KOSTAL

ENECTOR

AC wallbox 3.7/11 kW

Operating manual

Exclusion of liability

All names, trademarks, product names and other designations used in this manual may be legally protected even if not indicated as such (e.g. as a trademark). KOSTAL Solar Electric GmbH assumes no liability for their free usage. The illustrations and texts have been compiled with great care. However, the possibility of errors cannot be ruled out. The compilation is made without any guarantee.

General note on gender equality

KOSTAL Solar Electric GmbH is aware of how language impacts on gender equality and always makes an effort to reflect this in documentation. Nevertheless, for the sake of readability we are unable to use non-gender-specific terms throughout and use the masculine form instead.

Contents

1. General information

1.1 Contact

Thank you for choosing a device from KOSTAL Solar Electric GmbH! We hope you enjoy consistently high energy yields with your photovoltaic system.

If you have any questions about your device, please contact your relevant service partner or our service hotline:

- Germany and other countries (language: German, English):
  +49 (0)761 477 44-222

- Switzerland:
  +41 32 5800 225

- France, Belgium, Luxembourg:
  +33 16138 4117

- Greece:
  +30 2310 477 555

- Italy:
  +39 011 97 82 420

- Poland:
  +48 22 153 14 98

- Spain, Portugal (language: Spanish, English):
  +34 961 824 927

Please have the following information to hand for speedy processing:

- Type designation
- Serial number (see type plate on the device)

1.2 About this manual

This manual is intended for the operator and electrician. It contains information relating to safe operation and installation. Activities that may only be carried out by an electrician are marked separately. Pay particular attention to the information regarding safe usage. KOSTAL Solar Electric GmbH assumes no liability for damages arising from the non-observance of this manual.

This manual is an integral part of the product. It applies exclusively to the device from KOSTAL Solar Electric GmbH. Keep all documents permanently for reference and pass them on to any subsequent operator.

The electrician and operator must have unrestricted access to these instructions at all times. The installer must be familiar with this manual and follow all instructions.

The most recent version of the operating manual for the product is available in the download area at **www.kostal-solar-electric.com**.

1.3 Exclusion of liability

Any use that deviates from or goes beyond the proper use described is considered improper use. The manufacturer accepts no liability for any damage resulting from this. Modifications to the device are prohibited. The device may only be used if it is safe to operate and is in a technically perfect condition. Any instance of misuse will result in the termination of the warranty, guarantee and general liability of the manufacturer.

> **❗ IMPORTANT INFORMATION**
>
> The device may only be installed, maintained and repaired by a trained and qualified electrician.
>
> Only a qualified electrician may open the device. The device must be installed by a trained electrician (according to DIN VDE 1000-10 or BGV A3 accident prevention regulations or an internationally comparable standard) who is responsible for observing the applicable standards and regulations.
>
> The electrician is responsible for ensuring that the applicable standards and regulations are observed and implemented. Work that could affect the electrical power system of the relevant energy supply company at the site of the solar power feed-in may only be carried out by qualified electricians expressly authorised (licensed) by the energy supply company.
>
> This includes changes to the factory-preset parameters.

Work that could affect the electrical power system of the relevant energy supply company at the site of the solar power feed-in may only be carried out by qualified electricians expressly authorised (licensed) by the energy supply company. This includes changes to the factory-preset parameters. The installer must always observe the regulations of the energy supply company.

Factory settings may only be changed by qualified electrical installers or persons with at least comparable or higher technical qualifications, e.g. foremen, technicians or engineers. When doing so, all requirements are to be observed.

1.4 Target group

Operator

As the operator, you are responsible for the device. You are responsible for the proper use and safe use of the device. This also includes instructing people using the device.

As an operator without specialist electrical training, you may only carry out activities that do not require an electrician.

Electrician

As an electrician, you have recognised electrical engineering training. On the basis of this expertise, you are authorised to carry out the electrical work required in this manual.

Requirements of an electrician:

- Knowledge of general and specific safety and accident prevention regulations.
- Knowledge of electrical regulations.
- Knowledge of national regulations.
- Ability to recognise risks and avoid possible hazards.

Qualification

Some activities in this manual require expertise in electrical engineering. If activities are carried out by someone without the necessary knowledge and qualifications, serious accidents and death may result.

- Only carry out activities for which you have been qualified and instructed.
- Observe the references to electricians in this manual.

1.5 Proper use

The device is a charging station for use in private areas to which access is restricted, such as private properties, company car parks or depots.

The device is intended for charging electric vehicles only.

- Mode 3 charging according to IEC 61851-1 for electric vehicles with sealed batteries.
- Plugs and socket-outlets according to IEC 62196.

Electric vehicles with non-sealed batteries cannot be charged.

The device is intended exclusively for fixed installation and can be used indoors and outdoors.

The device can only be operated as a single charging point.

Read and observe this manual and all additional documentation relating to device usage.

Improper use

The device is only safe to use when used properly. Any other use or modifications to the device are considered improper and are therefore not permitted.

The operator is responsible for the proper use and safe use. KOSTAL Solar Electric GmbH accepts no liability for the consequences of improper use.

1.6 Notes in this manual

Notes have been incorporated into the instruction text. A distinction is made in this manual between warnings and information notes. All notes are identified in the text line with an icon.

Warnings

The warnings refer to life-threatening dangers. Serious injuries possibly resulting in death may occur.

⚠ **DANGER**

Indicates a direct hazard with a high level of risk, which, if not avoided, will result in death or serious injury.

⚠ **WARNING**

Indicates a hazard with a moderate level of risk, which, if not avoided, will result in death or serious injury.

⚠ **CAUTION**

Indicates a hazard with a low level of risk, which, if not avoided, will result in minor or slight injury or property damage.

❗ **IMPORTANT INFORMATION**

Indicates a hazard with a low level of risk, which, if not avoided, may result in damage to property.

ℹ **NOTE**

Information notes contain important instructions for the installation and problem-free operation of the device. These must be followed at all times. The information notes also point out that failure to observe instructions may result in damage to property or financial damages.

Warning symbols

⚠ Danger

	Danger due to electrical shock and discharge

	Danger due to burns

Symbols within the information notes

	The symbol indicates activities that may only be carried out by an electrician.

	Information or tip

	Important information

	Damage to property possible

1.7 Navigation in the document

In order to enable navigation through this document, it contains clickable areas.

The table of contents takes you to the specified chapter in one click.

You can navigate to the referenced points in the document within the instruction text using the cross-references.

1.8 Labelling on the device

There are signs and labels on some of the device components. These signs and labels may not be altered or removed.

- Observe safety stickers.

- Keep dirty safety stickers legible. Do not use aggressive cleaning agents when cleaning.

- Replace damaged safety stickers or those that have become unrecognisable.

- After replacing spare parts and accessories, label with the safety stickers provided.

Symbol	Explanation
	Danger due to electrical shock and discharge. Ensure that the device is voltage-free before working on it.
	Danger notice
	Observe and read operating manual.
	Device may not be disposed of with household waste. Observe the local application of disposal requirements.
	CE marking The product satisfies the applicable EU requirements.
	Labelling for charging equipment and electric vehicles. Drivers of electric vehicles can then easily and conveniently determine whether their electric vehicle can be used with the charging device and plug. In addition, the maximum charging power for 1-phase and 3-phase can be seen.

1.9 Fundamental safety instructions

Proper condition

Damaged device

If the device has damage or defects, e.g. a defective housing or missing components, people may be seriously injured by electric shock.

- Avoid collisions and improper handling.
- Do not use the device if it is damaged or defective.
- Mark damaged device so that it is not used by other people.
- Have damage repaired immediately by an electrician.

Improper maintenance

Improper maintenance may affect the operational safety of the device and cause accidents. This may seriously injure or kill people.

- Observe the maintenance schedule.
- Commission an electrician to carry out regular maintenance.

Observe your duty of supervision

People, especially children, who are unable to assess potential hazards or can do so only to a limited extent, pose a danger to themselves and to others.

- Keep children and animals away from the device and charging cable.

Use the charging cable properly

Improper handling of the charging cable may result in hazards such as electric shock, short circuit or fire.

- Do not touch the contact pins.
- Do not use adapter plugs or extension cables.
- Avoid kinks, sharp edges, loads and impacts.
- Avoid tangling the charging cable.
- Unwind the charging cable completely when charging.
- Only remove the charging cable from the charging socket using the plug.
- Use the protective cap when the charging cable is not in use.
- Do not subject the charging cable to tensile stress.

Keep things neat and tidy

A charging cable left lying around is a trip hazard. Objects located on the device may fall off.

- Minimise the risk of tripping.
- Stow the charging cable properly or use the cable holder when charging is complete.
- Do not place any objects on the device.

2. Product description

2.1 Equipment features

- Mode 3 charging power from 1.4 kW single-phase up to 11 kW three-phase
  (mode 3 according to IEC 61851 - charging mode for vehicles with communication interface to type 2 charging plugs and sockets)

- No authorisation

- Status information via LED display panel

- 7.5 m permanently connected type 2 charging cable
  (type 2 according to IEC 62196-2 - single-phase and three-phase charging plugs and sockets with identical plug geometry for charging powers from 3.7 to 44 kW AC)

- Integrated DC residual current monitoring > 6 mA

- (only one type A RCD is required for pre-installation)

- Terminals in the device for connecting an optional push-button for switching convenience functions (additional wallbox activation code required)

- Terminals in the device for connecting an energy meter/energy manager (KOSTAL Smart Energy Meter) via Modbus RTU

- Charging modes: Lock Mode (lock wallbox), Solar Pure Mode (solar charging) or Solar Plus Mode (solar-optimised charging) available (PV system and KOSTAL Smart Energy Meter with wallbox activation code required)

- Firmware update via KOSTAL Smart Energy Meter
  (KOSTAL Smart Energy Meter with wallbox activation code required)

- Welding Detection (protective measure for monitoring the load relays)

- Temperature monitoring

- Integrated cable holder

- Wired ready for connection

- Outdoor installation possible (wallbox: IP54, coupling/plug: IP44)

2.2 Type plate

All the important device data is on the type plate. The type plate shown is an example.

You will find the type plate on the left side of the device.
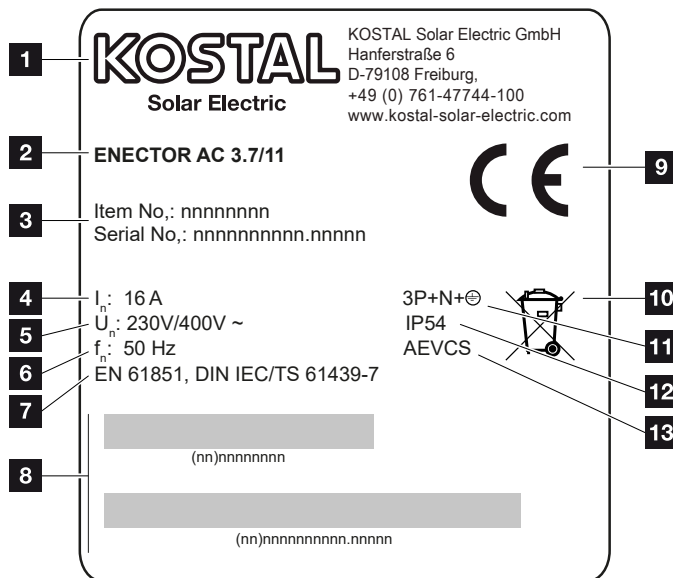
1   Manufacturer

2   Type

3   Article/serial number

4   Nominal current

5   Nominal voltage

6   Nominal frequency

7   Standards/guidelines

8   Barcode for article/serial number

9   CE mark

10   Do not dispose of the device in the dustbin.

11   Number of poles

12   Protection class

13   Usage

2.3 Scope of delivery

4 x ✏️○
4 x ✏️
2 x ⬮ CLIXX 20
1 x ⬮ CLIXX 25
2 x ◎ Quixx 20
1 x ◎ Quixx 25
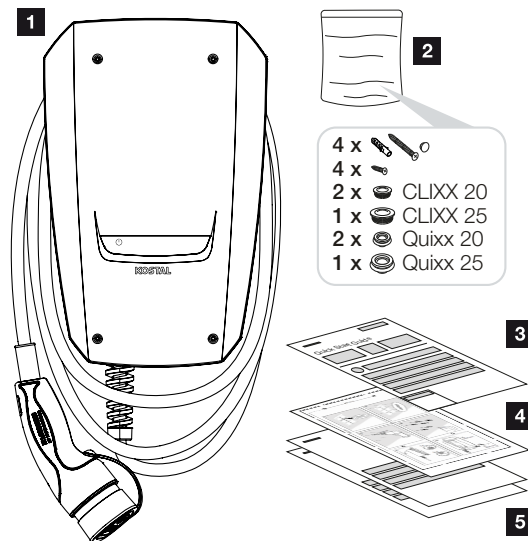
1   Wallbox

2   Bag containing fastening material
(screws, screw anchors, sealing plugs, membrane cable entries)

3   Operating manual

4   Drilling template

5   Accompanying documents:
- Test certificate
- Circuit diagram

2.4 Wallbox structure

The housing is in two parts and consists of the lower part of housing and the housing cover.
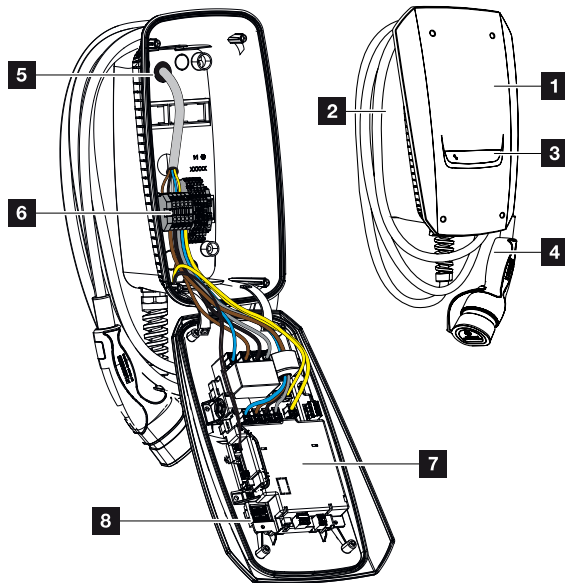
1   Housing cover

2   Lower part of housing

3   LED display

4   Charging cable

5   Cable inlets (there are further cable inlets on the top and bottom)

6   Connection panel (terminal strip)

7   Control unit

8   DIP switch

Cable holder

The wallbox is designed so that the charging cable can be hung on the housing itself.

2.5 Operating modes

The wallbox has various operating modes.

> **ℹ NOTE**
>
> The operating mode depends on the configuration (settings via DIP switches) of the wallbox ↗ **Commissioning/configuration, Page 56**.
>
> A push-button (available as an option) can also be installed in the wallbox ↗ **Installation of optional push-button, Page 52**.

ENECTOR without energy meter

Power Mode (simple charging)

The electric vehicle is charged at maximum power.

ENECTOR with convenience functions via KOSTAL Smart Energy Meter

> **ℹ NOTE**
>
> In order for the wallbox to be set up for the convenience functions in the KOSTAL Smart Energy Meter (KSEM), this function must first be activated via an activation code in the KSEM.
>
> The activation code can be purchased from the KOSTAL Solar online shop.
>
> To access the shop, go to: **shop.kostal-solar-electric.com**.

> **ℹ NOTE**
>
> A list of approved energy meters and their purpose is available in the download area for the product on our homepage at
>
> **www.kostal-solar-electric.com/released-energy-meters-wallbox**
>
>
> SCAN ME

Blackout protection (house connection monitoring)

The house connection is monitored when charging the electric vehicle. If the maximum connected load (e.g. 63 A) is exceeded, the charging power is reduced or charging is interrupted.

Lock Mode (lock wallbox)

If a KOSTAL Smart Energy Meter (KSEM) is connected to the wallbox and the wallbox has been activated via an activation code in the KSEM, the wallbox can be locked via the KSEM. It can then only be unlocked by selecting another mode in the KSEM.

Power Mode (simple charging)

The electric vehicle is charged at maximum power.

Solar Pure Mode (solar charging)

Solar charging is only possible in combination with a PV system and the KOSTAL Smart Energy Meter. The PV system supplies the power needed to charge the electric vehicle.

The function is usually actively selected via the user interface of the KOSTAL Smart Energy Meter.

If an optional push-button (not included in the scope of delivery) has been fitted in the device, the push-button can be used to switch between all modes (except Lock Mode).

With this function, the electric vehicle is only charged using the PV surplus.

For electric vehicles that are charged 1-phase, the charging power is between 1.4 and 3.7 kW. This means that charging is only started when at least 1.4 kW of surplus PV energy is available and is interrupted or terminated when this falls below 1.4 kW.
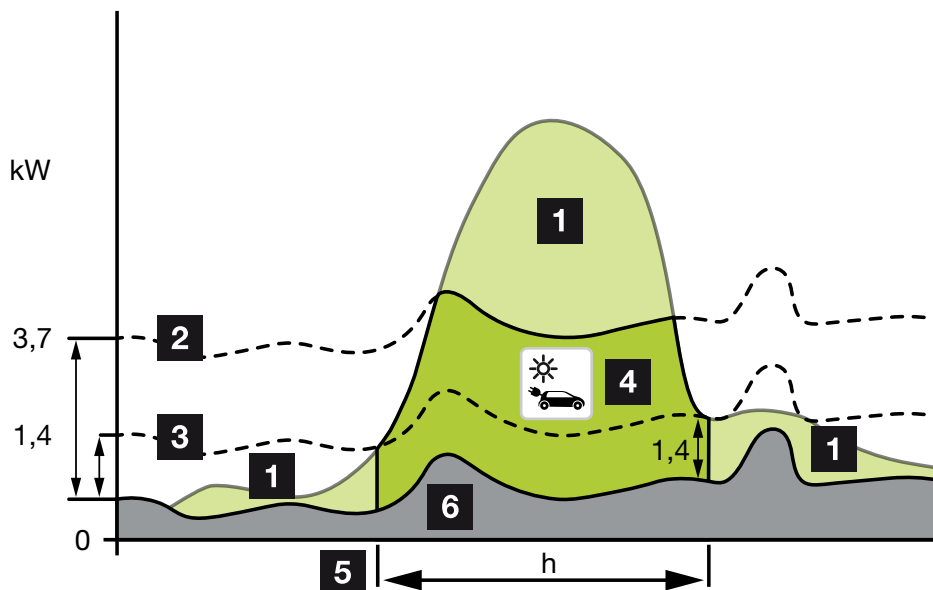
For electric vehicles that are charged 3-phase, the charging power is between 4.1 and 11 kW. This means that charging is only started when at least 4.1 kW of surplus PV energy is available and is interrupted or terminated when this falls below 4.1 kW.
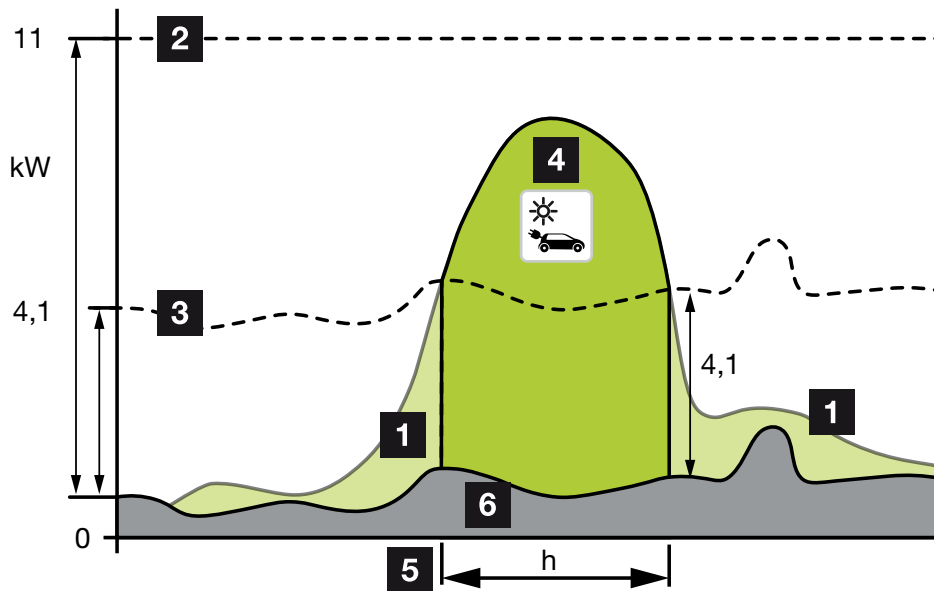
1   PV surplus

2   Max. wallbox charging power 3.7 kW (with 1-phase vehicle)

       Max. wallbox charging power 11 kW (with 3-phase vehicle)

3   Min. wallbox charging power 1.4 kW (with 1-phase vehicle)

       Min. wallbox charging power 4.1 kW (with 3-phase vehicle)

4   Charging electric vehicle with PV surplus

5   Electric vehicle charging time

6   Home consumption of other devices - partly covered directly from PV.

> **ℹ️ NOTE**
>
> Hysteresis for passage of clouds (changing cloud cover): If the surplus needed to charge the vehicle is no longer available due to further consumers or the passage of clouds, charging is not interrupted immediately. Instead, it is reduced to the minimum charging power for approx. 5 min to avoid an interruption in charging after the vehicle has frequently switched charging on and off.

### *Solar Plus Mode* (solar-optimised charging)

Solar-optimised charging is only possible in combination with a PV system and the KOSTAL Smart Energy Meter. The PV system supplies the energy needed to charge the electric vehicle.

The function is usually actively selected via the user interface of the KOSTAL Smart Energy Meter.

If an optional push-button (not included in the scope of delivery) has been fitted in the device, the push-button can be used to switch between all modes (except Lock Mode). With this function, the charging power specified by the customer is made available to the vehicle for charging.

If there is a PV surplus at the grid interconnection point, the amount drawn from the grid is replaced by the PV power or, if possible, increased to the PV surplus.

If desired, a minimum PV surplus power can also be defined here. This is the minimum level which must be present before charging is started at the power level defined by the customer. If the surplus power falls below the defined minimum value, charging is stopped again.

This function can be used to charge the electric vehicle in the evening, for example, when there is no longer enough PV energy available but the electric vehicle needs to be charged for the next morning.
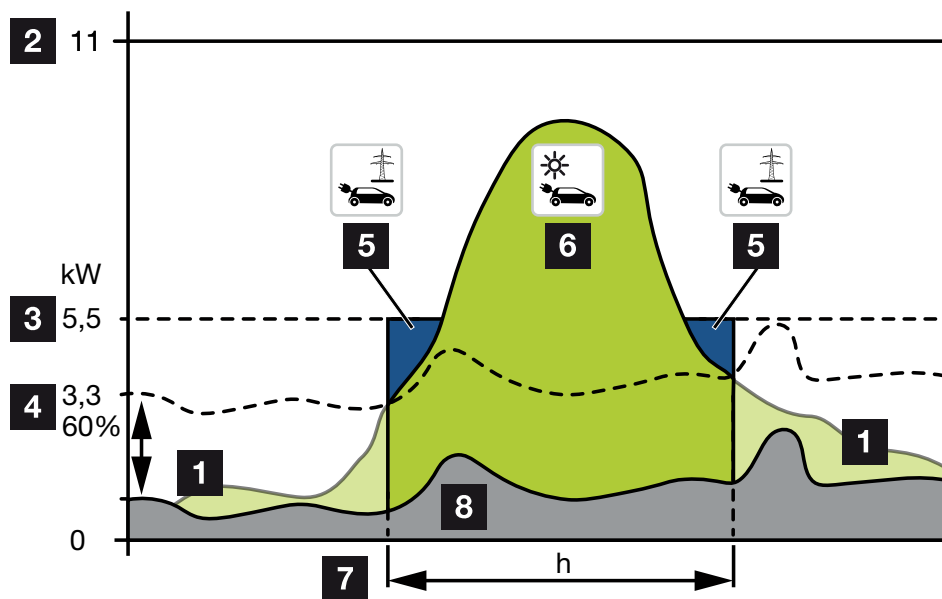
1　PV surplus

　　This surplus can also be used to charge a battery.

2　Max. wallbox charging power 11 kW (3-phase).

3　Fixed minimum starting charging power

　　In this example, at 50 % of the max. charging power of 11 kW (for 3-phase connection with 3-phase vehicle = 5.5 kW).

4　Set min. surplus power at the grid connection point before charging is started. In this example, 60 % of 5.5 kW = 3.3 kW.

　　The additional charging power of 2.2 kW (5) is drawn from the public grid.

5   Charging electric vehicle from the public grid. In this example 2.2 kW.

6   Charging electric vehicle from PV surplus.

7   Electric vehicle charging time.

8   Home consumption of other devices - partly covered directly from PV.

> **ℹ   NOTE**
>
> Hysteresis for passage of clouds (changing cloud cover): If the surplus needed to charge the vehicle is no longer available due to further consumers or the passage of clouds, charging is not interrupted immediately. Instead, it is reduced to the minimum charging power for approx. 5 min to avoid an interruption in charging after the vehicle has frequently switched charging on and off.

ENECTOR with KOSTAL Smart Energy Meter for blackout protection (house connection monitoring)

Blackout protection (house connection monitoring)

The house connection is monitored when charging the electric vehicle. If the maximum connected load (e.g. 63 A) is exceeded, the charging power is reduced or charging is interrupted.

Power Mode (simple charging)

The electric vehicle is charged at maximum power.

2.6 LED displays

The LEDs indicate the operational status of the wallbox.

Standby, charging, solar and fault are indicated by four symbols.

LED status				Meaning
LEDs light up one after the other				The wallbox is booting or still waiting for information from the master (KOSTAL Solar Energy Meter).
All LEDs off				The wallbox is in energy-saving mode or switched off via the line circuit breaker.
Flashing quickly	-		-	The wallbox has been locked via the KOSTAL Smart Energy Meter.
Lit up	-		-	Wallbox active. After 10 minutes in this status, energy-saving mode is activated and the LED goes out. Plugging in a vehicle restores the operational status.
Flashing slowly	-		-	Vehicle has been connected to the wallbox and recognised. The following statuses are possible: ■ Waiting for authorisation by wallbox (internal system test is being carried out). ■ Waiting for authorisation by KOSTAL Smart Energy Meter (e.g. with **Solar Pure Mode** convenience function). ■ Charging has been interrupted (e.g. due to excess wallbox temperature).
-	Pulsing		-	■ Vehicle has been enabled for charging ■ Charging process complete The charging process is terminated by the electric vehicle when the set level/SoC of the battery is reached. When this happens, the wallbox again signals that the vehicle is again enabled for charging.
-	Lit up		-	Vehicle is being charged.
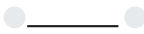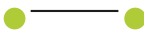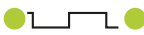
LED status				Meaning
⏻	🔋	☀	🔧	
-	Flashing slowly		-	Vehicle is being charged at reduced charging power.
*	*	off	-	Power Mode (simple charging) is activated. Vehicle is being charged at the set charging power of e.g. 11 kW (standard). ↗ **Operating modes, Page 22**. Switch the operating modes via KOSTAL Smart Energy Meter or push-button (optional).
*	*	Lit up	-	Solar Pure Mode (solar charging / surplus charging) is activated ↗ **Operating modes, Page 22**. Switch the operating modes via KOSTAL Smart Energy Meter or push-button (optional).
*	*	Pulsing	-	Solar Plus Mode (solar-optimised charging) is activated ↗ **Operating modes, Page 22**. Switch the operating modes via KOSTAL Smart Energy Meter or push-button (optional).
-	-	-	Flashing slowly	There is a fault that is preventing the vehicle from being charged ↗ **Troubleshooting, Page 84**
-	-	-	Lit up	
Flashing slowly	Flashing slowly	Flashing slowly	Flashing slowly	Wallbox is in configuration mode and is being configured via the KOSTAL Smart Energy Meter.

* LED status variable: off, lit up, flashing slowly, pulsing.

LED status	Meaning
●——●	LED off
●——●	LED on/lit up
●⌐_⌐●	LED flashing slowly
●ՊՊ●	LED flashing quickly
●〰〰●	LED pulsing

3. System overview

3.1 Applications and functions

The wallbox can be used in the house grid as a stand-alone device or in combination with an energy meter/manager and a PV system.

Depending on the application, various additional functions are available.

You can charge your electric vehicle between 1.4 kW-11 kW with the wallbox.

The *Solar Pure Mode* (solar charging) or *Solar Plus Mode* (solar-optimised charging) functions are available when used in combination with a KOSTAL PV system and the **KOSTAL Smart Energy Meter**.

> **i** **NOTE**
>
> In order to be able to use the functions, they must first be activated via an activation code in the KSEM.
>
> The activation code can be purchased from the KOSTAL Solar online shop.
>
> To access the shop, go to **shop.kostal-solar-electric.com**

On the following pages, you will find an overview of the connection options.

- ◪ **Connecting an ENECTOR without KSEM, Page 31**
- ◪ **ENECTOR with KSEM without PV system, Page 32**
- ◪ **ENECTOR with KSEM and PV system, Page 34**
- ◪ **ENECTOR with KSEM for house connection monitoring, Page 36**

3.2 Connecting an ENECTOR without KSEM

1-phase or 3-phase connection
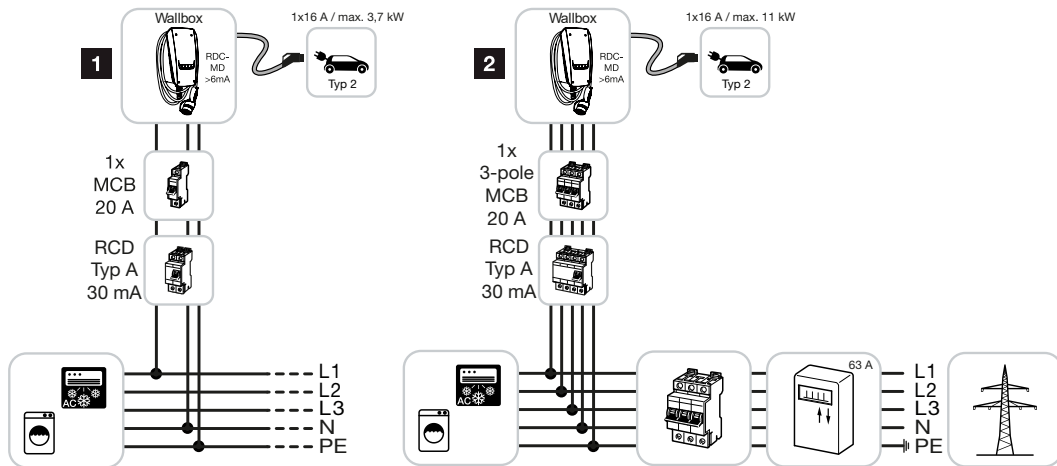
1   KOSTAL wallbox (1-phase connection)

2   KOSTAL wallbox (3-phase connection)

The wallbox can be connected to the house grid as a 1-phase or 3-phase system.

Function:

- *Power Mode* (simple charging)
  1-phase at 1.4 - 3.7 kW / 230 V
  3-phase at 3.7 - 11 kW / 400 V

3.3 ENECTOR with KSEM without PV system

1-phase or 3-phase connection with convenience functions
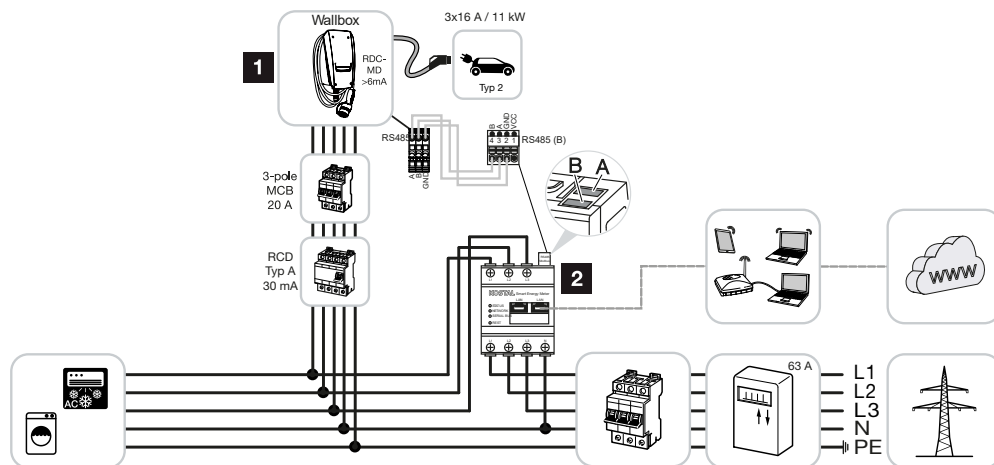
1 KOSTAL wallbox (slave)

2 KOSTAL Smart Energy Meter (master) with activation code (for data transfer to the KOSTAL Solar Portal)

The wallbox can be connected to the house grid as a 1-phase or 3-phase system. The wallbox (slave) is controlled by the KSEM (master) via Modbus RTU.

> **ℹ NOTE**
>
> In order for the wallbox to be set up in the KOSTAL Smart Energy Meter (KSEM), this function must first be activated via an activation code in the KSEM.
>
> The activation code can be purchased from the KOSTAL Solar online shop.
>
> To access the shop, go to **shop.kostal-solar-electric.com.**

Functions:

Modes can be selected via KSEM Webserver, KOSTAL Solar App or optional push-button.

- *Lock Mode* (lock wallbox, cannot be selected via optional push-button)
- *Power Mode* (simple charging)
  1-phase at 1.4 - 3.7 kW / 230 V
  3-phase at 3.7 - 11 kW / 400 V
- *Solar Plus Mode*
  The mode is only used here to set the charging power to a fixed value (e.g. 50 % of the vehicle's max. charging power).
- Blackout protection (house connection monitoring)

> **ℹ NOTE**
>
> Here, the KOSTAL Smart Energy Meter monitors the amount drawn from the grid. If the grid demand exceeds the maximum current (e.g. 63 A per phase) configured in the wallbox, the charging power of the wallbox is reduced to remain below the maximum house connection capacity.

- Data transfer of the wallbox charging data to the KOSTAL Solar Portal via the KSEM

3.4 ENECTOR with KSEM and PV system

1-phase or 3-phase connection with convenience functions
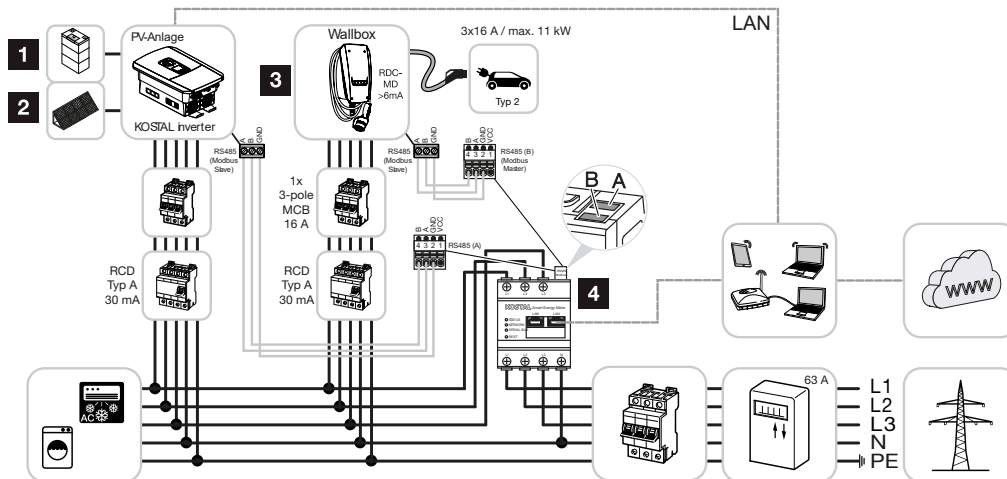
1 PLENTICORE plus or PLENTICORE BI with battery

2 PLENTICORE plus, PIKO IQ or PIKO 12-20 as solar inverters

3 KOSTAL wallbox as slave

4 KOSTAL Smart Energy Meter as master with activation code for wallbox

The wallbox can be connected to the house grid as a 1-phase or 3-phase system. The wallbox is configured as a slave and is controlled by the KSEM (master) via Modbus RTU.

ℹ NOTE

In order for the wallbox to be set up in the KOSTAL Smart Energy Meter (KSEM), this function must first be activated via an activation code in the KSEM.

The activation code can be purchased from the KOSTAL Solar online shop.

To access the shop, go to **shop.kostal-solar-electric.com.**

Functions:

Modes can be selected via KSEM Webserver, KOSTAL Solar App or optional push-button.

- *Lock Mode* (lock wallbox, cannot be selected via optional push-button)

- *Power Mode* (simple charging)
  1-phase at 1.4 - 3.7 kW / 230 V
  3-phase at 3.7 - 11 kW / 400 V

- *Solar Pure Mode* (solar charging)

- *Solar Plus Mode* (solar-optimised charging)

- Blackout protection (house connection monitoring)

> **ℹ NOTE**
>
> Here, the KOSTAL Smart Energy Meter monitors the amount drawn from the grid. If the grid demand exceeds the maximum current (e.g. 63 A per phase) configured in the wallbox, the charging power of the wallbox is reduced to remain below the maximum house connection capacity.

- Data transfer of the wallbox charging data via the KSEM to the KOSTAL Solar Portal

3.5 ENECTOR with KSEM for house connection monitoring
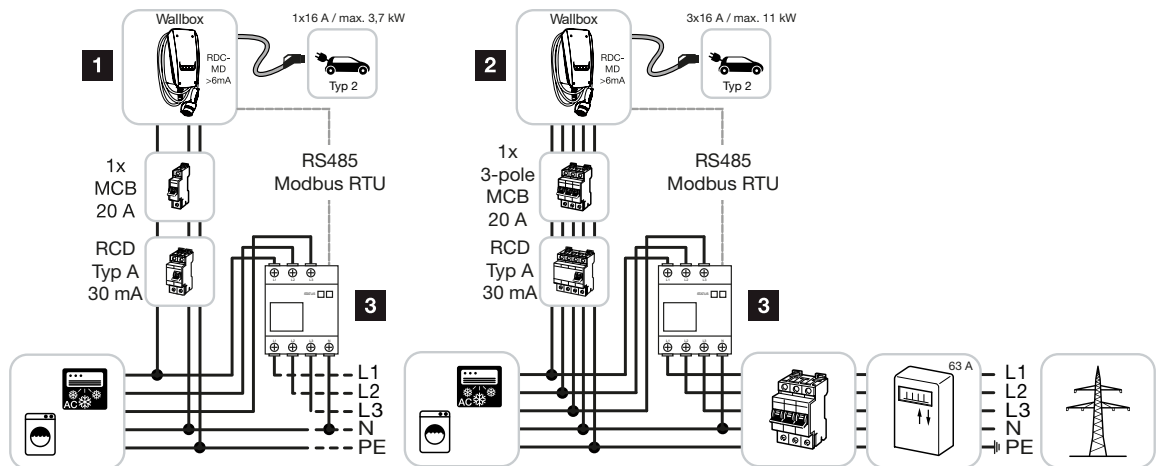
1 KOSTAL wallbox as master (1-phase connection)

2 KOSTAL wallbox as master (3-phase connection)

3 Modbus for energy meter (KSEM)

The wallbox can be connected to the house grid as a 1-phase or 3-phase system. The wallbox is configured as a master and can retrieve data from the energy meter via Modbus RTU. This makes blackout protection (house connection monitoring) possible.

> **ℹ NOTE**
>
> A list of approved energy meters and their purpose is available in the download area for the product on our homepage at
>
> **www.kostal-solar-electric.com/released-energy-meters-wallbox**
>
>
> SCAN ME

Functions:

- **Power Mode** (simple charging)
  1-phase at 1.4 - 3.7 kW / 230 V
  3-phase at 3.7 - 11 kW / 400 V

- Blackout protection (house connection monitoring)

> **ℹ NOTE**
>
> Here, the energy meter measures the grid demand. If the grid demand exceeds the maximum current (e.g. 63 A per phase) configured in the wallbox, the charging power of the wallbox is reduced to remain below the maximum house connection capacity.

4. Installation

4.1 General handling instructions

The wallbox may be damaged by improper handling.

🔲   **NOTE**

The activities described in this chapter may only be carried out by an electrician.

- Avoid collisions and impacts.
- Place the wallbox on a soft surface.

4.2 Site selection

The wallbox is intended exclusively for fixed installation and can be used indoors and out-doors. A suitable location fulfils the following requirements:

- Technical data and grid data match. ↗ **Technical data, Page 94**.

- Permissible ambient conditions are complied with ↗ **Permissible ambient conditions, Page 41**

- The following minimum distances from other objects (e.g. walls) are observed:
  - Distance to the left and right: 300 mm
  - Distance upwards: 300 mm
  - Distance downwards: approx. 1100 mm

- Depending on the charging cable used, the wallbox and the charging parking space are sufficiently close to one another.

4.3 Permissible ambient conditions

Unsuitable ambient conditions may result in damage to the wallbox.

> ⚠️ **DANGER**
>
> **Risk of explosion and fire**
>
> If the device is operated in potentially explosive atmospheres (Ex-area), explosive substances may ignite due to sparks from device components.
>
> Do not use in potentially explosive atmospheres (e.g. gas filling stations).

- Avoid direct sunlight.
- Protect the wallbox from direct water jets.
- Ensure that the wallbox is sufficiently ventilated.
- Do not install in recesses.
- Keep the wallbox away from heat sources.
- Avoid large temperature fluctuations.

4.4 Routing AC supply cable

> ### ⚠ DANGER
>
> **Risk of fire due to overload**
>
> If the line circuit breaker and supply cable are not suitably designed, there is a risk of fire due to cable overload.
>
> - ■ Design the line circuit breaker and supply cable in accordance with the device's technical data.

> ### ℹ NOTE
>
> If mounting on the wall, the position of the supply cable must be planned using the drilling template or illustration supplied. Cable inlets are located on the rear, bottom and top.
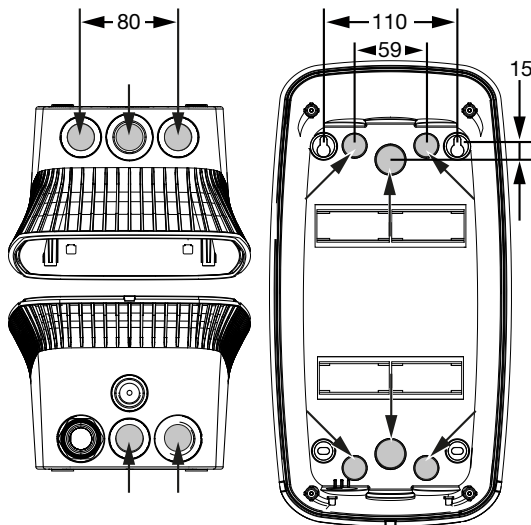
1. Route the supply cable to the desired location.

2. Observe the permissible bending radius when routing the supply cable. Approx. 30 cm of cable is required for the supply cable inside the wallbox.

3. Design the supply cable in accordance with the wallbox's technical data (**◪ Technical data, Page 94**) and observe the following local conditions:
   - Cable length, cross-section and cable type
   - Type of routing and cable coverings

> **ℹ NOTE**
>
> Installing the wallbox in a supply network in which sources of interference (e.g. a frequency inverter) are operated may result in malfunctions or termination of the charging process.

Residual current device

The required residual current device must be located in the house installation (in accordance with IEC 60364-7-722 [in Germany in accordance with DIN VDE 0100-722]).

- The wallbox has a residual current sensor for DC residual current monitoring > 6 mA with activation behaviour in accordance with IEC 62955.
- The wallbox must be individually protected with at least one type A residual current device.
- No other circuits may be connected to the residual current device.
- It is essential that national regulations are observed.

Line circuit breaker

- The line circuit breaker required must be located in the house installation.
- The wallbox must be protected with a line circuit breaker of max. 20 A with C characteristics.
- The line circuit breaker must be dimensioned in accordance with the national regulations, taking into account the type plate, desired charging power and supply cable (cable length, cross-section) to the wallbox.
- One line circuit breaker is required per charging point.

4.5 Mounting wallbox

When delivered, the housing cover is not screwed on.

> ℹ️ **NOTE**
>
> Should temperatures fall a long way below freezing, the device should first be stored temporarily at room temperature for 24 hours before installation and commissioning.

1. Loosen the screws if necessary.

2. Fold down the housing cover.
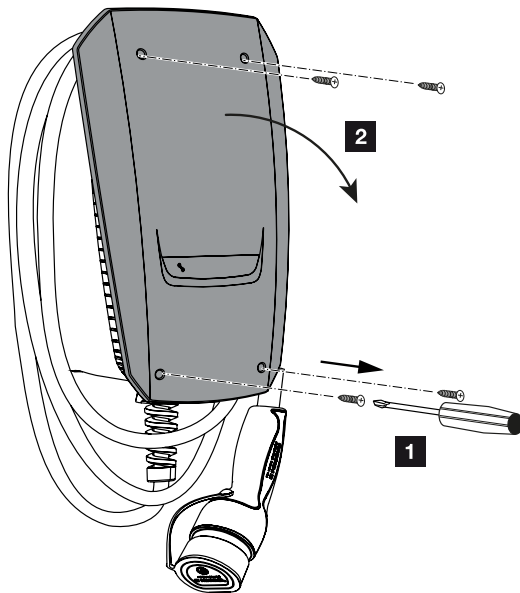
Drilling holes for wallbox

If the wallbox is mounted on an uneven surface, the lower part of the housing may warp. The specified protective class is then no longer guaranteed. The electronic components may experience subsequent damage.

- Only mount the wallbox on level surfaces.
- Take appropriate measures to level out uneven surfaces.

In the packaging box of the wallbox, there is a drilling template that can be used to mark the drilling holes. We would recommend mounting the wallbox at a height that makes ergonomic sense in terms of the user's height.
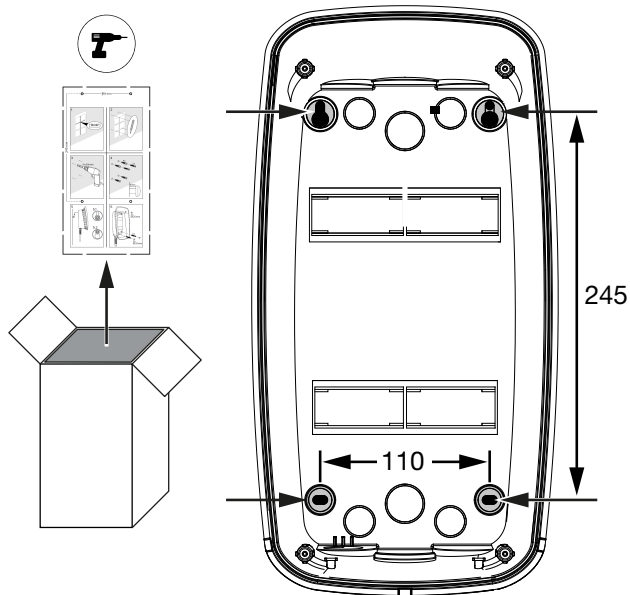
1. Mark the drilling holes using the drilling template or illustration supplied. Make sure that it is aligned horizontally.

2. Drill holes with a diameter of 6 mm in the wall.

✔ Holes drilled.

Inserting cables
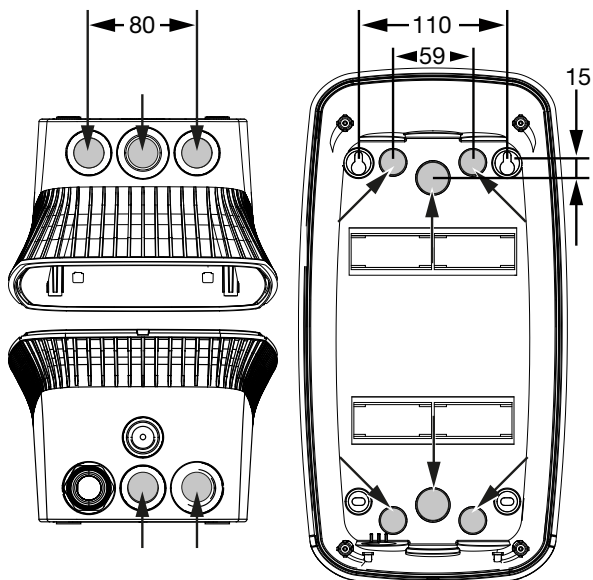
1. Use a suitable to tool to cut the required cable inlet out of the wallbox. Cable inlets are located on the rear, bottom and top.

2. Insert the appropriate membrane cable entry (included in the scope of delivery) into the respective cable inlet.

For cable inlet on the top or bottom:
Use membrane cable entries with strain relief.

For cable inlet on the rear:
Use membrane cable entries without strain relief.

3. Insert the cables into the wallbox. To do this, a hole must be pierced in the membrane.

🏠 POSSIBLE DAMAGE

Damage to the device due to rainwater ingress

To prevent rainwater from entering, the hole in the membrane should not be any larger than the cables. The electronic components may experience subsequent damage.

✓ Cable routing complete.

Mounting wallbox

The supplied fastening material (screws, screw anchors) is only suitable for mounting on concrete, brick and wooden walls.

≈1500

4 x 5x60 TX20
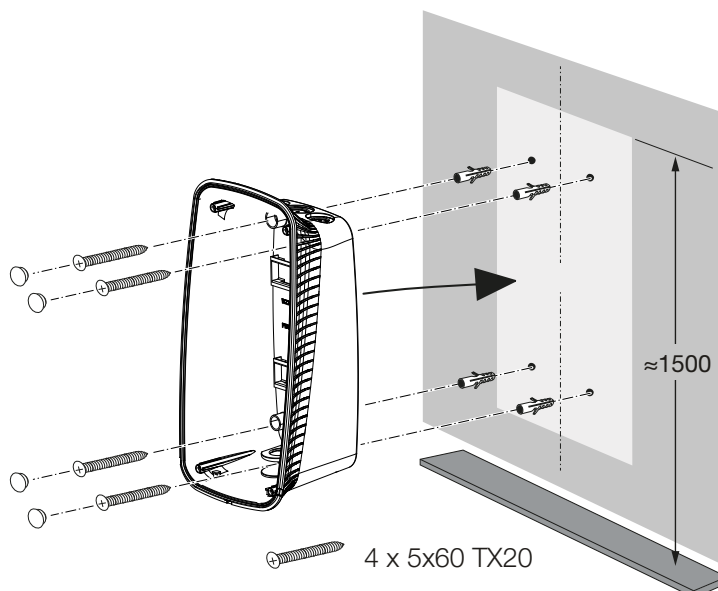
1. Screw the wallbox to the wall using screw anchors and screws. Follow the mounting instructions on the wallbox drilling template.

2. Cover the screws in the housing with the sealing plugs supplied.

⌂ POSSIBLE DAMAGE

Damage to the device if sealing plugs are not fitted

If the screws in the housing are not covered by the supplied sealing plugs or are insufficiently covered, the specified protective class is no longer guaranteed. The electronic components may experience subsequent damage.

3. Check that the wallbox is firmly and securely fastened.

✓ Wallbox mounted.

4.6 Electrical connection

The wallbox may be connected to a TN / TT grid.

> ⚠ **DANGER**
>
> **Risk of death due to electrical shock and discharge!**
>
> De-energise device and secure against being switched on again.
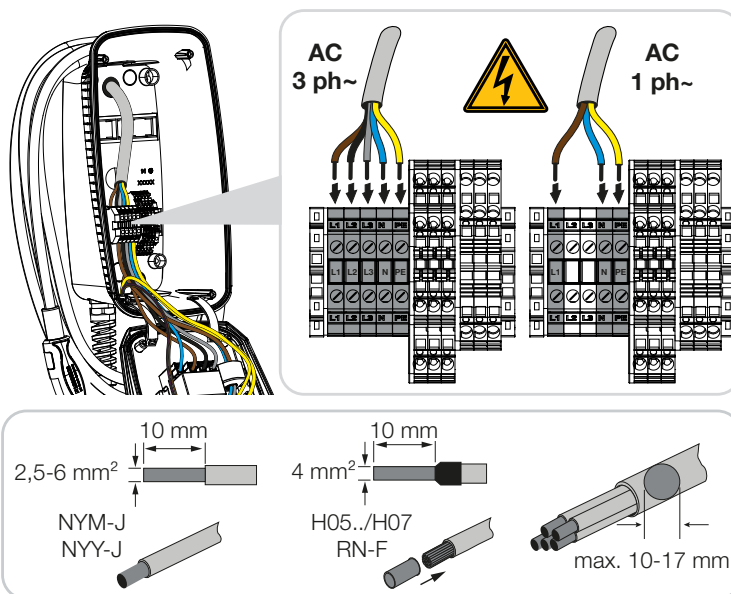
1. Strip the supply cable.

2. Strip 10 mm of insulation from the wires.

3. Connect the wires to the terminals according to the terminal labelling.
   Three-phase operation: Use terminals L1, L2, L3, N and PE.
   Single-phase operation: Use terminals L1, N and PE.
   Observe the connection data for the terminal strip ↗ **Technical data, Page 94**.

4. Check that the individual wires are connected correctly and that the screws are tightened securely.

✔ Supply cable connected.

5. Connection of additional components

5.1 KOSTAL Smart Energy Meter connection

For blackout protection (house connection monitoring), *Solar Pure Mode*, *Solar Plus Mode* or *Lock Mode*, a **KOSTAL Smart Energy Meter** with activated convenience functions is required; this is coupled to the ENECTOR via RS485.

For simple house connection monitoring, a KOSTAL Smart Energy Meter can be used without activated convenience functions.

ℹ️ NOTE

A list of approved energy meters and their purpose is available in the download area for the product on our homepage at

www.kostal-solar-electric.com/released-energy-meters-wallbox

SCAN ME

Proceed as follows to install and connect an energy meter:

1. Install the energy meter at the grid connection point in the house grid. Follow the installation instructions for the energy meter ↗ **System overview, Page 29**

2. Route the communication cable between the wallbox and energy meter.

⚠️ DANGER

Risk of death due to electrical shock and discharge!

If the cable is not kept reliably separate from active electrical equipment, touchable parts may be live. As a result, people may be seriously injured or killed by electric shock.

When routing and connecting the cable, keep it reliably separate from active electrical equipment.

ℹ️ NOTE

Use a rigid mains cable of at least CAT6, or preferably CAT7 (to avoid interference) with a cross-section of at least 0.5 mm².

---

3. Use a suitable to tool to cut the required cable inlet out of the wallbox. Cable inlets are located on the rear, bottom and top.

4. Insert the appropriate membrane cable entry (included in the scope of delivery) into the respective cable inlet.
   For cable inlet on the top or bottom: Use membrane cable entries with strain relief.

For cable inlet on the rear: Use membrane cable entries without strain relief.
**Insert the cables into the wallbox**. To do this, a hole must be pierced in the membrane.

ℹ NOTE

To prevent rainwater from entering, the hole in the membrane should not be any larger than the cables.

---

5. Strip the cable.

6. Strip 10 mm of insulation from the wires.

7. Connect communication cable to wallbox terminal according to the terminal labelling.
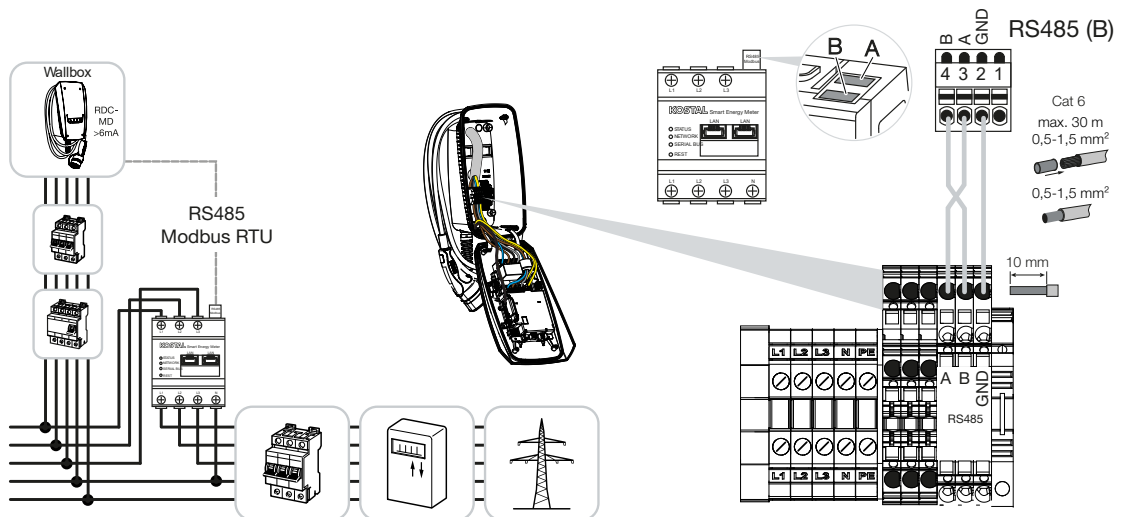
8. Connect communication cable to energy meter.

✓ Connect wallbox with energy meter.

5.2 Installation of optional push-button

The wallbox does not have a push-button as standard.

Certain operating modes can only be switched via the KOSTAL Smart Energy Meter (KSEM) using an activation code.

So that this does not always have to be done via the KOSTAL Smart Energy Meter, an optional push-button can be installed on the underside of the housing. You will find a description of the function in ↗ **Operating modes, Page 22**.

Function	KSEM	Push-button
Lock Mode (lock wallbox)	Yes	No
Enable wallbox	Yes	No
Power Mode (simple charging)	Yes	Yes
Solar Pure Mode (solar charging)	Yes	Yes
Solar Plus Mode (solar-optimised charging)	Yes	Yes

Installing push-button

The push-button is installed on the underside of the wallbox.
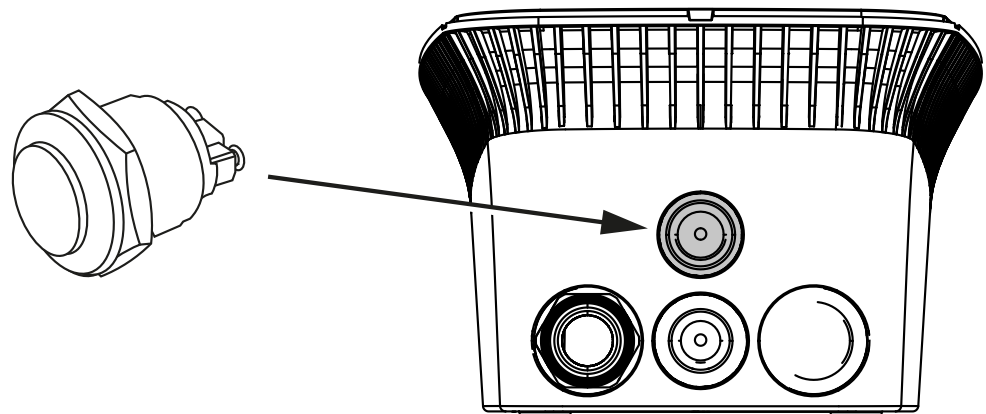
1. 22 mm vandalism-protected push-button with sealing ring available from accessory suppliers.

2. Use a suitable tool to cut/drill the required 22 mm opening out of the wallbox.

3. Install the push-button with sealing ring.

Push-button connection

The push-button is connected to the terminal.
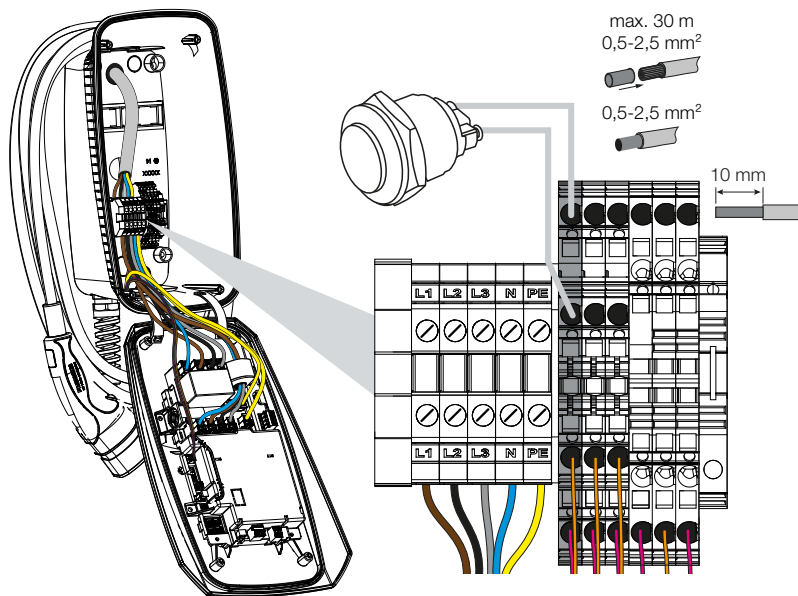
Proceed as follows:

1. Installing push-button

2. Strip the cable.

3. Strip 10 mm of insulation from the wires.

4. Connect cables to push-button/rotary switch according to terminal labelling.

5. Connect cables to terminal according to terminal labelling.

✓ Push-button installed.

5.3 Connection of optional shunt releases

In some countries, automatic AC shutdown is required in the event of a fault. A shunt release can be connected to the wallbox for this purpose.

Connecting the shunt release

1. Install shunt release in the house connection box. Follow the manufacturer's installation instructions.

2. Route the cable between the wallbox and shunt release.

⚠ **DANGER**

Risk of death due to electrical shock and discharge!

If the cable is not kept reliably separate from active electrical equipment, touchable parts may be live. As a result, people may be seriously injured or killed by electric shock.

When routing and connecting the cable, keep it reliably separate from active electrical equipment.

---

3. Use a suitable to tool to cut the required cable inlet out of the wallbox. Cable inlets are located on the rear, bottom and top.

4. Insert the appropriate membrane cable entry (included in the scope of delivery) into the respective cable inlet.
   For cable inlet on the top or bottom: Use membrane cable entries with strain relief.
   For cable inlet on the rear: Use membrane cable entries without strain relief.

5. Insert the cables into the wallbox. To do this, a hole must be pierced in the membrane.

ℹ **NOTE**

To prevent rainwater from entering, the hole in the membrane should not be any larger than the cables.

---

6. Strip the cable.

7. Strip 10 mm of insulation from the wires.

8. Connect cable to wallbox terminal according to terminal labelling.

ℹ **NOTE**

The potential-free contact (normally open contact) can be loaded to max. 230 V AC / 24 V DC / 1 A.

---
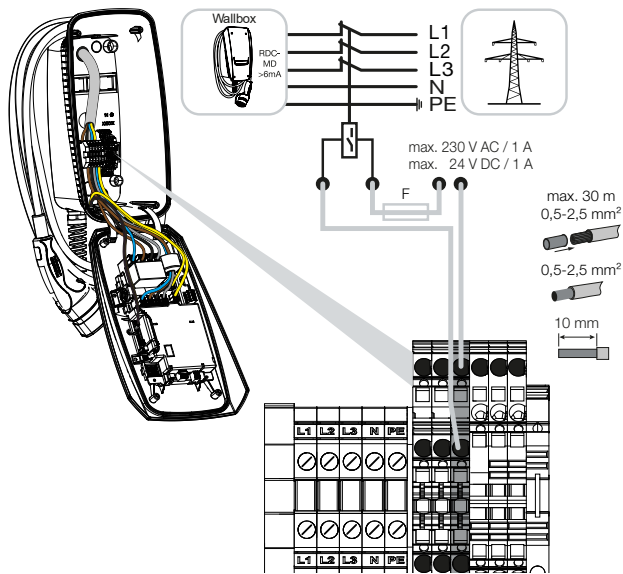
9. Connect cable to shunt release.

✓ Wallbox connected to shunt release.

6. Commissioning/configuration

6.1 Safety

The wallbox may only be configured when voltage-free.

> ⚠️ **DANGER**
>
> **Risk of death due to electrical shock and discharge!**
>
> De-energise device and secure against being switched on again.

> 🛈 **NOTE**
>
> The activities described in this chapter may only be carried out by an electrician.

6.2 Function of DIP switches

There are two 8-pole DIP switches (banks) in the housing cover with which the wallbox can be configured.

Bank 2 (S2)

Bank 1 (S1)

OFF

ON

Configurable functions:

Bank	DIP switch	Function
1	1	No function (set to OFF)
	2	Unbalanced load limitation between the phases
	3	No function (set to OFF)
	4	Activate Modbus RTU
	5	Wallbox control, master/slave
	6	Activate KOSTAL Smart Energy Meter
	7	Activate convenience functions (e.g. **Solar Pure Mode**) for KOSTAL Smart Energy Meter
	8	No function
2	1–3	Max. charging current per phase
	4–5	No function (set to OFF)
	6–8	Maximum current for house connection

6.3 Example of DIP setting depending on application

> **ℹ️ NOTE**
>
> **Bank 2 (S2):** If the values for your installation deviate from this example, e.g. for a house connection fuse of only 50 A, this must be adapted using the DIP switches.
>
> Settings for **bank 2 (S2)** in this example:
>
> - The maximum charging current per phase is set to **16 A** (bank 2 / DIP 1-3).
> - The maximum current for the house connection is set to **63 A** (bank 2 / DIP 6-8).

ENECTOR without energy meter
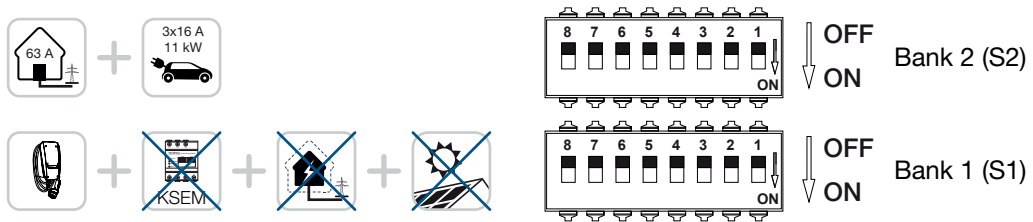
Bank	DIP switch							
	8	7	6	5	4	3	2	1
2	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
1	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF

ENECTOR with KOSTAL Smart Energy Meter and convenience functions
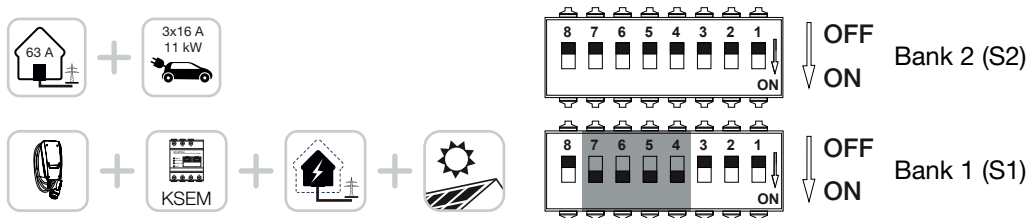
Bank	DIP switch							
	8	7	6	5	4	3	2	1
2	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF

Bank	DIP switch							
	8	7	6	5	4	3	2	1
1	OFF	ON	ON	ON	ON	OFF	OFF	OFF

ℹ NOTE

In order for the wallbox to be set up with the convenience functions in the KOSTAL Smart Energy Meter (KSEM), this function must first be activated via an activation code for the wallbox in the KSEM.

The activation code can be purchased from the KOSTAL Solar online shop.

To access the shop, go to: **shop.kostal-solar-electric.com**.

ENECTOR with KOSTAL Smart Energy Meter for blackout protection (house connection monitoring)
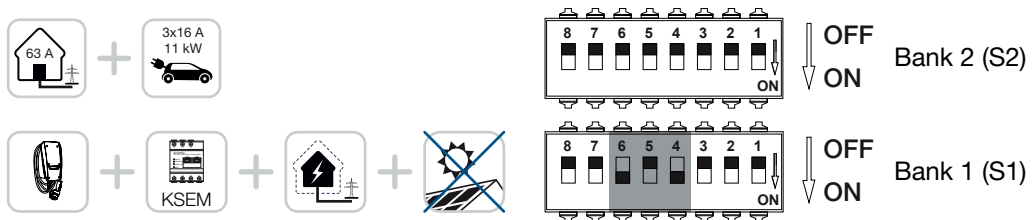
Bank	DIP switch							
	8	7	6	5	4	3	2	1
2	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
1	OFF	OFF	ON	OFF	ON	OFF	OFF	OFF

6.4 Settings for bank 1

The following settings can be configured via bank 1:

Configurable functions:

Bank	DIP switch	Function
1	1	No function (set to OFF)
	2	Unbalanced load limitation between the phases
	3	No function (set to OFF)
	4	Activate Modbus RTU
	5	Wallbox control, master/slave
	6	Activate KOSTAL Smart Energy Meter
	7	Activate convenience functions (e.g. **Solar Pure Mode**) for KOSTAL Smart Energy Meter
	8	No function (set to OFF)

Setting unbalanced load limitation

The unbalanced load monitoring between phases L1-L3 can be activated. If the unbalanced load between the phases is greater than 4.6 kVA, the charging power is reduced. In some countries, activation of this function is mandatory.

Configure the setting as desired.
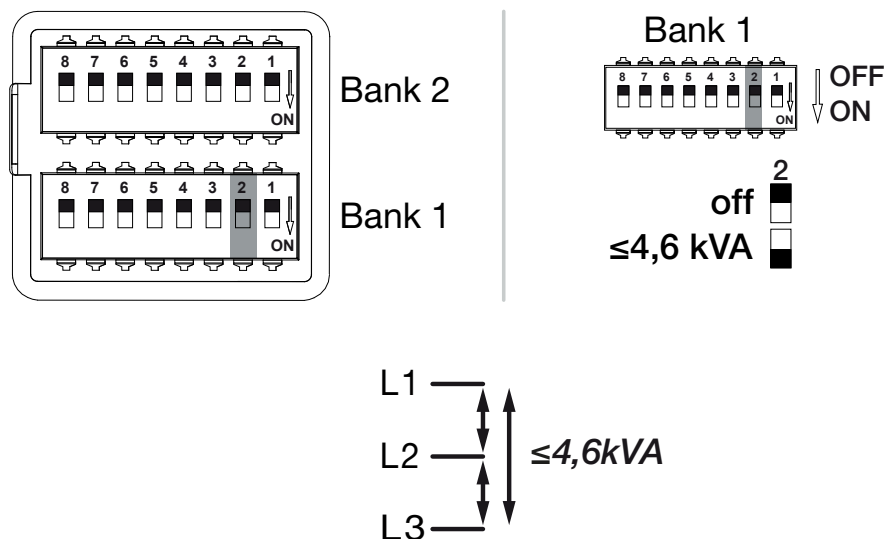
Configurable functions:

Bank	DIP switch		Function
1	2	OFF	Unbalanced load limitation deactivated
		ON	Unbalanced load limitation activated.

Activate Modbus RTU

If a Modbus RTU energy meter (KOSTAL Smart Energy Meter) is connected to the wallbox, the Modbus RTU protocol must be activated for this purpose.

Configure the setting as desired.
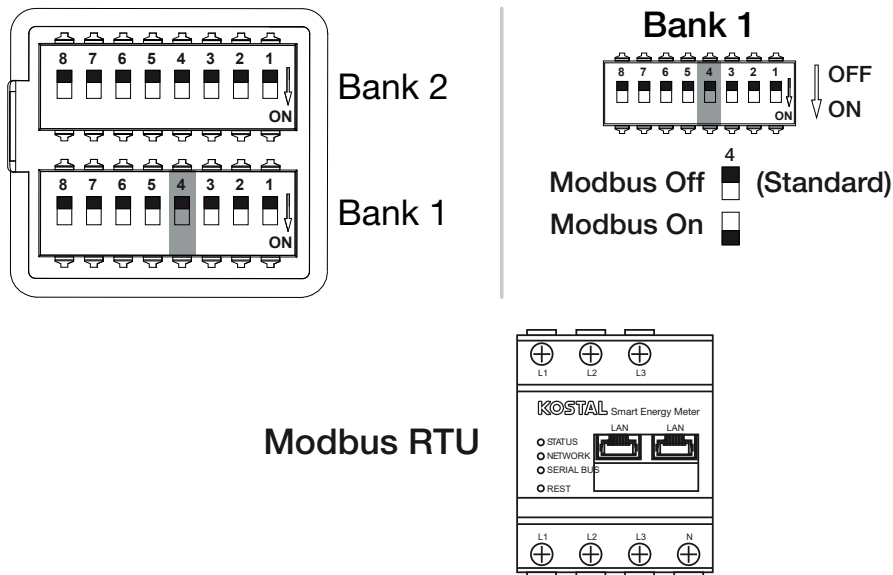
Configurable functions:

Bank	DIP switch		Function
1	4	OFF	Modbus RTU deactivated.
		ON	Modbus RTU activated for a Modbus RTU energy meter (KOSTAL Smart Energy Meter).

Application:

- ENECTOR with KOSTAL Smart Energy Meter and convenience functions
- ENECTOR with KOSTAL Smart Energy Meter for blackout protection (house connection monitoring)

Setting wallbox control

The wallbox can operate as a master or slave and therefore read or receive data or control information from a connected energy meter/manager ↗ **System overview, Page 29**

If a KOSTAL Smart Energy Meter (KSEM) is installed in the house network and the wallbox has been activated via an activation code in the KSEM, the wallbox must always be set up as a slave. In this case, the KSEM is the master and controls the wallbox, e.g. for grid monitoring (blackout protection), **Solar Pure Mode** (PV surplus charging) and **Solar Plus Mode** (solar-optimised charging).

If the KOSTAL Smart Energy Meter is connected to the wallbox as an energy meter, it can be used for grid monitoring (blackout protection).

ℹ️ **NOTE**

A list of approved energy meters and their purpose is available in the download area for the product on our homepage at

www.kostal-solar-electric.com/released-energy-meters-wallbox

Configure the setting as desired.
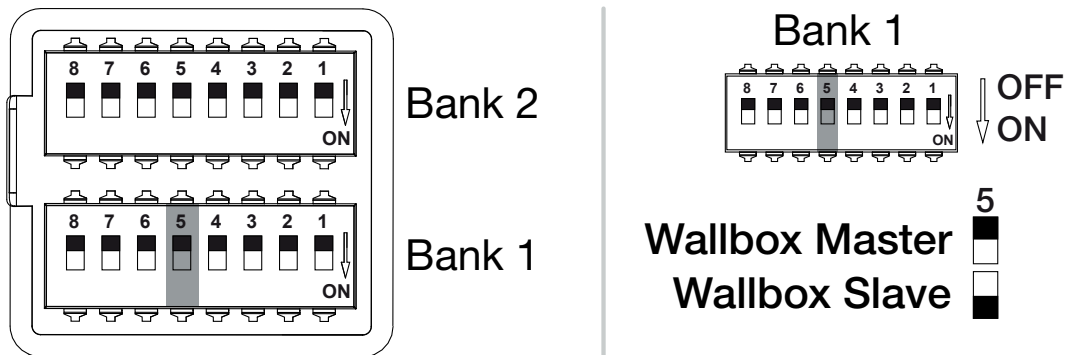
Configurable functions:

Bank	DIP switch		Function
1	5	OFF	The wallbox (master) reads the data from the energy meter (slave).
		ON	Control data is sent from the KOSTAL Smart Energy Meter (master) to the wallbox (slave).

Application:

- ENECTOR with KOSTAL Smart Energy Meter and convenience functions
- ENECTOR with KOSTAL Smart Energy Meter for blackout protection (house connection monitoring)

Activating KOSTAL Smart Energy Meter energy meter

> **ℹ NOTE**
>
> A list of approved energy meters and their purpose is available in the download area for the product on our homepage at
>
> **www.kostal-solar-electric.com/released-energy-meters-wallbox**
>
>

If the KOSTAL Smart Energy Meter (KSEM) is used as an energy manager, the range of functions can be extended by entering an activation code in the KSEM. These functions include, for example:

- Data transfer of charging values to the KOSTAL Solar Portal and diagrammatic depiction

- *Solar Power Mode* (solar charging)

- *Solar Plus Mode* (solar-optimised charging)

- *Lock Mode* (lock wallbox)

Configure the setting as desired.
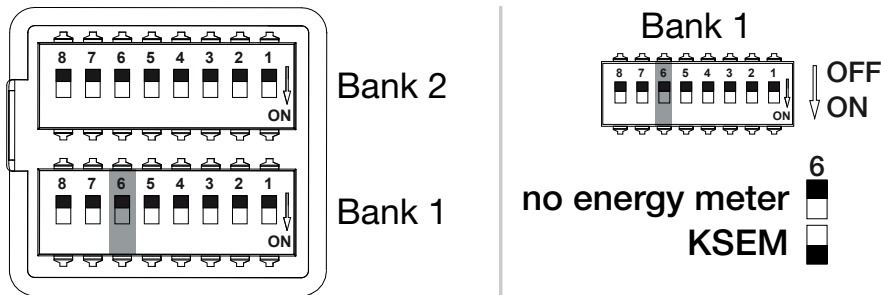
(KSEM) KOSTAL Smart Energy Meter

Modbus RTU Energy Meter
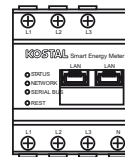
Configurable functions:

Bank	DIP switch		Function
1	6	OFF	No energy meter

Bank	DIP switch		Function
		ON	KOSTAL Smart Energy Meter as energy manager (master) with activation code

Activating convenience functions for KSEM

If a PV system is present and if used in combination with the **KOSTAL Smart Energy Meter** and an activation code, the electric vehicle can be charged using the solar power generated.

> ### ℹ NOTE
>
> In order for the wallbox to be set up with the convenience functions in the KOSTAL Smart Energy Meter (KSEM), this function must first be activated via an activation code for the wallbox in the KSEM.
>
> The activation code can be purchased from the KOSTAL Solar online shop.
> To access the shop, go to: **shop.kostal-solar-electric.com**.

The functions can be controlled via the KSEM.

These include:

- *Power Mode* (simple charging)
- *Solar Power Mode* (solar charging)
- *Solar Plus Mode* (solar-optimised charging)
- *Lock Mode* (lock wallbox)

Configure the setting as desired.
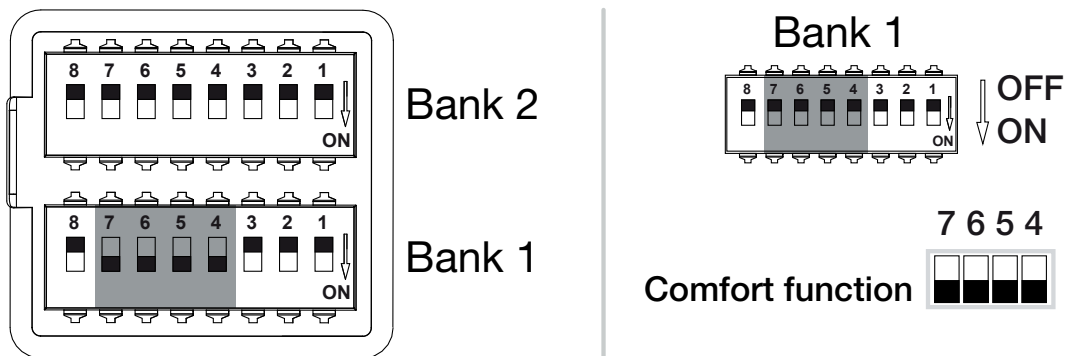
Configurable functions:

Bank	DIP switch		Function
1	7	ON	Convenience functions (solar charging) activated in combination with the KSEM
	6	ON	

Bank	DIP switch		Function
	5	ON	
	4	ON	

Application:

- ENECTOR with KOSTAL Smart Energy Meter and convenience function

6.5 Settings for bank 2

The following settings can be configured via bank 2:

Configurable functions:

Bank	DIP switch	Function
2	1-3	Max. charging current per phase
	4-5	No function (default setting OFF)
	6-8	Maximum current for house connection

Setting maximum charging current per phase

The max. charging current per phase for charging an electric vehicle can be set between 6-16 A. This must be compliant with the fuse protection (line circuit breaker / residual current device) of the wallbox.

Configure the setting as desired.
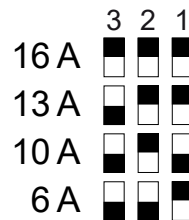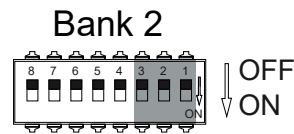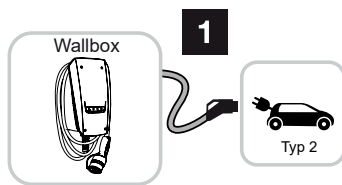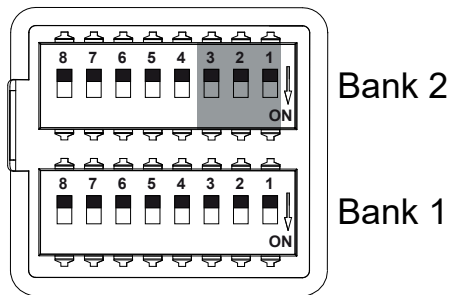
Configurable functions:

Bank	DIP switch			Charging current per phase (A)	Charging power (kW)	
					Connection	
	3	2	1		1-phase	3-phase
2	OFF	OFF	OFF	16	3.7	11
	ON	OFF	OFF	13	3.0	9
	ON	OFF	ON	10	2.3	6.9

Bank	DIP switch			Charging current per phase (A)	Charging power (kW) Connection	
	3	**2**	**1**		**1-phase**	**3-phase**
	ON	ON	OFF	6	1.4	4.1

Setting the house connection current

The maximum current per phase of the house connection must be set so that it is not overloaded when charging an electric vehicle (blackout protection).

> ℹ️ **NOTE**
>
> **Nature and source of hazard**
>
> The maximum current which can be set per phase of the house connection depends on the fuse protection at the grid connection point (e.g. 63 A) and house connection box (e.g. 50 A downstream of grid demand meter). The lowest fuse protection (in this example 50 A) must be set here.
>
> With a KOSTAL Smart Energy Meter and activated convenience functions, this setting for overload protection is automatically transferred.

Configure the setting as desired.
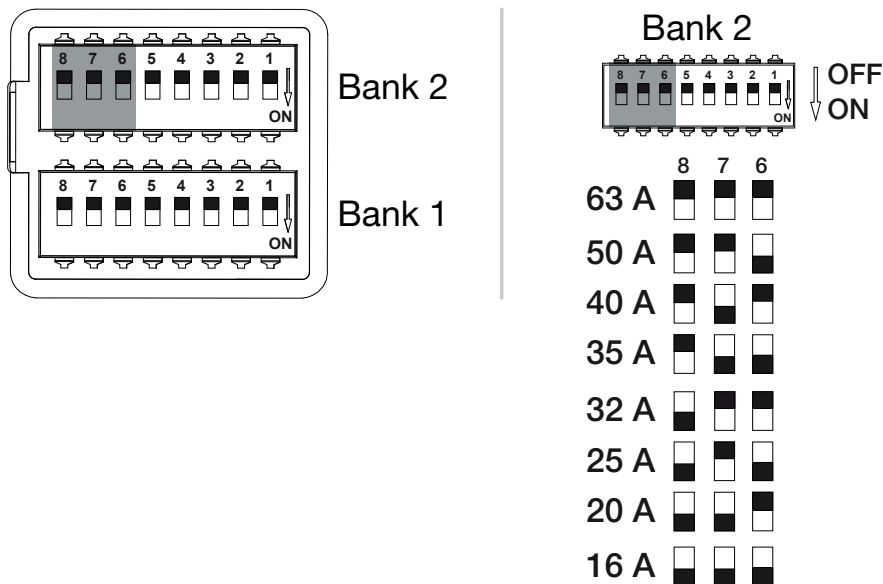
Configurable functions:

Bank	DIP switch			Charging current per phase (A)
	8	7	6	
2	OFF	OFF	OFF	63
	OFF	OFF	ON	50
	OFF	ON	OFF	40
	OFF	ON	ON	35
	ON	OFF	OFF	32
	ON	OFF	ON	25
	ON	ON	OFF	20
	ON	ON	ON	16

6.6 Closing wallbox
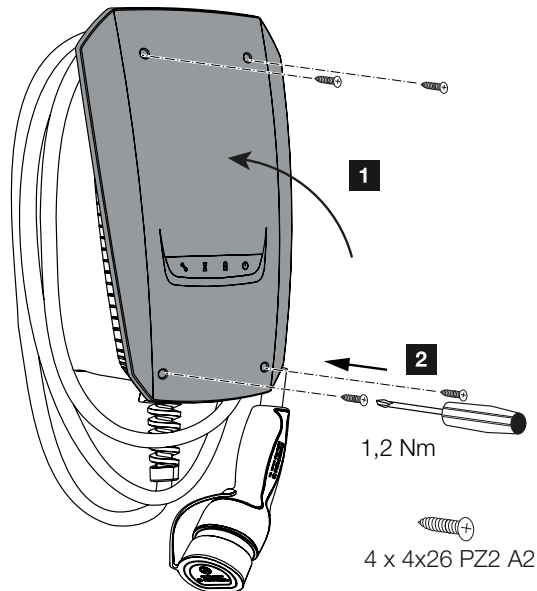
When all settings have been configured, the wallbox can be closed.

1. Remove foreign parts (e.g. leftover cable) from the wallbox.

2. Check that all cables are secure.

3. Fold up the housing cover.

4. Screw the housing cover and lower part of the housing together. Torque: 1.2 Nm.

✓ Wallbox closed

6.7 Switching on wallbox

Before switching on the wallbox, note the following:

> ⚠ **DANGER**
>
> **Risk of death due to electrical shock and discharge!**
>
> If a damaged device is used, people may be seriously injured or killed by electric shock.
>
> - Do not use the device if it is damaged.
> - Mark damaged device so that it is not used by other people.
> - Remedy damage immediately.
> - If necessary, take the device out of operation.

- Wallbox has been installed correctly.
- Wallbox is in proper condition.
- The safety devices required (residual current devices line circuit breaker) are installed in the house installation, functional and switched on in compliance with the relevant national regulations.
- Wallbox has been tested in accordance with IEC 60364-6 and the corresponding valid national regulations (e.g. DIN VDE 0100-600 in Germany) during initial commissioning.

> ℹ **NOTE**
>
> When commissioning for the first time, carry out an inspection of the device in accordance with IEC 60364-6 and the corresponding valid national regulations (e.g. DIN VDE 0100-600 in Germany).
>
> The inspection can be carried out in conjunction with a test box and a test device for standard-compliant testing. The test box simulates vehicle communication. Test boxes are commercially available.

If all the above points have been complied with, you can switch on the wallbox via the residual current device and line circuit breaker.

1. Switch on the residual current device.
2. Switch on the line circuit breaker.
→ The wallbox powers up.
→ *Standby* LED on the LED display lights up.
✓ Wallbox is in operation.

If the wallbox has been connected to a KOSTAL Smart Energy Meter as an energy meter and you have a PV system, the wallbox should be activated and set up via an activation code in the KOSTAL Smart Energy Meter ↗ **Setting up wallbox in the KSEM, Page 73**

7. Setting up wallbox in the KSEM

7.1 Possible configurations

The wallbox must be set up in the KOSTAL Smart Energy Meter (KSEM) so that the KSEM can control the wallbox or the wallbox can read data from the KSEM.

There are two ways of doing this:

- ENECTOR with KOSTAL Smart Energy Meter and convenience functions. The KSEM is an energy manager (master) and sends control signals to the wallbox. ↗ **Setting up ENECTOR with convenience functions in the KSEM, Page 75**

- ENECTOR with KOSTAL Smart Energy Meter for blackout protection (house connection monitoring). The KSEM is an energy meter (slave) and the wallbox reads data from the KSEM. ↗ **ENECTOR with KOSTAL Smart Energy Meter for blackout protection (house connection monitoring), Page 78**

7.2 Setting up ENECTOR with convenience functions in the KSEM

Setting up the wallbox with convenience functions in the KSEM provides a wide range of additional options. With a PV system, functions such as **Solar Pure Mode** or **Solar Plus Mode** are possible. These can be selected as a function via the KSEM interface or using the KOSTAL Solar App. An activation code is required to set up the wallbox in the KSEM.

ℹ️ NOTE

In order for the wallbox to be set up in the KOSTAL Smart Energy Meter (KSEM), this function must first be activated via an activation code in the KSEM.

The activation code can be purchased from the KOSTAL Solar online shop.

To access the shop, go to **shop.kostal-solar-electric.com.**

The following must be done to set up the wallbox with convenience functions in the KSEM:

- Buy activation code from the online KOSTAL shop.
- Enter activation code in the **Activation code** menu. The new **Wallbox**menu then appears.
- Add ENECTOR in the **Wallbox** menu.
- Add KOSTAL inverter in KSEM in the Inverter menu under devices. This sends the inverter data to the Solar Portal.
- Activate data transfer to the KOSTAL Solar Portal in the KSEM.
- Assign the KSEM to a system as a device in the KOSTAL Solar Portal.

Buying activation code from the online KOSTAL shop

1. The link **shop.kostal-solar-electric.com** will take you to the online KOSTAL Solar shop.
2. You can purchase a code to activate the wallbox in the KSEM under "Activation code".

Entering activation code in KOSTAL Smart Energy Meter

The activation code is entered via the KSEM user interface.

1. Log in to the KSEM on the user interface.
2. Go to **Activation code**.
3. Enter and confirm the 10-digit activation code for the wallbox.
→ The new **Wallbox**menu appears.

✔ Activation is complete.

Enabling RS485 interface

Go to **Modbus settings**. The RS485 interface to which wallbox communication is connected must be deactivated. Only then can the wallbox be assigned to an RS485 interface in the "Wallbox" menu.

Modbus RTU ⌄
Settings of serial interfaces

Interface RS485 A

Enable interface ⬤

Presetting | PLENTICORE / PIKO IQ ⌄ |

Advanced   ›

Interface RS485 B

Enable interface ◯

Presetting | User-defined ⌄ |

Advanced   ›

| RESET | SAVE |

1. Go to **Modbus settings**.

2. Under **Modbus RTU**, deactivate the RS485 interface (e.g. interface RS485 B) to which wallbox communication is connected.

3. Press the **Save** button to adopt the settings.

Setting up and configuring the wallbox

The points, wallbox connection, selection of functions, current status of the wallbox in relation to the connection and charging/discharging power can be displayed under "Wallbox".

1. The wallbox is set up in the KSEM via **Available charging devices** . To do this, select the **Add** button or the cogwheel on the right.

2. Give the wallbox a name and select a free RS485 interface (e.g. RS485 B) via which the wallbox is connected to the KSEM.

3. Save your input.

✔ Wallbox is set up.

You can then choose between the different charging modes.

Adding inverters in KOSTAL Smart Energy Meter

To ensure that all data is displayed correctly in the KOSTAL Solar Portal in combination with the wallbox, the KOSTAL inverter must be added under **Inverter > Devices** . Further information can be found in the KOSTAL Smart Energy Meter operating manual.

Activating data transfer to the KOSTAL Solar Portal in the KOSTAL Smart Energy Meter

Data transfer must be activated so that the wallbox data is also visible in the KOSTAL Solar Portal.

1. Go to **Solar Portal**, press the **Activate solar portal** switch.

✔ Transfer is activated

ℹ　NOTE

Incorrect time information during data transfer to the KOSTAL Solar Portal

Check the time and time zone set in the KOSTAL Smart Energy Meter and correct them if necessary. If the time is set incorrectly, the data will be transferred from KSEM with incorrect time information and will not be displayed correctly in the KOSTAL Solar Portal.

Assigning the KOSTAL Smart Energy Meter to a system in the KOSTAL Solar Portal

All KOSTAL inverters and the KOSTAL Smart Energy Meter must be assigned to a PV system in the **KOSTAL Solar Portal**. If this was not been done when setting up your PV system, you must do it now.

1. To do this, log in to the **KOSTAL Solar Portal**.

2. Select a system or create a new one.

3. Now add the KOSTAL Smart Energy Meter to this system using the article and serial number. These can be found in the **Solar Portal** menu in the KOSTAL Smart Energy Meter:

✔ The KOSTAL Smart Energy Meter has been set up in the **KOSTAL Solar Portal**. This means that the data can now be accessed in the **KOSTAL Solar Portal** and in the KOSTAL Solar App.

7.3 ENECTOR with KOSTAL Smart Energy Meter for blackout protection (house connection monitoring)

If the ENECTOR is connected to a KOSTAL Smart Energy Meter and this is only to be used for blackout protection (house connection monitoring), the RS485 interface used must be configured in the KOSTAL Smart Energy Meter.

Only then can the ENECTOR read data from the KOSTAL Smart Energy Meter.

Do this by performing the following steps:

1. Call up the online interface of the KOSTAL Smart Energy Meter.

2. Call up the Modbus configuration under **Modbus settings** .

3. Activate the RS485 interface connected to the ENECTOR (e.g. **RS485 B)** .
   Select the **User-defined** value under **Presettings** and configure the following settings under **Advanced.**

Parameter	Value
Interface	RS485 B
Presetting	User-defined
Mode	Slave
Slave address	2
Baud rate	57600
Data bits	8
Parity	None
Stop bit	2

1. Press the **Save** button to adopt the settings.

✓ The interface to the ENECTOR has been set up in the KOSTAL Smart Energy Meter.

8. Operation

Authorisation

The wallbox can be used without authorisation. The electric vehicle can be charged at maximum power.

The wallbox can be locked via the KOSTAL Smart Energy Meter with convenience functions.

Starting the charging process on the vehicle

> ⚠ **DANGER**
>
> **Risk of injury if using unauthorised tools**
>
> There is a risk of electric shock or cable fire if adapter plugs, extensions or additional charging cables are used in conjunction with the device.
>
> Only use the charging cable intended for the vehicle and device.
>
> Never use adapter plugs, extensions or additional charging cables to charge the vehicle.

1. Unwind the charging cable completely.
2. Remove protective cap.
3. Connect charging cable to vehicle.
✓ Vehicle is being charged.

Starting charging process on vehicle with convenience function

1. Unwind the charging cable completely.
2. Remove protective cap.
3. Connect charging cable to vehicle.
4. Optional: Select charging mode via KOSTAL Smart Energy Meter or optional push-button.
   - *Power Mode* (simple charging)
   - *Solar Pure Mode* (solar charging)
   - *Solar Plus Mode* (solar-optimised charging)

> ℹ️ **NOTE**
>
> **The charging mode cannot be selected.**
>
> If the wallbox has been set to **Lock Mode** via the KOSTAL Smart Energy Meter, no other mode can be selected via the optional push-button.
>
> ■ Wallbox can only be enabled via the KSEM.

✔ Vehicle is being charged.

Ending charging process

1. End the charging process via the electric vehicle or via the KOSTAL Smart Energy Meter online interface.
2. Remove the charging cable from the vehicle by the plug.

> ℹ️ **NOTE**
>
> Damage to the charging cable
>
> Tensile stress on the charging cable may result in cable breakage and other damage.
>
> Only remove the charging cable from the electric vehicle using the plug.

3. Put on the protective cap.
4. Hang up the charging cable without kinks.

✔ Charging process completed.

9. Servicing

Maintenance

> ⚠️ **DANGER**
>
> **Risk of electric shock from damaged devices**
>
> If a damaged device is used, people may be seriously injured or killed by electric shock.
>
> - Do not use the device if it is damaged.
> - Mark damaged device so that it is not used by other people.
> - Have damage repaired immediately by an electrician.
> - If necessary, have the device taken out of operation by an electrician.

Regular checking and maintenance work helps ensure trouble-free and safe operation of the wallbox and helps to extend its service life. Potential sources of error can therefore be detected at an early stage and hazards avoided. If damage to the wallbox is detected, it must be repaired immediately by an electrician.

- Daily or before each charge, check that the wallbox is ready for operation and has no external damage.

Examples of damage:

- Defective housing (e.g. severe deformations, cracks, fractures)
- Defective or missing components (e.g. protective elements)
- Illegible or missing safety stickers.

Maintenance intervals

> 🛈 **NOTE**
>
> The following activities may only be carried out by an electrician.

Select the maintenance intervals taking account of the following aspects:

- Age and condition of the wallbox
- Environmental influences
- Demands
- Latest test protocols

Carry out maintenance at the following intervals at the very least:

Components Six-monthly	Maintenance work
Electrical switching and safety devices	Check residual current devices, line circuit breakers, etc. for visual defects.
	Check the function of residual current devices.
Housing outside	Check wallbox for defects and damage.
	Check wallbox for cleanliness. Clean wallbox if necessary.
Charging cable	Check charging cable for defects and damage (e.g. kinks, cracks).
	Repeat measurements and tests according to the corresponding valid national regulations (e.g. VDE 0701/702 in Germany).
LED display panel	Check that LED display panel is working properly and legible. Restart wallbox (the LEDs light up one after the other during a restart).

Components Annually	Maintenance work
Terminals	Check terminals of the supply cable.
Wallbox	Repeat measurements and tests according to IEC 60364-6 and the corresponding valid national regulations (e.g. DIN VDE 0105-100 in Germany).

- Correctly remedy any damage to the wallbox.
- Ensure adequate documentation of maintenance.
- If necessary, contact the service department.

Cleaning

The wallbox can be cleaned dry or damp, depending on the operating conditions and dirt levels. Cleaning is carried out exclusively from the outside.

> ⚡ **DANGER**
>
> **Risk of electric shock from damaged devices**
>
> The device contains electrical components that are under high voltage. If handled improperly, especially if moisture is involved and the housing is open, people may be seriously injured by electric shock.

Incorrect cleaning can cause damage to the housing or components.

- Avoid running water and make sure that water does not come into contact with live parts.
- Do not use high-pressure cleaning equipment.
- Only use tools (e.g. brushes, cleaning agents) that are suitable for plastic surfaces.
- Do not use aggressive cleaning agents or chemicals.

Procedure:

- Remove coarse dust and dirt with a hand brush with soft bristles.
- If necessary, dampen a clean cloth suitable for plastic surfaces with water and wipe the wallbox thoroughly.
- Only clean the charging cable when it is unplugged and with the protective cap on.

10. Troubleshooting

If a fault occurs, the *fault* symbol on the LED display panel lights up or flashes. The wallbox cannot be used until the fault has been rectified.

If the wallbox has been set up in the KOSTAL Smart Energy Meter, the event messages are displayed in KSEM and in the KOSTAL Solar Portal. Explanations of the event messages can be found on the following pages.

Faults not displayed:

- In the event of major interference on the grid side, the wallbox may restart in order to reinitialise all system components. A charging process that had previously been started is then resumed. If the error occurs frequently, check the surroundings of the installation for EMC interference.

- *Lock Mode* cannot be cancelled
  If the wallbox is in *Lock Mode* (only possible with KOSTAL Smart Energy Meter with convenience functions) and this mode can no longer be cancelled via the KOSTAL Smart Energy Meter, the wallbox must be restarted via the line circuit breaker.

Red LED flashing:

The fault can be remedied by the user or the operator.

Potential faults:

- Maximum charging current exceeded by electric vehicle

- DC residual current

- Excess temperature

When troubleshooting, work in the following order:

- Stop charging process and disconnect the charging cable.

- Wait approx. 20 seconds.

- Reconnect charging cable and start charging process.

- If necessary, disconnect charging cable and wait until the wallbox has cooled down.

If you are not able to rectify the fault, please contact your service partner or our service hotline.

Red LED lit up:

The fault can only be rectified by an electrician.

> **NOTE**
>
> The following activities may only be carried out by an electrician.

Potential fault	Potential remedy
Wallbox incorrectly configured.	Check the configuration of the DIP switches.
Switching relay no longer switching off.	Wallbox is defective and can only be repaired by the service team.
The DC residual current detection self-test fails.	Wallbox is defective and can only be repaired by the service team.

Event messages in the KOSTAL Smart Energy Meter or KOSTAL Solar Portal

ID	Handling instruction for user	[1] preventing charging	[2] aborting charging	LED fault
2	No action [3]	-	x	off
13	Contact service team	x	-	Lit up
14	No action [3]	-	-	off
15	No action [3]	-	-	off
16	No action [3]	-	-	off
17	No action [3]	-	-	off
18	No action [3]	-	-	off
19	No action [3]	-	-	off
21	Contact service team	x	-	Lit up
22	Contact service team	x	-	Lit up
23	Contact service team	x	-	Lit up
25	Contact service team	x	-	Lit up
32	No action [3]	-	-	off
450	Check installation	x	-	Lit up
1300	No action [3]	x	-	off

[1] Error preventing charging

[2] Error aborting charging

[3] If the error occurs several times/permanently, please contact the support team.

ID	Handling instruction for user	[1] preventing charging	[2] aborting charging	LED fault
2001	Check installation	x	x	Flashing
2005	Incompatible electric vehicle	x	x	Flashing
2008	No action [3]	-	-	off
2009	Incompatible electric vehicle	x	-	Flashing
2010	Restart charging process	x	x	Flashing
2011	Restart charging process	-	x	Flashing
2050	Restart charging process	x	-	Flashing
2051	Restart charging process	x	-	Flashing
2052	Restart charging process	-	-	Flashing
2100	Restart charging process, reconnect charging cable or test another charging cable	x	-	Flashing
2101	Reconnect charging cable or test another charging cable	-	-	off
2300	Check AC grid connection	x	x	Flashing
2301	Check AC grid connection	x	x	Flashing
2302	Check AC grid connection	x	x	Flashing
2303	Check AC grid connection	x	x	Flashing
2304	Check AC grid connection	x	x	Flashing
2305	Check AC grid connection	x	x	Flashing
2323	Check configuration	x	x	Lit up
2414	Restart charging process	x	x	Flashing
2415	Restart charging process	x	x	Flashing
2416	Contact service team	x	-	Lit up
2417	Contact service team	x	x	Lit up
2421	Contact service team	x	x	Lit up
2422	Contact service team	x	x	Lit up
2426	Restart charging process	x	x	Flashing
33072	No action [3]	-	-	off
33296	No action [3]	-	-	off

11. Updating firmware

When updating the firmware, you have the option of importing the firmware to the wallbox. The wallbox software is updated to the latest version.

The firmware can be updated in two ways:

- Via the KOSTAL Smart Energy Meter from wallbox FW version 2021.50.**9128**-202. This update can be carried out by the user.

- Directly via the wallbox.
  The update may only be installed by an electrician.

Carrying out FW update via KOSTAL Smart Energy Meter

The firmware is updated on the wallbox via the KOSTAL Smart Energy Meter.

The following requirements must be met:

- The wallbox is connected to the KOSTAL Smart Energy Meter via an RS485 connection.

- The convenience functions have been activated for the wallbox in the KOSTAL Smart Energy Meter.

- The wallbox has been set up in the KOSTAL Smart Energy Meter.

- The wallbox must support Modbus version 1.1 (as of wallbox FW: 2021.50.**9128**-202). The FW version can be queried by going to *Wallbox > Settings (cogwheel) > Available charging devices > i* (stands for details).

Perform the following steps for the firmware update:

1. Download the latest wallbox firmware from our website under *Download > Wallbox > ENECTOR AC 3.7/11 kW > Update*.

2. Go to *Wallbox > Settings (cogwheel) > Available charging devices > Firmware update*.

3. Use the *Browse* button to select the file on your PC.

4. Press *Update* to start the update.

5. After another question, the new firmware is uploaded and installed on the wallbox.

➔ Finally, the wallbox is restarted. This process may take several minutes.

✓ The firmware on the wallbox has been updated.

Performing a FW update via the wallbox

To update the wallbox firmware, a CAN/USB cable, a PC and the configuration software are required. You can obtain these from our KOSTAL Service.

🏠   **NOTE**

The update may only be installed by an electrician.

The firmware can only be imported when the wallbox is switched on.

⚠   **DANGER**

Risk of death due to electrical shock and discharge!

Device is live. Only work with protective equipment.

---

1. De-energise device via line circuit breaker.

2. Unscrew housing cover.

3. Fold down the housing cover.

4. Plug CAN/USB cable into the CAN interface in wallbox and connect it to the PC.
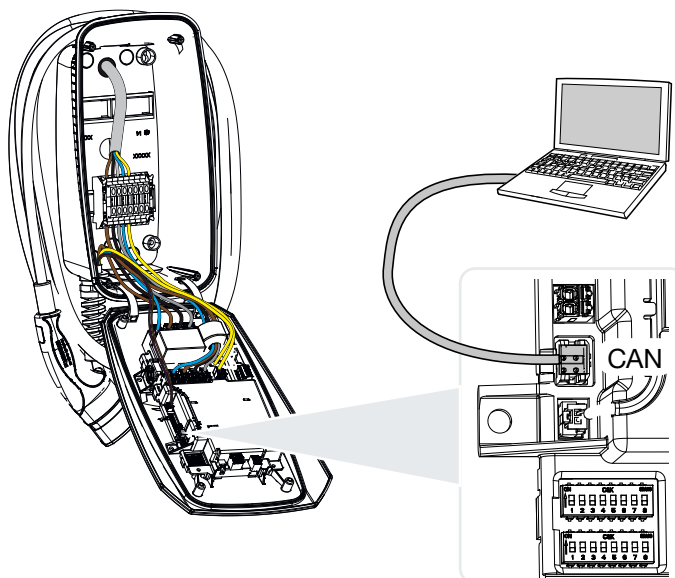
5. Switch on wallbox via the line circuit breaker.

6. Launch configuration software on the PC. A description of the configuration software is included in the software package.

7. Install new firmware on wallbox via the configuration software.

8. De-energise device via line circuit breaker.

9. Remove connection between PC and wallbox again.

10. Fold up the housing cover.

11. Screw the housing cover and lower part of the housing together. Torque: 1.2 Nm.

12. Switch on wallbox via the line circuit breaker.

✓ The update has been carried out.

12. Warranty and service

Information about the service and warranty conditions can be found in the download area for the product at **www.kostal-solar-electric.com**.

For service information and in the event of parts being needed, we require your device type and the serial number. You will find this information on the type plate on the exterior of the housing.

If you have any questions about the wallbox, please contact your relevant service partner or our service hotline:

- Germany and other countries (language: German, English):
  +49 (0)761 477 44-222

- Switzerland:
  +41 32 5800 225

- France, Belgium, Luxembourg:
  +33 16138 4117

- Greece:
  +30 2310 477 555

- Italy:
  +39 011 97 82 420

- Poland:
  +48 22 153 14 98

- Spain, Portugal (language: Spanish, English):
  +34 961 824 927

Spare parts

If spare parts or accessories are required for troubleshooting, use only original spare parts and accessories manufactured and/or approved by the manufacturer.

13. Handover to the operator

Following successful installation and commissioning, all documents are to be handed over to the operator. The operator must be made aware of the following points:

- Safety when using the wallbox

- Appropriate procedure for checking and servicing the wallbox.

- Meaning of the LEDs.

- Position and function of the AC line circuit breaker to switch off the wallbox or perform a restart.

- Contact person in the event of a fault.

14. Decommissioning / disposal

To dismantle the wallbox, proceed as follows:

> 🛡 **NOTE**
>
> The following activities may only be carried out by an electrician.

1. De-energise the wallbox on the AC side.

> ⚠ **DANGER**
>
> **Risk of death due to electrical shock and discharge!**
>
> De-energise the device, secure it against restart, check that it is voltage-free.

2. Unscrew cover of wallbox.
3. Remove all cables that have been routed into the housing from the terminal block.
4. Lead cables out of the housing through the membrane cable entry.
5. Remove plugs and screws from the rear.
6. Take wallbox off the wall.
7. Close wallbox.

Proper disposal

Electronic equipment labelled with a dustbin with a line through it may not be disposed of with household waste. This equipment can be handed in to waste collection points free of charge.

Find out about the local requirements for the separate collection of electrical and electronic equipment in your country.

Deletion of personal data

It is the user's responsibility to delete all personal data from the device before decommissioning.

15. Storage

Proper storage can have a positive impact on and maintain the operability of the wallbox.

- Clean wallbox before putting into storage.
- Store wallbox in its original packaging or with suitable packaging materials in a clean and dry place.
- Observe permissible storage conditions.

Permissible storage conditions	
Storage temperature	-5 °C to 35 °C max. 2 years
	-40 °C to 85 °C max. 24 hours
Average temperature in 24 hours	< 35 °C
Relative humidity (non-condensing)	max. 95 %

16. Technical data

Subject to technical changes. Errors excepted.
You can find current information at **www.kostal-solar-electric.com**.

KOSTAL wallbox	Unit	ENECTOR AC 3.7/11
Mode 3 charging power (single-phase / three-phase)	kW	3.7 / 11
Nominal voltage (U,n) AC ±10 %	V	230 / 400
Nominal frequency (fn)	Hz	50
Nominal current (I,na)	A	up to 16
Maximum preliminary fuse	A	According to type plate / configuration
Protection class - wallbox		IP 54
Protection class - coupling/plug		IP 44
Protective class		I
Standby consumption	W	< 1
Height/width/depth	mm	400/260/160
Weight	kg	3.9
Rated insulation voltage U,i [V]	V	500
Rated impulse withstand voltage (U,imp)	kV	4
Rated current of a charging point (I,nC)	A	16, 1-phase / 3-phase
Conditional rated short-circuit current (I,cc)	kA	1.1
Rated diversity factor (RDF)		1
Degree of contamination		3
Overvoltage category		III
System by type of earth connection		TN / TT
Installation		Outdoor or indoor
Fixed / mobile		Fixed
Usage		AEVCS
External design		Wall mounting
EMC classification		A / B
Impact resistance		IK10
Screw terminals for supply cable AC	mm^2	max. rigid 5 × 6 / flexible 5 × 4
Terminal strip for communication cable	mm^2	max. 0.5 -2.5

KOSTAL wallbox	Unit	ENECTOR AC 3.7/11
Ambient temperature (with derating)	°C	-25…40 (50)
Max. operating altitude above sea level	m	2000
Max. relative humidity (non-condensing)	%	95
Directives		CE, EN 61851, DIN IEC / TS 61439-7

www.kostal-solar-electric.com