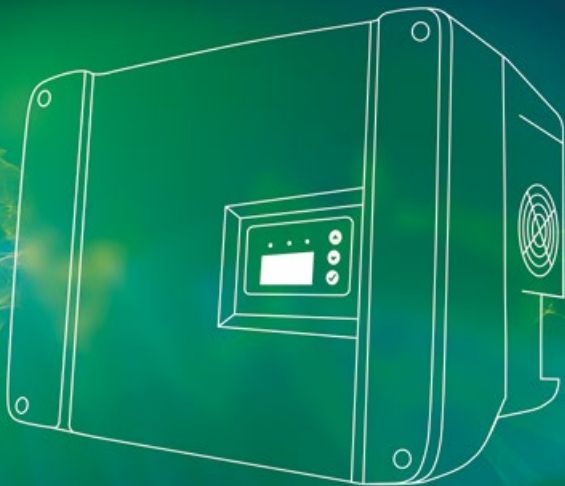


SOLAR ELECTRIC

KOSTAL



Smart
connections.

Short Manual

PIKO 6.0 BA / 8.0 BA / 10 BA
with Energy Management

EU Declaration of conformity

The company

KOSTAL Solar Electric GmbH
Hanferstraße 6
79108 Freiburg i. Br.
Germany

hereby declares that the inverters described in this document are the essential requirements and other relevant provisions of the below mentioned guidelines in accordance.

Directive 2014/30/EU (Electromagnetic compatibility, EMC)
Directive 2014/35/EU (Electrical Apparatus Low Voltage Directive)

A detailed EU declaration of conformity can be found at:

www.kostal-solar-electric.com/Download/Zertifikate

Proper use

The PIKO BA inverter converts DC current into AC current.

The current can be used for the following:

- for consumption
- to store the current in the battery of the system (PIKO BA System)
- for feeds into the public mains grid

The unit may only be used in grid-connected photovoltaic systems within the permissible power range and under the permissible environmental conditions. The device is not intended for mobile use.

Inappropriate use can be hazardous and lead to injury or even death of the user or third parties. Material damage to the device and other equipment can also occur. The inverter may therefore only be used for its intended purpose.

The PIKO BA Inverter is equipped with an energy management system. This system controls based on technical and economic aspects of the use of electricity generated.

Additional User Information

For additional information, please read the complete operation manual on the CD.

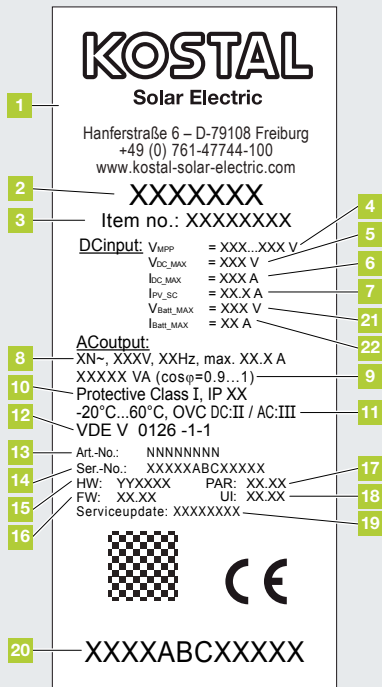


Exclusion of liability

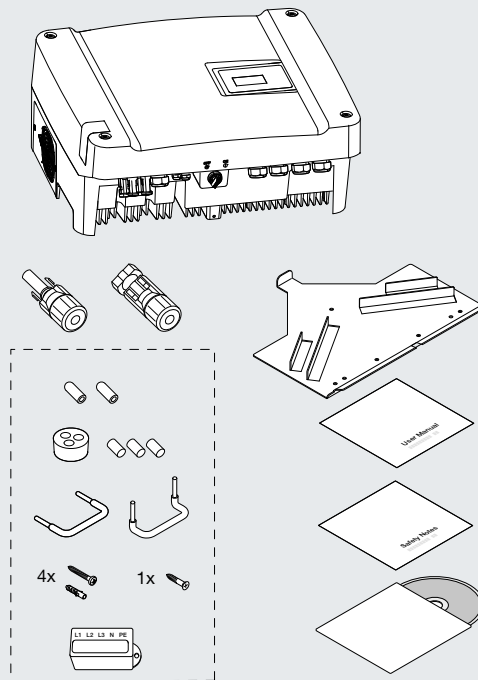
Any use that differs from or goes beyond the stated intended purpose is considered inappropriate. The manufacturer accepts no liability for any damage resulting from this. Modifications to the inverter are prohibited. The inverter may only be used if safe to operate and in technically perfect condition. Any instance of misuse will cause the termination of the warranty, guarantee and general liability of the manufacturer.

Only a qualified electrician may open the device. The inverter must be installed by an electrician who is responsible for observing the applicable standards and regulations. Work that could affect the electrical power system of the respective utility company at the site of the solar energy feed-in may only be carried out by qualified electricians expressly authorised (licensed) by the utility company.

This includes changes to the factory preset parameters. The installer must always observe the regulations of the utility company. The utility company's specifications must always be observed when setting the parameters.



- 1** Name and address of manufacturer
- 2** Device type
- 3** Item number
- 4** MPP control range
- 5** Maximum DC input voltage
- 6** Maximum DC input current
- 7** Maximum DC short circuit current
- 8** Number of feed-in phases,
Output voltage (nominal), frequency,
Maximum AC output current
- 9** Maximum AC power
- 10** Protective class to IEC 62103,
Protection type and ambient
- 11** Temperature range,
overvoltage category
- 12** Requirements conforming to those
of the built-in grid monitoring
- 13** Internal item number
- 14** Serial number
- 15** Version of hardware
- 16** Version of firmware
- 17** Version of parameter set
- 18** Version of user interface
- 19** Date of the last update
- 20** Removable guarantee label
- 21** Maximum input voltage battery
- 22** Maximum input current battery



Selecting the installation side



NOTE

Observe the following instructions, or else warranty claims will be restricted.



Protect from rain and water.



Protect from direct sunlight.



Select non-flammable installation location.



Maintain safe distance from flammable materials or areas at risk of explosion.



Select vertical installation location.



Ambient temperature must be between -20°C and $+60^{\circ}\text{C}$.
Air humidity must be between 4 % and 100 % (condensing).



Select stable installation location.
No plasterboard or wooden walls.



Prevent access by children.



Required cooling space is 200 mm vertical and 100 mm horizontal.



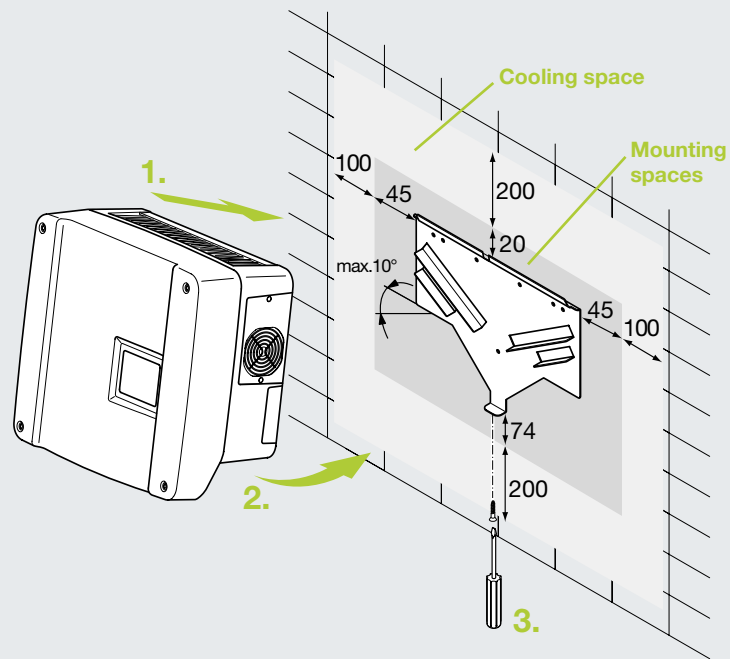
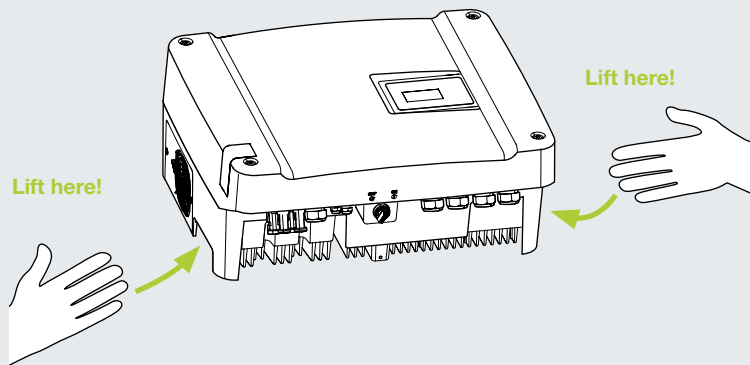
Protect from dust, contamination and ammonia.



Ensure easy access and visible display.



Ensure that people are not disturbed by operating noise.



Connecting AC and DC side



-  **LEBENSGEFAHR DURCH STROMSCHLAG!**
Wechselrichter spannungsfrei schalten.
-  **RISK OF DEATH DUE TO ELECTRICAL SHOCK!**
De-energise the inverter.
-  **DANGER DE MORT PAR ÉLECTROCUTION !**
Mettre l'onduleur hors tension.
-  **¡PELIGRO DE MUERTE DEBIDO A ELECTROCUCIÓN!**
Desconectar el inversor de la tensión.
-  **PERIGO DE MORTE DEVIDO A CHOQUE ELÉTRICO!**
Desligar a tensão de corrente do inversor.
-  **PERICOLO DI MORTE PER SCOSSA ELETTRICA!**
Eliminare la tensione dall'inverter.
-  **LIVSFARE PGA. ELEKTRISK STØD!**
Vekselstrømsomformereren skal kobles fra spændingen.
-  **LEVENSGEVAAR DOOR ELEKTRISCHE SCHOK!**
Schakel de omvormer spanningsvrij.
-  **OHROŽENÍ ŽIVOTA ELEKTRICKÝM PROUDEM!**
Odpojte střídač od napětí.
-  **PERICOL DE ELECTROCUTARE!**
Scoateți ondulatorul de sub tensiune.
-  **SMRTNA NEVARNOST ZARADI ELEKTRIČNEGA UDARA!**
Razsmernik odklopite iz električne napetosti.
-  **NEBEZPEČENSTVO OHROZENJA ŽIVOTA ZÁSAHOM ELEKTRICKÉHO PRÚDU!**
Menič prepnite do beznapätovej prevádzky.
-  **ELEKTRİK ÇARPMASI NEDENİYLE HAYATİ TEHLİKE!**
İnvertörü gerilimsiz hale getirin.
-  **ΚΙΝΔΥΝΟΣ ΘΑΝΑΤΟΥ ΑΠΟ ΗΛΕΚΤΡΟΠΛΗΞΙΑ!**
Αποσυνδέστε τον αντιστροφέα από το ρεύμα.



-  **ОПАСНОСТ ЗА ЖИВОТА ПОРАДИ ТОКОВ УДАР.**
Изключвайте инвертора от напрежението.
-  **LIVSFARA PÅ GRUND AV ELEKTRISK STÖT!**
Koppla växelriktaren spänningsfri.
-  **ZAGROŻENIE ŻYCIA PRZES PORAŻENIE PRĄDEM!**
Odłączyć falownik od zasilania.
-  **ELEKTRILÕÕGI OHT!**
Lahutage vaheldi vooluvõrgust.
-  **PAVOJUS GYVYBEI DĖL ELEKTROS SROVĖS SMŪGIO!**
Inverteriui nutraukite įtampos tiekimą.
-  **ELEKTRISKĀS STRĀVAS TRIECIENA BRIESMAS!**
Atslēgt inverteru no strāvas.
-  **OPASNOST PO ŽIVOT OD STRUJNOG UDARA!**
Isključiti izmjenjivač.
-  **OPASNOST PO ŽIVOT ZBOG STRUJNOG UDARA!**
Isključiti izmjenjivač.
-  **OPASNOST PO ŽIVOT USLIJED STRUJNOG UDARA!**
Izmjenjivač isključite sa naponskog napajanja.
-  **OPASNOST PO ŽIVOT USLED STRUJNOG UDARA!**
Izmjenjivač isključite sa naponskog napajanja.

De-energising inverter:



Switch off DC side
1. At Inverter
2. At Batterysystem
(when connected)



Switch off
- AC side
- SO/AL-out
- Battery
(when connected)



Safeguard



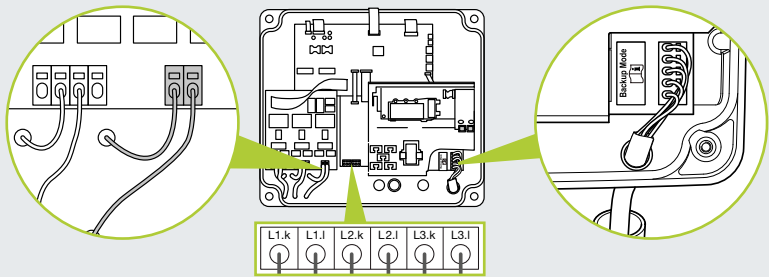
Disconnect
DC side



Wait 5 minutes

Connecting AC, DC and battery side

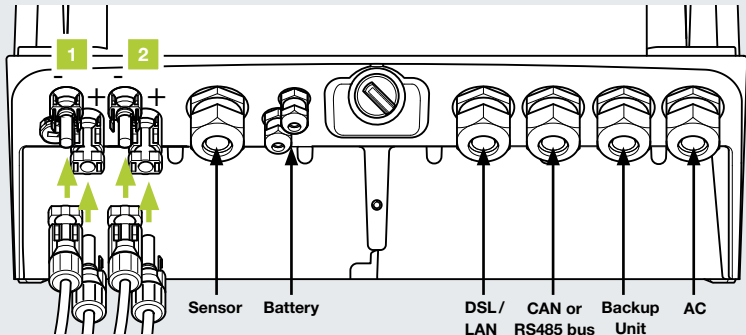
Option: Connecting Backup Unit



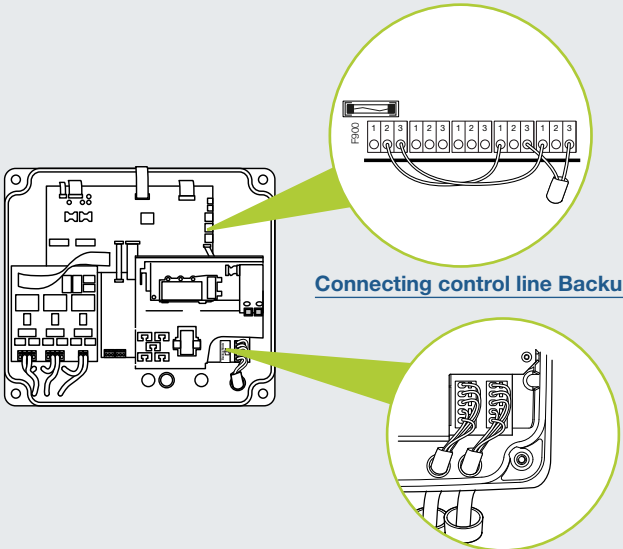
Connecting battery

Connecting sensor

Connecting AC



Connecting DC side

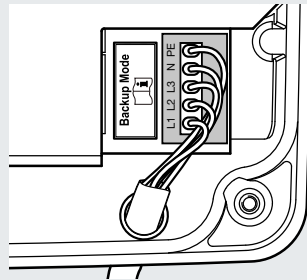
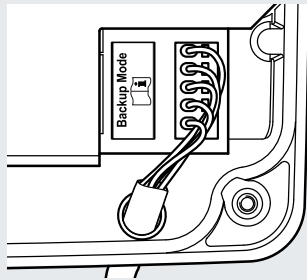


Connecting control line Backup Unit

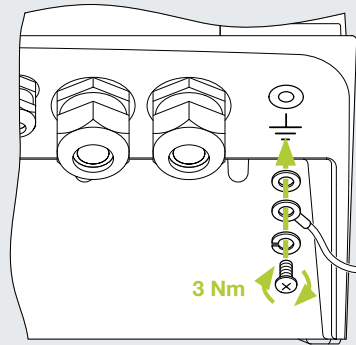
Connecting Backup Unit

Connecting Backup Unit (optional equipment)

Country-specific installation

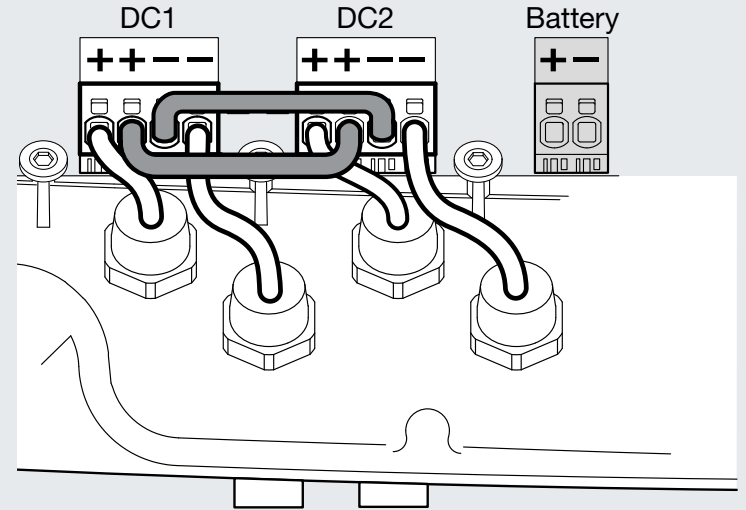


Connecting main cable with sealing cap



Second ground connection

Option: Connecting DC1 & DC2 in parallel



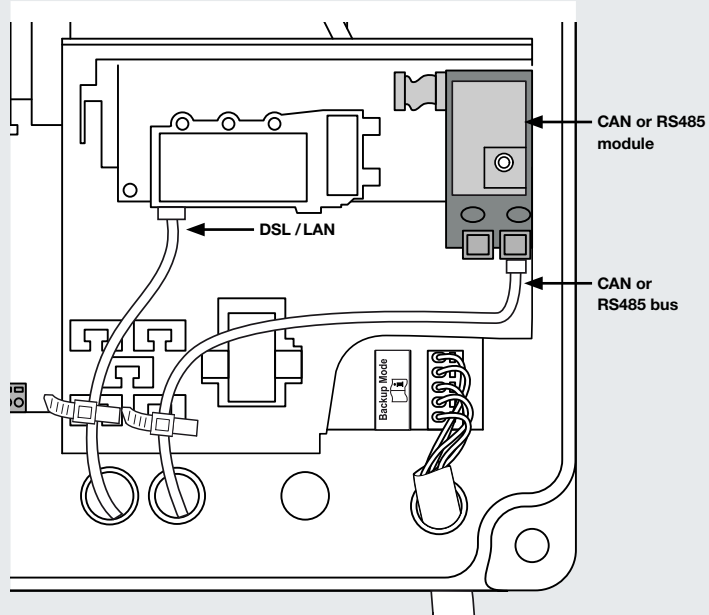
NOTE

When using the parallel connection this feature must be activated under the menu Settings >> Service menu >> String connection >> Parallel connection (only with service code).

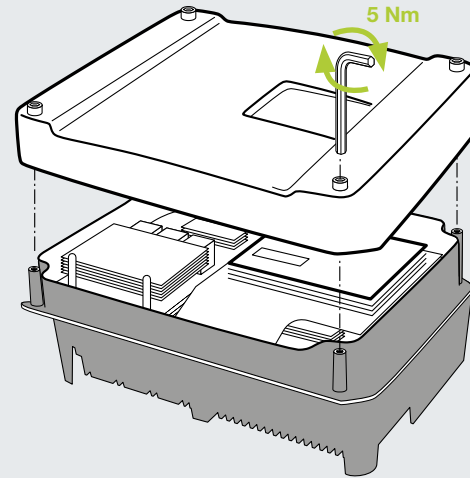
Data transfer Communicationboard II

Commissioning the inverter

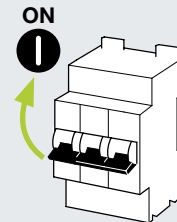
DSL or LAN and CAN or RS485 bus



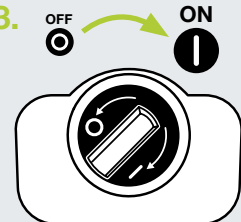
1.



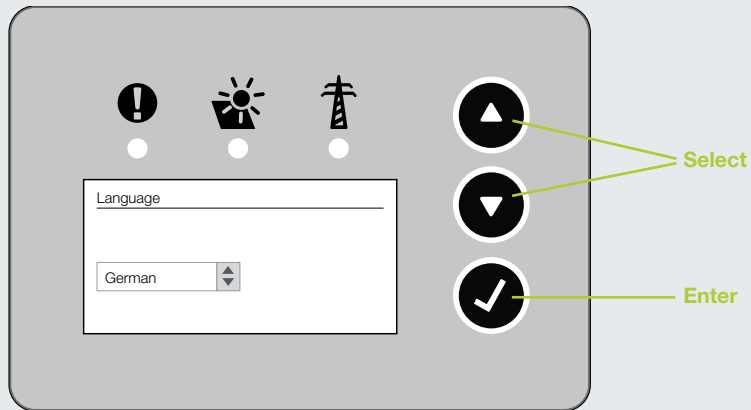
2.



3.



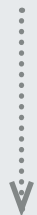
Installation Wizard*



Language

German

>



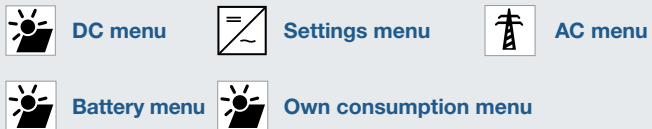
Country setting

Do you really want to apply this country?

No Yes

1. ▲ Select language
2. ✓ Enter
3. ▲ Enter Date / time
4. ✓ Enter
5. ▲ Select string connection
6. ✓ Enter
7. ▲ Select modulus of the current sensor
8. ✓ Enter
9. ▲ Select country
10. ✓ Enter
11. ▲ Confirm Country settings with YES
12. ✓ Enter

Menu overview*

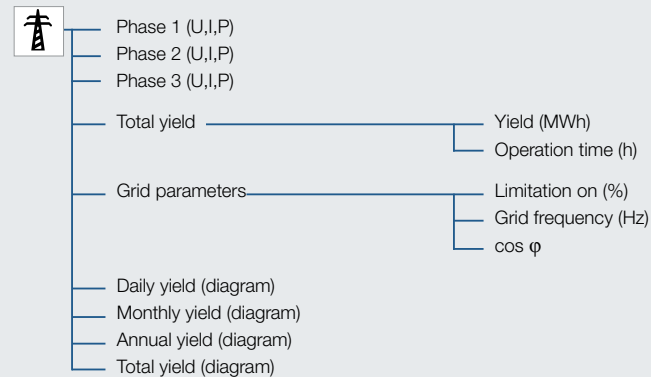


Menu DC and AC

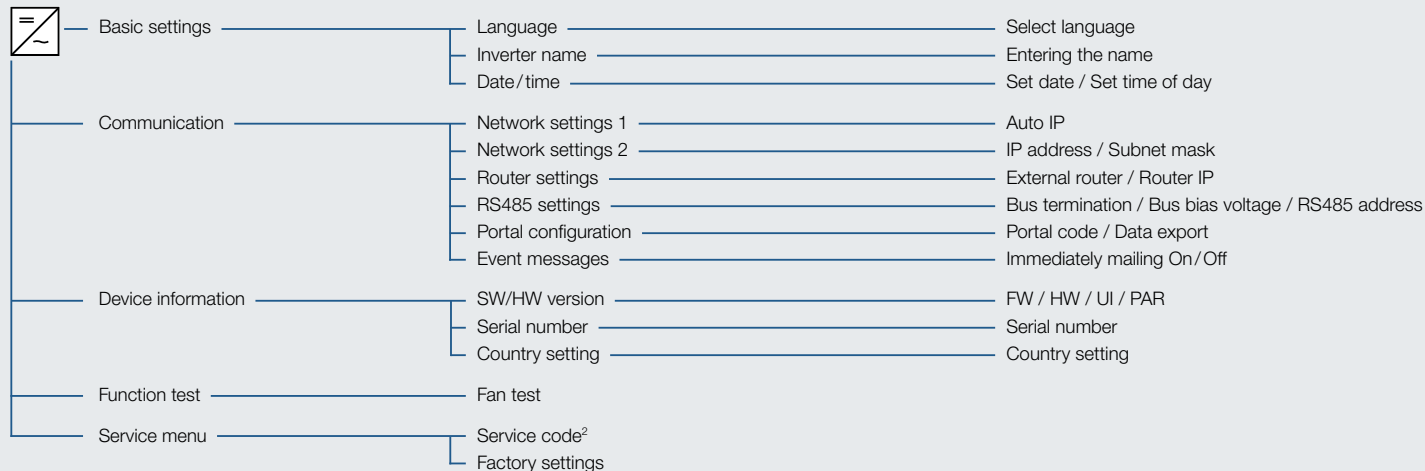
DC menu



AC menu



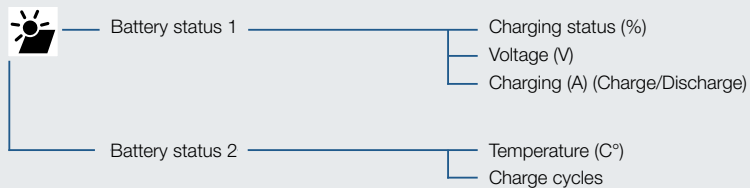
Settings menu¹



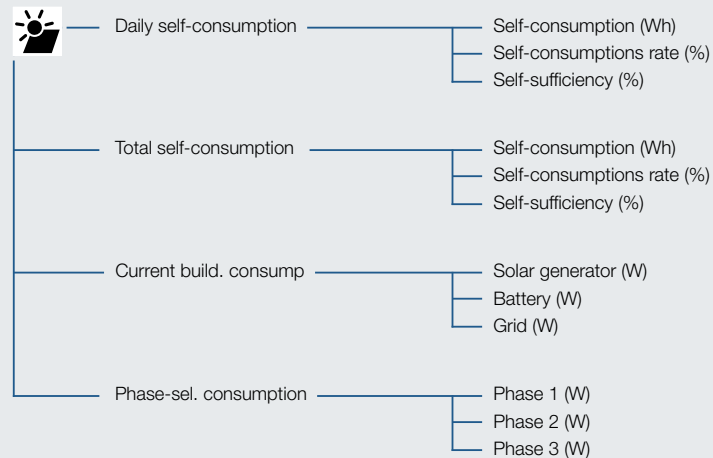
¹Deviations due to software versions (UI level) is possible.

²After entering the code, additional menu items appear to configure the inverter.
The code can be obtained by electricians from our customer service.

Menu Battery*



Menu Own Consumption*



Technical data

Inverter PIKO	Unit	6.0 BA	8.0 BA	10 BA
Input side (DC)				
Inverter type		PIKO		
Max. PV power	kWp	6.6	8.8	11
Recommended PV power	kWp			
MPP range with rated DC power	V	260-850	350-850	440-850
Max. input voltage (U_{dcmax})	V	950		
Min. input voltage (U_{dcmin})	V	180		
Rated input current	A	11.5		
Max. input current (I_{dcmax})	A	12		
Max. input current with parallel connection	A	24		
Number of DC inputs		2		
Number of independent MPP trackers		2		
Battery input side (DC)				
Max. battery input voltage	V	420		
Min. battery input voltage	V	153		
Max. charge current	A	12		
Max. discharge current	A	12		

Inverter PIKO	Unit	6.0 BA	8.0 BA	10 BA
Output side (AC)				
Rated output, $\cos \varphi = 1$ ($P_{ac,r}$)	kW	6	8	10
Max. output apparent power, $\cos \varphi$, adj	kVA	6	8	10
Rated output current	A	8.7	11.6	14.5
Max. output current (I_{acmax})	A	9.7	12.9	17.5
short circuit current (Peak / RMS)	A	19 / 12,2		
Number of feed-in phases		3		
Grid connection		3N~, AC, 400V		
Rated frequency (f_r)	Hz	50		
Ext. current sensor				
Rated current primary (Peak/RMS)	A	50/35		
Precision method		1		
Dimensions (H x W x D)	mm (inch)	90 x 105 x 54 (3.54 x 4.13 x 2.13)		
Max. cable diameter	mm (inch)	13.5 (0.53)		
Mounting on top hat rail to DIN EN 60715	✓			
Efficiencies				
Max. efficiency	%	96.1	96.3	96.5
Max. European efficiency rate	%	94.8	95.0	95.3

Inverter PIKO	Unit	6.0 BA	8.0 BA	10 BA
System data				
Topology: without galvanic separation - transformerless			✓	
Internal protection according to IEC 60529			IP 55	
Protection class according to IEC 62109-1			I	
Overvoltage category according to IEC 60664-1 Input side (PV-generator)			II	
Overvoltage category according to IEC 60664-1 Output side (grid connection)			III	
Degree of contamination			3	
Environmental category (outdoor installation)			✓	
Environmental category (interior installation)			✓	
UV-resistance			✓	
Minimum cable cross-section of AC-connect-inline	mm ²		2.5	
Minimum cable cross-section of DC-connect-inline	mm ²		4	
Max. fusing on output side			B25, C25	
Tightening torque of PE connection, outer	Nm		3	
Tightening torque of lid screws	Nm		5	
Operation protection (EN62109-2)			RCCB Typ B	

Inverter PIKO	Unit	6.0 BA	8.0 BA	10 BA
System data				
Electronic disconnection device integrated			✓	
Height	mm (inch)		450 (17.72)	
Width	mm (inch)		520 (20.47)	
Depth	mm (inch)		230 (9.06)	
Weight	kg (lb)		33 (72.75)	
Max. air throughput	m³/h		188	
Max. noise emission	dBA		46	
Ambient temperature	°C (°F)		-20...60 (-4...160)	
Max. installation altitude	m above sea level		2000	
Relative humidity (condensing)	%		4...100	
Connection technology at input side – MC 4			✓	
Connection technology at output side – spring-loaded terminal strip			✓	
Various				
Warranty	Years		5	
Warranty extension optional	Years		10/20	

SOLAR ELECTRIC

KOSTAL

Service Hotline

Germany
and other countries¹

+49 761 47 74 42 22

¹ Language: German, English

Smart
connections.



06/2016 edition, subject to technical changes and printing errors.