eBox professional
Instructions for use

Fuelling becomes charging

Dear EV Driver,

innogy offers you modern, leading-edge solutions for the fast charging of electric vehicles. Thank you for buying the eBox professional.

In order to commission your eBox, please download the **eCharge+ app**. For all further steps, please see the app.

eCharge+ app

GET IT ON Google Play

Download on the App Store

Contents

Product subject to modification without prior notice. This document might not contain the latest changes to the product's specifications or processes described herein.

Safety information

DANGER

Danger to life and limb

Warning of electrical voltage!

CAUTION

Significant risk of injury/material damage

Caution: Significant risk of injury or material damage!

HINWEIS

Information on optimising the application

Observing this information can improve the product's application.

Danger
Turn off circuit before remounting or replacing the eBox.

Caution
The feet of the eBox are sharp-edged. Do not grip the eBox by its feet.

Caution
The contents of the delivery must be checked for completeness and intactness.

Caution
Small parts dangerous for children. Do not install in the presence of children.

Note
The eBox professional is a maintenance-free product. It does not contain any reparable parts or components. Do not attempt any repairs. If a malfunction persists, replace the eBox.

Caution
Ensure that all components are dry throughout the installation.

Caution
Check that the warranty seal on the back of the eBox is intact. Do not operate the product unless the warranty seal is undamaged. Damaged warranty seals void the warranty.

Note
This is a CE-certified product. All relevant product standards and rules and regulations applicable to the product are confirmed in the product's EC Declaration of Conformity.

About this document
These instructions for use describe how the eBox professional is operated properly. The eBox must be handled as described in these instructions for use.

The eClick serves as a docking station, so this must be installed before the eBox can be mounted. This prior installation is described in detail in the installation instructions provided with the eClick and must be performed by a qualified electrician.

Please refer to the above-said installation instructions for the complete installation.

Your personal safety is assured and the eBox functions correctly only when you follow exactly the steps in these instructions for use. Do not perform any work on the eBox when this work is not described in these instructions for use. When in doubt, consult a qualified specialist.

In addition, use only accessory parts that have been manufactured specifically for the eBox.

Intended purpose
These instructions for use apply to the eBox professional and to its use in Germany, Austria, and Switzerland. **Please note the safety standards applying in the country of use.**

eBox – intended use
The device is intended for use in the exterior and interior area.

In public spaces, the operator must ensure that these instructions remain permanently legible. The operation of the eBox presupposes knowledge of the contents of these instructions.

This design is intended exclusively for the charging of electric vehicles fitted with a Type-2 plug (IEC 62196-2), a Type-1 plug (SAE J1772-2009; possible only with the variant socket on the eBox), and charging current control via the pilot signal (IEC 61851-1). When the device does not have an attached charging cable, a Type-2 plug must be used at least on the infrastructure side. It may not be used to charge or supply other devices.

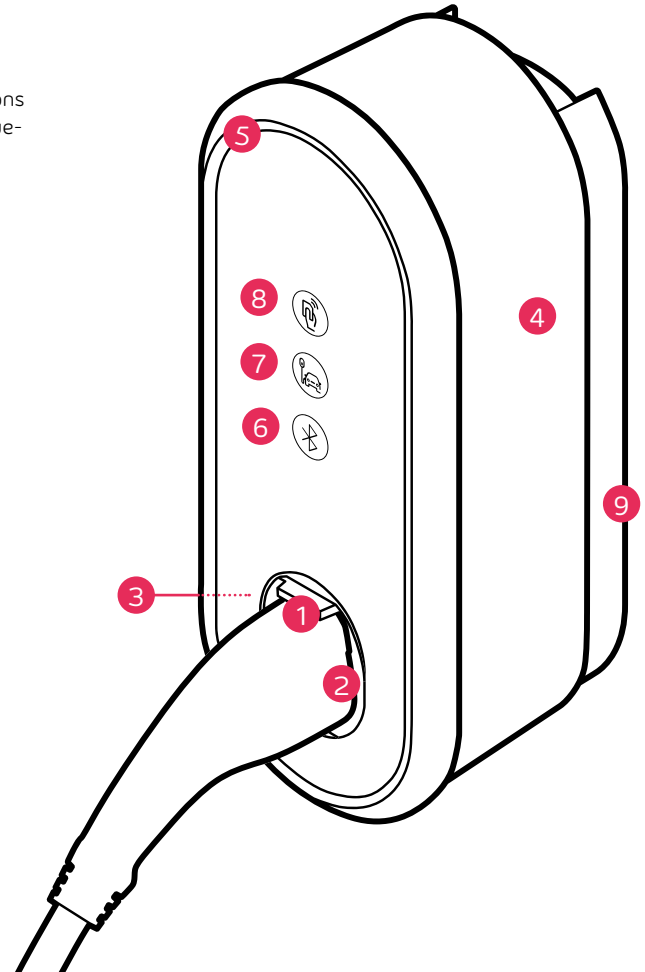
Please bear in mind:
- There must be no adapters, converters, or charging cable extensions.
- The two circuit breakers are installed outside of the eBox and eClick and must be easily accessible.

Product overview

Included in delivery
1 eBox professional with adhesive operating instructions
1 instructions for use with PUK label sticked on for Bluetooth

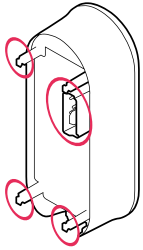
eBox professional – product details

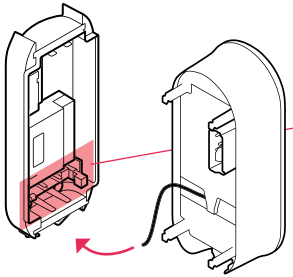
1 Shutter
2 Socket / plug compartment
3 Rating plate
4 Information on use
5 LED ring
6 Bluetooth pairing button
7 Vehicle connection indicator
8 Authentication indicator
9 eClick (delivered separately)

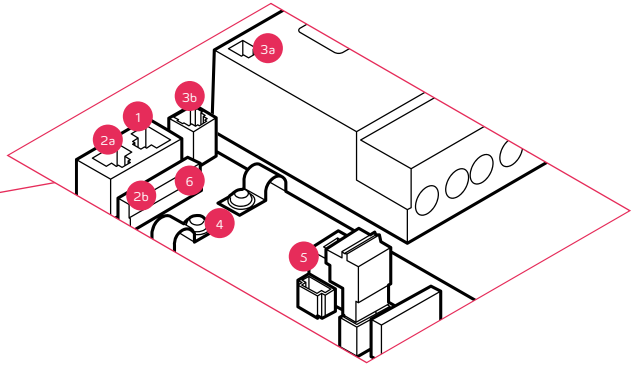


Clicking the eBox into the eClick

Before mounting the eBox, make sure the supply to the eClick is off.







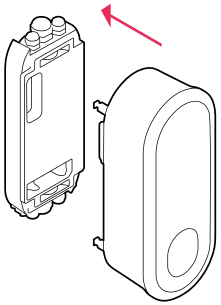
01
If an eSmartMeter is installed, make sure the ports are connected to the supplied data cable. Connect port 3a (eSmartMeter) to port 3b (eClick) using the data cable.
Take the eBox and identify the connecting points (here red) on its rear side.

02
Connect the black ribbon data cable of the eBox to the port "5 Expansion Terminal" at the bottom right of the eClick.

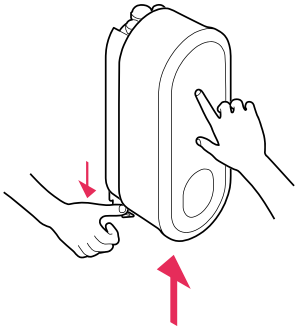
03
If the eBox/eClick is to be connected online via a router using a LAN cable, place the white ribbon data cable of the eBox on port 1 on the left of the eClick.

1 LAN 1 RJ45 (eBox communication)
2a LAN 2 RJ45 (deactivated)
2b LAN 2 LSA-Plus (deactivated)
3a eSmartMeter output (optional)
3b eSmartMeter input (optional)
4 Cable clips for S/FTP cable
5 Expansion terminal (eBox communication)
6 LAN 1 LSA-Plus to internet router

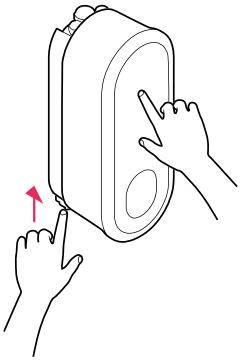
Caution
Make sure that the flat ribbon data cables are not trapped between the eClick and eBox when mounting the eBox.



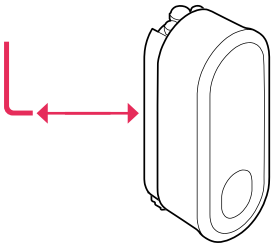
03
Place the eBox carefully on the eClick, and push in the eBox to the stop.



04
Keep a firm hold on the eBox while pulling down the locking bracket on the locking clip of the eClick. Now release the locking clip. As soon as the locking clip is pulled up, gently press the eBox onto the eClick.



05
If necessary, readjust the locking bracket until it adopts its original position. Alignment marks are visible on the eClick. Check that the locking bracket is fully inserted. The markers protruding laterally from the locking latch must be level with the line mark of the eClick housing.



Note
The grub screws should only be fully inserted when the locking clip is fully inserted.

Caution
Make sure that the eBox clicks correctly into the eClick.
Marking of the locking clip is in end position.
Grub screws are fully screwed in.
Check box for tight fit.

06
Tighten the two grub screws using the allen wrench at the rear left and rear right of the eClick to secure the locking mechanism in place and the eBox on the eClick.

07
Power on the eClick circuit.

Danger
This product contains antennas that emit electromagnetic fields that can interfere with other electronic devices such as mobile phones and medical devices when exposed to prolonged periods of time at intervals less than 3.5 cm. If prolonged exposure is expected, a minimum distance of 20 cm is recommended to avoid interference.

Launching the app

Commissioning in case of private use
In order to commission your eBox, please download the **eCharge+ app** and set up an account. For all further steps, please see the app. The whole technical commissioning and the technical configuration of your eBox has already been performed by the electrician.

For the commissioning of the eBox via the eCharge+ app, it is necessary to enter the PUK.

The PUK can be found on the back of this manual. Keep this PUK in a safe place, and hand it over to the next owner of the eBox.

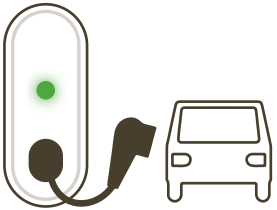
eCharge+ app

GET IT ON Google Play

Download on the App Store

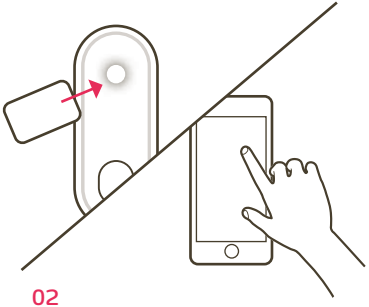
Charging

Charging involves connecting your vehicle to the eBox, authenticating the charging process, charging your vehicle, and finally disconnecting your vehicle from the eBox. Please make sure that any connected cables are hung carefully back up. (Steps 1 and 2 are interchangeable.)

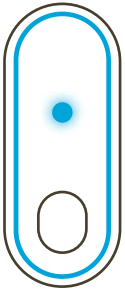


01
Connect your electric vehicle to the eBox. To do so, plug the cable first into the eBox. When your vehicle is detected, the vehicle link indicator lights up green.

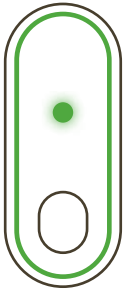
Using charging cables properly
Do not use charging cables with adapters of any kind on the eBox. The use of extension cords is not permitted.



02
Authenticate the charging process via RFID card or the eCharge+ app. For the latter you will need the charging port number displayed on the front of the eBox. The eBox can also be activated from the backend.



03
Shortly after successful authentication, the LED ring and vehicle link indicator start flashing blue, and your vehicle starts to charge. For energy saving purposes, the ring goes out after some minutes when you move away from the eBox.



04
Charging is finished* when both the vehicle link indicator and the LED ring light up green. After the vehicle is unlocked or charging is complete, disconnect the charging cable and disconnect the eBox from the vehicle.

* Optionally, charging may also be stopped via the RFID card you used before or the eCharge+ app.

Troubleshooting

Troubleshooting
Most eBox malfunctions are caused by incorrect use. These errors can not be detected by the eBox and therefore can not be displayed by the device. This applies e.g. to the following situations:

- No power source connected

- Charging cable not plugged in correctly

If a malfunction persists despite adherence to the instructions for use, we recommend restarting the eBox. To do so, disconnect briefly the eBox from the mains by switching the (miniature) circuit breaker in sub-installation, and then reconnect it. If necessary, also check the connection on the vehicle side.

Charging malfunction
In rare cases, charging is disrupted or reduced by external effects. This can occur when:

- the eBox overheats:
  The eBox down-regulates the charging power automatically when a temperature limit is exceeded and so temporarily reduces charging. Shield, therefore, the eBox from direct sunlight.

Note
There is no facility for an additional ventilation option on the eBox.

- Charging problem at the vehicle:
  Check the fault display in your vehicle.

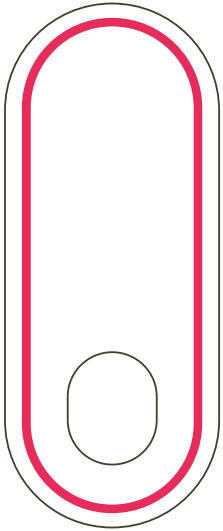
Authentication faults
- The authentication indicator does no light up when:
  authentication fails via the eCharge+ app. Please repeat authentication via the eCharge+ app.

- Authentication indicator flashes red:
  RFID card not detected or not configured. Please hold up again the configured RFID card against the authentication indicator, or configure an RFID card.

- Vehicle link indicator does not light up (does not light up green):
  Communication fault between the vehicle and eBox. Check the connection between the vehicle and the eBox, and if necessary connect again.

- Bluetooth pairing button does not light up:
  Bluetooth communication fault between the eBox and your smartphone / tablet (relevant only in the eBox private offline mode). Initialise the Bluetooth connection on your smartphone / tablet and the eBox by pressing again the Bluetooth pairing button.

Danger
Device error.
Warning of
electrical voltage.



Critical fault
A serious device fault has rendered the eBox inoperable, and it must be disconnected immediately from the mains. If the fault persists after a restart and after the eBox has cooled down by itself, then consult a qualified electrician, and if necessary have the eBox replaced.

General specifications	
Number of charging ports	1
Cable length (version with cable)	6.5 m
Charging mode	Mode 3 (IEC 61851)
Areas of use	Protected internal areas; unprotected exterior areas exposed to rain and direct sunlight
IP code of the housing	IP55
Protection category (impact strength)	IK10 in accordance with IEC 62262:2002
UV protection	Outdoors (F1)
Housing material	Lexan® EXL9330 (copolymer)
Weight	3.1kg (version without cable)/6.4 kg (version with attached cable) (each without eClick and without eSmartMeter)
Storage temperature	-30 °C to +80 °C
Packaging dimensions (W x D x H)	515 mm x 225 mm x 235 mm (version without cable)/ 695 mm x 370 mm x 235 mm (version with attached cable)
Power consumption in standby mode	6 W
Certification	CE certificate (tested and confirmed by a certified body)
Foliation	High-quality standard film; custom films possible for a surcharge
Charging port number	Charging port number lasered on shutter bracket in production

Working conditions	
Operating temperature	-30 °C to +50 °C (full load output at -30 °C to +50 °C) Thermal overload protection: output power reduced at higher temperatures
Air humidity	5 % to 95 % as defined under IEC 61851-1 Ed.3/EN 61851-1 (2017)
Max altitude above sea level	Max 2,000 m (air pressure: 860 hPa to 1,060 hPa)
IEC protection class	I

Electrical input/power connection	
Input power from eClick	Three-phase current 400 V AC, 32 A (22 kW)/20 A (13.8 kW)/16 A (11 kW) Alternating (single-phase) current 230 V AC, 32 A (7.4 kW)/20 A (4.6 kW)/16 A (3.7 kW)
Charging power	3.7/4.6/7.4/11/13.8/22 kW (16 A, 20 A, 32 A; single- or three-phase)
Output power	Three-phase current 400 V AC, 32 A (22 kW) or 16 A (11 kW) Alternating (single-phase) current 230 V AC, 32 A (7.4 kW) or 16 A (3.7 kW)
Plug assembly	Without cable: Type 2 plug assembly as defined under DIN EN 62196-2 with automatic plug locking, shutter With cable: Type 2 plug as defined under DIN EN 62196-2, plug compartment on eBox, shutter
Consumption measuring	eSmartMeter: optional for eClick, MID-compliant (Europe) and CE-certified

Protective equipment	
DC residual current monitoriing (protection of people)	Integrated AC/DC sensitive RCD, triggering at: DC 6 mA
Welding detection (indication signal for welded power contacts)	Connection via change-over contact (max. 230 V, 1 A), use e.g. for shunt release for disconnection of main power path
Integrated overvoltage protection	According to IEC 61851-21-2:2018 (ESD/surge/burst)

Communication	
Vehicle communication	Charging current controlled via PWM pilot signal in accordance with IEC 61851-1:2017
Direct communication	Bluetooth Class 1 and 2 (power level)
Communication protocol B2B application	OCPP1.6J to innogy eOperate backend or to third-party provider backend
Communication protocol B2C application	OCPP2.0 to innogy eHome backend
Backend communication	WLAN with 2.4 GHz IEEE 802.11 b/g/n with WPA2 (antenna gain, frequency-dependent, max. 4.6 dBi) or LAN or SIM card (dependent on frequency and direction, max. 4.4 dBi antenna gain); no SIM for B2C application

Authentication	
Authentication/activation	Free charging, eCharge+ app (smartphone app for iOS®/Android™) from contracted providers or direct Payment (credit card/PayPal), direct Payment via web access
Plug&Charge (eCable smart)	Yes, in connection with eOperate
Plug&Charge (ISO 15118)	Yes
RFID authentication	Yes, in accordance with ISO 14443A, Type V (ISO/IEC 15693/Vicinity). Supported protocols: MIFARE Classic 1K, MIFARE Classic 4K, MIFARE DESfire V1 4K, MIFARE DESfire V2 4K, MIFARE DESfire V1 8K, MIFARE DESfire V2 8K, MIFARE Ultralight Standard, MIFARE Ultralight C, MIFARE Ultralight NXP NTAG 216, MIFARE Plus SE 1K, MIFARE Plus X 2K, LEGIC advant ATC 1024-MV, Legic advant ATC 4096, J3A081 JCOP 2.4.1 Rev 3, ICODE SLIX, ICODE ISO, TAG-IT HFI plus 2048 and SLE 66 R 35

UI/UX	
Display/interaction	LED ring for charging status; 2 status LEDs: authentication/RFID, vehicle link; 1 status LED as touch button: Bluetooth
Operating instructions	Graphical operating instructions have been installed on the product

External accessories	
User protection to be installed in sub-distribution	Type A RCD: 32 A connection: ABB F204A-40/0.03, Type A, 4-pin (short time delay operating voltage: 230/400 V AC) 16 A connection: ABB F204A-25/0.03, Type A, 4-pin (short time delay operating voltage: 230/400 V AC)
Short circuit/overload protection to be installed in sub-distribution	Over-current protection device: 32 A connection: ABB S203-NA K40A (rated switching capacity: 6,000 A) 16 A connection: ABB S203-NA K20A (rated switching capacity: 6,000 A)

The eBox professional is available for wall-mounting as the following variants:
eBox professional, Type 2 socket
eBox professional, Type 2 plug with cable
each including eClick

The eBox professional is not branded and has a neutral colour. On request, the eBox may be ordered with the innogy branding. Additional accessories, e.g. the eSmartMeter, may be included in the order.

Note
Android is a trademark of Google LLC.

Notes

The product eBox professional must always be used in conjunction with the eClick.

Electric vehicle charger characteristics (IEC 61851-1 Ed 3):

1. The product must be connected to an AC mains.
2. The product is connected permanently to the mains.
3. The product is eClick-compatible. It is available in the variants with a Type-2 socket and with a Type-2 plug with connected cable.
4. The product is compatible with electric vehicles charged with AC in Mode 3.
5. The product can be installed and used in protected indoor areas and unprotected outdoor areas exposed to rain and direct sunlight.
6. The product can be used in closed and public areas.
7. The product can be installed on walls and in compatible Pole products.
8. The product eBox professional in conjunction with the eClick or coverage is rated electrical protection class I.
   The open eClick is rated electrical protection class I.

Maintenance/repair
The eBox is a maintenance-free product. It does not contain any repairable parts or components. Do not perform any repair work. In case of a permanent error, replace the eBox.

Disposal
The eClick and the eBox are are electrical devices. These must be disposed according to the EU directive WEEE II or the ElektroG of October 20, 2015 or in Switzerland according to VREG, SR 814.620 of January 14, 1998.

Cleaning
The eBox may only be cleaned with water; the use of lukewarm water is recommended. Do not use cleaning agents containing solvents.

Disassembly
To dismantle the eBox, you first have to disconnect the power supply. First unscrew the two grub screws on the side and remove the eBox from the eClick by pulling down the locking clip, Remove the charging unit and, if necessary, the Ethernet cables, that connect the eBox and the eClick.

Danger
The eClick must be disconnected from the power supply before disassembly. Make sure that all components are dry during disassembly.

Legal notice

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eMob-80/12.19

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