31490 (v1.2.7b)

- HEMS Configurator → IO mux → enter IP address of slave RDX Charger (6). Serial number (SN) will be listed automatically once connection is established.

IO mux

Wireless relay WR-1 output function			
act.	status	output function	out mode
WR 1	<input checked="" type="checkbox"/>	/	normal
WR 2	<input checked="" type="checkbox"/>	/	normal
WR 3	<input checked="" type="checkbox"/>	/	normal
WR 4	<input checked="" type="checkbox"/>	/	normal
WR 5	<input checked="" type="checkbox"/>	/	normal
WR 6	<input checked="" type="checkbox"/>	/	normal
WR 7	<input checked="" type="checkbox"/>	/	normal
WR 8	<input checked="" type="checkbox"/>	/	normal

HEMS input and output function (wired connection)		
	input/output function	out mode
QX0	Digital-1	normal
QX1	Digital-2	normal
QX2	Digital-3	normal
QX3	Digital-4	normal
I012	WR 1 channel 0	normal
I013	Linker reset	normal
I014	/	normal
I015	/	normal
IX0	Toggle consumer-1	normal
IX1	Toggle consumer-2	normal
IX2	Toggle consumer-3	normal

Heat pump control mode						
	Off	Reduced	Normal	Increased	Increased +	Enter number
Heat pump 1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Heat pump 2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Heat pump 3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Heat pump 4	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	

Slave device IP address		
Device	IP address	SN
Grid	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
RDX Charger	0.0.0.0	0
	0.0.0.0	0
40105	192.168.0.109	40105
	192.168.0.213	0
40001	192.168.0.124	40001
	0.0.0.0	0
El.heater	0.0.0.0	0

Fri 12:07:13 2023.feb.10 HEMS SN: 31490 (v1.2.7b)

- HEMS Configurator → ev fleet:

- (7) master RDC Charger,
- (8) connected slave RDX Charger with enabled control by master (green tick) and
- (9) connected slave RDC Charger with disabled control (red X) → master can not control it! To enable control, run RDC Charger app on slave charger and enable “EVSE works as slave”.

