



Smart
connections.

Operating instructions KOSTAL Solar Portal

Legal notice

KOSTAL Solar Electric GmbH
Hanferstraße 6
79108 Freiburg i. Br.
Germany
Phone +49 (0)761 477 44 - 100
Fax +49 (0)761 477 44 - 111
www.kostal-solar-electric.com

Exclusion of liability

All names, trademarks, product names or 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 or warranty 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 the importance of language with regard to the equality of women and men and always makes an effort to reflect this in the documentation. Nevertheless, for the sake of readability we are unable to use non-gender-specific terms throughout and use the masculine form instead.

© 2020 KOSTAL Solar Electric GmbH

All rights reserved by KOSTAL Solar Electric GmbH, including those of reproduction by photocopy and storage in electronic media. Commercial use or distribution of the texts, displayed models, diagrams and photographs appearing in this product is not permitted. This manual may not be reproduced, stored, transmitted or translated in any form or by means of any medium, in whole or in part, without prior written permission.

Contents

1.	Proper use	5
2.	About this manual	6
2.1	Navigation through the document	7
2.2	Notes in this manual	8
2.3	Warnings	9
2.4	Warning symbols	10
2.5	Information notes	11
2.6	Symbols used	12
3.	Prerequisites for using the KOSTAL Solar Portal	13
3.1	PV systems with KOSTAL Smart Energy Meter	14
3.2	Connecting the inverter and computer	18
3.3	Activating data transfer to the KOSTAL Solar Portal via Webserver	19
3.4	Activating data transfer to the KOSTAL Solar Portal on the inverter	21
4.	The KOSTAL Solar Portal	23
4.1	Creating a system in the KOSTAL Solar Portal	25
4.2	System overview	28

Thank you for choosing the KOSTAL Solar Portal from KOSTAL Solar Electric GmbH!

We hope you enjoy consistently high energy yields with the KOSTAL solar inverter and your photovoltaic system.

If you have any technical questions, please call our service hotline:

- Germany and other countries¹
+49 (0)761 477 44 - 222

¹ Language: German, English

- Switzerland
+41 32 5800 225

² Language: Spanish, English

- France, Belgium, Luxembourg
+33 16138 4117

- Greece
+30 2310 477 555

- Italy
+39 011 97 82 420

- Spain, Portugal²
+34 961 824 927

1. Proper use

The KOSTAL Solar Portal, manufactured by KOSTAL Solar Electric GmbH, is a free Internet platform for monitoring PV systems.

The KOSTAL solar inverter sends the PV system's yield data and event messages to the KOSTAL Solar Portal via the Internet.

The information is then stored in the KOSTAL Solar Portal. You can view and call up this information via the Internet.

2. About this manual

Read this manual carefully in its entirety. It contains step-by-step instructions.

We recommend you print them out and follow them step-by-step to set up the KOSTAL Solar Portal.

Most of the user guidelines are self-explanatory. Every webpage has its own help texts. To view these texts, simply click on the linked word “More”.

The most recent version of the operating manual for your product is available in the [download area at www.kostal-solar-electric.com](http://www.kostal-solar-electric.com).

Target group

This manual is intended for PV system installers who set up PV plants and put them into operation. Technical expertise is required to use the KOSTAL Solar Portal correctly. For this reason, we recommend the KOSTAL Solar Portal is only installed by a properly qualified technician.

Information concerning your safety or that of the unit is specifically highlighted.

2.1 Navigation through the document

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

One of these is the navigation bar in the header of each page. By clicking here, you are taken to the overview pages of the individual chapters.

The table of contents can also be used in this way: From the index at the beginning of each chapter you can go to the indicated sub-chapter with a click.

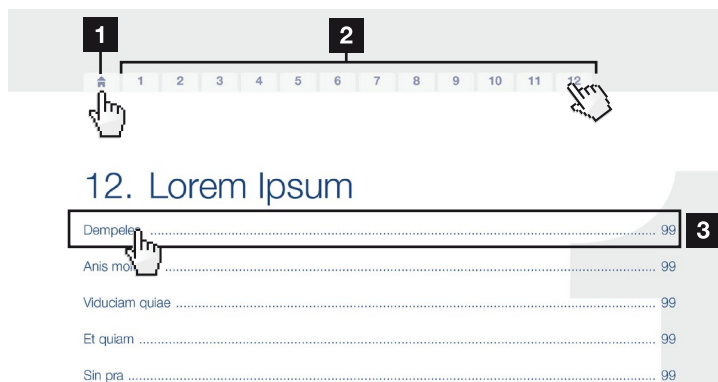


Fig. 1: Navigation through the document

- 1** Calling up the main table of contents
- 2** Navigation bar
- 3** Tables of contents

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

Ch. 1

Fig. 1, It. 2

Fig. 2: Examples of cross-references

2.2 Notes in this manual

Installation

Installing the wall mount and hanging the inverter

- Mark the positions of the drill holes at the installation site by using the wall mount as a drilling template.
- Drill holes and insert wall anchors if necessary.
- Screw the wall mount to the intended surface.
- Use the supplied screws.

Connecting AC-side

We recommend a mains cable with the cross-section $3 \times 2.5 \text{ mm}^2$. The outer diameter of the cable can be 9...17 mm, the cross-section of the individual conductors can be a max. of 4 mm^2 for flexible cables and a max. of 6 mm^2 for rigid cables. For flexible cables, we recommend using core end sleeves.

Remove the sheath and the insulation of the mains cable as much as needed.

First thread the unscrewed union nut and then the sealing ring over the cable.

DANGER

Risk of death due to electrical shock
Always disconnect the device from the power supply during installation and before maintenance and repairs and lock it to prevent it being switched back on.

IMPORTANT NOTE

Press the blind plug and the sealing ring out of the screw connection from the inside outwards using a screwdriver or similar implement.

NOTE

To connect the AC and DC cables, the inverter is equipped with spring-loaded terminal strips.

Fig. 3: Safety instructions in this manual

- 1 Reference icon within the instruction text
- 2 Warning
- 3 Information note
- 4 Other notes

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

2.3 Warnings

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

Each warning consists of the following elements:

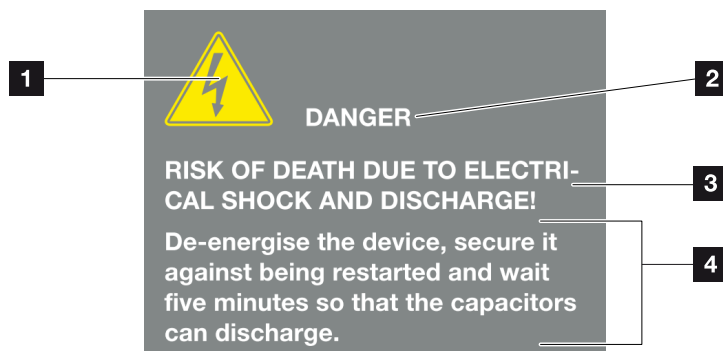


Fig. 4: Structure of warnings

- 1 Warning symbol
- 2 Signal word
- 3 Type of danger
- 4 Corrective actions

2.4 Warning symbols



Danger



Danger due to electrical shock and discharge

Signal words

Signal words are used to identify the severity of the danger.

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, may result in minor or moderate injury or property damage.

2.5 Information notes

Information notes contain important instructions for the installation and smooth operation of the backup unit. These must be followed at all times. The information notes also point out that failure to observe can result in damage to property or financial damages.

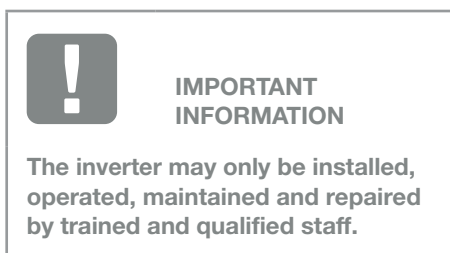


Fig. 5: Example of an information note

Symbols within the information notes



Important information



Damage to property possible

Other notes

These contain additional information or tips.



INFO

This is additional information.

Fig. 6: Example of an information note

Symbols within the additional notes



Information or tip



Enlarged view

2.6 Symbols used



Symbol	Meaning
1., 2., 3. ...	Sequential steps in a handling instruction
➔	Effect of a handling instruction
✓	Final result of a handling instruction
📌	Cross-reference to other places in the document or to other documents
■	List

Tab. 1: Symbols and icons used


Abbreviations used

Abbreviation	Explanation
Tab.	Table
Fig.	Figure
It.	Item
Ch.	Chapter

3. Prerequisites for using the KOSTAL Solar Portal

- The inverter must have a connection to the Internet.
- The inverter must not yet be assigned and registered to a system.
- If a KOSTAL Smart Energy Meter is installed in the system, it can transmit data to the solar portal. In PV systems with several inverters, it should also be integrated in the KOSTAL Solar Portal.  **Ch. 3.1** 

To use the KOSTAL Solar Portal, follow these two steps:

1. Data transfer to the KOSTAL Solar Portal must be activated in the inverter.
(Activation can be performed using the Webserver or the inverter control panel.) 
2. Register (free of charge) on the KOSTAL Solar Electric GmbH website to use the KOSTAL Solar Portal.



INFO

KOSTAL Smart Energy Meter
firmware version 1.2.1 required.



INFO

If there are several inverters in a system, data transfer to the KOSTAL Solar Portal must be set up separately for each inverter.

3.1 PV systems with KOSTAL Smart Energy Meter

In all PV systems in which a KOSTAL Smart Energy Meter has been installed at the grid connection point, this meter can transmit data to the KOSTAL Solar Portal. However, this is not necessary for all PV system variants. In addition, transmission must be activated in the KOSTAL Smart Energy Meter. Please refer to the operating manual for the KOSTAL Smart Energy Meter.



INFO

KOSTAL Smart Energy Meter
firmware version 1.2.1 required.

In principle, the PLENTICORE plus or PIKO IQ can transmit all the required data to the KOSTAL Solar Portal as a standalone device provided that the KOSTAL Smart Energy Meter is connected via RS485 and set up in the inverter.

In PV systems with a PIKO 4.2 - 20, if the KOSTAL Smart Energy Meter is connected via LAN/TCP, the KOSTAL Smart Energy Meter can also transmit data to the KOSTAL Solar Portal. In this case, the KOSTAL Smart Energy Meter in the KOSTAL Solar Portal must be integrated into the system in order to visualise the home consumption/self-consumption.

For PV systems with a PLENTICORE plus with battery and additional inverters in a PV system, the KOSTAL Smart Energy Meter must be installed at the grid connection point. In this case, the KOSTAL Smart Energy Meter in the KOSTAL Solar Portal must be integrated into the system in order to visualise the home consumption/self-consumption.

For PV systems with third-party inverters, the KOSTAL Smart Energy Meter can be used to record at least the entire feed-in to the public grid (all inverters including the third-party inverters). Direct consumption of the third-party inverters cannot currently be calculated with this setup because the information on the generation data of the third-party inverter is not transferred to the KOSTAL Smart Energy Meter.

PV system types and device set-up in the KOSTAL Solar Portal

■ 1 x PLENTICORE plus

PLENTICORE plus with and without battery storage with connected and set-up KOSTAL Smart Energy Meter via RS485 on the inverter.

The PLENTICORE plus transmits data to the KOSTAL Solar Portal and must be assigned to a system and set up in the KOSTAL Solar Portal.

The KOSTAL Smart Energy Meter does **not** need to be set up in the KOSTAL Solar Portal.

■ 1 x PIKO IQ

PIKO IQ with connected and set-up KOSTAL Smart Energy Meter via RS485 on the inverter.

The PIKO IQ transmits data to the KOSTAL Solar Portal and must be assigned to a system and set up in the KOSTAL Solar Portal.

The KOSTAL Smart Energy Meter does **not** need to be set up in the KOSTAL Solar Portal.

■ 1 x PIKO MP plus as PV inverter

PIKO MP plus with connected and set-up KOSTAL Smart Energy Meter via RS485 on the inverter.

The PIKO MP plus transmits data to the KOSTAL Solar Portal and must be assigned to a system and set up in the KOSTAL Solar Portal.

The KOSTAL Smart Energy Meter does **not** need to be set up in the KOSTAL Solar Portal.

- **1 x PIKO MP plus as hybrid/battery inverter**

PIKO MP plus with connected BYD battery storage and KOSTAL Smart Energy Meter.

The inverter and the KOSTAL Smart Energy Meter transmit data to the KOSTAL Solar Portal. Both devices (inverter and KOSTAL Smart Energy Meter) must be assigned to a system and set up in the KOSTAL Solar Portal.

- **1 x PIKO 4.2-20 or 1 x PIKO BA with connected PIKO BA sensor**

The PIKO transmits data to the KOSTAL Solar Portal and must be assigned to a system and set up in the KOSTAL Solar Portal.

However, the difference here is the fact that the inverter can only record data provided that it is receiving energy from the solar modules or battery. As soon as this is no longer the case, no more home consumption can be recorded.

- **1 to n PIKO 4.2-20 and KSEM**

PIKO 4.2-20 with KOSTAL Smart Energy Meter at the grid connection point.

All inverters and the KOSTAL Smart Energy Meter transmit data to the KOSTAL Solar Portal and must be assigned to a system and set up in the KOSTAL Solar Portal.

- **Systems with several KOSTAL solar inverters, PLENTICORE plus, PIKO IQ**

The KOSTAL Smart Energy Meter must be installed at the grid connection point.

All inverters and the KOSTAL Smart Energy Meter transmit data to the KOSTAL Solar Portal and must be assigned to a system and set up in the KOSTAL Solar Portal.

- **Systems with several KOSTAL solar inverters and one PLENTICORE BI or PLENTICORE plus including battery**

The KOSTAL Smart Energy Meter must be installed at the grid connection point.

All inverters and the KOSTAL Smart Energy Meter transmit data to the KOSTAL Solar Portal and must be assigned to a system and set up in the KOSTAL Solar Portal.

- **Third-party inverters**

The KOSTAL Smart Energy Meter must be installed at the grid connection point.

For PV systems with third-party inverters, the KOSTAL Smart Energy Meter can be used to record at least the entire feed-in to the public grid (all inverters including the third-party inverters). Direct consumption of the third-party inverters cannot currently be calculated with this setup because the information on the generation data of the third-party inverter is not transferred to the KOSTAL Smart Energy Meter.

3.2 Connecting the inverter and computer

If the inverter and PC are already linked by means of a router, you can go straight to **Ch. 3.3**.

If there isn't yet a link, connect the computer to the router using e.g. an Ethernet cable.

More information can be found in the inverter's operating manual.

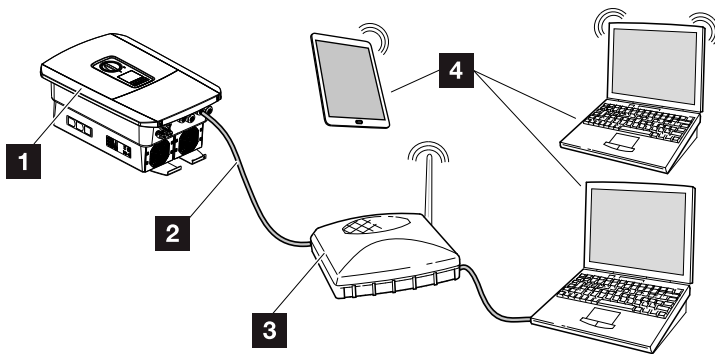



Fig. 7: Connecting inverter and computer

- 1** Inverter
- 2** Ethernet cable
- 3** Switch/hub/router with or without WLAN
- 4** Computer via LAN or WLAN
(for configuration or data retrieval)

3.3 Activating data transfer to the KOSTAL Solar Portal via Webserver

Calling up Webserver

1. Launch an Internet browser.
 2. Enter the IP address of the inverter in the address line of the browser and confirm with "Return". 
- ➔ The Webserver is called up.
3. To log in, click on Login and log in as plant owner.
- ➔ The Webserver's menu opens.



INFO

The description in this document refers to the PIKO IQ and PLENTICORE with Webserver UI 06.00 or higher.

For other inverters, please refer to the operating manual of the relevant inverter to find out how to activate data transfer to the solar portal.





TIP

The IP address can be queried in the inverter menu.

Making settings in the Webserver

After logging in, the settings required can be configured on the inverter via the Webserver.

1. Go to the “Settings” page.
 2. Depending on the Webserver version, now go to “Portal Configuration” or “Solar Portal”.
 3. Select portal or enter portal code. 
 4. Activate data transfer to the solar portal. 
 5. Click on “Accept”.
- ✓ Data transfer to the KOSTAL Solar Portal is now enabled.



INFO


Portal code for KOSTAL Solar Portal
= P3421



INFO

Data transfer to the KOSTAL Solar Portal can be activated or deactivated by clicking on the checkbox.

Checking the data connection between the inverter and KOSTAL Solar Portal

If a value in minutes is displayed in the “Last portal connection” field, data has been transmitted to the KOSTAL Solar Portal. 

- ✓ The data connection between the inverter and the KOSTAL Solar Portal is functioning correctly.




INFO

The registration may take up to 20 minutes.

3.4 Activating data transfer to the KOSTAL Solar Portal on the inverter

To activate the KOSTAL Solar Portal on the inverter, proceed as follows.

PIKO 10-20

1. Select the “Settings” menu on the inverter.
 2. Confirm with the “ENTER” key.
 3. Use the “UP” and “DOWN” keys to select the “Portal configuration” menu. 
 4. In the “Code:” field enter the code “P3421”.
 5. Press and hold down the “ENTER” key for approximately 3 seconds.
 6. Select the “Accept” field.
- ✓ You have now entered the portal code. Data transfer to the KOSTAL Solar Portal is now enabled.



INFO

This option can only be used with KOSTAL solar inverters running UI software version 4.06 and higher.



INFO

The menu item can be found under “Settings / Communication / Portal configuration”.

PIKO IQ / PLENTICORE

1. Select the “Settings” menu on the inverter.
 2. Confirm with the “ENTER” key.
 3. Select the “Solar Portal” menu.
 4. Select a solar portal.
 5. Activate data export.
 6. Select the “Accept” field.
- ✓ You have now entered the portal code. Data transfer to the KOSTAL Solar Portal is now enabled.

PIKO MP plus

Data transfer is automatically activated on the PIKO MP plus.

Once the network connection has been established, the inverter automatically begins transferring data to the KOSTAL Solar Portal.


If automatic transfer is not desired, you can remove the network cable or deactivate data transfer under “Settings” > “Network”.

PIKO CI

With the PIKO CI, data transfer to the KOSTAL Solar Portal is activated by default.

4. The KOSTAL Solar Portal

Registration

7. Go to the KOSTAL Solar Portal home page (www.kostal-solar-portal.com).
8. If you do not yet have an account, you can create one by clicking on “Register for free now!”. To do this, click on the “Join now” button.
 - ➔ The “Create User Account” page appears.
9. Complete the registration form and agree to the terms of use. 
10. To confirm the registration, click on the “Send registration” button.
 - ➔ We will send you an e-mail to confirm your registration.
11. Open this e-mail and click on the link.
 - ➔ This opens the “KOSTAL Solar Portal | Registration” page and reports “Registration finished”.
- ✓ Registration in the KOSTAL Solar Portal is complete.



INFO

Pay attention to the fields highlighted in red in the input masks. These fields are required entry fields and must be completed.

Login on KOSTAL Solar Portal

1. Go to the KOSTAL Solar Portal home page (www.kostal-solar-portal.com).
2. Enter your e-mail address and password in the login area.

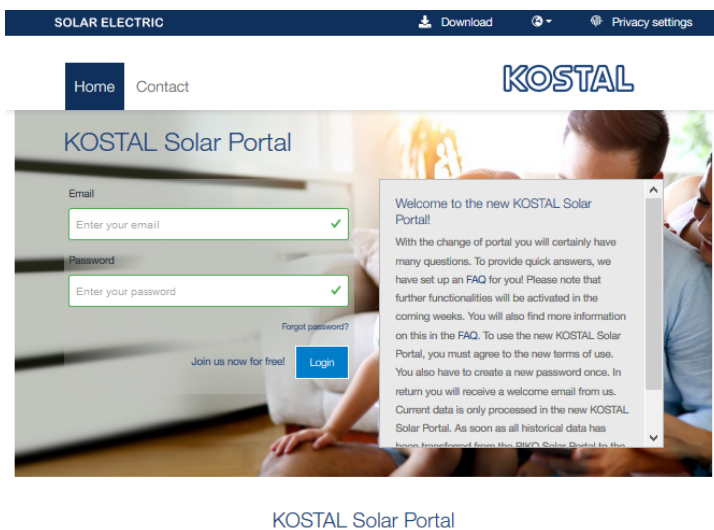


Fig. 8: Login area

3. Click on the “Log in” button.
 - ➔ The dashboard of the KOSTAL Solar portal appears.
 - ✓ You have logged into the KOSTAL Solar Portal.

4.1 Creating a system in the KOSTAL Solar Portal

4. Log into the KOSTAL Solar Portal.
 5. To set up an inverter, a system must first be created.
To do this, under the heading “System overview” click on the button “Create new system”.
- The “Create new system” page appears.
Here you can set up a system.

Create new site



INFO

Before you can register the inverter on the KOSTAL Solar Portal, the inverter has to log into the KOSTAL Solar Portal. This may take up to 20 minutes from first being set up in the inverter.



INFO

You can also create a system here for someone else (e.g. as an installer for a customer).

To do this, click on the “for someone else” button. He or she will then be notified about the setup by e-mail.

6. Enter the system data and click on “Create”.

→ The “Create new device” page appears.

Create new device

7. Enter the article number and serial number of the inverter here. These can be found on the inverter's type plate. Click on “Create”.

→ When the inverter is found, it is added to the system.

Device created

Your Device has successfully been created! Please mind that it can take up to 1 day until your device is sending data.

You will be noticed immediately in the portal and have to complete the onboarding of strings and/or batteries.

Close



INFO

If you do not yet have an inverter or if it has not yet logged into the portal, you can initially also create the system without devices and add devices at a later time by going to “System > Configuration > Devices”.

8. Close the window by clicking on the “Close” button.

➔ A summary appears.

Finished

The image shows a 'Summary' screen for a newly created solar system. At the top, there is a progress bar with three steps: 'Create new site' (represented by a site icon), 'Create new device' (represented by a device icon), and 'Finished' (represented by a checkmark icon). Below the progress bar, the title 'Summary' is centered. The main content area is titled 'Site' and contains the following information: Name: Testanlage, Location: Hagen, Site installed power: 9.2 kWp, and Construction date: 2020-10-13. At the bottom left, there is a 'Back' button, and at the bottom right, there is an 'Overview' button.

9. A system with inverter has been created. Close the window by clicking on the “Overview” button.

➔ This opens the “KOSTAL Solar Portal | System List” page.

✓ The new system is now displayed in the system list.

4.2 System overview

Calling up the system webpage

1. Log into the KOSTAL Solar Portal.
 2. Click on “System overview”.
 3. Click on the name of the system you want.
- ✓ The webpage of the system appears with all relevant system data.

In the system overview, you can see all the systems that have been created.

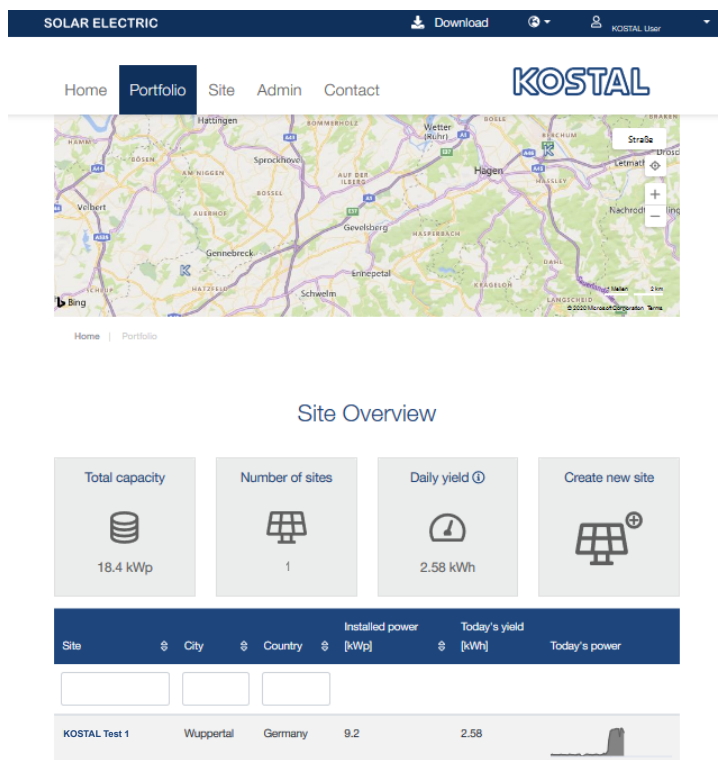


Fig. 9: System overview

After a system has been selected, the overview with all relevant measured values appears.

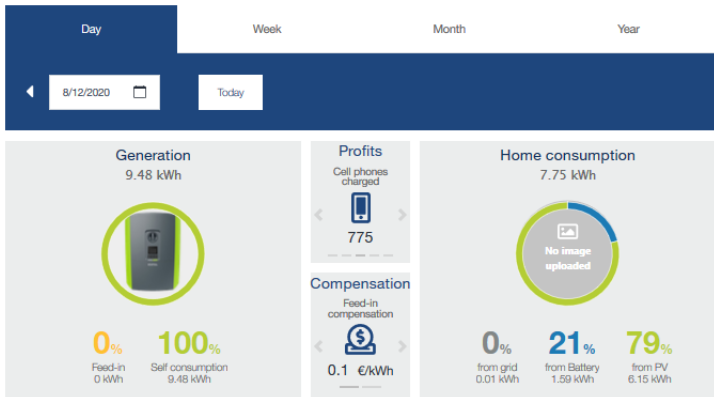


Fig. 10: Selected PV system



KOSTAL Solar Electric GmbH
Hanferstr. 6
79108 Freiburg i. Br.
Germany
Telephone: +49 761 47744 - 100
Fax: +49 761 47744 - 111

KOSTAL Solar Electric Ibérica S.L.
Edificio abm
Ronda Narciso Monturiol y Estarriol, 3
Torre B, despachos 2 y 3
Parque Tecnológico de Valencia
46980 Valencia
España
Teléfono: +34 961 824 - 934
Fax: +34 961 824 - 931

KOSTAL Solar Electric France SARL
11, rue Jacques Cartier
78280 Guyancourt
France
Téléphone: +33 1 61 38 - 4117
Fax: +33 1 61 38 - 3940

KOSTAL Solar Electric Hellas E.Π.Ε.
47 Steliou Kazantzidi st., P.O. Box: 60080
1st building – 2nd entrance
55535, Pilea, Thessaloniki
Ελλάδα
Τηλέφωνο: +30 2310 477 - 550
Φαξ: +30 2310 477 - 551

KOSTAL Solar Electric Italia Srl
Via Genova, 57
10098 Rivoli (TO)
Italia
Telefono: +39 011 97 82 - 420
Fax: +39 011 97 82 - 432

www.kostal-solar-electric.com