Duo

Manual

ecotap®
A brand of legrand®

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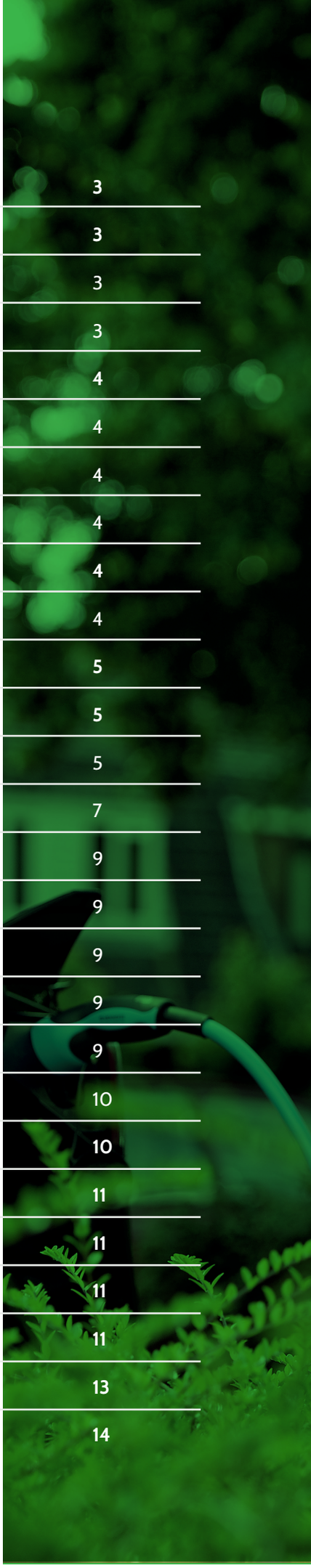


1. INTRODUCTION

Thank you for choosing for an Ecotap® charging station. This manual is regarding the charge point DUO.
This manual contains important information for properly and safely installing and using the charging station.
This charging station is designed for vehicles that are equipped with a mode 3 charging system that complies with IEC 61815-1 (version 2.0) and a plug system that complies with VDE-AR-E 2623-2-2. 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 the 2014/35/EU directive dealing with the harmonisation of regulations regarding electric materials within certain voltage limits (a recast of all previously published versions).
This manual explains how to safely install and use the charging station. This manual was drawn up in such a way as to ensure the charging station's maximum functioning and lifespan.
This manual was drawn up with great care. However, should anything remain unclear after reading it, please contact your supplier before you install the charging station.
We cannot guarantee that this charging station will function properly unless it is installed by an authorised or certified installer / mechanic.
Read this manual carefully before you install or use the charging station. Save this manual and store it near the station so that the instructions and safety regulations will always be readily available.

This is an English translation of the original Dutch manual.

2. GENERAL

2.1 Warranty

The Ecotap® B.V. General terms and conditions for delivery apply here.
Ecotap® B.V. cannot be held accountable for any injury or damage to goods should the charging station be altered, damaged, refitted or expanded upon with other components, or not used in accordance with the instructions and conditions set out here.

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 Use

This charging station is especially designed for public areas. The station can be installed in various environments: in paved areas, in open soil/sand, or in asphalt surfaces.	

The following environments, however, are not suitable:

- All grounds that can flood
- Loading quays
- Slope at an angle of more than 4%

3.2 Accessories
The following accessories will not be provided: tools, foundation.

3.3 Safety provisions
- 2 half euro profile cylinders
- Extra caps behind front cap
- 12 Volt control voltage
- Components comply with IP2 at least
- Strain reliefs
- 4 mm steel casing
- IP54 (lowest waterproof class for Mennekes outlets).

4. SAFETY

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

4.1 Safety regulations
Before you install the charging station, you must make sure the location is safe for all bystanders. NEVER allow children onto this worksite. Never allow ANYONE who has nothing to do with the work onto the worksite.
- Never be distracted while you are performing the work.
- Make sure you maintain a healthy posture at all times while doing the work.
- Do not leave any tools or charging station components unattended.
- Make sure any tools you are using are clean and dry.
- Make sure that the charging station, tools and components will stay dry when it is raining.

	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 the charging station goes live. **NEVER** use the charging station if one or more of the checks indicate that the power supply or stability of the charging station does not suffice. Check the insulation resistance of the various conductors in accordance with NEN1010 provision 61.3.3.
	Always perform the checks below before voltage is applied to the DUO charging station.

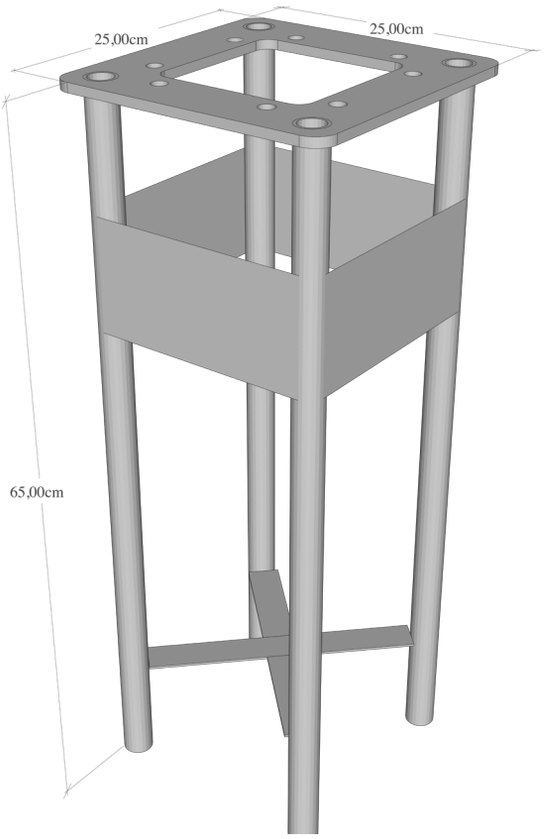
√ All of the activities listed below must be performed in accordance with NEN 3140.
√ Check whether the wires have been connected to the terminals in the right order.
√ Check whether the conductors on the terminals have been screwed on properly (4 to 5 NM).
√ Check whether the grounding connector has been connected to the coded terminal and whether it has been connected to the grounding electrode or the supplied grounding device. The entire grounding system must comply with the NEN1010/EU/35.
√ Check whether the charging station is stable.
√ Check whether the seals on the charging station's caps have been installed properly during installation (IP54).
√ Check whether any actions still need to be performed, so that they may be performed safely.
√ Make sure there are no obstacles surrounding the worksite.
√ **Before any voltage is applied to the charging station, make sure to contact Ecotap® B.V. by calling 0031 (0) 411-210210 so that we can activate that particular station's software; we will need the station's unique code to do so.**

6. USER / INSTALLATION MANUAL

6.1 Mounting the casing on the foundation

- The foundation must be installed in a hole of 50x50 cm in size and 80 cm deep.
- The bottom of the hole must be stable and flattened out properly. Place the foundation in the hole and check whether it level using a spirit level. You can correct any small deviations while you are closing the hole.
- Place the charging station on the foundation without its 2 bent steel cap sections and mount it using the bolts and nuts supplied (the nuts go on the top).
- Leave the transparent lids on the front of the charging station in place for now. Make sure the station faces the right way (i.e. the connecting side is at the front).
- Close the hole using around 20 cm of soil/sand.
- Install the cap in the back using the nuts that have been supplied.
- 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.

T 1.0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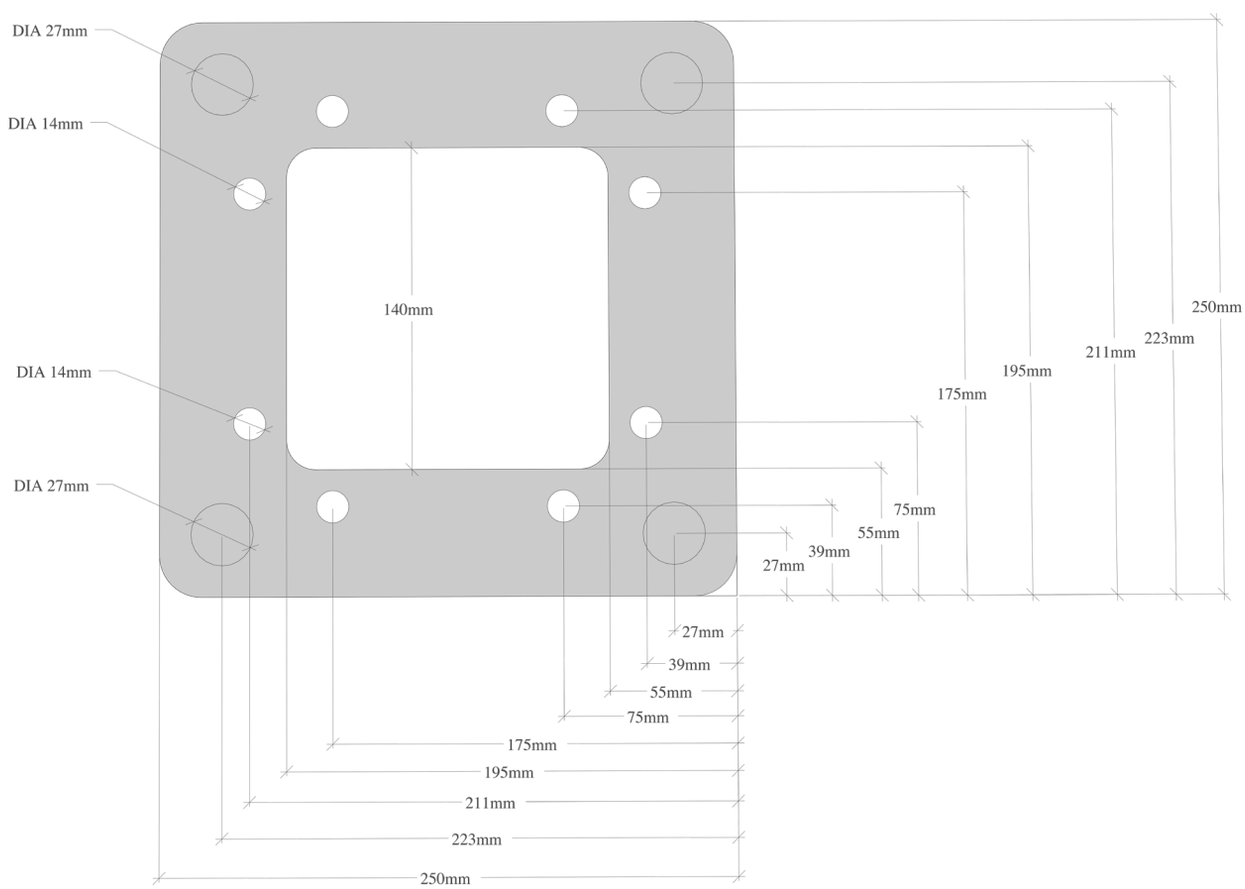
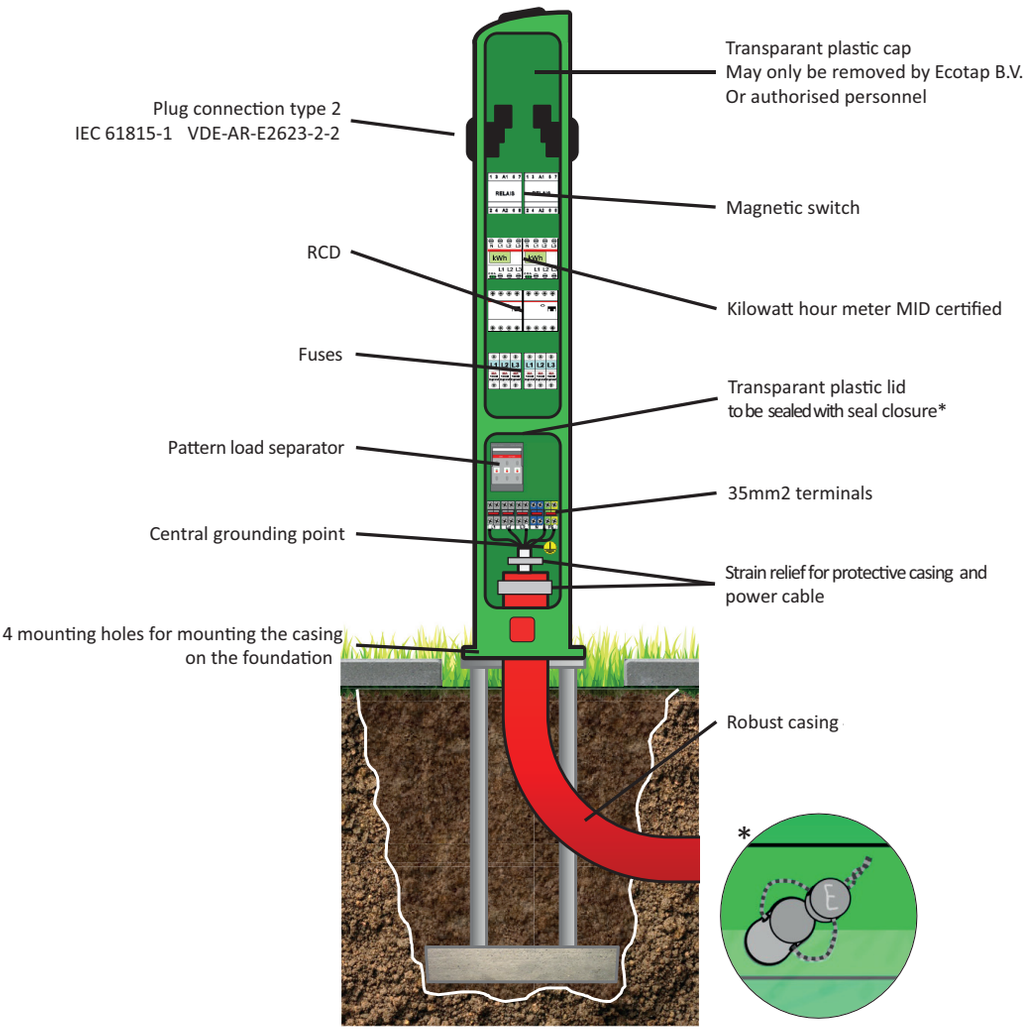
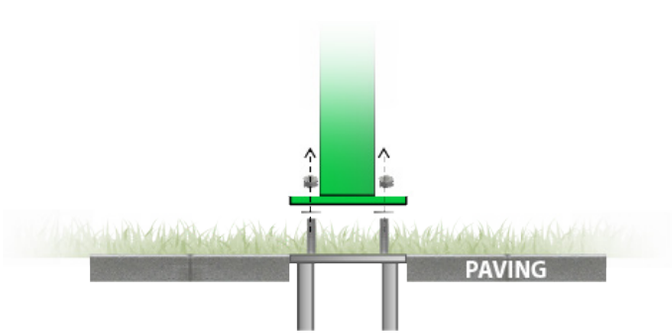
25,00cm
65,00cm


DIA 27mm
DIA 14mm
140mm
DIA 14mm
DIA 27mm
250mm
223mm
211mm
195mm
175mm
75mm
55mm
39mm
27mm
27mm
39mm
55mm
75mm
175mm
195mm
211mm
223mm
250mm

T 1.1



T 1.2



6.2 Opening and closing the charging station

	Always de-energise the charging column and read the operating instructions before handling maintenance or malfunctions.

At the base of the charging station, at the front in the cover, there is a lock that locks the entire DUO charging column.

- Remove the cover plate with socket 2.5.
- Open the charging point with the key provided.
- Insert your key into the right lock.
- Turn the key all the way to the right.
- Turn the two locks with cylinder all the way to the left.

T 1.3

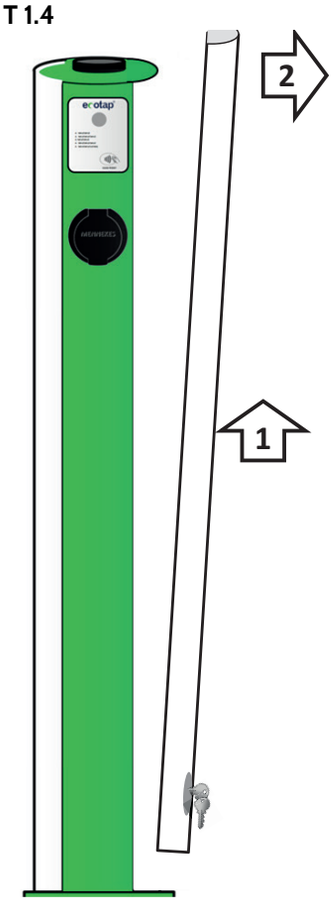
After unlocking the lock, the front cover (with lock) can be disconnected from the charging point.

- Grasp the front cover at the sides.
- Slide the front cover upwards (± 10cm) and move the top of the front cover away from the charging point. (see T1.4)

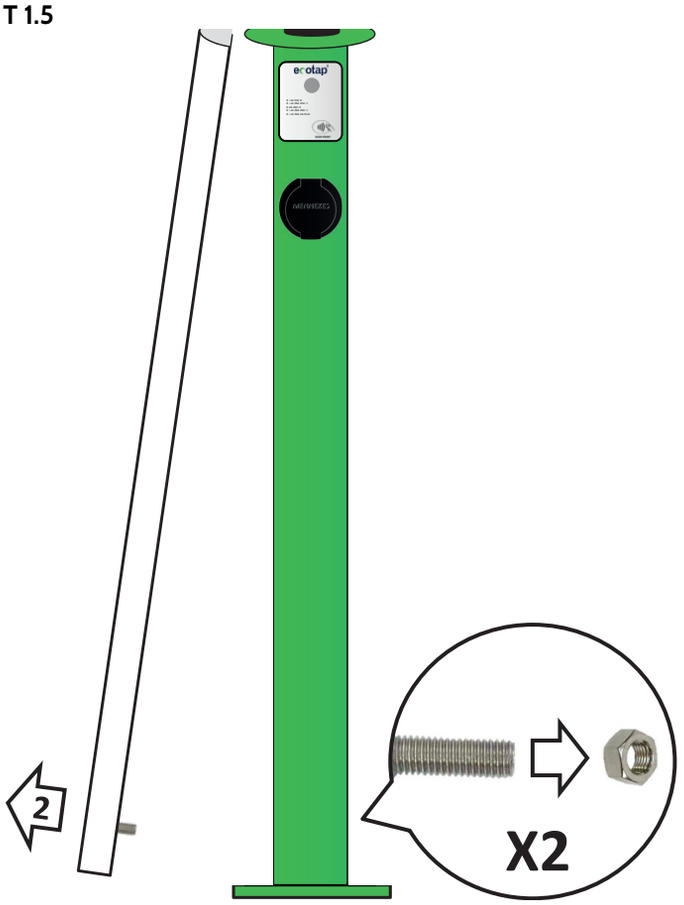
After removing the front cover, the rear cover can be disconnected.

- At the bottom of the charging point at the front, loosen the two nuts.
- Move the rear cover off the charging point at the bottom. (see T1.5)

T 1.4



T 1.5

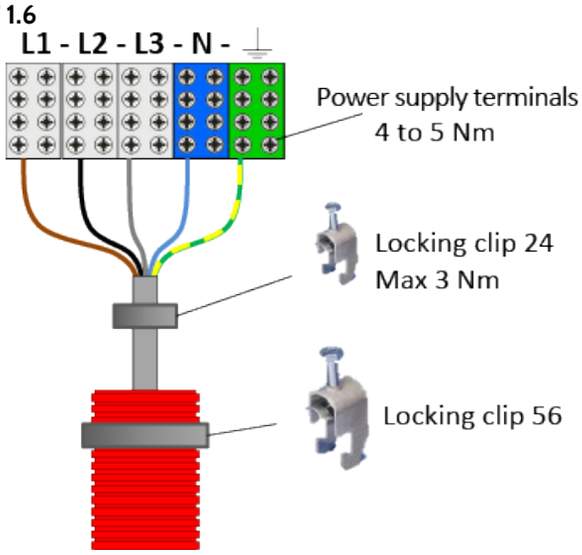


6.3 Installing the protective casing
The protective casing pipe (80cm) is supplied along with the foundation.
Once the casing has been mounted on the foundation, the clear plastic protective lid on the bottom of the charging station can be removed.
Install the casing bottom side-down and fix it in place using the support clamp. (diagram 1.1)

6.4 Feeding the cable and installing it with strain relief
Feed the power cable through the protective casing pipe.
Avoid making it too long. Fit the cable clamp around the cable and fix it in place (3 Nm max). (diagram 1.1)

6.5 Connecting the power cable to the terminals
Connect the phase conductors to the terminals marked L1 / L2 / L3 (4-5 Nm)
Connect the neutral conductor to the neutral terminal (blue)(4-5 Nm).
Connect the grounding conductor to the coded ground terminal (green) (4-5 Nm).

T 1.6



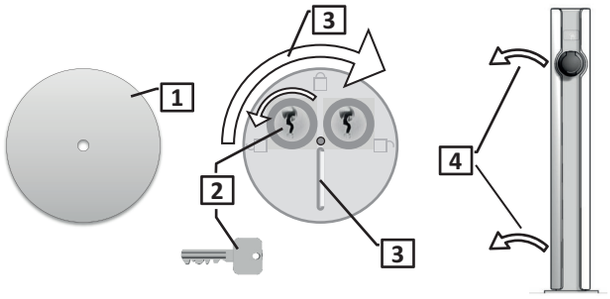
6.6 Connecting the grounding electrode/grounding conductor
Connect the connection cable's grounding conductor to the specified grounding point (the ground terminal). If a grounding electrode has been installed, connect that to the ground terminal as well, as shown in diagram 1.1. Perform the entire grounding process in accordance with the guidelines currently in force, namely NEN1010/EU/35

6.7 Replace cylinder lock

	Always de-energise the charging column and read the operating instructions before handling maintenance or malfunctions.

1. Use socket 2.5 to remove the cover plate which keeps the lock free of sand and dirt.
2. Insert the key into the right lock and turn the key clockwise.
3. Turn the two locks with casing counterclockwise 90˚.
4. Lift the cover (front with lock) up and off the column.

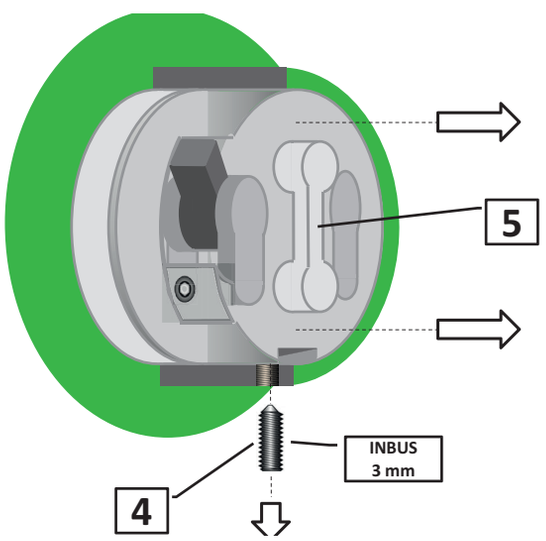
T 1.7



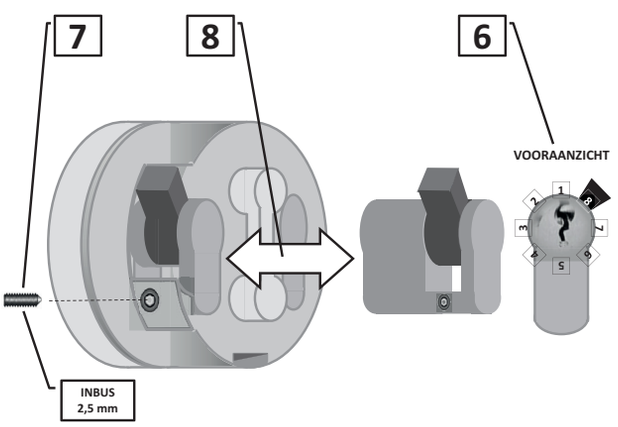
6.8 Half euro lock cylinder replacement

1. Unscrew the Allen bolt with socket 3mm.
2. Slide the entire lock cylinder (with the locks) out of the cover.
3. Work the cylinder lock, making sure the cam matches Figure 6 (T 1.9)
4. Unscrew the Allen bolt (with Allen spanner 2.5mm).
5. Lock can be replaced.
6. Screw everything in reverse order.

T 1.8



T 1.9



7. MAINTENANCE

	Always disconnect the charging station from its power supply completely and read the manual before performing any maintenance or fixing any malfunctions. Repairs or replacements of components may only be done if using products that are approved by the supplier. When in doubt, please contact Ecotap® first.

Repairs and replacements must always be performed by an authorised person / specialist. The maintenance must always comply with and be performed in compliance with NEN3140 and NEN50110 low voltage European standards.
Check the charging station for any leaks.
Test the heating element and the thermostat together to make sure they are working correctly. The thermostat must be set to five degrees or to frost protection mode. Check the connections on the power supply cable and ensure a fixed connection of between 4 and 5 Nm.
Treat any minor damage to the charging station with corrosion-resistant paint in the right shades (Ecotap® green ral.6018 & white ral.9016).
Treat the cylinder locks with graphite powder or a suitable oil product if they require any maintenance.

8. TRANSPORTATION AND STORAGE

Transport the charging station (the core housing all of the technology) upright and prevent the coating from being damaged; any such damage might result in corrosion. Provided that they are properly protected to prevent them being damaged, the caps can be transported in a variety of positions. The charging station should be stored in a dry, damp-free area.

9. IN CASE OF MALFUNCTIONS

In case the DUO charging station is not functioning (properly), please contact the Ecotap® 24/7 helpdesk immediately (phone number: 0031 (0) 411-745020) or a licensed mechanic in possession of measuring and testing equipment with auto simulation.

WARNING!
All work performed on and modifications made to the charging station must comply with NEN1010 at the very least.

10. OPERATION AND CONTROL OF CHARGING COLUMN

The charging column can be operated with a charging card.

To charge with registration, you still need to register it.
Once registration is complete, the charging column can be used with any Electric Transport Charging Card (EV Charging Card) or other suitable cards, mobile and key holders. When unused, the charging column will give an illuminated green signal with some regularity.

Operation: Starting or stopping charging is done by holding the charging card in front of the scan point, you hear 1 sound signal and the lamp starts flashing green.First, the plug is locked in the Mennekes charging socket.Then the charging column communicates with the vehicle and the BackOffice system. Once all safety and payment requirements have been checked, the maximum permissible charging current is transmitted. The charging procedure is now automatically switched on and the lamp lights blue.When stopping the charging process, hold the pass in front of the scan point again. You will hear 2 beeps and the lamp will flash green and go out as soon as the plug is unlocked. You can now safely remove the plug.

11. TECHNICAL SPECIFICATIONS

General characteristics	
Reference number	60111810 / 60321110 / 60161610 / 60321610 / 60081812 / 60081112 / 60081612 / 60081813 / 60081114 / 60081614/60102215/60102205/60080199 / 60080198
Reference number (Eichrecht)	60451810 / 60451110 / 60451610
Dimension H x W x D (mm)	1400 x 220 x 240
Casing material	Steel 2,2 mm
Standard colour	Body: Ral 6018 / Cover: Ral 9016 for 60451810 / 60081812 / 60081813 / 60102215 / 60102205 / 60080199 / 60080198 Body: Ral 7011 / Cover: Ral 9016 for 60111810 / 60321110 / 60451110 / 60081112 / 60081114 Body: Ral 9016 / Cover: Ral 9016 for 60161610 / 60321610 / 60451610 / 60081612 / 60081614
Steel treatment	Anti-corrosion (KTL) and powder coating

Weight (kg)	45 kg for 60451810 / 60451110 / 60451610 / 60081812 / 60081112 / 60081612 / 60081813 / 60081114 / 60081614 49 kg for 60111810 / 60321110 / 60161610 / 60321610 / 60102215 / 60102205 / 60080199 / 60080198
Number of charging points	2
Socket	Type 2
Cable	Type 2

Electrical characteristics

Power output per socket	0 to 22 kW for 60321110 / 60321610 / 60451810 / 60451110 / 60451610 / 60081812 / 60081112 / 60081612 / 60081813 / 60081114 / 60081614 / 60102215 / 60102205 0 to 11 kW for 60111810 / 60161610 / 60080199 / 60080198
Operating voltage (Ue) / Current rates (In A, In C)	Single-phase cabling, phase + N 230V~ from 0 to 32A (determined at 20°C) Three-phase cabling, 3 phases + N 400V~ from 0 to 32A (determined at 20°C)
Impulse voltage (Uimp)	4kV
Insulation voltage (Ui)	230V single-phase 500V three-phase
Frequency (fn)	50Hz/60Hz
Rated voltage	1 phase + N: 230V - 3 phases + N: 400V
Voltage tolerance (V) regardless of vehicle requirements	195V - 265V
Integrated protection system on charging station	Fuse type gG 63A
Integrated protection system per charge point	MCB 40A curve C RCD 40A 30mA Type B
Conditional short-circuit	6000A IEC/EN 60898-1 10kA IEC/EN 60947-2
Allowable thermal stress in Short Circuit	16 000 A^2s
Connection to the mains	Phase/Neutral, rigid cable, 2.5 to 35 mm^2, screw terminals H07 V R/U Earth, rigid cable, 2.5 to 35mm^2, screw terminals H07 V R/U
Type of load	Mode 3 charging terminal equipped with a locking system for Mode 3
Vehicle connection Mode 3 connector socket (60451810 / 60451110 / 60451610 / 60081812 / 60081112 / 60081612 / 60081813 / 60081114 / 60081614)	Type 2 3P+N (single-phase compatible) with pilots compliant with IEC 62191-1 and IEC 62196-2. Use only a manufacturer-approved plug with silver-plated contacts. Use of extension and adapter prohibited. .
Vehicle connection Mode 3 attache cable connector (60111810 / 60321110 / 60161610 / 60321610 / 60102215 / 60102205 / 60080199 / 60080198)	Type 2 3P+N (single-phase compatible) with pilots compliant with IEC 62191-1 and IEC 62196-2. Use of extension and adapter prohibited. 60080199 / 60080198: 4m curl 3x16A 60111810 / 60161610: 4m straight 3x16A 60321110 / 60321610 / 60102215 / 60102205: 8m straight 3x32A
AC meters	MID certified, Class B according to EN 50470-1, -3

Back office protocol	OCPP 1.6 Json
Positioning	GPS
Connectivity Ethernet	RJ45 connector for 60451810 / 60451110 / 60451610 / 60081813 / 60081114 / 60081614 / 60102215 / 60080199

Environment

Operating temperature	-25°C / +50°C
Storage temperature	-25°C / + 80°C
Relative humidity	0 to 90% without condensation
Protection rating	IP 54 (IEC 60529), IK 10 (EN 62262) Plugged in or not
Noise level	< 40 dBA at 1m
Product	IEC 61851-1, IEC TS 61439-7 (AEVCS)
Installation	Interior or exterior, limited access zone, intended for use by ordinary persons (DBO), assembly in cabinet (wall mounted), Pollution Degree 3, TNS, TT,compatible earthing system. In the event of an IT earthing system, this can be changed locally by adding an isolation transformer.
Electrical safety	Class 1 IEC 61140

Electromagnetic compatibility

European standards	Low Voltage Directive 2014 / 35EU / EMC Directive: 2014 / 30 / EU
Radio technology type	GSM 2G/3G/4G, GPRS, RFID
Suitable charging cards	Mifare, Ntag and iCODE SLI cards (more info)

Ecotap® B.V. reserves the right to change any of the above technical specifications without prior notice as the result of the ongoing innovative development of the machine. Moreover, the technical specifications may 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. EC DECLARATION OF CONFORMITY

EC Declaration of Conformity for machines
(Directive 2014/35/EU, Annex II page 96/369)

Ecotap® B.V. Industrieweg 4 5281RW Boxtel, The Netherlands, hereby declares that the charging stations stated below comply with the Machinery Directive and other regulations and standards mentioned.

Name: Ecotap® Charging station DUO, Type: SLA_K2, Designed in: 2018

EC directives applied:
- Machinery Directive 2014/35/EU
- EMC Directive 2014/30/EU

Standards used as reference:
• EN/IEC 60950-22:2017
• EN/IEC61851-1:2017
• EN/IEC61851-22:2002
• EN/IEC 62196-2:2017
• EN/IEC 61000-6-2:2016
• EN/IEC 61000-6-3/2007 + A1:2011
• EN/IEC 60335-1/2012 + A13:2017
• EN/IEC 60364-4-41:2017
• NEN/EN/IEC 60529
• IEC 62262
• NEN/EN/IEC 61439-1
• IEC/TS 61439-7

Boxtel, June 2018

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

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