



DC120

Manual

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1. INTRODUCTION

Thank you for choosing an Ecotap® DC charger.
This manual describes the DC charger.
This manual contains important information for the proper and safe installation and operation of the DC charger.

The charging station is designed for vehicles fitted with a mode-4 charging system in line with IEC 61851-1 (edition 2.0) using a connector jack system as per VDE-AR-E 2623-2-2 / IEC 62196-2. Together with the vehicle and system, the charging station will select the best option for charging the vehicle quickly and safely.
The entire charging station complies with EU Directive 2014/35/EU relating to the harmonisation of legislation on electrical equipment within certain voltage limits (re-rating of all versions issued previously).

This manual provides insight into how to install and operate the charging station safely. This manual is drawn up to maximise the function and technical design life of the charging station.

It has been drawn up with the utmost care. However, if there are still any uncertainties, contact your supplier before installing the charging station.
We can only guarantee the functioning of the charging station if the charging station is connected by an authorized or certified fitter/technician.

Read this manual carefully before installing and operating this charging station. Store this manual in the vicinity of the charging station so that the instructions and safety guidelines are always to hand.





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This manual is an English translation. The original manual was written in Dutch.

2. GENERAL

15.1 Warranty
The Ecotap® B.V. General Delivery Conditions apply.
Ecotap® B.V. cannot be held responsible for injury or damages as a result of the charging station being changed, damaged, converted, or expanded with other components, or if it is not being used in accordance with the specified instructions and conditions.


2.2 Symbols used in this manual and on the charging system

Symbol	Meaning
	Pay attention! Important instruction
	Electrical hazard
	For maintenance: first disconnect the installation from its power supply and test it to make sure there is no voltage left, before engaging in any maintenance activities
	Wear special gloves.

	Disconnect the electrical installation from its power supply
	Reading this manual is mandatory

3. DEVICE DESCRIPTION

3.1 Application

<p>The charging station is specially designed for intensive use.</p> <p>Locations not suitable for placing the charging station:</p> <ul style="list-style-type: none"> - Small enclosed spaces < 4m³ - The preferred position of the charging station is not directly in full sun. 	
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3.2 Accessories


The following accessories are not included in the scope of delivery:

- Assembly tools
- Screw bit for opening the charger

3.3 Safety features




- Lockable by means of special screws and key
- Fuse holders / earth leakage protection
- 12 Volt control voltage
- Strain relief
- IP54 watertightness class

4. SAFETY



Read the following safety regulations carefully before you install and use the charging station.	
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4.1 Safety instructions

Before placing the charging station, make the location safe for bystanders. NEVER allow children in this work area. Ensure that NO ONE unrelated to the work enters the work area. Never be distracted while working. Maintain a healthy posture at all times while working. Do not leave tools and components of the charging station unattended. Ensure that tools are clean and dry. During bad weather with rainfall ensure that the charging station, tools and components remain dry.

	Make sure that there is no danger of anyone tripping over objects or paving while you are digging the hole for the foundation.
	Make sure to wear good, suitable gloves for any special actions throughout the entire installation and connection process.
	Always check any measuring instruments you will be using to disconnect the installation from its power supply before you use them, checking them several times to make sure they are working properly.

5. MANDATORY CHECKS BEFORE INITIAL USE

	The following checks are mandatory before installing / commissioning the charging station. NEVER use the charging station if the 1 or more checks show that the power supply or stability of the charging station is inadequate.
	Always perform the checks below before applying voltage to the charging station.

- ✓ All work described below is in compliance with NEN 3140.
- ✓ Check whether the wires have been connected to the terminals in the right order.
- ✓ Check whether the cores have been properly tightened, see point 19.3
- ✓ Check whether the earth connection is mounted on the connection terminal in accordance with the NEN1010/EU/35 standard.
- ✓ Check whether the cable thickness of the power cable matches the fused current rating.
- ✓ Check whether the charging station is tightly and properly secured.
- ✓ Check whether the station is sufficiently waterproof.
- ✓ Keep the immediate environment of the work area free from obstacles.

6. OPERATING / INSTALLATION MANUAL

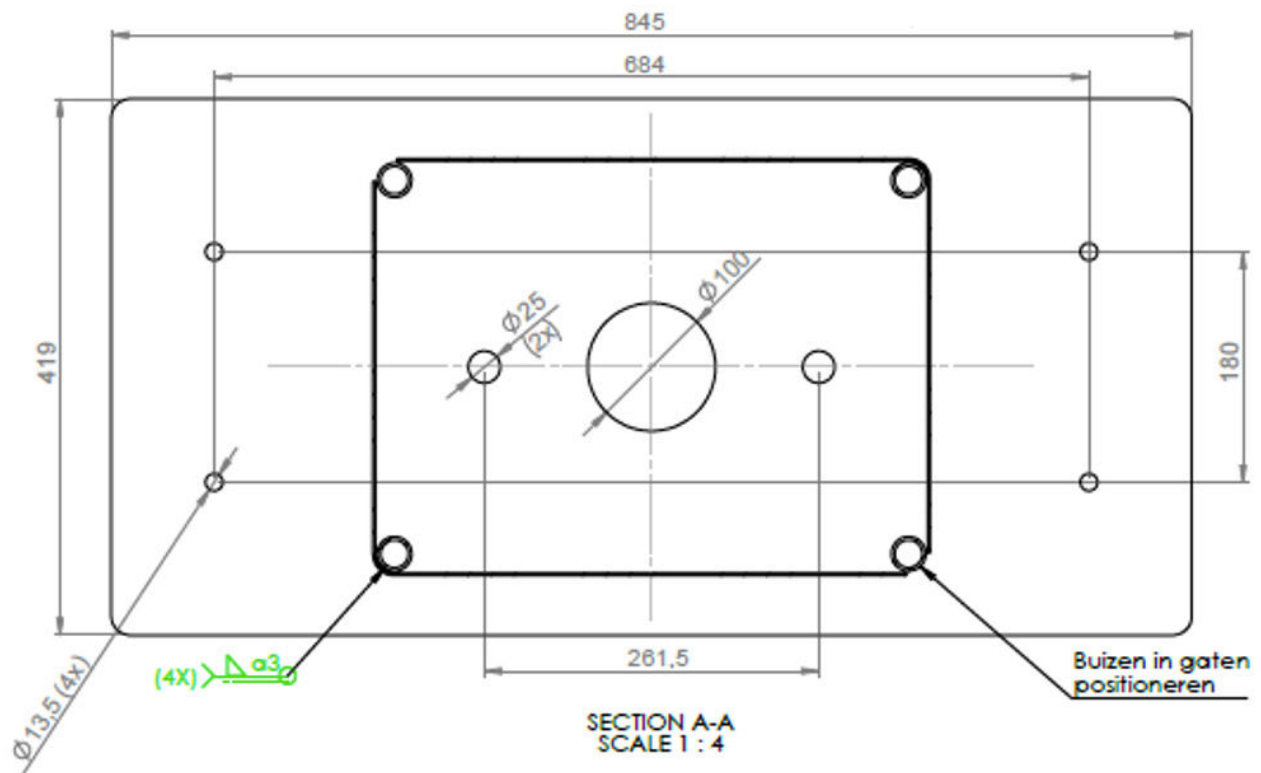
6.1 Open the door

To open the door, proceed as follows. Open the cover for the lock before inserting the key into the keyhole to open it. This will bring the handle forward. Turn the handle half a turn after which the door is unlocked.

6.2 Mounting on the foundation

To fit the foundation, a hole must be dug of roughly L 900 mm x D 450 mm x H 450 mm. The bottom of the hole must be stable and levelled.
Place the foundation base level in the hole. The upper surface of the base must be flush with the upper surface of the grade / paving. The foundation must then be reinforced by adding at least two 20 kg bags of fast-setting concrete in the corners of the foundation.
After the fast-setting concrete has cured, the charging station can be mounted on its foundation using the nuts and bolts provided (nuts to the top).
The hole in the foundation and the charging station must be lined up. See drawing of the front of the foundation base. Take account of the connection face of the charging station in relation to walls, hedges, etc.
Also keep in mind that there is sufficient space for the operation of the charging station. For this we advise to keep at least 1 meter of free space around the charging station.



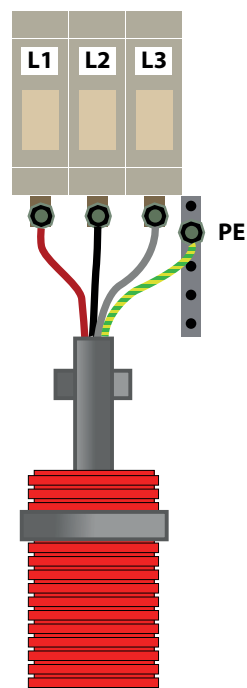


6.3 Inserting cable and securing with strain relief

Secure the power cable in the foundation using the cable gland.

Connect the conductors of the cable to the existing main switch terminals (max. 15 to 22Nm bolt m8 oder 30 to 44Nm bolt n10).


Below is an overview of the wiring diagram



6.4 Load balancer

If you want to install the charging station in combination with a load balancer, you need to connect it to the charging station as follows. The data cable from the load balancer should be connected to the grey terminal (see drawing).

7. MAINTENANCE

	Always de-energise the charging station and read the operating instructions before handling maintenance or faults. Repair or replacement of components should only be done with the products approved by the supplier. Repairs and replacements must always be carried out by an authorised / specialist. Maintenance must always comply and be carried out in accordance with NEN3140 and NEN 50110 low voltage Euro standard.
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Check the charging station for leaks. Check the connections of the main power cabling and ensure a firm connection of max. 5 Nm. Treat damage to the charging station with rust-proof paint.

8. TRANSPORTATION AND STORAGE


Transport the charging station (technical core) upright and prevent the paint from being damaged, as this could cause rust. The covers may be transported in various ways as long as they are protected from damage. Preferably store the charging station in a dry, non-humid space. When hoisting the charging station into position, there are 2 securing holes for lifting eyes on the top of each corner of the charging station. The lifting eyes can be removed after fitting. To ensure a safe work setting, only a certified fitter may hoist the charging station. Please note that the weight is 285 kg.

9. RESOLVING PROBLEMS

If the charging station malfunctions, immediately contact the Ecotap® helpdesk, open 24/7 (telephone number: +31 (0)411 745 020) or a certified technician who possesses the necessary measuring and en testing equipment with auto-simulation.
NOTE!

All work on and modifications to the charging station must comply with at least NEN1010.

10. OPERATION AND FUNCTIONING OF THE CHARGING STATION

	The charging station can be operated with the charging card or a likewise key fob.
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Before applying power to the charging station, it is necessary to contact the back office provider whose telephone number is listed on the charging system so that the charging station can be activated by software. The unique charging station number is required for this purpose.

10.1 Operation

Take the plug from the holder of the charging station that is suited to your vehicle. Then insert it in your vehicle. Initiate the start/stop procedure by holding your charging card up to the scanning point. Firstly the plug is locked onto the vehicle. The charging station then communicates with the vehicle and the back-office system. Once all security and payment guidelines have been checked, the maximum permissible charging current is forwarded. After some time, it can occur that the charging station activates the cooling systems fitted for this purpose to dissipate the excess heat via the venting duct. The charging procedure is now activated automatically. The AC charging process is indicated by a small light. To stop the charging process, hold your card up to the scanning point. The charging process then stops. You can now remove the plug and hang it back up in the available holder.

10.2 Emergency stop

In case of an emergency, the emergency button provided for this purpose must be used. This can be reached by pressing (breaking) the glass with your thumb. When activating the emergency button, the charging process is immediately aborted both software and hardware-wise. When resetting the emergency button, the emergency button should be turned a quarter of a turn clockwise so that it shoots forward. Then, via the Back-office (see phone number on the charger), the charger will have to be restarted provided everything is safe.

11. TECHNICAL SPECIFICATIONS

AC INPUT	
Input voltage:	3f 400VAC $\pm 10\%$ + PE
Input frequency:	50Hz
Power factor:	Rated output load PF ≥ 0.99
Connection value:	Minimal 3 x 185A (With a lower available capacity, the charger can be set lower by software)
RCD:	Type B
Input under voltage protection:	255V $\pm 5V$
Input overvoltage protection:	535V $\pm 5V$
DC OUTPUT	
Protocol:	Mode 4
Output power:	1 - 120 kW CCS
Output voltage range:	200-1000VDC
Output current range:	CCS: 0~250A (400A peak) ,
Output overvoltage protection:	1000 $\pm 5V$
Output under voltage alarm:	140V $\pm 2V$
Voltage stabilized accuracy:	$\leq \pm 0.5\%$
Max. startup overshoot:	$\leq \pm 1\%$
Current stabilized accuracy:	$\leq \pm 1\%$
Startup Time:	Normally 3s $\leq t \leq 15s$
Efficiency:	$> 96\%$
OPERATING ENVIRONMENT	
Operating temperature:	-30°C ~ 70°C, derating from 55°C
Overtemperature protection:	On temperature $> 70^\circ\text{C} \pm 4^\circ\text{C}$ or $< -40^\circ\text{C} \pm 4^\circ\text{C}$, charger will shut down automatically
Operating/ambient temperature:	-25° - to 60°
Storage temperature:	- 40°C ~ 85°C
Humidity:	$\leq 95\%$ RH, without condensation

Pressure/Altitude:	79kPa-106kPa/2000m
PHYSICAL CHARACTERISTICS	
Acoustic Noise:	< 72 dB at 1m at 20° C, at full charging
Cooling:	Air Cooling fans
Dimensions (HxWxD):	1736 mm x 825 mm x 419 mm
European Standards:	EN 61851-1 2011, EN 6185123-2014, CE
Casing material:	Steel >3 mm
Treatment:	Anti-corrosion and powder coating
Standard colour:	RAL 9016
Weight:	285 kg
Number of charging points:	1 (CCS)
Cable length:	3 meters
MTBF:	> 500000 hrs (40°C)
DC power plug:	Mode 4 (IEC-61851-23/24) Combo-2 (DIN 10121)
Enclosure protection against external impacts:	> IK10 according to IEC 62262
CONTROL	
Back office protocol :	OCPP 1.6 Json
Start-Stop:	RFID-card
Suitable charge cards:	Mifare, NTag and iCODE SLI cards (more info)
Network interface:	Ethernet (standard) / GPRS-UMTS (4G)
Push button:	Emergency stop button
Positioning:	GPS
Pay attention ! Earthing (earth dispersion resistance) completely in accordance with the applicable standards.	
Suitable charge cards:	Mifare, NTag and iCODE SLI cards (more info)
Network interface:	Ethernet (standard) / GPRS-UMTS (4G)
Push button:	Emergency stop button

**Pay attention ! Earthing (earth dispersion resistance) completely
in accordance with the applicable standards.**

Ecotap® B.V. reserves the right to change technical details due to continual, innovative development of the charging station, without publishing this in advance. The technical details might also differ from country to country.

12. CONTACT DETAILS SUPPLIER

Ecotap® B.V.
Kruisbroeksestraat 23
5281RV Boxtel – The Netherlands
Tel.: 0031 (0) 411-210210
E-mail: info@ecotap.nl

13. EU CONFORMITY STATEMENT

(Directive 2014/35/EU, Annex II page 96/369, EMC 2014/30/EU)

Ecotap® B.V. Kruisbroeksestraat 23, 5281RV Boxtel, the Netherlands, hereby states that the following charging station meets the requirements of the listed directives and standards.

Type: Ecotap® DC 120

Year of construction: 2022

EU directives used:

- Low-voltage directive 2014/35/EU
- EMC directive 2014/30/EU

Standards used as reference:

- EN 61851-23:2014
- EN 61851-1:2012
- EN 61851-21-2 :2016
- EN 61000-3-11:2000
- IEC 61000-3-12:2011
- EN 61000-4-2:2009
- EN 61000-4-3:2006
- EN 61000-4-4:2012
- EN 61000-4-5:2014
- EN 61000-4-6:2014
- EN 61000-4-8:2010
- EN 61000-4-11:2004
- NEN/EN/IEC 60529
- IEC 62262
- NEN/EN/IEC 61439-1
- IEC/TS 61439-7

Used harmonisation standards:

NL NEN-EN-IEC 61851-1/ NEN-EN-IEC 61851-22
FR NF-EN-IEC 61851-1 / NF-EN-IEC 61851-22
DE DIN-EN 61851-1 / DIN-EN 61851-22
GB BS-EN 61851-1 :2019 / BS-EN 61851-22
IT IEC-EN 61851-1 / IEC-EN 61851-22

Boxtel, January 2022



Ir. P.F.A. van der Putten (Technical Director)



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