



RDC Charger

User manual



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EV fleet 5

EV fleet

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

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

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



Only one RDX charger is master in ev fleet !

Procedure to set RDX Charger as slave is as follows:

- [RDX Charger](#) → set Max current (1)
- [RDX Charger](#) → enable “EVSE works as slave” (2) Master SN presents serial number of master charger, it will appear once connection is established.
- [RDX 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 screenshots illustrate the configuration process for setting an RDX Charger as a slave in an EV fleet. The RDX Charger interface shows the 'EVSE Settings' section where 'EVSE works as slave' is checked and 'Master SN: 40000' is entered. The 'Limit if connection with master is lost' is set to 6 A. The HEMS Configurator interface shows the 'System settings' section where a static IP address (192.168.0.124) is configured. The 'Dynamic Load Management' section shows the 'Grid current limit [A]' table with 'Used current limit' and 'MAX current limit' set to 25 A for all three phases (L1, L2, L3). The 'Limit if connection with master is lost' is set to 0 A for all phases. The 'Limit if connection with cloud is lost' is set to 1200 W for all phases. The 'No limiter' option is selected for the RDX Charger in the bottom table.

	Power [w]			Current [A]			Voltage [v]			Phase order	Priority	
	Total	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 RDX Charger as master is as follows:

- HEMS Configurator → settings → output column → select “EVSE RDX 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' window is open, displaying various configuration options. The 'CONSUMERS' table is the primary focus, showing the 'RDX 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 modal dialog for IP address settings is also visible in the top right, showing options for DHCP and static IP.

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

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

- 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			VIRTUAL PH
/	/	add del	/	/	/
/	/	add del	/	/	/
/	/	add del	/	/	/
/	/	add del	/	/	/
/	/	add del	/	/	/
Unknown	/				

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	0min <input checked="" type="checkbox"/>
/	/	add del	/	✗	/	0min	<input checked="" type="checkbox"/>
El.heater	Water boiler	✗ /	/	✗	Digital-8	0min	2500W <input checked="" type="checkbox"/>
/	/	add del	/	✗	/	0min	<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 RDX 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

		Power [W]				Current [A]			Voltage [V]			Phase order	Priority
		Total	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	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	⊗	/	normal
WR 2	⊗	/	normal
WR 3	⊗	/	normal
WR 4	⊗	/	normal
WR 5	⊗	/	normal
WR 6	⊗	/	normal
WR 7	⊗	/	normal
WR 8	⊗	/	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	⊗	⊗	⊗	⊗	⊗	
Heat pump 2	⊗	⊗	⊗	⊗	⊗	
Heat pump 3	⊗	⊗	⊗	⊗	⊗	
Heat pump 4	⊗	⊗	⊗	⊗	⊗	

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
	0.0.0.0	0
RDX Charger	0.0.0.0	0
	0.0.0.0	0
40105	192.168.0.109	40105
	192.168.0.215	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 RDX Charger,
 (8) connected slave RDX Charger with enabled control by master (green tick) and
 (9) connected slave RDX Charger 3 phases with disabled control (red X) → master can not control it! To enable control, run RDX Charger app on slave charger and enable “EVSE works as slave”.

The screenshot displays the HEMS Configurator v2.0.1 interface with eight RDX Charger slots. The interface is organized into columns for each charger, showing status, power/energy data, and settings. A sidebar on the right contains navigation buttons: home, power [W], energy [Wh], timetable, tariff, DLM, ev fleet, IO mux, settings, and exit.

Charger ID	Status	Power	EVSE max	Max current	Last session	Time	Energy	Slave SN	Control Status
1	Charging	391 W	16 A	16 A	145 h 24 min	26392 Wh	0	Master	7
2	On	0 W	0 A	1 A	0 h 00 min	0 Wh	0	0 X	
3	Off	0 W	0 A	1 A	0 h 00 min	0 Wh	0	0 X	
4 (40105)	Charging	7650 W	11 A	32 A	143 h 48 min	312850 Wh	40105	✓	8
5	Off	0 W	0 A	0 A	0 h 00 min	0 Wh	0	0 X	
6 (40001)	EV not connected	0 W	0 A	20 A	6 h 32 min	40670 Wh	40001	X	9
7	On	1350 W	0 A	1 A	0 h 00 min	0 Wh	0	0 X	
8	Off	0 W	0 A	1 A	0 h 00 min	0 Wh	0	0 X	

Settings for each charger include: Priority charg., Locked, Allow charging with ventilation, Disable button, Turn LED off after 3 minutes of inactivity, Economy charging (Current, Charge only at LO tariff, Charge with surplus energy), and EVSE works as slave (checked in slot 7).

Event log: RFID_QR

Limit if connection with master is lost: 0 A

Footer: thu 15:26:39 2023.feb.09 HEMS SN: 31490 (v1.2.7b)