Technical Data PIKO 6.0 BA / 8.0 BA / 10 BA

- Charge controller and inverter in one casing
- Integrated energy management system
- Provision of grid services, in particular reactive power, active power reduction according to VDE-AR-N 4105
- 3-phase feed-in
- Future-oriented, as fully equipped for new storage technologies
- Integrated communication and monitoring package
- 2 independent MPP trackers
- Relais control self consumption; EEBus ready
- Visualisation via the PIKO Solar App and PIKO Solar Portal

Input side (DC)

Inverter type		6.0 BA	8.0 BA	10 BA
Max. PV power	kWp	6.6	8.8	11
Rated input voltage ($U_{DC,r}$)	V	680		
Max. input voltage (U_{DCmax})	V	950		
Min. input voltage (U_{DCmin})	V	180		
Start-up input voltage ($U_{DCstart}$)	V	180		
Max. MPP voltage (U_{MPPmax})	V	850		
Min. MPP voltage for DC rated output in single tracker mode (U_{MPPmin})		530	700	–
Min. MPP voltage for DC rated output in two-tracker mode (U_{MPPmin})	V	260	350	440
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 (system)

Max. voltage battery input	V	420
Min. voltage battery input	V	153

Output side (AC)

Rated output, cos φ = 1 ($P_{AC,r}$)	kW	6	8	10
Max. output apparent power, cos φ, adj	kVA	6	8	10
Max. output voltage (U_{ACmax})	V	264.5		
Min. output voltage (U_{ACmin})	V	184		
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)	A	19/12.2		
Grid connection		3/N/PE, AC, 400V		
Rated frequency (f_r)	Hz	50		
Max. grid frequency (f_{max})	Hz	51.5		
Min. grid frequency (f_{min})	Hz	47.5		
Setting range of the power factor cos $\varphi_{AC,r}$		0.9…1…0.9		
Max. total harmonic distortion	%	1		

Device properties

Standby consumption	W	2.3

Efficiency

Max. efficiency	%	96,1	96,3	96,5
European efficiency	%	94,8	95,0	95,3
MPP adjustment efficiency	%	95.3		

Various interfaces

Ethernet RJ45		2
RS485		1
S0		1
Analogue inputs		4
PIKO BA Sensor Interface		1
CAN or RS485 Interface (for battery-communication)		1

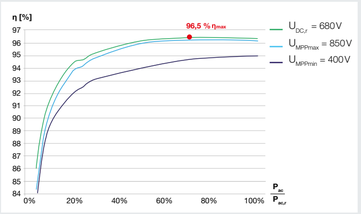
System data

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
Max. fusing on output side		B25, C25
Operator protection according to (EN 62109-2)		RCCM Typ B
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)	%	4…100
Connection technology at input side - MC 4		✓
Connection technology at output side - spring-loaded terminal strip		✓

Warranty

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

Efficiency characteristics of PIKO 10 BA



Technical Data PIKO Battery Li

- Compact and expandable within the first 18 months (modular concept), various performance categories
- Powerful, efficiency and with a long life cycle up to 20 years [1]
- Meets the highest requirements for lithium storage
- Awarded with the ees AWARD 2015 for the advanced memory technology
- 3-level electronic protection against overcharging
- Integrated battery management system
- Communication interface with PIKO BA
- Identification of the battery status

Battery

Battery type		FORTELION*					
Battery technology		Lithium iron phosphate ($LiFePO_4$)					
Number of battery modules		3	4	5	6	7	8
Total energy content (C5 [2])	kWh	3.6	4.8	6	7.2	8.4	9.6
Depth of discharge (DoD [3])	%	90					
Number of cycles (at 80% remaining capacity)		6000 [1]					
Max. output power	kW	1.84	2.45	3.1	3.7	4.3	4.9
Rated voltage	V	153	205	258	307	358	410
IP protection class		20					
Guideline		UN38.3, EN62311:2008, EN50178, EN62109-1, IEC 61508-1:2008, CE					

Battery Management

Calculation of the battery status		Charging status (SoC [4]), ageing status (SoH)
Interface of battery management – inverter		RS485

System

Structure		Battery cabinet with 3 to 8 battery modules					
Height	mm	1145					
Width	mm	550					
Depth (*with tilt bracket)	mm	655*	655*	575	575	575	575
Weight	kg	120	136	153	169	186	202

Operating conditions

Recommended operating temperature	°C	10...30
Min. operating temperature	°C	5
Max. operating temperature	°C	35
Relative humidity (non-condensing)	%	0...85

Efficiency

Max. system efficiency	%	98

Warranty

Warranty (years)		5

[1] Battery manufacturer information [2] C5 = Capacity with 5-hour discharge [3] DoD = Depth of Discharge [4] SoC = State of Charge

* FORTELION is a trademark of Sony Corporation

Technical Data PIKO Battery Pb

- 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
- Communication interface with PIKO BA
- Identification of the battery status

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 12 V rated voltage)		19
Rated voltage	V	228
Capacity (C100 [2])	Ah	70
IP protection class		21
Test		IEC 60896-21, IEC 61427

Battery management

Calculation of the battery status		Charging status (SoC [3]), ageing status (SoH)
Interface of battery management – inverter		CAN Open Standard

System

Structure		Modular frame system consisting of 5 basic units
Height	mm	1584
Width	mm	900
Depth	mm	388
Weight	kg	ca. 850

Operating conditions

Recommended operating temperature	°C	10…30
Relative humidity (non-condensing)	%	0...85
Ventilation		Supply and exhaust opening with 154 cm^2 cross-section area

Efficiency

Max. system efficiency	%	92

Warranty

Warranty (years)		2

[1] Depth of Discharge
[2] C10 / C100 = Capacity with 10- / 100-hour discharge
[3] SoC = State of Charge

Technical Data PIKO BA Backup Unit

- Secure supply in case of power failure
- VDE-tested replacement power function
- Automatic switching to replacement power mode after approx. 20 sec.
- 3-phase power supply with real three-phase AC
- Suitable for consumers up to 2,500 W with PIKO Battery Pb
- Suitable for cosumer between 2,900 - 4700 W with PIKO Battery Li (depending on the number of the battery modules)
- Up to 18 hours of operation (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	mm	680
Width	mm	366
Depth	mm	173
Weight	kg	11.4
Ambient temperature	°C	-5...35
Relative humidity (condensing)	%	4…96
Connection technology - spring-loaded terminal strip		✓

The PIKO BA Backup Unit can be combined with the PIKO Battery Pb or the PIKO Battery Li from 5 battery modules.

Technical Data PIKO BA Sensor

- Registration of building consumption with analogue current measurement [1]
- Easy installation due to assembly on top-hat rail according to DIN EN 60715

Sensor

Rated current, primary (Peak/RMS)	A	50/35
Rated current, secondary	A	1
Accuracy class		1
Connected power	kW	14
Height	mm	90
Width	mm	105
Depth	mm	54
Max. line diameter	mm	13.5

[1] The measurement of building consumption takes place during operation of the PIKO inverter

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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Data sheet

PIKO BA System

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