



HIGH-SPEED EV CHARGER

150 kW Column Type DC Charger

*'Unlocking Operational Efficiency' with High-Speed EV Infrastructure'
without major grid upgrades*



When Energy Crisis Looms..... BIA EV charger provides stability
powered by solar pv

PROPOSAL: BIA RAPID EV CHARGING SOLUTION

The Future of High-Efficiency Commercial Charging

1. Executive Summary

The BIA Rapid EV Charger is a innovative solution for commercial electric vehicle (EV) charging. While traditional DC fast chargers require massive electrical grid upgrades and significant downtime, the BIA solution delivers ultra-fast charging—up to 150 km of range in 30 minutes using existing 40 kW / 63 Amp or 100 Amp power supplies. By eliminating infrastructure delays and maximizing vehicle uptime, this technology generates an estimated \$200,000 in annual productivity gains for a standard 4-vehicle fleet. Sustainability and ESG value that supports reduced carbon emissions and clean energy transition.

Crystal Solar is strategically placed to offer a business transformation solution, driving clear productivity gains and adding ESG value to businesses transitioning to clean energy solutions

2. The “Zero-Upgrade” Advantage

- ◆ The single biggest barrier to EV adoption is the cost of upgrading local utility grids. BIA by passes the “Utility Wall”.
- ◆ Infrastructure Savings: BIA works on standard 32A, 64A, or 100A power supplies. This eliminates the need for new transformers or extensive trenching, saving \$60,000 and over depending on the power upgrade for each site.
- ◆ Rapid Deployment: Installation takes weeks, not months, as no major civil works or new high-voltage line permits are required.

3. Operational Efficiency & Financial Impact Assessment

Unlock your Operational Efficiency with High-Speed EV Infrastructure. In the commercial sector, a vehicle only makes money when it is moving. BIA transforms “plugged-in” time into “billable” time.

The \$180,000 Productivity (Based on 4 Vehicles)

Metric	Standard Charging	BIA Rapid Charging
Charge Time	3–6 Hours	<30 Minute
Daily Time Recovered	0 Hours	~2.5 Hours per vehicle
Daily Value (\$100/hr)	\$0	\$250 per vehicle
Annual Gain (4 Vehicles)	\$0	\$180,000 (estimated)

4. Technical Specifications

- ◆ Charging Output: Up to 150 kW (Dual CCS2 Guns).
- ◆ Onboard Energy: 100.69 kWh capacity using high-durability Supercapacitor technology.
- ◆ Weather Resistance: IP54 rating for the column; IP65 for the inverter.
- ◆ Smart Interface: 27" LCD Advertisement screen for secondary revenue + 7" User Interface.
- ◆ Connectivity: OCPP 1.6J capability via 4G/5G/GPS for remote management.
- ◆ Sustainability: Solar-to-Battery for direct PV integration.
- ◆ Scalability: Scalable for larger EV charging requirements

5. Investment Summary & Security

- ◆ **5-year warranty** (as specified in the technical data), ensuring your CapEx is protected against hardware failure.
- ◆ **Obsolescence Protection:** Remote Update & Diagnostics allow the system to receive software and protocol updates (OCPP) wirelessly, ensuring it remains compatible with new EV models for the next decade.
- ◆ **Secondary Revenue:** The integrated 27" LCD screen allows the BIA to act as a digital billboard, potentially offsetting its own electricity costs through local advertising partnerships.

6. Fleet Productivity Transformation Plan

The BIA Rapid EV Charger is a financial instrument that pays for itself through infrastructure savings and massive productivity gains.

Immediate Next Steps:

1. **Site Audit:** A brief electrical assessment to identify existing 63A/415V access points.
2. **Pilot Program:** Installation of one BIA unit to validate the 30-minute charge cycle with your specific fleet.
3. **Full Deployment:** Scaling to the 4-vehicle configuration to unlock the A\$180,000 annual productivity dividend.

CHARGE YOUR EVs IN 30 MINUTES*



Powerful - Faster charging with efficiency

- Up to 150 kW of fast charging
- Fast DC-DC Charging mode



Smart Advertising & Communication Portal

Additional revenue to boost ROI

- Display shows charging related info
- Built in display screen offer advertising potential



High Reliability - Worry Free Charging

- Compatible with all EVs
- High charging success rate
- Innovative Technology



Solar - to - Battery Charging Connect to a PV source to charge batteries



Scalable Solution for high power heavy vehicle charging



Weather Resistant



Smart Cloud Portal & OCPP Capability



Remote Update & Diagnostics



Smart Charging



98% Charging Efficiency



Dual plug CCS2 guns



Support APP, RFID Card, Credit Card, Mobile Payment

* depends on the ev charge capability

100 kWh - 150 kW Column Type DC Charger

No	Description	Specification	Remarks
1	Charging Gun Output power (kW)	150 kW (2 Guns)	FlexibleIntelligent Allocation
2	Charging Gun Output current (A)	0-300A (CCS2)	
3	Charging Gun Output voltage Range (Vdc)	200 ~ 1000	
4	DC Charging gun standard	CCS 2 - 1 Gun	
5	DC Charging gun cable length	5 M	
6	Charging mode	Touch start	Support OCPP1.6J
7	Operating temperature range (°C)	-20 + 50	
8	Storage temperature range (°C)	-20 + 60	
9	Protection level	IP54	
10	Thermal management	Charging module air cooling	
11	Display screen	7 inch user interface screen & 27 inch Advertising screen	
12	Unit Size	1300mm x 1000mm x 2000mm	
13	Active safety	Insulation detection, SOC, temperature, fire, voltage, emergency stop	
14	Weight (kg)	1500	
Power-pack information			
15	Electricity (kWh)	100.69	
16	Cell Type	Supercapacitor	
17	Battery Pack Size	1060 wide x 660 deep x 1000 high	
18	Nominal Voltage (Vdc)	599.4 V	
19	Nominal Capacity (Vdc)	168 Ah	
20	Min Voltage (Vdc)	453.6 V	
21	Max Voltage (Vdc)	680.4 V	
22	Charging current (Amps)	80 A (1C)	
23	Discharging current (Amps)	300 A (3C)	
Other parameters (Input Characteristics)			
	Battery recharged mode DC recharge AC recharge	N/A (40kW @ 63A) ; (69kW @100Amp) or (86 kW @125 Amp - Europe only)	CCS2 DC charging Socket AC 3-PHASE 415 V
	Full discharge time (100.69 kwh)	2.5 hours	IEC 62916 -2 IEC62916-3
	Discharge time (100.69 kWh)	24 minutes	
	Recharged time by DC charger(50kW)	N/A	
	Recharged time by AC 3-phase (43 kW)	2.3 hours	
Other parameters			
	Warranty	5 years	

specification subject to change without notice

HYBRID INVERTER SPECIFICATION

Technical Data

www.deyeinverter.com

Model	SUN-29.9K-SG01HP3 -AU-BM3	SUN-30K-SG01HP3 -AU-BM3	SUN-35K-SG01HP3 -AU-BM3	SUN-40K-SG01HP3 -AU-BM4	SUN-50K-SG01HP3 -AU-BM4
Battery Input Data					
Battery Type		Lithium-ion			
Battery Voltage Range (V)		160-800			
Max. Charging Current (A)		50+50			
Max. Discharging Current (A)		50+50			
Charging Strategy for Li-ion Battery		Self-adaption to BMS			
Number of Battery Input		2			
PV String Input Data					
Max. PV access power(W)	59800	60000	70000	80000	100000
Max. PV Input Power (W)	44850	45000	52500	60000	75000
Max. PV Input Voltage (V)		1000			
Start-up Voltage (V)		180			
MPPT Voltage Range (V)		150-850			
Rated PV Input Voltage (V)		600			
Max. Operating PV Input Current (A)		36+36+36		36+36+36+36	
Max. Input Short-Circuit Current (A)		55+55+55		55+55+55+55	
No. of MPP Trackers/ No. of Strings MPP Tracker		3/2+2+2		4/2+2+2+2	
AC Input/Output Data					
Rated AC Input/Output Active Power (W)	29900	30000	35000	40000	50000
Max. AC Input/Output Apparent Power (VA)	29900	30000	35000	40000	50000
Rated AC Input/Output Current (A)	43.4	43.5	50.8	58	72.5
Max. AC Input/Output Current (A)	43.4	43.5	50.8	58	72.5
Max. Continuous AC Passthrough (grid to load) (A)		200			
Peak Power (off-grid) (W)		1.5 times of rated power, 10s			
Power Factor Adjustment Range		0.8 leading to 0.8 lagging			
Rated Input/Output Voltage/Range (V)		230/400V 240/415V 0.85Un-1.1Un			
Rated Input/Output Grid Frequency/Range(Hz)		50Hz/45Hz-55Hz			
Grid Connection Form		3L+N+PE			
Total Current Harmonic Distortion THDi		<3%			
DC Injection Current		<0.5% In			
Efficiency					
Max. Efficiency		97.60%			
Euro Efficiency		97.0%			
MPPT Efficiency		>99%			
Equipment Protection					
Integrated	DC Reverse Polarity Protection, AC Output Overcurrent Protection, Thermal Protection, AC Output Overvoltage Protection, AC Output Short Circuit Protection, DC Component Monitoring, Insulation Impedance Detection, Arc Fault Circuit Interrupter (optional),DC Switch, Anti-islanding Protection(Active Frequency shift) , Residual Current Detection				
Surge Protection Level	TYPE II(DC), TYPE II(AC)				
Interface					
Communication Interface	WIFI,RS485,CAN				
LCD/LED Display	LCD				
General Data					
Operating Temperature Range (°C)	-40°C to +60°C,> 45°C Derating				
Permissible Ambient Humidity	0-100%				
Permissible Altitude	2000m				
Noise (dB)	≤65				
Ingress Protection(IP) Rating	IP 65				
Protection Level	Class I				
Inverter Topology	Non-Isolated				
Over Voltage Category	OVC II(DC), OVC III(AC)				
Cabinet Size (WxHxD mm)	527×894×294 (Excluding Connectors and Brackets)				
Weight (kg)	80				
Type of Cooling	Intelligent Air Cooling				
Warranty	10 Years				
Grid Regulation	AS/NZS 4777.2				
Safety / EMC Standard	IEC/EN 61000-6-1/2/3/4, IEC/EN 62109-1, IEC/EN 62109-2				





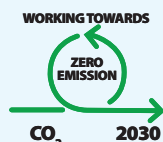
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CRYSTAL SOLAR ENERGY PTY.LTD.®

RENEWABLE ENERGY POWER SOLUTIONS

"Engineering the Future of Integrated Energy"



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