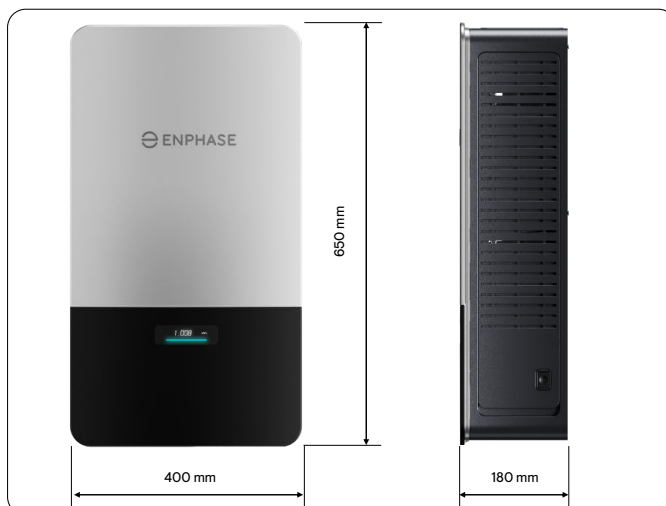


IQ Bidirectional EV Charger

The IQ Bidirectional EV Charger¹ enables standards-based bidirectional energy flow between compatible electric vehicles, homes, and the grid, supporting EV charging, home backup, and grid services across European single-phase and three-phase electrical systems. As a DC-coupled charger, all power conversion happens in the charger, not the vehicle, ensuring consistent compliance with local grid codes at the point of installation and broad compatibility with bidirectional-capable EVs.



Key specifications	IQ Bidirectional EV Charger	
Order code	IQ-EVSE-EU-3020-1103-1400	IQ-EVSE-UK-1020-1103-1400
Operation mode	Single-phase and three-phase	Single-phase
Nominal AC input voltage (V_{nom})	230 V_{L-N} (single-phase) 400 V_{L-L} (three-phase)	230 V_{L-N}
Nominal input frequency	50 Hz	
Rated AC supply (charging and discharging)	Up to 11 kW (three-phase), up to 7.4 kW (single-phase)	Up to 7.4 kW (single-phase)
Connector cables	CCS Type 2 vehicle connector (IEC 62196-3)	
Cable length	7.5 m	
Operating temperature	-30°C to 55°C	



Future ready

- Designed to ISO 15118-2 and -20 standards for compatibility with all EVs and grid systems
- DC-coupled architecture keeps grid code compliance fixed at the installation site, simplifying regional certification and DSO approval
- Supports OCPP 2.1, EEBUS, and IEEE 2030.5 for seamless interoperability with charge point operators and utility programs

Smart

- AI Optimization schedules charging/discharging based on tariffs, solar output, home consumption, and departure time to maximise savings
- V2G export enables selling energy at peak tariff periods, turning the EV into a revenue-generating asset
- Power the home instantly with V2H backup and Dark Start when the EV is connected after the grid goes down
- Dynamic load balancing adjusts charging power real time to prevent overloads and costly upgrades

Robust

- DC-coupled connection delivers up to 97% round-trip efficiency, preserving nearly all driving range
- Field-replaceable microinverters and modular design minimise downtime

¹ Specifications, certifications, and available operating modes may vary by country and are subject to regulatory approval.

Electrical specifications	Units	IQ-EVSE-EU-3020-1103-1400	IQ-EVSE-UK-1020-1103-1400
Operating mode	—	Single-phase and three-phase	Single-phase
Nominal AC input voltage (V_{nom})	V	230 V_{L-N} (single-phase) 400 V_{L-L} (three-phase)	230 V_{L-N}
Nominal input frequency	Hz	50	
Rated AC supply (charging and discharging)	kW	Up to 11 (three-phase) and 7.4 (single-phase) ²	Up to 7.4 ²
Supported DC voltage range	—	Up to 1000 VDC, 40 A	
Frequency range	Hz	47–53	
Efficiency	%	>97	
AC input electrical connection	—	Single-phase: Hardwired (L1, N, PE) Three-phase: Hardwired (L1, L2, L3, N, PE)	Single-phase: Hardwired (L1, N, PE)
Charging equipment components	Units		
Connector cable length	m	7.5	
Connector cable type	—	CCS Type 2 vehicle connector (IEC 62196-3)	
Cable and connector holster	—	Included	
Mechanical specifications	Units		
Enclosure dimensions (W × H × D)	mm	400 × 650 × 180	
Weight	kg	38	
Enclosure rating	—	IP55 and IK10	
Supply cable entry options	—	Bottom and rear	
Environmental specifications	Units		
Relative humidity range	%	5–95 (non-condensing)	
Altitude	m	Up to 3000	
Operating temperature	°C	–30 to 55	
Storage temperature	°C	–40 to 80	
Communication interfaces	Units		
Cellular	—	4G LTE	
Wireless network	—	Wi-Fi	
Bluetooth	—	BLE 5.2	
Wired communication	—	Ethernet, CAN, RS-485	
EV communication	—	ISO 15118-2 and ISO 15118-20, DIN 70121	
Integration support	—	OCPP 1.6, 2.0.1, and 2.1	
Features			
LED indicator		Provides real-time visual indication of both operational status and error conditions, enabling quick system diagnostics without additional test equipment.	
Vehicle-to-home (V2H)		Allows your electric vehicle to act as a home battery, powering your house during blackouts or lowering peak energy costs.	

² Rated AC supply is subject to local grid operator approval and installation configuration.

Features	
Vehicle-to-grid (V2G)	Exports stored EV battery energy to the grid during peak demand or instability, supporting grid resilience, demand response, and energy cost savings
Dark Start	Enables the system to power up a completely de-energised home during a power outage when installed with a grid islanding device (IQ System Controller or IQ Grid Switch)
AI Optimization	Optimises charging with dynamic tariff rates and excess solar power and EV-specific profiles
Self-consumption	When integrated with Enphase PV or any other PV system (through the IQ Gateway), the charger tracks surplus solar and redirects it to the EV
Savings	Optimises charging patterns while saving money and minimising the carbon footprint
Scheduled charging	Charges the EV based on user-configurable custom schedules
Green charging	Green charging tracks solar to ensure efficient consumption of excess solar
Dynamic load balancing	Automatically adjusts EV charging power based on variations in solar production and home consumption to prevent tripping and avoid upgrades to the main panel
Access control	App/RFID/NFC (13.56 MHz)
Safety and compliance	
Compliance	IEC 61851-1/-23/-24: EV charging systems IEC 62116: Anti-islanding protection IEC 62109-1: Power electronics safety ISO 15118-2/ISO 15118-20: EV communication EN 50549-1/EN 50549-2: Grid connection of generation units EMC Directive (2014/30/EU) Low Voltage Directive (2014/35/EU) Radio Equipment Directive (2014/53/EU)
Grid compliance	Germany: VDE-AR-N 4105, VDE-AR-N 4110 Netherlands: Netcode Elektriciteit, EN 50549 (DSO implementation) France: NF C 15-100, Enedis technical references United Kingdom: ENA G99/G100
Product labeling	CE, UKCA
Safety features	Overvoltage protection (253 V), RDC-DD (± 6 mA), relay weld detection, overcurrent detection (+20%)
Advanced grid functions	Power export limiting (PEL), phase imbalance management (PIM), loss of phase detection (LOP), power factor control Q (U), cos (phi) (P)
In-built sensors	Ambient light, temperature, humidity, and tilt
Metering accuracy	$\pm 1\%$ (Class B, MID-certified)
Limited warranty	
IQ Bidirectional EV Charger	10-year limited warranty

Komponenten des Enphase Energy System



IQ Gateway

The IQ Gateway is the platform for energy management and integrates with IQ Microinverters and IQ Batteries to provide complete control and insights into the Enphase Energy System.



IQ System Controller 3 INT

IQ System Controller 3 INT connects the home to grid power, the IQ Battery storage system, and solar PV. It provides microgrid interconnect device (MID) functionality by automatically detecting and seamlessly transitioning the home energy system from grid power to backup power in the event of a grid failure.

Revision history

Revision	Date	Description
DSH-00921-3.0	June 2026	Updated the cover image.
DSH-00921-2.0	June 2026	• Updated the cover image. • Updated the introduction section. • Added a new section, "Components of the Enphase Energy System".
DSH-00921-1.0	January 2026	Preliminary release.