



# Homebox

Manual

# TABLE OF CONTENTS

1	Introduction	3
2	General	3
2.1	Warranty	3
2.2	Symbols used in this manual and on the charger	3
3	Description of equipment	4
3.1	Application	4
3.2	Accessories	4
3.3	Safety features	4
4	Safety	4
4.1	Safety instructions	4
5	Mandatory checks before commissioning	5
6	Operation / installation manual	5
6.1	Requirements for the power cable	5
6.2	Mounted on a wall or on a special stand	5
7	Maintenance	7
8	Transportation and storage	8
9	Resolving problems	8
10	Operation of the charging system	8
11	Technical specifications	8
12	Contact details supplier	10
13	EG conformity statement	11

## 1. INTRODUCTION

Thank you for selecting the Ecotap® Homebox.

This manual describes the Homebox with socket and fixed charging cable type 1 or 2 for versions with and without registration.

This manual contains important information on correct and safe installation and use of the charging system.

The Homebox was designed for vehicles fitted with a mode 3 charging system in conformity with IEC 61851-1 (edition 2.0) with a plug system that conforms to VDE-AR-E 2623-2-2.

The charging system as a whole complies with directive 2014/35/EU on harmonisation of the laws relating to electrical materials within certain voltage limits (recasting of all earlier published versions).

This manual provides information on safe installation and use of the Homebox. This manual was drawn up to ensure optimum operation and lifespan of the Homebox.

This manual was drawn up with great care. However, if anything in the manual is unclear, please contact your supplier before installing the Homebox.

Proper operation of the Homebox can only be guaranteed if the Homebox is installed by an authorised installer / engineer. If the Homebox is not installed by an authorised installer, this may affect the product warranty.

**Please read this manual carefully before installing and using this charging system. Store this manual in the vicinity of the charging system for easy access to the instructions and safety regulations.**

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*The original version of this manual was written in the Dutch language.*




## 2. GENERAL



### 2.1 Warranty

The General Terms of Delivery of Ecotap® B.V. apply.

Ecotap® B.V. cannot be held liable for any injury or damage if the charging system has been changed, damaged, converted or extended with other components or if the instructions and conditions have not been observed.

### 2.2 Symbols used in this manual and on the charging system

Symbol	Meaning
	Please note! Important instruction
	Electrical danger
	For maintenance: First, switch off power and carry out various measurement tests before starting maintenance work

	Switching off the power of the electrical installation
	The manual must be read first

### 3. DESCRIPTION OF EQUIPMENT

#### 3.1 Application

The Homebox was specially designed to be mounted on a wall or on a special mounting stand.



#### 3.2 Accessories

The following accessories are included in the scope of delivery:  
tools, mounting frame

#### 3.3 Safety features

- Fuse boxes
- 12 Volts control voltage
- Components at least IP2
- Strain reliefs
- 2.5 mm steel casing
- IP54 lowest waterproof class of type 2 sockets
- IP55 in combination with Flex type 2 plug

### 4. SAFETY

Please read the following safety regulations with care before installing and using the charging system.



#### 4.1 Safety instructions


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.



When switching off the power of the system, always make sure the measurement instrument used for testing this is checked for proper operation repeatedly.

## 5. MANDATORY CHECKS BEFORE COMMISSIONING


	The following checks are mandatory before commissioning the Homebox. NEVER use the Homebox if 1 or more checks indicate that the power supply or the stability of the Homebox does not meet the requirements.
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	Always perform the following checks before switching on the power supply of the Homebox.
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- ✓ All the following work must be carried out in full conformity with NEN 3140.
- ✓ Check if the terminals have been properly tightened (3.5 to 5 NM).
- ✓ Check the earth connection.
- ✓ Check if the power cable thickness matches the fuse value.
- ✓ Check if the Homebox has been mounted securely.
- ✓ Check if the cable glands are watertight.
- ✓ Keep the area around the workplace free of obstacles.

## 6. OPERATION / INSTALLATION MANUAL


### 6.1 Requirements for the power cable

	The power cable must be attached to a separate group in the distributor / meter cupboard. For an automatic system, this must be the C or D characteristic or equivalent. Cabling must be in full conformity with NEN1010.
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Exceptions to NEN1010 are:

- Earth distribution resistance < 30 Ohm.
- Installation resistance < 2 Ohm.

### 6.2 Mounted on a wall or on a special rack

	The Homebox should preferably be mounted at a height of +/- 100 centimetres, measured from the lower edge of the Homebox.
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First remove the steel shield using the torx screw at the bottom. Feed the cable into the Homebox and fix the cable with the cable gland. (The cable can be fed in from the back wall as well as via the existing gland inlet on the bottom).

Connect the wires in the way indicated on the terminator strip.

Connect the phase wires\* to the terminals L1 / L2 / L3.

Connect the neutral wire to the neutral terminal.

Connect the shielding/earthing wire to the neutral terminal.

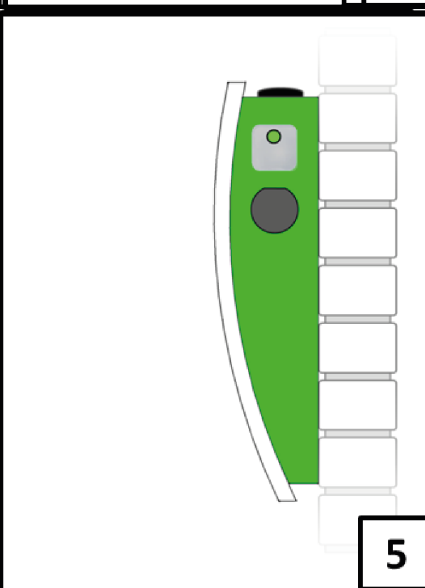
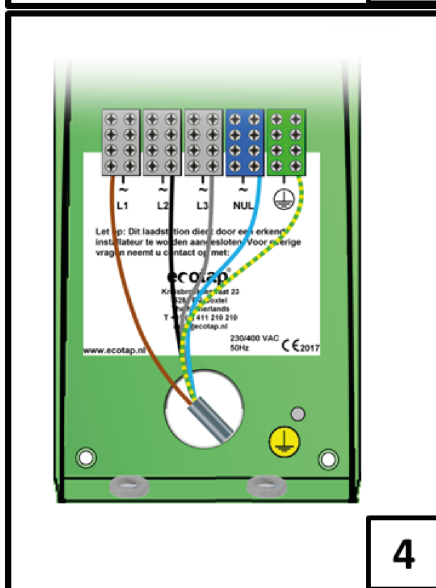
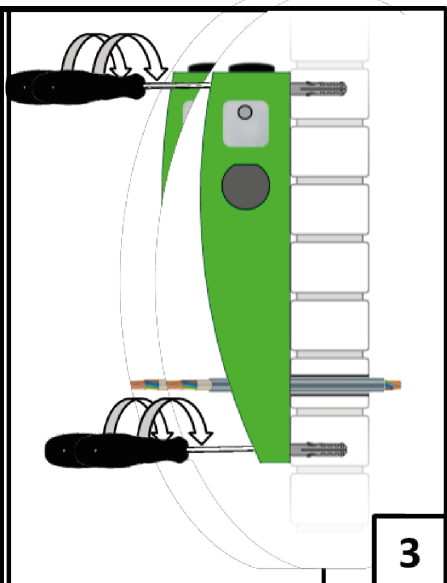
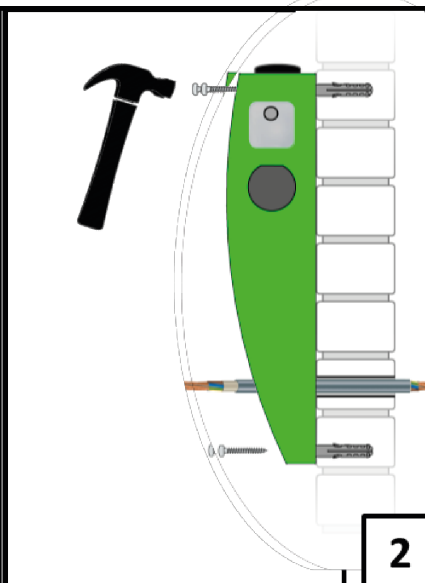
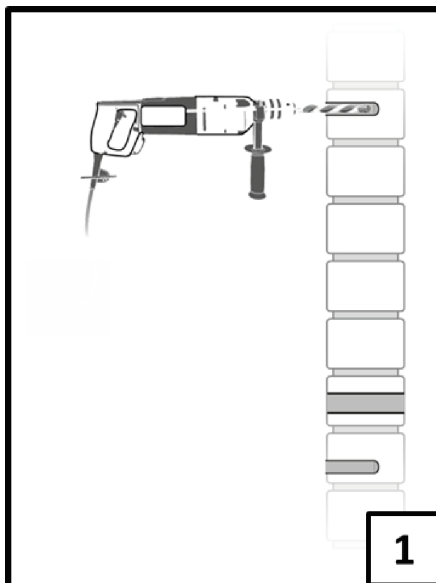
(\*This can be 1-phase or 3-phase, depending on the available power source.

If you want to use 1-phase, connect to Phase 1 and to Neutral and Earth.)

Use the proper screwdriver size for connecting the wires, and tighten the screws with a torque of at least 3.5Nm. Do not forget to connect the loose earthing wire from the Homebox to the loose cover.

Use the correct screws included to securely fix the Homebox to the wall or rack.

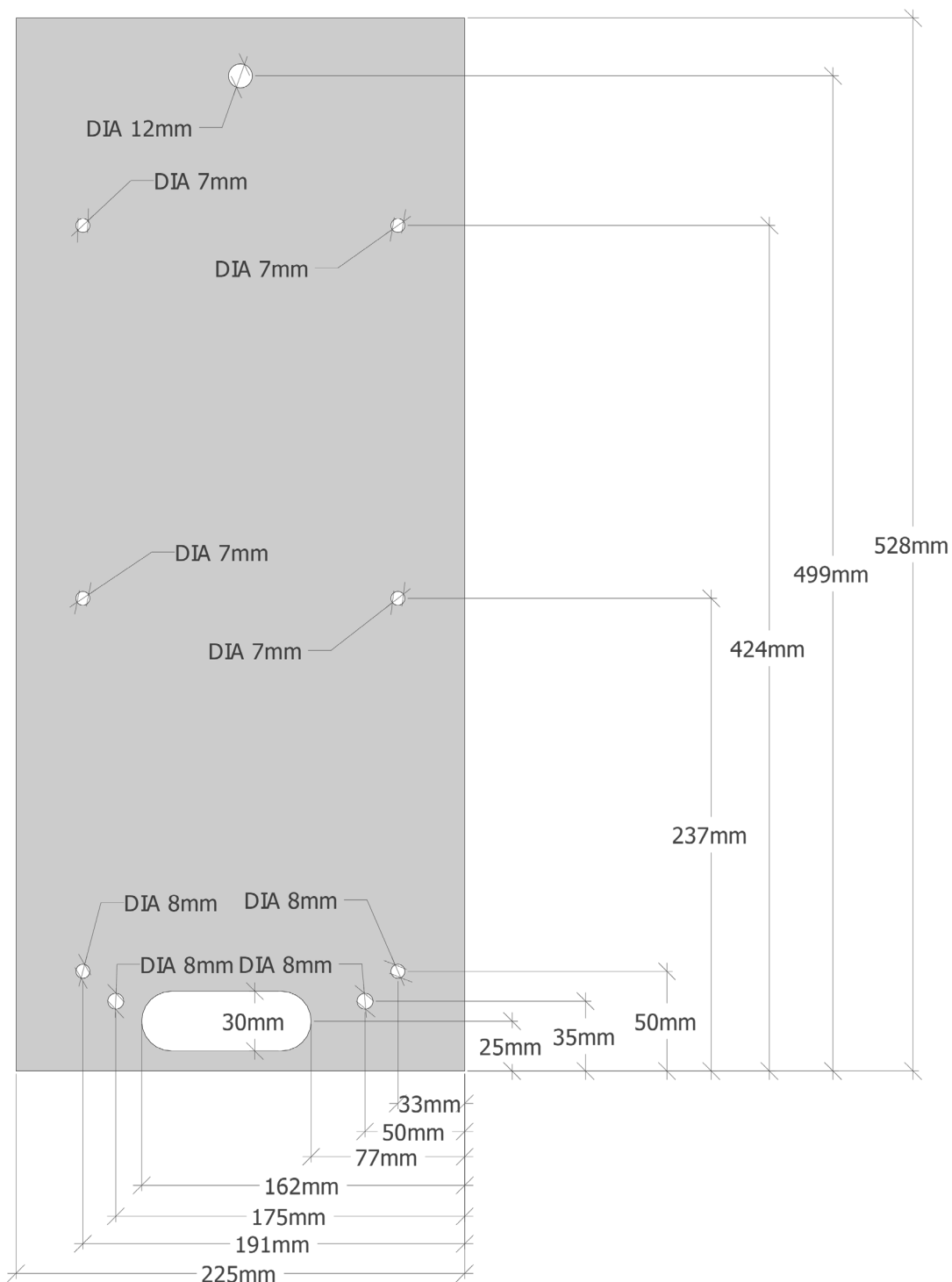
When using the special mounting rack, the cable must be guided through the opening of the structure. The mounting rack must be sunk at least 70 centimetres (max. 90) into the underground and may need to be anchored in concrete.



You must register the charging station with online support before powering on. (The telephone number is indicated on the charging station number nearby. (the number is indicated on the cover of the power connection or on the connector). Without registration, the charging station will not work!

6

Boormal homebox  
25-9-2020



## 7. MAINTENANCE



Always switch off the power and read the user manual before carrying out maintenance or fixing problems.

Only products approved by the supplier must be used for repairs or replacement of components.

Repairs and replacements must be carried out by an authorised employee / installer. All maintenance work must be carried out in compliance with the NEN3140 and NEN 50110 Euro standards for low-voltage equipment.

Treat damage to the Homebox with rust-proof paint.

## 8. TRANSPORTATION AND STORAGE

Transport the Homebox in the box it was delivered in. When shipping the Homebox, apply a clear indication that the item must be handled with care.

## 9. RESOLVING PROBLEMS

If the charging system does not work properly, you can contact back office provider or an authorised installer in possession of measurement and testing equipment with car simulation.

## 10. OPERATION OF THE CHARGING SYSTEM



The Homebox can be operated with a charge card, push button or is self-starting.

The Homebox can be operated either with a charging pass or with the button, or the system is self-starting. The Homebox version “Laden Met Registratie / LMR” (Charging with registration) needs to be registered. This registration is possible by calling Ecotap® B.V. during office hours. Tel. +31 (0) 411 74 50 20. As soon as registration is completed, the Homebox can be used with any Electric Transport charging pass, or other suitable pass. When the Homebox is not in use, a green light will flash regularly.

### Operation:

The charging procedure can be started and stopped by holding the charging pass in front of the scan point, or by pressing the Start button (only for the version with a Start button). You will hear 1 audio signal and the light starts blinking green. With the version with a type 2 socket, the plug is locked in the type 2 charging socket. The charging system then communicates with the vehicle and with the back office system. Once all safety and payment conditions have been checked the maximum allowed charging current is released. The charging procedure is automatically started and the light will flash blue. To stop the charging process, hold your pass in front of the scan point or press the button (only for the version with a button). You will hear 2 audio signals, the light starts to blink green and stops when the plug is unlocked. You can now remove the plug. The version with a flexible/spiral cable does not lock/unlock the Homebox. The button or autostart operation is used instead of the scan point; with this version no back office check is needed to start the system.

## 11. TECHNICAL SPECIFICATIONS

### General characteristics

Reference number	78161003 / 78321063 / 78081003 / 78161006 / 78081005 / 78321064 / 78161005 / 78101985 / 78101975 / 78081010 / 78081020 / 78081030
Reference number (Eichrecht)	78323040 / 78083000
Reference number (FR)	78587000 / 78587001
Dimension H x W x D (mm)	530 x 220 x 200
Casing material	Steel 2,2 mm
Standard colour	Body: Ral 7011 / Cover: Ral 9016
Steel treatment	Anti-corrosion (KTL) and powder coating
Weight (kg)	10 kg for 78083000 / 78587000 / 78081003 / 78587001 / 78081005 / 78081010 12 kg for 78323040 / 78161003 / 78321063 / 78161006 / 78321064 / 78161005 / 78101985 / 78101975 / 78081020 / 78081030



Number of charging points	1
Socket	Type 2
Cable	Type 2
<b>Electrical characteristics</b>	
Power output per socket	0 to 22 kW for 78323040 / 78083000 / 78587000 / 78321063 / 78081003 / 78587001 / 78081005 / 78321064 / 78101985 / 78101975 / 78081010 / 78081030 0 to 11 kW for 78161003 / 78161006 / 78161005 / 78081020
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 16 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	MCB 40A curve C + RCD 40A 30mA Type B for 78323040 / 78083000 / 78161003 / 78321063 / 78081003 / 78161006 / 78081005 / 78321064 / 78161005 / 78101985 / 78101975 MCB 40A curve C + RCD 40A 30mA Type A + 6mA DC for 78081010 / 78081020 / 78081030 MCB 40A curve C for 78587000 / 78587001
Conditional short-circuit	6000A IEC/EN 60898-1 10kA IEC/EN 60947-2
Allowable thermal stress in Short Circuit	16 000 A²s
Connection to the mains	Phase/Neutral, rigid cable, 2.5 to 25 mm², screw terminals H07 V R/U Earth, rigid cable, 2.5 to 25mm², 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 (78083000 / 78587000 / 78081003 / 78587001 / 78081005 / 78081010)	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 attached cable connector (78161003/78321063)	Type 2 3P+N (single-phase compatible) with pilots compliant with IEC 62191-1 and IEC 62196-2. Use of extension and adapter prohibited. 78323040: 3.5m straight 3x32A 78161003 / 78161006 / 78161005 / 78081020: 4m curl 3x16A 78321063 / 78321064 / 78081030: 6m straight 3x32A 78101985 / 78101975: 10m 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 78323040 / 78083000 / 78587001 / 78081005 / 78321064 / 78161005 / 78101985

## 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 ( <a href="#">more info</a> )

Ecotap® B.V. reserves the right to change the above technical data without prior notice as a result of continued innovative development of the charging system. Please note also that the technical data may vary between countries.

## 12. CONTACT DETAILS SUPPLIER

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

## 13. EG CONFORMITY STATEMENT



## Statement of conformity for machines

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

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

Type: Ecotap® Homebox type lcd/flex type 1 & 2

Design year: 2019

### 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, April 2019



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



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