

SOLAR ELECTRIC

KOSTAL

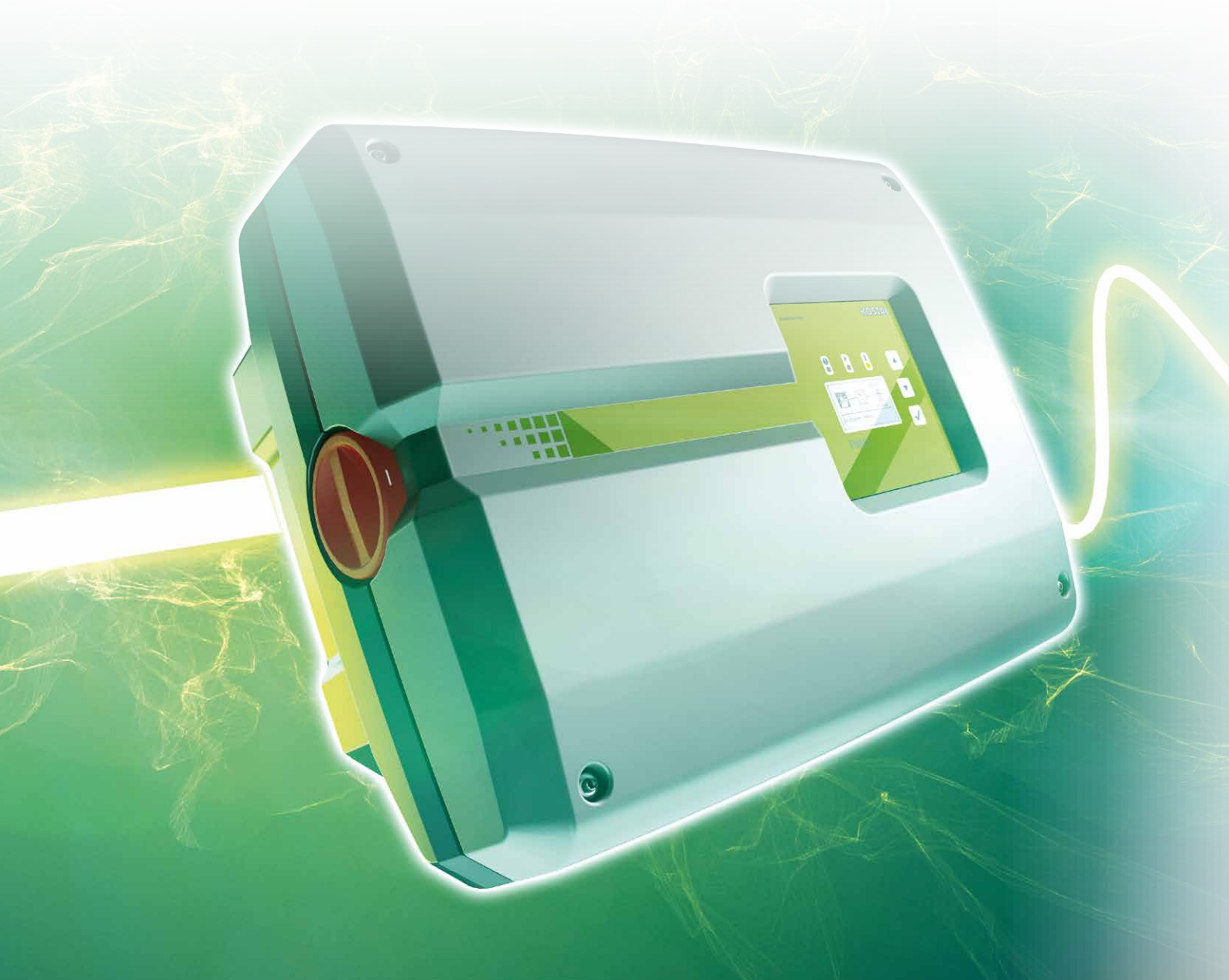
PIKO inverters – flexible, communicative and practical

Smart
connections.



KOSTAL competence – Using energy the smart way. Convincing.

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| KOSTAL family | 3 |
| KOSTAL benefits | 4 |
| PIKO inverters overview | 5 |
| PIKO inverters – even more flexible through smart optimisation | 6 – 7 |
| PIKO inverters – even more communicative through smart interaction | 8 – 13 |
| PIKO inverters – even more practical through smart design | 14 |
| Service | 15 |



KOSTAL family –

Success founded on history and over 100 years of experience.

The KOSTAL Group: the KOSTAL success story

- As an independent, family-owned company, the KOSTAL Group specialises in the development of high-quality electronic and mechatronic solutions for a wide range of automotive and industrial applications.
- The company was founded in 1912 by Leopold Kostal in Lüdenscheid, Germany, and today employs about 16 300 people at 39 locations in 18 countries.
- The KOSTAL Group has four divisions: Automotive Electrical Systems, Connectors, SOMA Test Technology and Industrial Electronics with its international sales company KOSTAL Solar Electric.
- The KOSTAL Group's partners include the world's leading automotive manufacturers and numerous major industrial companies.

Quality-offensive thinking

- Having been developed in-house at KOSTAL, the PIKO inverter meets the highest standards.

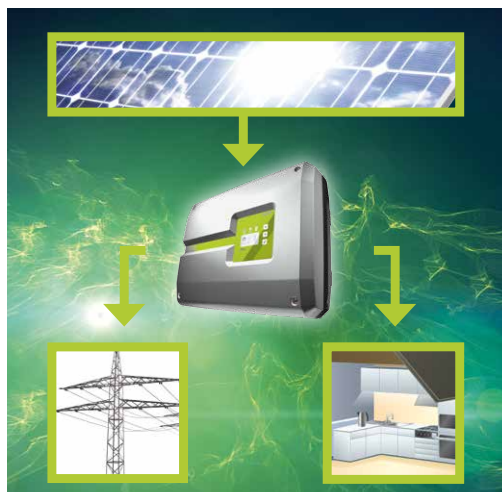
- All PIKO inverters are produced in line with state-of-the-art technological standards.
- All production processes are aligned to the "zero-defects philosophy" of an automotive supplier.
- The PIKO inverter is subject to strict quality management throughout the production process, including a final check lasting several hours.

KOSTAL Solar Electric: a partner you can always count on

- PIKO inverters are developed and produced within the Industrial Electronics division at the German headquarters. KOSTAL Solar Electric handles all distribution and marketing of the inverters, as well as technical support.
- International customers also benefit from our local service with branch offices in France, Italy, Spain, Greece and Turkey.
- KOSTAL partnerships are designed for the long term. This has always been and continues to be an essential element of our company culture.



What KOSTAL can offer you – Photovoltaics: a sustainable investment that pays.



Your very own miniature power station for your daily electricity needs

Generate your own electricity with a photovoltaic system comprising solar modules and photovoltaic inverter components. The solar modules convert available sunlight into electrical energy, providing you with a secure and cost-effective power supply for the next 6 billion years or so*.

PIKO inverter – the heart and brains of your PV system

The electrical energy generated by the solar modules is in direct current, which cannot be readily used in homes. That's where the PIKO inverter comes in: it reliably converts solar power into usable electricity (alternating current) so you can use it in your home and feed any surplus into the public power grid.



Good reasons to invest

A photovoltaic system will be profitable for at least 20 years, i.e. the projected life cycle of its high-end components.

Advantages:

- Avoid rising electricity costs: solar power is already cheaper than purchased domestic electricity.
- Self-consumption cuts your electricity costs: you could potentially save around 30 % on your annual bills.
- The handy overview function helps you to identify which of your domestic appliances consume the most energy so you can replace them.
- Increase the value of your property: the tangible benefits provided by the photovoltaic system are not subject to inflationary losses.
- In these turbulent times, you need a safe haven for your money: a photovoltaic system will give you 20 years of guaranteed income and savings on your electricity bills.
- Contribute to the energy transition and protect the environment.



*predicted life expectancy of the sun

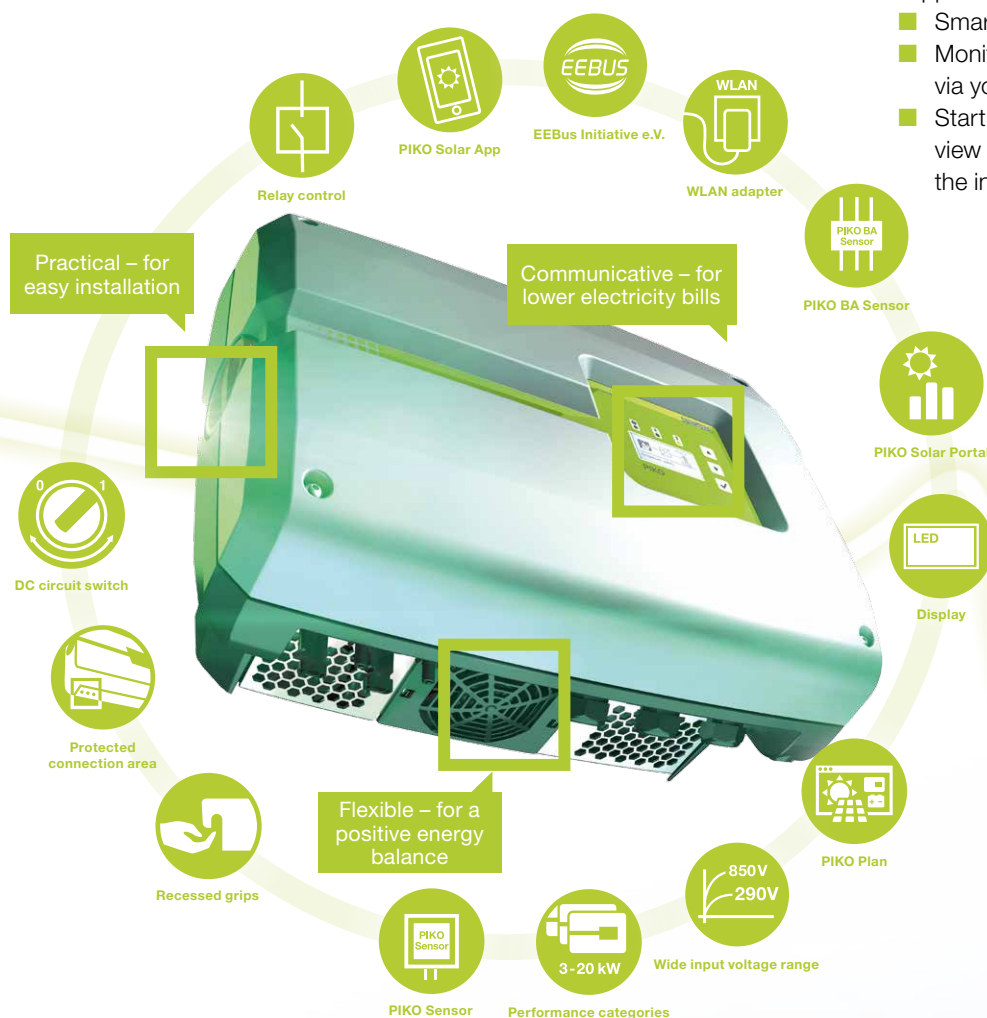
PIKO inverters by KOSTAL – flexible, communicative and practical. Simply better.

The PIKO inverter, the centrepiece of all photovoltaic systems, increases solar benefits while cutting your electricity costs. KOSTAL's all-in-one design eliminates the need for any further components in your system planning: all you need is PIKO.

PIKO inverter – even more communicative through smart interaction

With a wide range of communication interfaces, any additional monitoring components are surplus to requirements. The PIKO inverter also supports Smart Home technology.

- Smart Home-compatible
- Monitor your system locally or on the move via your PC, smartphone or tablet
- Start up and configure your system and view yield data in graphic form directly via the inverter display screen



PIKO inverters – even more practical through smart design

The futuristic design of the PIKO inverter is geared towards safe and convenient installation and operation.

- Recessed side grips for easy handling
- Robust circuit breaker with easy-to-read switching status
- Easily-accessible and well-protected connection area

PIKO inverters – even more flexible through smart optimisation

Because the PIKO inverter is so flexible, virtually any photovoltaic system can be fitted with a KOSTAL device.

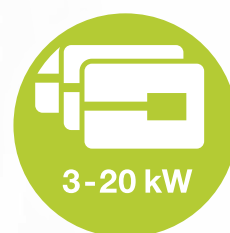
- Expanded 3 – 20 kW product range for flexible system planning
- Broad voltage and current range suitable for virtually any design
- Maximum yield even in partial shade
- User-friendly layout through PIKO Plan

PIKO inverters – even more flexible ...

Flexibility just got more flexible

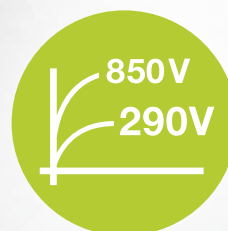
With better smart optimisation of product features, the PIKO inverter enables an even broader range of applications.

- The product range includes single- and three-phase inverters in the 3 – 20 kW performance categories. This means that a suitable PIKO can be found for any PV system.
- The inverter's broad input voltage range makes virtually any design possible, so you can plan your ideal PV system without any major restrictions.
- Up to three independent MPP trackers ensure the greatest degree of flexibility so that even awkward roof surfaces can be used optimally.
- Even if the PV system is partially shaded, e.g. owing to the position of the sun in winter, the PIKO inverters can still achieve maximum yield.



3-20 kW

Performance categories



Wide input voltage range

...through smart optimisation.



- All inverters can be installed on a range of different sites: due to their high housing protection category, the inverters can be used either indoors or out.
- The PIKO inverter is pre-configured for most European countries and can be installed straightaway. Just select the appropriate standard and country settings using the multilingual display.
- The flexible PIKO Plan layout software covers all PIKO inverters, so you can quickly, confidently and accurately arrive at a recommendation as to which inverter is best for you.



Optimisation through smart partnerships

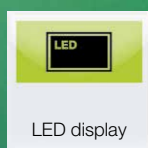
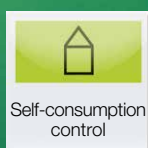
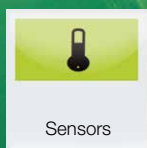
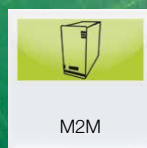
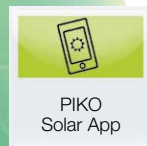
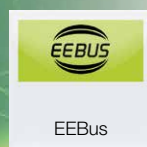
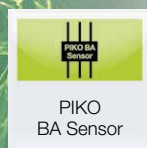
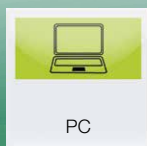
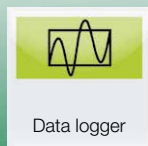
The broad range of flexible applications enabled by the PIKO inverter can be increased through cooperation with trusted partners.

- The external module control for TIGO modules can also be used with all three-phase PIKO inverters. This further increases the field of application, ensuring and maintaining maximum performance so you get even more back from your PV system.
- The products of component manufacturer PADCON prevent stress-induced degradation of solar modules and promote the regeneration of degraded modules. PIKO inverters support the use of PADCON products and therefore guarantee the performance of PV systems for many years.



PIKO Plan

PIKO inverters – even more communicative ...



Communication just got more communicative

The variable communication interfaces of the PIKO inverter ensure simple, straightforward interaction between devices and with a diverse range of accessories.

- PIKO inverters are equipped with a web server with a whole host of different functions.
- Start-up and configuration are quick and easy through the integrated display.
- The display, web server and PIKO Solar App enable you to easily visualise all yield, house and performance data.
- You can also connect PIKO inverters with one another or integrate them into an existing network using a WLAN/DLAN adapter or (DSL) router.



Data logger

... through smart interaction.

PIKO – all-in-one design

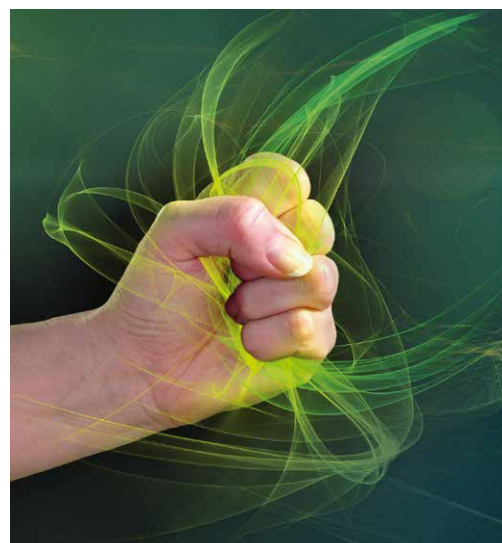
PIKO's all-in-one design ensures that no additional components are required for modern communication and monitoring of the PV system. This provides convenient protection against yield losses.

- The comprehensive communication package contains the following interfaces:
2 LAN interfaces, RS485 interface, S0 pulse input/output, analogue inputs and the PIKO BA Sensor Interface.
- The integrated interfaces can be used for a number of different components, including sensors, ripple control receivers, WLAN/DLAN adapters, GSM modems, external displays, routers, data loggers and smart home controls.

Smart accessories

To ensure optimal system monitoring, KOSTAL provides a range of smart accessories:

- PIKO Sensor – for measuring ambient temperature, module temperature and irradiation. Readings can be visualised on the PIKO Solar Portal so you can make sure the PV system is working as it should.
- PIKO M2M Service enables automated data transfer between the inverter and the PIKO Solar Portal via the mobile network. For a one-off package price (for five years), you can avoid monthly costs and take advantage of KOSTAL's secure mobile network.



Ripple control receiver



PIKO Sensor

PIKO inverters – reliable monitoring ...

PIKO Solar Portal:

Monitoring online – from anywhere at any time

The PIKO Solar Portal protects your investment in a PV system against yield loss, e.g. through active e-mail alerts of events. You can register for the PIKO Solar Portal for free via the affiliated website of KOSTAL Solar Electric*.

Functions include:

- Worldwide online access to the portal
- Graphic depiction of the DC single string power, system power and yield data
- Visualisation of home consumption for optimised self-consumption
- Awareness-raising of sustainable energy use
- Notification of events by e-mail
- Detailed data export
- Sensor evaluation
- Display and proof of a potential active power reduction by the grid operator
- Storage of log data for long-term and reliable monitoring of your PV system

The PIKO Solar Portal can also be used with PV systems with several inverters and, thanks to the multilingual menu navigation, internationally.

* www.piko-solar-portal.com



... online, any time. Worldwide.

PIKO Solar App: Monitoring made easy

Using the new PIKO Solar App, customers can monitor their systems easily via their smartphone or tablet – naturally free of charge. Here, you can view important data from your PV system in graphic form.

Thus, for example, the following can be displayed:

- Historic data through synchronisation with the PIKO Solar Portal (yield data, home consumption*, performance data, battery charge status)
- Live data (DC single string monitoring, feed-in capacity, home consumption*)
- Depending on configuration, amounts earned and saved.

As well as viewing this important data, you can also directly and conveniently contact KOSTAL Support, e.g. via a pre-filled data form for error analysis.

The PIKO Solar App is available for the Android and iOS operating systems.

Integrated web server: Quick and direct monitoring

The web server integrated into every PIKO inverter shows you the most important system data at a glance. Inverter settings and adjustments can be made simply and easily via a browser using a PC or tablet.

The most important data and settings are:

- Display of the current performance data and the daily and total yields
- Information page showing home consumption data and visualising coverage from multiple energy sources**.
- Download of historical log data
- Inverter configuration (e.g. portal access, IP address, self-consumption, active power control)

* Home consumption can only be visualised in conjunction with the PIKO BA Sensor.

** During operation of the PIKO inverter



PIKO inverters – part of a smart home ...

Efficient energy use

With its range of communication interfaces, PIKO meets requirements for efficient energy use. Graphic visualisations on the PIKO Solar Portal and the PIKO Solar App also help to raise awareness of energy usage.

More self-consumption

The PIKO BA Sensor helps you to use generated power in your home rather than let it go to waste.

- It measures the power consumption of your home and gives you an overview of when, where and how much electricity is needed, enabling you to change your consumption habits for the better.
- Through dynamic active power control, you can use every last watt of generated electricity while at the same time meeting statutory requirements (e.g. the 70 % rule). Through the PIKO BA Sensor, the PIKO inverter determines how much electricity the building is consuming and can adjust

feed-in capacity to the public grid accordingly. Through your self-consumption, more energy can be generated.

Basic update capability

KOSTAL's corporate philosophy, "Smart connections.", also applies to its products.

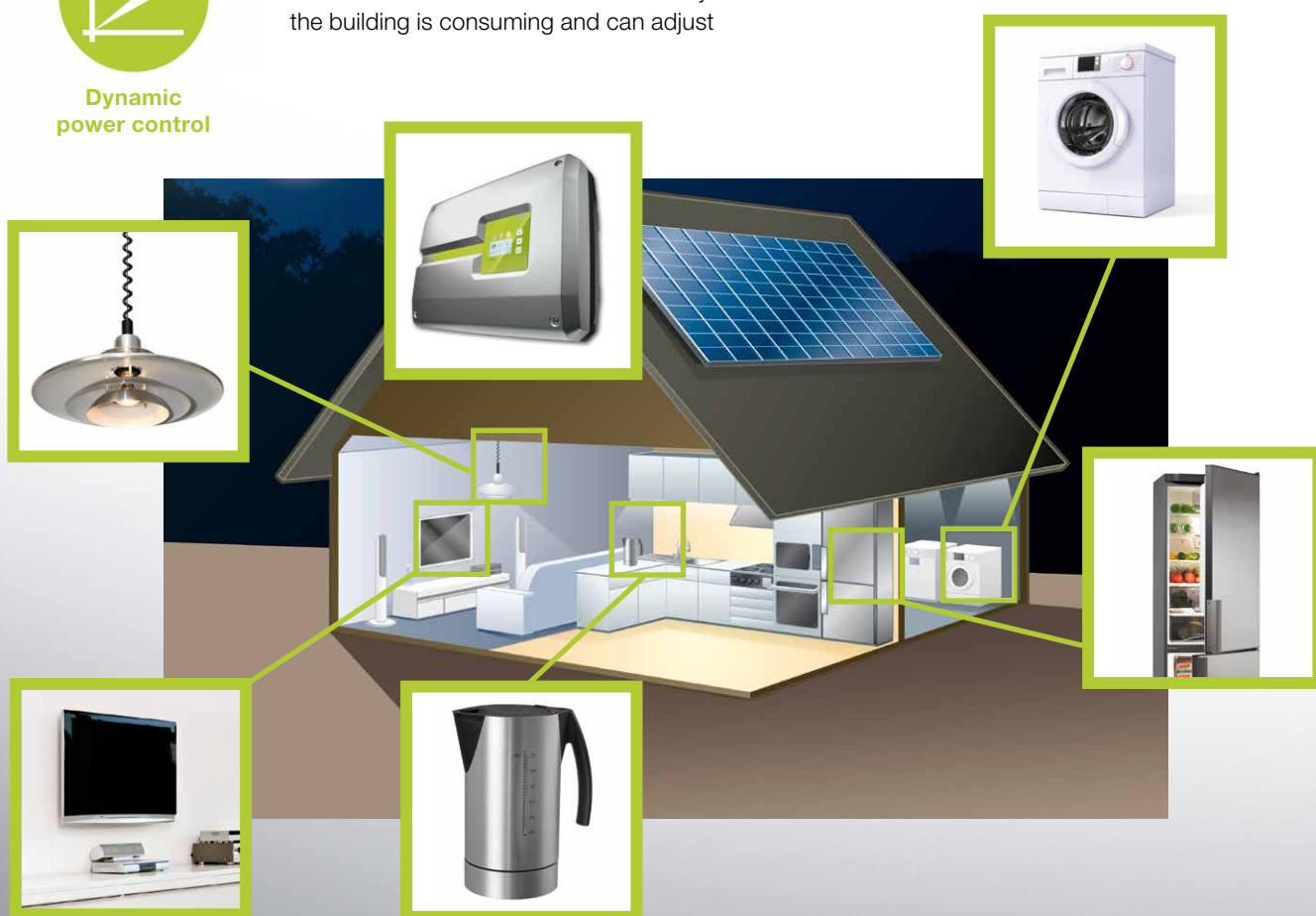
- Software developments or technological advancements, e.g. in the Smart Home domain, can be very easily incorporated into your PIKO inverter or system via the network connection.
- Software can be updated easily and without the service team having to visit you.



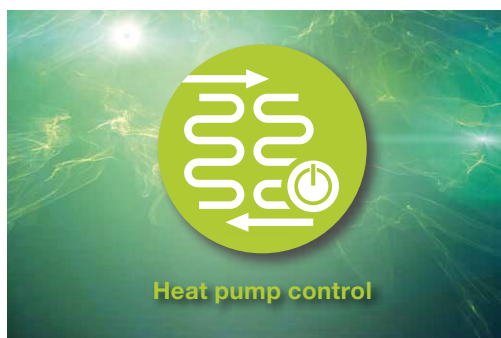
PIKO BA Sensor



Dynamic power control



... and Smart Home compatible.



Be ready for the technology of tomorrow with PIKO

Innovative PIKO inverters enable you to accurately manage your energy usage and provide you with the perfect basis for upgrading your home to a Smart Home.

Reduce electricity bills through smart communication

Accurate load control through the relay output connection increases your self-consumption.

- For instance, you can use a heat pump or air-conditioning unit when the energy is available.
- This will enable you to maximise your self-consumption and lower your electricity bills.

Innovative networking concepts in the home

KOSTAL is part of the EEBus Initiative and integrates the associated technological developments into its products.

- The PIKO inverter is fully EEBus-compatible and can communicate with other domestic electronic appliances.
- Energy can therefore be made available to appliances as it becomes available.
- This can be achieved through automated communication, without any need for manual control.

Partnership connections

Not only is the PIKO inverter Smart Home-compatible, but further applications are possible in collaboration with innovative partners.

PIKO inverters are compatible with:

- HomeLYnk from Schneider Electric GmbH
- PowerDog energy management systems from ecodata GmbH
- Solar log monitoring devices from Solare Datensysteme GmbH
- Solarfox displays from Soledos GmbH
- Weblog from meteocontrol GmbH

PIKO inverters – even more practical through smart design.



Practicality just got more practical

New-generation PIKO inverters are designed to impress: operation has been made even simpler and devices are incredibly easy to install.

- Simple handling, stable positioning and secure mounting of the PIKO is made possible by recessed side grips.
- The robust DC break switch is positioned in direct line with the housing, which prevents it from breaking off. The switching status can also be comfortably read at a glance.

- The highly durable no-contact magnetic switch draws on KOSTAL's proven know-how in the automotive sector.
- PIKO is now also equipped with easily accessible yet well-protected connections.
- The new, future-oriented design meets the current requirements of the photovoltaic market and visually reflects the corporate philosophy of "Smart connections."

PIKO inverters – Service guaranteed. Tailor-made.

Each PIKO inverter is a quality product manufactured within the KOSTAL Group, and subject to the same strict quality standards as, for example, our products for the automotive industry. PIKO inverters come with comprehensive warranties and services.



Service hotline with guaranteed assistance.



Personal customer contact for questions of any kind.



KOSTAL seminars and webinars can be booked online in just a few clicks.

Take service literally, give us a call!

For KOSTAL, partnership means teamwork, cooperation and above all personal contact with customers. KOSTAL Service employees are available by phone and can answer all your questions before and after your purchase, for example:

- General technical advice
- Support with system planning using the PIKO Plan configuration software
- Adjustment of grid parameters using the PARAKO software
- Help with start-up
- Support with system analysis
- Advice on configuring system monitoring
- Warranty processing

You can reach the service hotline on:

Telephone +49 761 47744-222

(Mon – Fri from 8:00 a.m. to 5:00 p.m.) or by e-mail at service-solar@kostal.com. You can send us queries or messages at any time, including outside hotline operating hours, using the service portal at service.kostal-solar-electric.com. Queries are treated as a priority.

Safety guaranteed!

Within the first two years following purchase, the warranty of the PIKO inverter can be extended from 5 to up to 20 years.

Services covered by the warranty:

- Exchange service
- Fixed replacement fees for specialist companies

Services outside of the warranty:

- Preferential price for replacement devices when a repairable defective device is returned
- 2-year warranty for the replacement device

KOSTAL seminars and webinars

Participants in KOSTAL seminars benefit from professional instruction, wide-ranging and specialised knowledge, and interactive exchanges with the seminar host. This offer includes various training sessions focusing on technology and sales. Detailed information on KOSTAL seminars is available at: www.kostal-solar-electric.com/wissensseminare. Here you can find out all you need to know about new webinars in KOSTAL's much-expanded range of training offers.



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