



EN

Smart
connections.

Data sheet

PIKO BA System Pb

BA

Technical data PIKO BA



- Module power of 4 to 11 kWp
- Charge controller and inverter in one casing
- Integrated energy management system
- CAN interface to the external storage's battery management system
- Provision of grid services, in particular reactive power, active power reduction according to VDE-AR-N 4105
- Phase-compatible feed-in to match demand
- Future-oriented, as fully equipped for new storage technologies
- Integrated communication and monitoring package
- 2 independent MPP trackers



Technical data PIKO Battery Pb



- Energy storage for photovoltaic direct consumption and optimisation of operating costs
- High energy yields and long useful life
- Low floor space requirement
- Modular structure for easy installation
- Complete storage solution from one supplier
- Maintenance-free battery technology
- Integrated battery management system

Input side (DC)

Parameter	Unit	PIKO BA
Inverter type		PIKO BA
Max. PV power	kWp	11
Recommended PV power	kWp	4...11
Rated input voltage (U _{DC,r})	V	680
Max. input voltage (U _{DC,max})	V	950
Min. input voltage (U _{DC,min})	V	180
Start-up input voltage (U _{DC,start})	V	180
Max. MPP voltage (U _{MPP,max})	V	850
Min. MPP voltage for DC rated output in single tracker mode (U _{MPP,min})		-
Min. MPP voltage for DC rated output in two-tracker mode (U _{MPP,min})	V	440
Max. input current (I _{DC,max})	A	12
Max. input current with parallel connection	A	24
Number of DC inputs		2
Number of independent MPP trackers		2

Battery input (system)

Max. voltage battery input	V	314
Min. voltage battery input	V	211
Rated voltage battery input	V	228
Max. charging current	A	12
Max. discharge current	A	12

Output side (AC)

Rated output, cos φ = 1 (P _{AC,r})	kW	10
Max. output apparent power, cos φ, adj	kVA	10
Max. output voltage (U _{AC,max})	V	264.5
Min. output voltage (U _{AC,min})	V	184
Rated output current	A	14.5
Max. output current (I _{AC,max})	A	14.5
Short-circuit current (peak)	A	20
Grid connection		3/N/PE, AC, 400V
Rated frequency (fr)	Hz	50
Setting range of the power factor cos φ _{AC,r}		0.9...1...0.9
Max. total harmonic distortion	%	≤3

Device properties

Max. night-time consumption of inverters in battery operation at max. output power (approx. 2.7 kW)	W	188
Max. night-time consumption of communication board	W	2.3

Efficiency

Max. efficiency	%	96.5
European efficiency	%	95.3
MPP adjustment efficiency	%	99.96
Max. system efficiency at 5A	%	88

Warranty

Warranty (years)		5
Warranty extension optional (years)		10/20

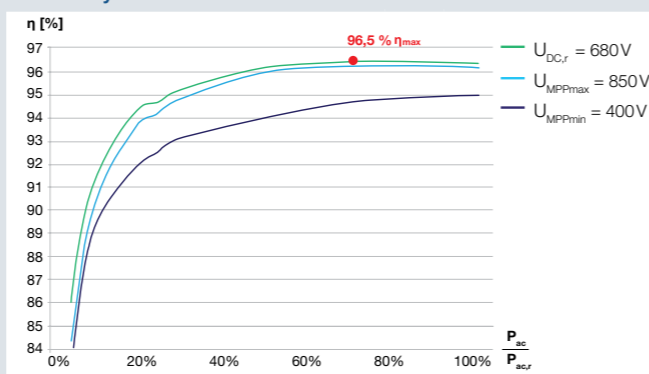
System data

Topology: Without galvanic separation - transformerless		✓
Internal protection according to IEC 60529		IP 55
Protection class according to IEC 62103		I
Surge category according to IEC 60664-1 Input side (PV generator)		II
Surge 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 connecting line	mm ²	2.5
Minimum cable cross-section of DC connecting line	mm ²	4
Min. fusing on output side		B20, C20
Operator protection		RCCM type B 30mA
Electronic disconnection device integrated		✓
Height	mm	450
Width	mm	520
Depth	mm	230
Weight	kg	33
Cooling principle - convection		-
Cooling principle - regulated fans		✓
Max. air throughput	m ³ /h	188
Max. noise emission	dBA	46
Ambient temperature	°C	-20...60
Max. installation altitude above sea level	m	2000
Relative humidity (non-condensing)	%	0...95
Connection technology at input side - MC 4		✓
Connection technology at output side - spring-loaded terminal strip		✓

Various interfaces

Ethernet RJ45		2
RS485		1
SO		1
Analogue inputs		4
CAN interface		1

Efficiency characteristics of PIKO BA



Battery

Battery type		HOPPECKE 12VOPzV blocsolar.power 70
Battery technology		Maintenance-free, cycle-optimised lead-gel battery
Number of cycles (50% DoD ¹)		2500
Total energy content (C10 ²)	kWh	11.6
Max. output power	kW	approx. 2.7
Number of block batteries (at 12V rated voltage)		19
Rated voltage	V	228
Capacity (C100 ³)	Ah	70
IP protection class		21
Test		IEC 60896-21, IEC 61427

Battery management

Calculation of the battery status		Charging status (SoC ²), ageing status (SoH)
Interface of battery management - inverter		CAN Open Standard

System

Structure		Modular frame system consisting of 5 basic units
Material		Powder-coated steel plate
Control element		Battery break switch
Total weight	kg	approx. 850
Length	mm	900
Width	mm	388
Height	mm	1584

Operating conditions

Recommended operating temperature	°C	10...30
Rel. air humidity	%	max. 85
Ventilation		Supply and exhaust opening with 154 cm ² cross-section area

¹DoD = Depth of Discharge ²SoC = State of Charge

³C10/C100 = Capacity with 10-/100-hour discharge

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Technical data PIKO BA Sensor



- Registration of building consumption with analogue current measurement
- Easy installation due to assembly on top-hat rail according to DIN EN 60715

Sensor

Rated current, primary	A	50
Rated current, secondary	A	1
Output load	VA	1
Ext. current sensor transmission ratio		50:1
Accuracy class		1
Height	mm	90
Width	mm	105
Depth	mm	54
Max. line diameter	mm	13.5

Technical data PIKO BA Backup Unit



- Secure supply in case of power failure
- VDE-certified replacement power function
- Automatic switching to replacement power mode after approx. 5 sec.
- 3-phase power supply
- Suitable for consumers up to 2,700 W (depending on battery charge status)
- Up to 10 hours of operation in the night (with consumption of 500 W and fully-charged battery)

Backup Unit

Backup connection		3/N/PE, AC, 400 V
AC connection		3/N/PE, AC, 400 V
Consumer connection		3/N/PE, AC, 400 V
Control line		2, AC, 230 V
Max. load	A	63
Potential equalisation		1
Internal protection according to IEC 60529		IP 45
Protection class according to IEC 62103		II
Degree of contamination		3
Environmental category (interior installation)		✓
UV resistance		✓
Height x Width x Depth	mm	680 x 366 x 173
Weight	kg	11.4
Ambient temperature	°C	-5...35
Relative humidity (condensing)	%	4...96
Connection technology - spring-loaded terminal strip		✓

This manual is subject to technical changes and printing errors. You can find current information at www.kostal-solar-electric.com.

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