ŠKODA iV

Charger Charger Connect Charger Connect+











ŠKODA iV Charger Charger Connect Charger Connect+

Manual | Part A

EN

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1. GENERAL INFORMATION AND SCOPE

1.1 Scope of the document

Keep this manual for the entire life cycle of the product.

The following installation-related and troubleshooting chapters are intended for qualified personnel, such as certified electricians, who can correctly and safely install the wallbox and identify potential danger:

- Chapters: 1, 4, 5, 6, 8, 9, 10, 11 and 12.

The following usage-related chapters are intended for end-users to correctly and safely operate the wallbox:

- Chapters: 1, 2, 3, 7 and 13.

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1.2 General

Product and environmental characteristics



1.3 Safety precautions

Read and obey the following safety precautions before you install, service or use your charging station. A qualified electrician must ensure that the charging station is installed in accordance with the relevant country-specific standards and local regulations.

Symbols

The symbols used in this manual have the following meaning:

Symbols used and their explanations

B 5.1	This symbol indicates that the illustrations corresponding to the indicated chapter are to be found in manual B.
1., a. or I.	Actions to be followed in the stated order.
-	Actions to be followed in a non-specific order.
Note:	Texts with this symbol contain supplementary information.

Highlighted sections



Danger

Texts with this symbol contain information regarding hazardous situations which will cause death or severe injures if ignored.



Warning

Texts with this symbol contain information regarding hazardous situations which could cause death or severe injuries if ignored.



Caution

Texts with this symbol contain information regarding hazardous situations which could cause minor or moderate injuries if ignored.

The following sections contain general information that applies when installing and using the wallbox.



Danger

Operating the wallbox when it indicates an error state, or when the wallbox or the charging cable have cracks, show extensive wear, or other physical damage, will result in the risk of electric shock, which will cause severe injuries or death.

- Do not operate the wallbox if it is physically damaged.
- ▶ In the event of danger and/or an accident, a certified electrician must immediately disconnect the electrical supply from the wallbox.
- See chapter Troubleshooting for explanation and further instructions on indicated error states.
- Contact skoda-auto.support@elli.eco or your distributor if you suspect that the wallbox or cable is damaged.

Some electric vehicles release hazardous or explosive gasses when charging which will result in the risk of explosion, and thus cause severe injuries or death.

- Refer to your vehicle user manual to check if your vehicle releases hazardous or explosive gases when charging.
- Follow the instructions given in the vehicle user manual before choosing the location of the charging station.

Extensive exposure of the wallbox to water or handling the wallbox with wet hands will result in the risk of electric shock, which will cause severe injuries or death.

- Do not direct powerful jets of water toward or onto the wallbox.
- Never operate the wallbox with wet hands.
- Do not put the charging plug into any liquid.

Not following the installation instructions given in this manual will result in the risk of electric shock to users, which will cause severe injuries or death.

- Read this manual before installing the wallbox.
- If you are unsure about how to use the wallbox after reading this manual, ask for help at skoda-auto.support@elli.eco or visit your local dealer for more information.
- Do not allow children to operate the wallbox. Adult supervision is required when children are near a wallbox that is in use.

Servicing of the wallbox or its components by non-qualified personnel will result in the risk of electric shock and damage to the wallbox, which will cause severe injury or death.

- The user must not attempt to service or repair the wallbox as it does not contain user-serviceable parts.
- The wallbox must only be serviced, repaired or relocated by a qualified electrician.



Warning

Improper usage of the wallbox may result in damage to the wallbox, which may cause injury or death.

- Read this manual before using the wallbox.
- ► If you are unsure about how to use the wallbox after reading this manual, ask for help at skoda-auto.support@elli.eco or visit your local dealer for more information.
- Do not allow children to operate the wallbox. Adult supervision is required when children are near a wallbox that is in use.

Using adapters, conversion adapters or cord extensions with the wallbox may result in technical incompatibilities and can result in damage to the wallbox, and thus cause injuries or death.

- Use this charging station to charge Mode 3 compatible electric vehicles only.
- Refer to your vehicle user manual to check if your vehicle is compatible.

Exposure of the wallbox to heat sources or flammable substances can result in damage to the wallbox, and thus cause injuries or death.

- Make sure that the wallbox or the charging cable never come into direct contact with heat sources.
- Do not use explosive or readily flammable substances near the wallbox.

Using the wallbox under conditions not specified in this manual may result in damage to the wallbox, which may cause injury or death.

 Only use the wallbox under the specified operating conditions, see chapter Technical specifications.



Caution

Charging the electric vehicle with the charging cable not being completely unwound may result in overheating of the cable, which can damage the wallbox.

Make sure to completely unwind the charging cable and avoid overlapping loops before charging your electric vehicle.

Putting fingers into or leaving other objects inside the plug port (for example during cleaning) may cause injury or damage to the wallbox.

- Do not put your fingers into the plug port.
- Do not leave objects inside the plug port.

Use of devices with (electro) magnetic properties in the vicinity of the wallbox may cause damage to the wallbox and affect its operation.

• Keep and use (electro) magnetic devices a safe distance from the wallbox.

Transport and storage

- Disconnect input power before removing the charging station for storage or relocation.
- Only transport and store the charging station in its original packaging. No liability can be accepted for damage incurred when the product is not transported in its original packaging.
- Store the charging station in a dry environment in the temperature range given in the specifications.

1.4 Technical specifications

Feature	Description			
Electrical properties				
Conception conceit.	1-phase, 230 V, 32 A, 50 Hz.			
Connection capacity	3-phase, 400 V, 16 A, 50 Hz.			
	7.4 kW (1-phase - 32 A).			
Charging capacity	11 kW (3-phase - 16 A).			
Charge mode	Mode 3 (IEC 61851)			
Fixed charging cable	Type 2 plug (IEC 62196-2).			
Number of fixed charging cables	1.			
Charging cable length	4.5 m or 7.5 m.			
lastellation estimat	16 A installation input terminals: 1 - 6 mm².			
Installation wiring	32 A installation input terminals: 1 - 10 mm².			
Metering	Optional, for ŠKODA iV Charger Connect+.			
Safety and certification				
Upstream installation protection	Minimum dedicated 1-phase 32 A (32 A station) or 3-phase 16 A (16 A station) upstream circuit breaker and at minimum RCD type A (30 mA AC). Check local installation requirements if additional measures are required.			
Static power limitation	Via DIP-switches.			
Earth leakage sensor (ELS)	6 mA DC.			
Ground loss monitor	Physical connection m quality monitoring, without ground monitoring			
Black-out protection	Via CT coils - optional comfort feature.			
CT colis supported	Invasive / non-Invasive - 40 A - 200 A, brands: VAC, LEM, and Nidec. See chapter Set DIP-switches for the supported models.			
Operating temperature range	-30 °C - +50 °C.			
Storage temperature range	-30 °C - +85 °C.			
Operating humidity	Max. 95 % - non-condensing.			
Maximum installation height	Max. 4000 m above sea level.			
Enclosure ratings	IP54 (IEC 60529), IK10 (IEC 62262).			
Certification	See EU Declaration of conformity			

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Feature	Description
Safety Class	Safety Class I (the charging station is equipped with a ground terminal for safety) and overvoltage Category III.
Power supply input	EV Supply equipment permanently connected to AC supply network.
Normal Environmental conditions	Outdoor use.
Access	Equipment for locations with non-restricted access.
Connectivity	
Authorization*	NFC / RFID (ISO 14443, ISO 15693).
Status indication / HMI (Human Machine Interface)	LED based HMI.
Communication standard*	Wi-Fi 2.4 / 5 GHz, Ethernet (via RJ45 connection), optional 4G / LTE.
Communication protocol to backend*	OCPP 2.0J.
Communication protocol to Home Energy Management System*	EEBus.
Local configuration*	via Configuration Manager.
Physical properties	
Housing	Polycarbonate.
Front panel	Polycarbonate and hardened glass.
Bezel	Acrylonitrile Styrene Acrylate (ASA).
Mounting bracket	Steel (zinc plated).
Dimensions (W x H x D)	297 mm x 406 mm x 116 mm.
Weight	 1-phase 32 A station with 4.5 m charging cable ~ 6 kg. 1-phase 32 A station with 7.5 m charging cable ~7 kg. 3-phase 16 A station with 4.5 m charging cable ~ 6 kg. 3-phase 16 A station with 7.5 m charging cable ~ 7 kg.
Mounting method	Stationary equipment, mounted on walls (preferred method), poles or equivalent positions – surface mounted.
Color	Platinum gray with electric white bezel.

*For ŠKODA iV Charger Connect and ŠKODA iV Charger Connect+ only.

2. PRODUCT INFORMATION

The table below contains the available product configurations for the ${\rm \check{S}KODA}$ iV Charger models.

Features	ŠKODA iV Charger	ŠKODA iV Charger Connect	ŠKODA iV Charger Connect+
Maximum output power 7.4 kW (1-phase)			
Maximum output power 11 kW (3-phase)			
Attached charging cable Type 2 (4.5 m or 7.5 m)		 Image: A start of the start of	 Image: A start of the start of
Alternating Current (AC) charging		 Image: A start of the start of	 Image: A start of the start of
Integrated Direct Current (DC) fault current detection			
Wi-Fi / Ethernet communication		 	
LTE mobile network communication		*	 Image: A start of the start of
Data transfer according to OCPP 2.0J			 Image: A start of the start of
Access control with charge card		 	
Remote access via Powerpass app			
Remote software update / diagnostic			
MID certified power consumption recording and calculation			

3. CHARGE WITH THE WALLBOX

Warning

Using a damaged wallbox or a damaged charging cable may expose the user to electric components and result in the risk of electric shock, which may cause injury or death.

- Always check that the wallbox, the charging cable, and the charging plug are free of damage before starting a charging session.
- Always check that the contact area of the charging plug is free from dirt and moisture before starting a charging session.
- Make sure that the charging cable cannot become damaged (kinked, jammed or driven over).
- Take precautions so that the charge plug does not come into contact with heat sources, dirt or water.

3.1 Start and stop a charging session



- 1. Start charging
 - Plug the charging cable into your car.



Optionally, hold your charge card (RFID card) in front of the reader on the charging station to start charging.*



2. Your car is charging.





3. Stop charging.

Optionally, hold your charge card (RFID card) in front of the reader on the charging station to stop charging.*

Unplug the charging cable from your car.

3.2 Status indication

LED description





7 State remains unchanged

8 Off

- 1 Wallbox state 2 Vehicle state
- 3 House state
- 4 RFID state
- Display



* For ŠKODA iV Charger Connect and ŠKODA iV Charger Connect+ only.



* For ŠKODA iV Charger Connect and ŠKODA iV Charger Connect+ only.



* For ŠKODA iV Charger Connect and ŠKODA iV Charger Connect+ only.



NOTE: If the wallbox shows other states than the ones described above, see Error states of the wallbox for more information.

4. PREPARE FOR INSTALLATION

4.1 Content of delivery



Position Description

Quantity

1	Bezel	1
2	Front cover	1
3	Main assembly A. ŠKODA iV Charger Connect+ with kWh meter B. ŠKODA iV Charger or ŠKODA iV Charger Connect with feed- through terminals	1
4	Wall bracket	1
5	Charging cable	1
6	HMI cable	1
7	RFID cable *	1
8	RS485 cable **	1
9	Fastening kit for main assembly	1
10	Fastening screws for front cover	1
11	Installation and User Manual A	1
12	Installation Manual B	1

^{*} For ŠKODA iV Charger Connect and ŠKODA iV Charger Connect+ only. ** For ŠKODA iV Charger Connect+ only.

Your ŠKODA iV Charger Connect+ comes equipped with a kWh meter, and it is compatible with different types of kWh meters. For example, a 3-phase kWh meter will also be compatible in a 1-phase wallbox, as shown in the following table.



4.2 Prerequisites for installation



Danger

Working on electric installations without proper precautions will result in the risk of electric shock, and thus cause severe injury or death.

- The installation must only be performed by qualified electricians.
- Make sure that connection of the electrical power cannot occur during installation.
- Put up caution tape and warning signs to mark the working areas. Make sure no unauthorized persons enter the working areas.

Choose location

- Position the wallbox, where possible, in surroundings where it is not exposed to extreme sunlight and vulnerable to external damage.
- The wall must have a flat structure and must be able to hold a load of at least 100 kg.
- The minimum free space around the wallbox must be a minimum of 300 mm.

Pre-installation checklist

- ▶ The local installation regulations are identified and are followed.
- A miniature circuit breaker (MCB) and residual current device (RCD) must be installed upstream and have ratings that correspond to the local power supply as well as to the required charging power.
- The following installation instructions are obeyed.
- The recommended tools (additional tools needed) are available on site. See chapter Tools and material needed for more information.

- The plugs, screws, and drill bits to be used for mounting the wall bracket are suitable for the wall structure at the place of installation.
- The bending radius of the power supply cable is within tolerances during and after installation.
- The bending radius of the charging cable is within tolerances during installation and storage.
- The configuration of the supply cable, Ethernet cable (optional) and CT coils (optional) is determined.
- ▶ The Set DIP-switches chapter is consulted for the list of supported CT coils.
- A single multi-core cable must be used for connecting multiple CT coils for overload protection.



NOTE: The above illustration indicates a standard installation height. Observe and comply with the local accessibility regulations.

4.3 Tools and material needed

A. Additional tools and material needed



- 1 Drill
- 2 Pliers
- 3 Hammer
- 4 Ethernet cable crimper
- 5 Drill bit 8 mm
- 6 Screwdriver 2 mm
- 7 Torx screwdriver T20
- 8 Torx screwdriver T30, with minimum working length of 20 cm
- 9 Screwdriver 5.5 mm
- 10 Cable stripper
- 11 Optional: CT Coil cable connector MCVR 1.5 / 3 ST 3.81
 - ▶ 1 x for 1-phase installation.
 - ▶ 3 x for 3-phase installation.



- 1 Fastening kit for main assembly
- 11 Screws M6 x 60 mm
- 12 Plain washers 6.5 mm x 14 mm
- 1.3 Wall plugs 8 mm x 50 mm
- 1.4 Torx screws M6 x 16 mm
- 1.5 Bonded washers 6.6 mm x 11 mm
- 1.6 Cable gland M25
- 17 Cable gland M12 (for CT coil cable)Cable gland M12 (for Ethernet cable)*
- 2 Torx screws M4 x 10 mm for front assembly
- 3 HMI cable
- 4 RFID cable*
- 5 RS485 cable**

The following table shows the torque values required for installation.

Screw type	Torque value
M4 x 10 mm	2,3-2,7 Nm
M6 x 16 mm	7,3–8,6 Nm
M6 x 60 mm	8–11 Nm

** For ŠKODA iV Charger Connect+ only.

^{*} For ŠKODA iV Charger Connect and ŠKODA iV Charger Connect+ only.

4.4 Notice on installation



Warning

Connecting the wallbox to the power supply other than as specified in this section can result in incompatibility of the installation as well as the risk of electric shock, and thus cause damage to the wallbox, and injury or death.

 Only connect the wallbox to a power supply in a configuration that is specified in this section.

Installation advice

	TN-system	PE-cable		
Ground	TT-system IT-system	Earth electrode installed separately (to be installed)		
Input	1-phase	230 V ± 10 %, 50 Hz		
	3-phase	400 V ± 10 %, 50 Hz		
МСВ	C-characteristic (MCB must be selected to match the amperage settings of the charging station, considering N manufacturer specifications)			
RCD	40 A, 30 mA, AC Type A			

NOTE: For a TT or IT electric grid with 230 V from line to line, the charging station must be installed with one phase being connected to clamp L1 and the other phase being connected to clamp N.

NOTE: Make sure that the provided ground connection meets the local regulations. The ground loss monitor functionality of the wallbox is limited to physical ground loss detection and cannot detect quality.

Option 1: 400 V 3-phase with neutral

For 3-phase use of a Wye-connected secondary, all three phases (L1, L2 and L3) and neutral must be connected. Each phase voltage must measure 230 V to neutral.



Option 2: 230 V1-phase with neutral

For 1-phase use of a Wye-connected secondary, only a single phase (L1 or L2 or L3) and neutral on the grid must be connected to the L1 and N on the terminal block of the charging station. This phase voltage must measure 230 V between line and neutral.

Note: Make sure to connect the single phase power supply to L1 of the charging station (not L2 or L3), as the internal electronics of the wallbox are supplied from L1.



Option 3: 230 V1-phase without neutral

In this configuration (without neutral and 230 V from line to line), connect any two lines (L1, L2 or L3) of the grid to L1 and N on the terminal block of the charging station.

Note: Make sure to connect the single phase power supply to L1 of the charging station (not L2 or L3), as the internal electronics of the wallbox are supplied from L1.



5. INSTALL WALLBOX



Danger

Working on electric installations without proper precautions will result in the risk of electric shock, which will cause severe injuries or death.

- Switch off input power before installing the charging station. Keep the power off until the charging station is fully installed with its front cover installed and secure.
- > Do not switch on the charging station if the front cover is not installed or not secure.
- Do not install a faulty charging station or a station with a noticeable issue.

Installation or repairs by non-qualified electricians will result in the risk of electric shock, which will cause danger to the user, severe injuries or death.

• The installation must only be performed by qualified electricians.



Warning

Installing the wallbox during wet environmental conditions (for example rain or fog) can result in the risk of electric shock and damage to the product, which can cause severe injuries or death.

Do not install the wallbox during wet environmental conditions (for example rain or fog) and do not open the wallbox in such environmental conditions.

A damaged charging cable can result in the risk of electric shock, which can cause danger to the user, severe injuries or death.

- Make sure that the charging cable is positioned so that it will not be stepped on, tripped over, driven over or otherwise subjected to excessive force or damage. Wind the charging cable around the charging station, making sure that the charging plug does not touch the ground.
- Only pull on the charging plug hand grip and never on the charging cable itself.

Caution

A front assembly with cracks in the glass can cause the wallbox to become a hazardous object, and thus result in the risk of injuries.

► If the glass of the front assembly breaks, have the front assembly replaced immediately by a qualified electrician.

Not taking precautions against ESD (Electrostatic discharge) can damage electronic components in the wallbox.

► Take the necessary precautions against ESD before touching electronic components.

Using other materials than specified in this manual for installation, operation, maintenance and/or service of the wallbox can result in damage to the wallbox.

• Do not use other materials than specified in this manual, especially materials containing silicone or phosphorus, as they can damage the wallbox.

5.1 Install wall bracket



- 1. Place the wall bracket on the wall and use a bubble level to align it. Make sure that the UP arrow on the bracket points upwards.
- 2. Mark the positions of the three attachment holes on the wall.
- 3. Prepare the attachment holes.
 - a. Drill the three attachment holes.
 - b. Insert wall plugs.
- 4. Mount the wall bracket on the wall using the three screws M6 x 60 mm and three washers 6.5 mm x 14 mm.

5.2 Prepare main assembly for installation



B 5.2 See the corresponding illustrations in manual B.

1. Prepare main assembly for cable installation.

- a. Choose the suitable routing method for the supply cables.
- b. If using on-wall wiring, remove one of the four break-out tabs using a set of pliers.



Caution

Leaving sharp edges after removing the break-out tabs can cause damage to the cables and result in a risk of electric shock.

• Make sure that no sharp edges are left after removing the break-out tabs.

NOTE: It is recommended to remove the bottom break-out tab and route the supply cable through the bottom tab (if applicable).

c. Optionally, remove knockouts.



Warning

Removing more knockouts and/or blind plugs than necessary for cable routing and leaving open holes will affect the protection against moisture of the wallbox, which can result in the risk of electric shock.

- Only remove the knockouts necessary for cable routing.
- Seal open holes with blind plugs if they are not necessary for cable routing.
 - I. Place the wallbox on a smooth flat surface.
 - II. Place a wide-head screwdriver (for example T30) into the slot of the knockout that is to be removed.
 - III. Hit the end of the screwdriver with a hammer to shear the knockout. Remove the rest of the knockout by hand if necessary and make sure that there are no burrs present.

NOTE: If the holes needed for cable routing are already sealed with blind plugs, remove these blind plugs using a pair of pliers.

2. Mount cable glands and route cables:



Warning

Not using round cables for installation and mounting the sealing nuts of the cable glands incorrectly will affect the protection against moisture of the wallbox, which can result in the risk of electric shock.

- Use round cables for installation.
- Make sure that the sealing nuts are mounted on the outside of the wallbox.
 - a. Remove the lock nuts from the cable glands and mount the cable glands on the power supply cable and (optionally) on the CT coil cable and Ethernet cable with their sealing nuts on the outside of the wallbox.
 - b. Insert the supply cables from the back of the wallbox through the cable opening of the main assembly.
 - c. Make sure the following lengths of cables are available after the cable glands, then tighten each cable gland.
 - Power supply cable: > 180 mm.
 - CT coil cable (optional): > 80 mm.
 - Ethernet cable (optional): > 400 mm.
 - d. Secure the cable glands by tightening their lock nuts.

5.3 Mount main assembly onto wall bracket



B 5.3 See the corresponding illustrations in manual B.

- 1. Engage the top edge of the main assembly with the top of the wall bracket and then rotate the main assembly so it is flat on the wall bracket.
- 2. Mount main assembly.



Warning

Not mounting all the screws and washers on the inside of the main assembly when mounting it onto the wall bracket will affect the protection against moisture of the wallbox, which can result in the risk of electric shock.

• Make sure that all screws together with their corresponding washers are mounted.

While holding the main assembly in place, insert the four screws M6 x 16 mm together with the bonded sealing washers $6.6 \text{ mm} \times 11 \text{ mm}$ and fasten them.

5.4 Assemble wallbox



1. Install power supply cable.



Caution

Using stranded wires without ferrules may result in improper installation, which can cause accelerated aging of electric components and/or loss of electric connection.

- ▶ Use crimped insulated ferrules for 1-phase installation.
- ▶ Use crimped uninsulated ferrules for 3-phase installation.
 - a. Strip the outer insulation of the cable to a length of 50 mm, then strip the individual wires to 12 mm.
 - b. Route the cables to their connection terminals. Ensure that the bending radius is within the limits for the cable type.
 - c. Connect the wires according to the ŠKODA iV Charger model and the color coding table below.

A. ŠKODA iV Charger Connect+ with kWh meter

- a. Connect L1 (as well as L2 and L3 for 3-phase version) wire(s) of the power supply cable to L1, L2, L3 terminals of kWh meter.
- b. Connect Neutral (N) wire of the power supply cable to the N feed-through terminal, located next to the kWh meter.
- c. Connect PE wire of the power supply cable to the first available slot of the PE feedthrough terminal, located next to the kWh meter.

B. ŠKODA iV Charger and ŠKODA iV Charger Connect without kWh meter:

- a. Connect L1 (and L2 and L3 for 3-phase version) wire(s) of the power supply cable to L1, L2, L3 slots of the feed-through terminals.
- b. Connect Neutral (N) wire of the power supply cable to the N feed-through terminal.
- c. Connect PE wire of the power supply cable to the first available slot of the PE feedthrough terminal.

Wires	L1	L2	L3	Ν	PE
Color	Brown	Black	Grey	Blue	Green/ Yellow

Color coding for power supply cable

NOTE: If the wallbox is not equipped with feed-through terminals or a kWh meter, strip the individual wires to 15 mm (1-phase wallbox) or 10 mm (3-phase wallbox). Afterwards, connect the supply cable wires directly to the connection terminals on the lower central part of the power board according to the stated color coding.

2. Optionally, install and connect the CT coil cable

- a. Strip the outer insulation of the cable to a length of 50 mm, then strip the individual wires to 7 mm.
- b. Connect the signal wires.



Caution

Connecting the signal wires of the CT-coils incorrectly may result in improper installation, which can cause the wallbox to exceed the configured maximum charging current.

Make sure that the signal wires of the CT-coils are connected to the middle and right pins on the power board connector. The left pin is reserved only for shield connection of such wires.

Insert the CT coil cable into the PCB connectors (MCVR 1.5/ 3-ST-3.81) and secure the wires using a screwdriver.

c. Connect the PCB connectors to the power board.

3. Install and connect charging cable.



Warning

An incorrect routing of the wires of the charging cable will result in improper installation, which can cause a malfunction of the safety features of the wallbox.

- Do not route the PE and CP wires of the charging cable through the ELS sensor.
- Route only the blue (N), brown (L1) (as well as black (L2) and grey (L3) for 3-phase version) wires through the ELS sensor.



Caution

An incorrect mounting of the charging cable holder in the main assembly may result in improper installation, which can cause damage to wallbox components.

Make sure that the charging cable is positioned with the V-shaped side towards the main assembly.

- a. Place the charging cable holder on the main assembly with the V-shaped side towards the main assembly.
- b. Connect the PE wire of the charging cable to the second available slot of the PE feed-through terminal.
- c. Connect the CP wire of the charging cable to the CP feed-through terminal, located at the end of the DIN-rail.
- d. Route Neutral (N), L1 (as well as L2 and L3 for 3-phase version) wire(s) of the charging cable through the ELS sensor. Connect them directly to the terminals on the power board according to the table below.

Color coding for EV charging cable

Wires	L1	L2	L3	Ν	PE
Color	Brown	Black	Grey	Blue	Green / Yellow

4. Set the DIP-switches.



Caution

A damaged communication board may result in improper installation and thus cause unstable wallbox functionality.

Be careful not to damage the communication board during DIP-switches configuration.

See chapter Set DIP-switches for the DIP-switch settings required.

5. Remove cardboard cover.

6. Optionally, connect the RS485 cable.

a. Insert the three wires into the kWh meter following the color coding below.

Color coding for RS485 cable

Wires	Ν	Ρ	PE
Color	White	Red	Black
kWh meter connection	37/A	36/B	35/C

b. Push the cable's connector into the dedicated port on the communication board.

7. Optionally, install and connect the Ethernet cable.

- a. Strip the outer insulation of the cable, then strip and crimp the individual wires to a suitable length for the Ethernet connector.
- b. Mount the Ethernet connector.
- c. Connect Ethernet cable to the communication board.

8. Mount front cover:

- a. Connect the HMI cable to the HMI board.
- b. Connect the RFID cable to the HMI board.*
- c. While holding the front cover next to the main assembly, connect the HMI cable to the power board.
- d. While holding the front cover next to the main assembly, connect the RFID cable to the communication board.*
- e. Before closing the wallbox, check and ensure the following:
 - I. All cables are connected properly.
 - II. The communication board is in the correct position. Check by pressing on it gently.*
 - III. The charging cable holder is aligned with the edges of the main enclosure.
 - IV. The rubber seal of the charging cable and the rubber seal of the front cover are in the correct position, clean and not damaged.
 - V. There is no risk for the cables to be trapped between main assembly and front assembly.
- f. Place the front cover onto the main assembly by using the provided hooks of the front cover. Mount the front cover by tightening the six screws M4 x 10 mm.

9. Align the bezel with the UP arrow on the inside pointing up. Push the bezel onto the front cover so it locks in position.

10. Wind the charging cable around the wallbox for proper storage.

11. Turn on the input power of the station.

The wallbox state LED comes on to show that the wallbox is starting up to become ready to charge. See chapter Status indication for more information.

6. SET DIP-SWITCHES

The power board has two groups of 5-pin DIP-switches:

- Group A determines the coil type used for the current transformer and defines the ground loss monitor functionality.
- Group B determines the maximum available current of the facility/house, or of the wallbox itself, depending on the group A configuration.

In the following illustrations and tables, the upper switch position is being referred to as position 1, whereas the lower switch position is being referred to as position 0.

DIP-switch positions:







Example of DIP-switch setting: 0, 0, 0, 1, 1



Group A switches							
CT coil model	DIP-switch number and position				nd	Illustration	Turns ratio
	1	2	3	4	5		
Default / No CT coil attached	0	0	0	0	N/A		N/A
To be set by user*	1	0	0	0	N/A		To be set by user.*
Nidec C-CT-10	0	1	0	0	N/A		3000:1
Nidec C-CT-16	1	1	0	0	N/A		3000:1
Nidec C-CT-24	0	0	1	0	N/A		3000:1
LEM TT 50-SD	1	0	1	0	N/A		3000:1
LEM TT 100-SD	0	1	1	0	N/A		3000:1
VAC E4623-X002	1	1	1	0	N/A		2500:1
VAC E4624-X002	0	0	0	1	N/A		2500:1
VAC E4626-X002	1	0	0	1	N/A		2500:1

Set the CT coil's parameters locally using the Configuration Manager of the wallbox. See chapter Configure the ŠKODA iV Charger Connect and ŠKODA iV Charger Connect+ locally for more information.

NOTE: Any different configuration than the ones presented above is considered invalid and causes an error state.

^{*} For ŠKODA iV Charger Connect and ŠKODA iV Charger Connect+ only.

Ground loss monitor configuration

DIP-switch 5, in group A configures the functionality of the ground loss monitor. By default, this feature is enabled from the factory.

NOTE: The wallbox will not detect a ground connection if the ground loss monitoring functionality is disabled.

		Group	Illustration			
	1	2	3	4	5	lilustration
Ground Loss Monitor Enabled	N/A	N/A	N/A	N/A	0	
Ground Loss Monitor Disabled	N/A	N/A	N/A	N/A	1	

Group B: Scaling current

NOTE: If the wallbox does not have a CT coil attached (indicated by DIP-switch setting of group A = 0000x), then the scaling current is the maximum static current of the station.

NOTE: If the wallbox does have a CT coil attached, which is set by DIP-switch group A, then the scaling current is the maximum facility current per phase.

NOTE: If the static max current is set above the station rating, an error will be shown and the wallbox will be inoperable.

Gro	Group B switches					No CT coil attached		CT coil
DIP-switch number and position		Westerfier	Station Ma	Facility/ house Max				
1	2	3	4	5	Inustration	16 A 3-phase	32 A 1-phase	Current per phase
0	0	0	0	0		16 A	32 A	0 A
1	0	0	0	0		6 A	6 A	6 A
0	1	0	0	0		7 A	7 A	8 A
1	1	0	0	0		8 A	8 A	10 A
0	0	1	0	0		9 A	9 A	13 A
1	0	1	0	0		10 A	10 A	16 A
0	1	1	0	0		11 A	11 A	20 A
1	1	1	0	0		12 A	12 A	25 A
0	0	0	1	0		13 A	13 A	28 A
1	0	0	1	0		14 A	14 A	32 A

Group B switches						No CT coi	l attached	CT coil
DIP-switch number and position			num ition	ber		Station Ma	Facility/ house Max	
1	2	3	4	5	lliustration	16 A 3-phase	32 A 1-phase	Current per phase
0	1	0	1	0		15 A	15 A	35 A
1	1	0	1	0		invalid	16 A	40 A
0	0	1	1	0		invalid	17 A	50 A
1	0	1	1	0		invalid	18 A	60 A
0	1	1	1	0		invalid	19 A	63 A
1	1	1	1	0		invalid	20 A	80 A
0	0	0	0	1		invalid	21 A	100 A
1	0	0	0	1		invalid	22 A	120 A
0	1	0	0	1		invalid	23 A	140 A
1	1	0	0	1		invalid	24 A	150 A

Group B switches						No CT coil attached		CT coil
DIP-switch number and position			num ition	ber		Station Ma	Facility/ house Max	
1	2	3	4	5	lilustration	16 A 3-phase	32 A 1-phase	Current per phase
0	0	1	0	1		invalid	25 A	160 A
1	0	1	0	1		invalid	26 A	180 A
0	1	1	0	1		invalid	27 A	200 A
1	1	1	0	1		invalid	28 A	invalid
0	0	0	1	1		invalid	29 A	invalid
1	0	0	1	1		invalid	30 A	invalid
0	1	0	1	1		invalid	31 A	invalid

NOTE: Any different configuration than the ones presented above is considered invalid and causes an error state.

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7. CONFIGURE ŠKODA iV CHARGER CONNECT AND ŠKODA iV CHARGER CONNECT+

NOTE: Smart charging functionalities, such as authorization with charge cards or remote controls for the ŠKODA iV Charger Connect and ŠKODA iV Charger Connect+ will be available after May 2020.

NOTE: Connecting the ŠKODA iV Charger Connect or ŠKODA iV Charger Connect+ to the internet is mandatory for using the smart charging functionalities with the according online services. The smart charging functionalities can be set up and controlled using the charging services of the Powerpass app.

7.1 Privacy information

This general information clearly explains how your personal data is processed in conjunction with wall box operation. You can find full details of Volkswagen Group Charging GmbH's Privacy Policy at www.elli.eco.

A. Data controller

We are delighted that you have chosen to use a wall box from Volkswagen Group Charging GmbH, Mollstraße 1, 10178 Berlin, email: info@elli.eco, entered in the Commercial Register of the District Court of Charlottenburg under number HRB 208967 B ('Volkswagen Group Charging GmbH'), and would like to thank you for your interest in our company and our products. Please find information on how your data is collected, processed and used in conjunction with wall box operation below.

B. Processing your personal data

I. Wall box electrical start-up and configuration

During electrical start-up and configuration, in order to ensure that your wall box is up-todate and able to communicate, including Wi-Fi connection or LTE mobile network standard (known as con-nectivity functions), we process the following device-specific technical data, which is regularly transferred to our IT systems in encrypted form: device identification, brand, generation, device type and software version (technical data). This data processing is required in order to fulfil the contract (Article 6 (1) (b) GDPR).

We process this data for as long as this is required for the above purpose and generally delete it without delay after the legal basis ceases to exist, if it is no longer required for the stated purposes or if the stated purposes cease to exist and insofar as there is no other legal basis (e.g. retention periods under trade and fiscal law), otherwise after the other legal basis ceases to exist or if we are obliged to do so for other legal reasons.

If service providers process personal data on our behalf, we have concluded a contract processing agreement and agreed appropriate guarantees on safeguarding the protection of personal data with these service providers. We also select our service providers with care. They process personal data exclusively for the purposes of fulfilling their responsibilities and are contractually bound by our instructions, have suitable technical and organisational measures for the protection of personal data at their disposal and are regularly monitored by us. EU standard contractual clauses for transferring personal data to processors in third countries (appropriate guarantee for data processing in non-European countries) have been concluded accordingly. You can access the EU standard contractual clauses at the URL https:// eur-lex.europa.eu/legal-content/DE/TXT/?uri=CELEX%3A32010D0087. You can find an overview of the service providers we use at any time on www.elli.eco.

II. Home charging or online services

If you want to authorise and use optional additional home charging or online services (e.g. control and analysis of charging cycles) in connection with your wall box, it is necessary to link the wall box to your existing ŠKODA user account by means of a pairing code (the ŠKODA ID is provided by ŠKODA AUTO a.s., tř. Václava Klementa 869, Mladá Boleslav II, 293 01 Mladá Boleslav, Identification No.: 00177041, registered in the Commercial Register kept by the Municipal Court in Prague under Section B, File No. 332 (hereinafter referred to as "ŠKODA AUTO"). You can use the ŠKODA ID to log into numerous services (e.g. websites and applications) offered by ŠKODA AUTO or third parties. It serves as a central user account in which you can manage your data centrally. The data processing required for this takes place as part of the fulfilment of the contract (Article 6 (1) (b) GDPR). To register, you need your email address and a password of your choice. Please note the detailed Privacy Policy that applies to the ŠKODA ID. You can access this via the https:// skodaid.vwgroup.io/data-privacy).

When you use the home charging and online services, we process the above-mentioned technical data (device identification, brand, generation, device type and software version) and the following personal and additional device-specific data: customer and user identification, wall box ID and status of wall box management (e.g. administration rights), RFID identification code of the charge cards you have activated, charging statistics and charging process information (e.g. charging volume, duration and/or time, start and end of a charging process, charging ID), and connection status and time stamp for the last established communication (sequence and logging data).

You will find further information on the processing of personal data during your use of these services and on how to assert your rights in the data protection information on home charging and online services at: www.elli.eco/datenschutz

C. Your rights

You may exercise the following rights regarding data processing by Volkswagen Group Charging GmbH vis-à-vis Volkswagen Group Charging GmbH at any time without cost. Additional information on exercising your rights can be found under Section D.

Right to information: You have the right to receive information from us (Article 15 GDPR) regarding the processing of your personal data.

Right to rectification: You have the right to request that we rectify (Article 16 GDPR) any of your personal data that is incorrect or incomplete.

Right to erasure: You have the right, in the event that the requirements specified in Article 17 GDPR have been met, to request the erasure of your data. Accordingly, you may request the erasure of your data, for instance, if it is no longer necessary for the purposes for which it was collected. Furthermore, you can also request deletion if we process your data on the basis of your consent and you revoke this consent.

Right to restriction of processing: You have the right to request the restriction of the processing of your personal data if the requirements specified under Article 18 GDPR have been met. This is the case, for example, if you dispute the accuracy of your data. You may

then request that processing is restricted for as long as it takes to examine the accuracy of your data.

Right to object: If processing is based on an overriding interest, you have the right to object to the processing of your data. An objection is permissible if processing is either in the public interest or on account of a justified interest of Volkswagen Group Charging GmbH or a third party. In the event of objection, you are kindly requested to notify us of your reasons for objecting to data processing. Besides this, you also have the right to object to data processing for the purpose of direct marketing. The same applies to profiling, if this is related to direct marketing.

Right to data portability: If data processing is based on consent or contract fulfilment and is also based on the use of automated processing, you have the right to receive your data in a structured, standard and machine-readable format and to transmit it to another data processor.

Right of revocation: Insofar as the data processing is undertaken based upon consent, you have the right to revoke your consent, with future effect at any time, free of charge.

Right to lodge a complaint: You also have the right to lodge a complaint with a supervisory authority (e.g. with the data protection officer for Berlin) regarding our processing of your data.

D. Your points of contact

Point of contact for exercising your rights

For the exercising of your rights and more information, please send an email via privacy@elli.eco or a letter to the Data Protection Officer of Volkswagen Group Charging GmbH, Datenschutzbeauftragter der Volkswagen Group Charging GmbH, Mollstraße 1, 10178 Berlin.

Data Protection Officer

Our Data Protection Officer is your contact person for issues relating to data protection:

Datenschutzbeauftragter der Volkswagen Group Charging GmbH Mollstraße 1, 10178 Berlin privacy@elli.eco

Version dated: June 2020

7.2 Configure the ŠKODA iV Charger Connect and ŠKODA iV Charger Connect+ locally

Note: For further information about the configuration, refer to the online manual at www.elli.eco/download.

Precondition: The wallbox is installed and you have the configuration sticker which is supplied with the charging station.

- 1. If the input power to the wallbox is on, have it switched off at the power supply cabinet. Then have the input power switched on again.
- 2. The LED indicating the wallbox's state shows solid blue and the Configuration Manager is accessible.
- 3. Stand close to the wallbox with your mobile device.



- 4. Connect to the Wi-Fi Hotspot listed on the sticker.
- 5. Open any internet browser on your mobile device and enter the IP-Address for the Configuration Page: 192.168.123.4
- 6. Use the Configuration Page Password shown on the sticker to log in to the Configuration Manager.
- 7. Configure the settings of the wallbox according to your requirements:
 - a. Establish an internet connection for the wallbox, e.g by setting access parameters to your home Wi-Fi or local area network (LAN).
 - b. Set your personal preferences, for example: language, log-in password, use of charge cards for access control.

7.3 Pair ŠKODA iV Charger Connect and ŠKODA iV Charger Connect+ to ŠKODA account

To use all online services offered by the ŠKODA iV Charger Connect and ŠKODA iV Charger Connect+, you must link your wallbox to your ŠKODA account.

1. Download the Powerpass app.



- 2. Create an account or log in.
- 3. Follow the steps shown in the App.

8. COMMISSIONING

General Commissioning

Before connecting the wallbox to the vehicle:

- 1. Clean the connection zone.
- 2. Check wall mounting for stability.
- 3. Check that all screws and terminal connections are tight.
- 4. Make sure there are no knock-out holes for cable routing left open. Seal them with blind plugs if there is no cable routed through them.
- 5. Make sure all cable glands are tightly closed.
- 6. Perform visual inspection according to commissioning protocol.
- 7. Switch on the input power to the wallbox.
- 8. Check HMI LED status indication.
- 9. Perform electric commissioning according to commissioning protocol and normative requirements and additional local installation requirements (if applicable).
- 10. Perform functional tests with a simulator or an EV and simultaneously check HMI LED status indication.

11. Fill-in commissioning report.

If you need a commissioning report, find an example of it at www.elli.eco/download

9. MAINTENANCE

The owner of the wallbox is responsible for the maintenance of the charging station, whereby both the law regarding the safety of persons, animals, and property must be observed, as well as the installation regulations in force in the country of use.

- 1. Dirt and natural organic matter on the outside of the charging station can be cleaned off using a damp soft cloth.
- 2. Check the charge plug for damage and for foreign matter. Clean if necessary.
- 3. Have the wallbox and its installation inspected by an electrician on a regular basis and in compliance with your local country installation guidelines.

10. TROUBLESHOOTING

Refer to Status indication for the description of the LED indications of the wallbox.

Danger

Operating damaged electric devices will result in the risk of electric shock, which will cause severe injury or death.

 Troubleshooting must only be done by a qualified electrician unless otherwise stated.



Warning

Ignoring an error indicated on the wallbox may result in the risk of electric shock, which can cause injury or death.

If any of the listed errors persists, get in contact with your customer support at skoda-auto.support@elli.eco to get further advice and to avoid damage to your wallbox.

10.1 Error states of the wallbox

LED states	Wallbox status	Explanation
	Energy saving	 Charging possible Connect the wallbox to the vehicle to start the wallbox.
	Off	 Charging not possible Check that the power supply to the wallbox is switched on at the power supply cabinet.
	HMI Cable not connected	 Charging not possible Have the HMI cable checked for a proper connection.
	Over-tempera- ture derating	Charging possible Due to high temperature, the wallbox only allows charging at a lower power. When the wallbox has cooled down, it will resume charging at the maximum power.

LED states	Wallbox status	Explanation
	CT coil / HEMS charging paused	Charging not possible The house power consumption is too high to permit charging. The wallbox starts charging again when power becomes available.
	CT coil / HEMS derating	Charging possible When the house power consumption is high, the wallbox allows charging only at a lower power. Once the house power consumption is normal, the wallbox allows charging at maximum power.
	Loss of com- munication with HEMS	 Charging possible The wallbox is unable to communicate with the HEMS network. Using the Configuration Manager, check your network configuration. Using the Configuration Manager,
		check your HEMS configuration.
	Self-test failure or processor freeze	 Charging not possible The wallbox has detected an internal error during a self-test. Have the wallbox switched off at the power supply cabinet. Have the wallbox switched on again for a
		 reboot. If the error still occurs, have the HMI cable checked for a proper connection.

LED states	Wallbox status	Explanation
	Critical temperature	 Charging not possible This error occurs when the temperature inside the wallbox is too high. If the wallbox does not recover from the critical temperature state, disconnect it from the car. Wait for at least one hour for the wallbox to cool down. If this error occurs more often, make sure that the wallbox is protected from heat sources (direct sunlight).
	Loss of	Charging not possible
	protective earth	Note : The ŠKODA iV Charger detects if it is correctly connected to ground by measuring the L1 to PE (Protective Earth) voltage.
		 Have voltage between L1 and PE measured multiple times:
		A – If voltage is close to 0 V, then L1 and N might be swapped.
		 B - If the voltages are different for each measurement, the ground connection is possibly floating. Possible solutions: For TN and TT grounding schemes (not applicable to 1-phase without neutral): Have the wallbox checked for a proper ground connection. In case of IT grid or 1-phase without neutral, have the ground monitor functionality disabled via DIP-switch 5 of Group A. If the error still occurs, and a safe operation of the wallbox and its upstream installation is ensured, have the ground monitor functionality disabled via DIP-switch 5 of Group A.

LED states	Wallbox status	Explanation
	Earth leakage	 Charging not possible The wallbox has detected a current leakage to ground (earth) caused by the vehicle. If the vehicle is connected to the wallbox, disconnect it. Wait until the wallbox is idle before reconnecting your vehicle. If the vehicle is not connected to the wallbox, have the wallbox switched off at the power supply cabinet. Have the wallbox switched on again for a reboot. If the error still occurs, inspect the charging cable and the connector for dirt or damage. If the error is not corrected, contact your customer support.
	Invalid CT coil configuration	 Charging not possible Have the settings of the DIP- switches checked to match the configurations shown in this manual.
	Relay state mismatch	Charging not possible The output relays are welded together. Warning: Risk of electric shock If the wallbox is powered on, there may be live voltage in the charging connector. Have the wallbox switched off at the
		 Prove the wallbox switched on at the power supply cabinet. If the vehicle is still connected to the wallbox, unplug the charging cable from your vehicle and attach the cap on the cable connector. Have the wallbox switched on again for a reboot. If the error still occurs, have the wallbox switched off permanently and secured. Call your customer support and have the wallbox replaced.

LED states	Wallbox status	Explanation
	Invalid vehicle communica- tion	 Charging not possible Pilot wire might be shorted to ground. If the vehicle is connected to the wallbox, disconnect it. Wait until the wallbox is idle before reconnecting your vehicle. If the error still occurs when the vehicle is not connected, inspect the charging cable and the connector for dirt or damage.
	Wallbox is remotely set to inoperable*	 Charging not possible Check the wallbox settings in your Powerpass app. If the error still occurs, contact your customer support in order to have your settings checked.
	Communi- cation board cannot be found*	 Charging not possible Have the wallbox switched off at the power supply cabinet. Have the wallbox switched on again for a reboot. Have the wallbox checked for a proper connection between the power board and the communication board.
	Wallbox is inoperable due to unexpected/ internal error	 Charging not possible If the vehicle is connected to the wallbox, disconnect it. Wait until the wallbox is idle before reconnecting the vehicle. If the vehicle is not connected to the wallbox, have the wallbox switched off at the power supply cabinet. Have the wallbox switched on again for a reboot. If the error is not corrected, contact your customer support.

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LED states	Wallbox status	Explanation
	Currently not connected to the IT systems of Elli*	 Charging possible Charging is still possible either with recently accepted cards or without access control. Use the Configuration Manager in order to make sure that the network settings are correct.
	Local authorization (e.g. charge card) rejected*	 Charging not allowed Use a charge card which is allowed to charge in order to be granted access. Check the access control settings in your Powerpass app. If the error still occurs, contact your customer support in order to have your settings and your charge card checked.

10.2 Adjust the length of the charging cable

- 1. Loosen the two screws of the charging cable strain relief with a Torx 10 screwdriver.
- 2. Hold the cable and adjust the position of the charging cable holder by turning it counterclockwise.
- 3. When the desired length is reached, adjust the orientation of the charging cable holder and tighten the two screws of the strain relief with a torque value of 4 Nm.



4. Adjust the length of the wires as required.

11. DECOMMISSIONING



11.] See the corresponding illustrations in manual B.



Danger

Working on electric installations without proper precautions will result in the risk of electric shock, and thus cause severe injury or death.

- Make sure that connection of the electrical power cannot occur during installation.
- Put up caution tape and warning signs to mark the working areas. Make sure no unauthorized persons enter the working areas.
- 1. Turn off the input power of the wallbox and make sure that the power stays off by adding warning signs to avoid accidental restart of power.
- 2. Use a plastic card or similar plastic tool for removing the bezel in a gentle way, without damaging it.
- 3. Dismount the screws of the front cover. Remove the front cover and hold it close to the main assembly while disconnecting the HMI cable and, optionally, if present, the RFID cable.
- 4. To continue dismounting the wallbox, follow the installation steps from Install wallbox in reverse order.

12.DISPOSAL

After decommissioning the wallbox, have the device disposed of in compliance with applicable local disposal regulations.



According to WEEE standards, this wallbox is labeled with the crossed-out waste bin. This indicates that the wallbox must not be disposed of in household waste. Instead, dispose of the wallbox at a local collection point for electric/electronic devices in order to enable recycling and thus avoiding negative and hazardous impacts on the environment. Ask your city or local authorities for respective addresses.



Recycling of materials saves raw materials and energy and makes a major contribution to conserving the environment.

13.APPENDIX

13.1 Warranty

The manufacturer of this wallbox shall not be liable for defects or damage due to the failure to comply with the operating and installation instructions, nor defects arising from normal wear and tear.

This liability exclusion particularly applies to:

- Improper storage, installation or use.
- ▶ Installation, commissioning or repair by a non-qualified electrician.
- Use of non-original spare parts.
- Use of materials not specified in this manual for installation, operation, maintenance and/or service of the wallbox will void the warranty and the manufacturer shall not be liable for defects or damage due to the use thereof. This applies explicitly for materials containing silicone or phosphorus.
- Modification of the wallbox or its components that can cause the wallbox or its components to become non-compliant with the intended use.
- Not being able to provide any relevant documentation of the installation conducted (e.g. commissioning report).

13.2 EU Declaration of conformity

The Manufacturer declares that this charging station is manufactured and delivered in accordance with the following directives and regulations:

EN/IEC 61851-1 (2017) EN/IEC 61851-21-2 (2018) EN/IEC 61000-3-2 (2014) EN/IEC 61000-3-3 (2013) EN 301 489-1 V2.2.0 EN 301 489-3 V2.1.1 EN 301 489-3 V2.1.1 EN 301 489-52 V1.0 EN 301 908-1 V11.1.1 EN 301 511 V12.5.1 EN 300 320 V2.1.1 EN 300 328 V2.1.1 EN 301 893 V2.1.1

The full CE Declaration of Conformity is available from www.elli.eco/download.

13.3 Glossary

Abbreviations and acronyms	Meaning
AC	Alternating Current
СР	Control Pilot
DC	Direct Current
DIP-switch	Dual In-line Package-switch
ELS	Earth Leakage Sensor
EV	Electric Vehicle
GDPR	General Data Protection Regulation
HEMS	Home Energy Management System
НМІ	Human Machine Interface
LED	Light Emitting Diode
МСВ	Miniature Circuit Breaker
MID	Measuring Instruments Directive
NFC	Near Field Communication
ОСРР	Open Charge Point Protocol
PE	Protective Earth
РСВ	Printed Circuit Board
RCD	Residual Current Detection
RFID	Radio-frequency Identification