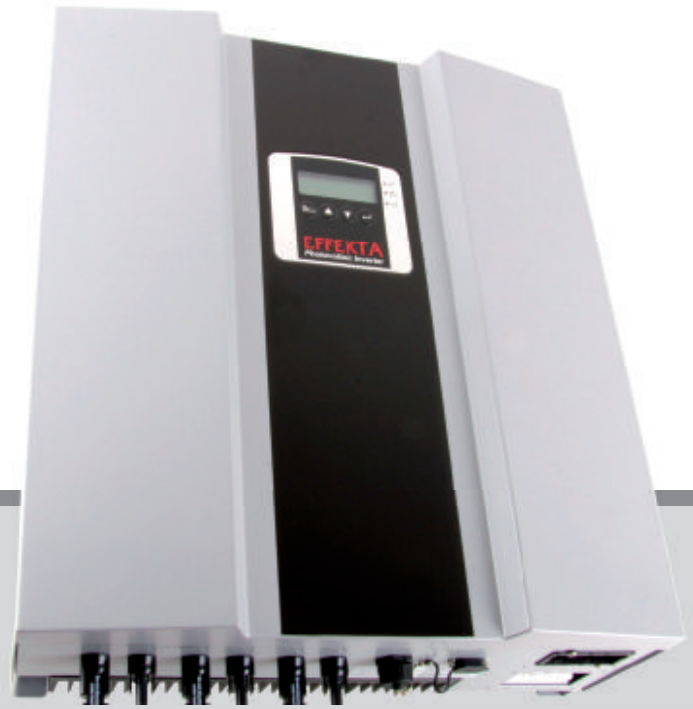
Solar inverter ES-series

Grid-connected

ES2200 – 2000watt
ES3300 – 3000watt
ES4200 – 4000watt
ES5000 – 5000watt

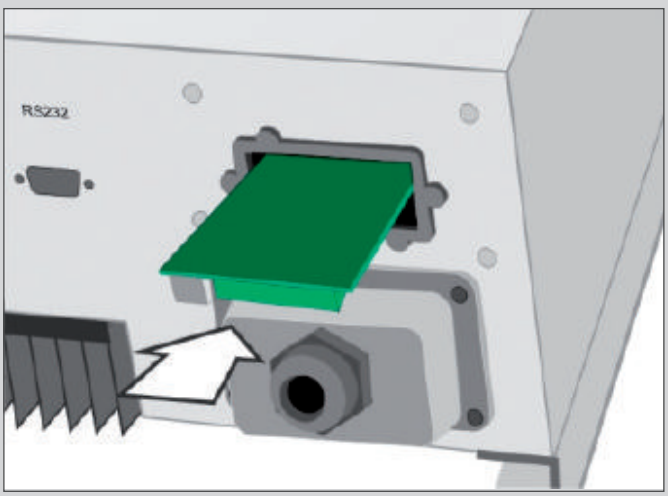
The EFFEKTA® ES inverters with an output power of 2000 up to 5000Watt are ideally suitable for several solar modules. With its robust assembly in dustproof IP65 cabinet, the application range is nearly unlimited.



Features

Transformer-less with high efficiency (up to 96%)

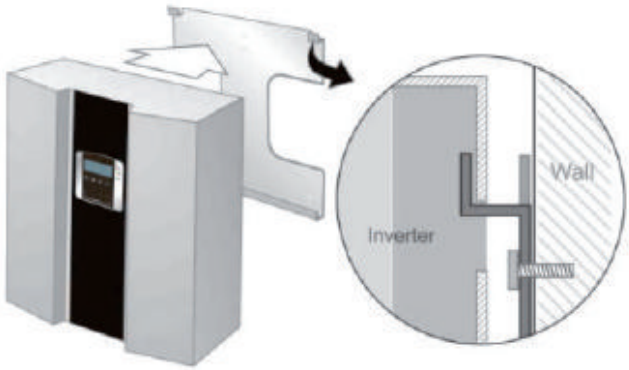
- Wide range of working temperature:
  -25°C bis +50°C
- Intelligent MPP-Tracking
- Suitable to operate either indoor or outdoor (IP65)
- Fan-less through convection cooling
- RS232-communication
- Wide communication equipment:
  Slots for RS485 USB,
  relays card or TCP/IP
- 5 years‘ warranty
  (optionally expandable to 10 years)
- G83/1 Compliant models



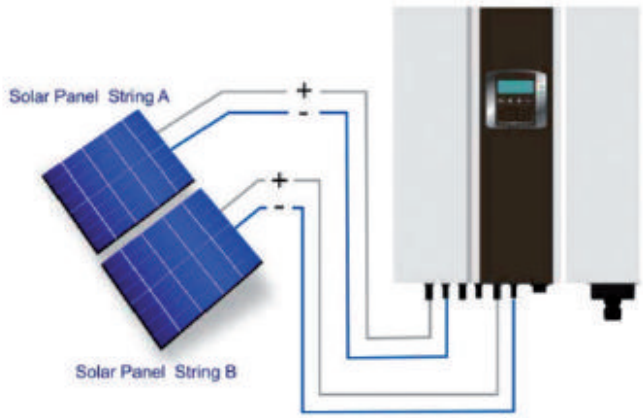
Slot for optional communication cards

Comfortable multifunction panel

1. LCD-Display
2. Warning-LED grounding failure
3. Warning-LED supply failure
4. LED-display supply OK
5. Access functions
6. Click back
7. Click forward
8. Confirm



Easy and secure mounting with carrier plate



Sample configuration:
DC-connection clamp for one 2-String-PV-array

Specifications

Specifications

Model		ES2200	ES3300	ES4200	ES5000
Inverter technology	Implementation	sine-wave, current source, change-/high-frequency PWM			
	Isolation method	version without transformer*			
DC-input	Nominal voltage	360VDC			
	Max. input voltage	500VDC			
	Operating voltage	120VDC to 500VDC**			
	Max. current (each MPPT-Tracker)	14.6A	22A	14A	17.65A
	Max. power (each MPPT-Tracker)	2200W	3300W	2100W	2650W
	MPPT range	150VDC to 450VDC			
	MPPT tracker	1		2	
AC-output	Nominal power	2000	3000	4000	4600
	Max. power	2200	3300	4200	5000
	Nominal voltage	230 VAC adjustable on 200/208/220/230/240			
	Form of the output connection	1-phase, mains connection (L, N, PE)			
	Voltage range	184 to 264.5 VAC (basic 230 VAC)			
	Nominal current	8.69A	13A	17.7A	20A
	Frequency	50/60Hz, autoselect			
	Power factor	>0.99 with nominal AC			
	Harmonic distortion	total harmonic distortion: under 5% single harmonic distortion: under 3%			
Efficiency	Max. efficiency	>96%			
	EURO efficiency	>94%			
	CEC efficiency	>94%			
Environment	Operating temperature	-25°C up to +50°C (-13°F up to +122°F)			
	Humidity	0 to 90% (without condensation)			
	Audible noise	<30dBA			
Mechanic	Dimensions (H x W x D in mm)	455 x 430 x 170		455 x 510 x 170	
	Weight (kg)	27		29	
	Enclosure	IP65, outdoor operating			
	Cooling	convection			
	AC connection	terminal			
	DC connection	multiple, pluggable			
Communicaion	Standard	RS232			
	Optional	USB, RS485, potential fee contact, TCP/IP			
Frontpanel	LCD	input DC voltage/input DC current/input DC current capacity/ output AC voltage/output AC current/output frequency/output AC current capacity/ energy output/inside temperature/cooling body temperature/status signal/failure signal			
	LED	red: grounding failure or DC-input insolation failure yellow: supply conditions are not comply with input values of photovoltaic inverter green: solar cell energy is higher or lower than 5% of nominal capacity of the photovoltaic inverter			
	Keyboard	up button/down button/function button/enter-button			
Safety	Mains supply	over-/under voltage, over-/under frequency, grounding failure, DC-input isolation failure, off-grid operation			
	Short circuit	AC input: input diode/electronical switching AC output: output relay/electronical switching			
	EPO	photovoltaic inverter switches off immediately			
	Over temparature	≤50°C (122°F) at full power/≥50°C (122°F) at reduced power			
Certification	Safety	Europe VDE0126-1-1, EN50178, IEC62103, G83/1 Compliant (ES2200 & 3300)			
	EMI/EMC	EN61000-6-1, EN61000-6-2, EN61000-6-3, EN61000-6-4			

*no galvanic isolation – note installation introduction of the solar-panel manufacturer..
**nominal range should be from 150 VDC up to 500 VDC to achieve the nominal capacity.