IQ Combiner 6C

The IQ Combiner 6C consolidates interconnection equipment into a single enclosure, streamlining the installation of IQ Series Microinverters. It integrates the IQ Gateway to offer a consistent, pre-wired solution for residential applications. It includes breaker spaces for PV, battery, EV charger, and an integrated load controller. Additionally, it reduces installation time with integrated and pre-wired current transformers for PV and batteries.

Enphase 15 year limited warranty

Key specifications	X-IQ-AM1-240-6C
Nominal voltage/Range (L-L)	240 VAC~/±20% Split-phase (L1-L2 240 V, L-N 120 V, 180°)
Nominal frequency/Range	60 Hz/56–63 Hz
Maximum continuous PV current (combined)	80 A
Maximum continuous battery current	2 × 59 A
Maximum continuous EVSE current	1 × 48 A
Maximum continuous integrated load controller current	64 A
Maximum continuous Distributed Energy Resources (DERs) current	160 A
Maximum continuous backfeed current	100 A
Maximum aggregate PV breaker size	Up to 100 A (ships with 60 A pre-installed breaker)[1]
Dimensions (H × W × D)	680 mm (26.8") × 460 mm (18.1") × 220 mm (8.7")
Ambient operating temperature range	–40°C to 46°C (–40°F to 115°F)
Cooling	Solar shield, active air cooling

Smart

- Integrated combiner controller board (CCB) and IQ Gateway.
- Includes Enphase Mobile Connect (CELLMODEM-07-NA).
- Supports flexible networking: Wi-Fi, Ethernet, or cellular.
- Integrated revenue-grade production and storage metering via pre-installed current transformers. Also supports consumption and EV charger monitoring.

Easy

- Pre-installed UL 489 certified device for Rapid Shutdown.
- Single-stud mountable with two screws.
- Supports multiple conduit entry options such as top side right, top side left, bottom side left, bottom side right, bottom rear, and bottom.
- Supports up to five PV branches, two battery circuit breakers and one EVSE circuit breaker.
- Bluetooth-based Wi-Fi provisioning for easy Wi-Fi setup.
- Supports an integrated load controller with up to 80 A using double-pole or quadplex breakers.

Reliable

- Durable NRTL-certified NEMA type 3R enclosure.
- 15-year limited warranty.

[1] Usable as a Rapid Shutdown initiator if the IQ Combiner 6C is installed at a readily accessible outdoor location.

Product details	IQ Combiner 6C
IQ Combiner 6C[2] (X-IQ-AM1-240-6C)	IQ Combiner 6C includes the following components: • IQ Gateway for revenue-grade production and storage metering. • Combiner controller board for safety. • Solar shield and fans to enhance thermal performance. • Integrated Rapid Shutdown initiator for outdoor installs. • Integrated and pre-wired current transformers for PV and batteries. • Enphase Mobile Connect cellular modem (CELLMODEM-07-NA). • Integrated load controller, with monitoring and control loads.
What's in the box	
Enclosure	IQ Combiner 6C unit
Enphase Mobile Connect	CELLMODEM-07-NA[3] cellular modem with a 5-year data plan.
Accessory kit	IQ Combiner 6C accessory kit, including labels, control (CTRL) headers, and the quick install guide (QIG).
Aggregate PV breaker	The pre-installed (60 A) UL 489-certified breaker is usable as a Rapid Shutdown initiator if the IQ Combiner 6C is installed at a readily accessible outdoor location.
Features	
IQ Gateway	The integrated IQ Gateway reports production and storage metering, IQ EV Charger, and consumption monitoring, along with IQ Battery and IQ Microinverters data from the site to the Enphase Cloud. This monitoring and analysis software enables comprehensive, remote maintenance and management of Enphase systems.
Distributed Energy Resource (DER) relay	The integrated DER relay isolates home loads from PV systems and batteries. It enables the system to automatically recover the State of Charge (SoC) when the batteries are depleted during off-grid operation.
DER busbar	A 100 A PV busbar (for IQ Microinverters) with support for four double-pole breakers for installing IQ Series Microinverters. A 200 A DER busbar (for PV, batteries, EV charger, and other home loads) with support for four double-pole breakers for installation: • Two for IQ Battery 10C. • One for Enphase EV charger. • One for aggregate PV (integrated Rapid Shutdown Device).
Integrated production metering	Fully integrated meter with solid-core current transformer (CT), accurate up to ±0.5%, ANSI C12.20 class 0.5 compliant. Does not require field wiring.
Integrated battery metering	Fully integrated meter with two solid-core CTs, accurate up to ±0.5%, ANSI C12.20 class 0.5 compliant. Does not require field wiring.
Integrated backfeed monitoring	Fully integrated monitoring using two solid-core CTs, accurate up to ±2.5%. Does not require field wiring.
Integrated monitoring in the built-in load controller	Fully integrated monitoring using two solid-core CTs, accurate up to ±0.5%. Does not require field wiring.
EV charger monitoring	Supports monitoring of EV charger; accuracy up to ±2.5%.[4]
Breaker spaces[5]	Up to 4 × 20 A breakers for PV.[6] Up to 1 × 100 A aggregate PV breaker.[7]

[2] IQ Combiner 6C is not service-entrance rated. IQ Combiner 6C does not support generator integration and fully off-grid systems (that is, without utility supply).
[3] A plug-and-play industrial-grade cell modem for systems of up to 96 microinverters.
[4] One unit of CT-200-CLAMP must be purchased separately and installed on the L2 line of the EV charger. Lead wires of the CT must be connected to the IQ Gateway according to the instructions in the QIG.
[5] All breaker spaces are supported with integrated hold-down kit.
[6] Also supports five 20 A PV branches using three double-pole breakers and one quadplex breaker. Refer to the QIG for information about specific spaces that can be used with the quadplex breakers.
[7] Ships with a factory-installed 60 A breaker. The aggregate PV breaker can be used as a PV disconnecting means, if the IQ Combiner 6C is installed outdoors, the aggregate PV breaker can be the Rapid Shutdown initiator.

Features	
	Up to 2 × 80 A breakers for batteries. Up to 1 × 60 A breaker for IQ EV Charger. Up to 1 × 80 A breaker for integrated load controller.
Rapid Shutdown initiator (options)	Aggregate PV breaker (if the combiner is installed at a readily accessible outdoor location)[8] OR External AC disconnect (located outdoors) installed between the IQ Combiner 6C and the backfed panel.[9] OR External AC disconnect (located outdoors) on aggregate PV breaker.[10]
Cellular data plan	5-year data plan included.[11]

Electrical specifications	
Nominal voltage/Range (L-L)	240 VAC~/±20% Split-phase (L1-L2 240 V, L-N 120 V, 180° phase angle)
Voltage measurement accuracy	±1% $V_{nominal}$ (±1.2 V L-N and ±2.4 V L-L)
Nominal frequency/Range	60 Hz/56–63 Hz
Maximum continuous PV current	80 A
Maximum continuous battery current	2 × 59 A
Maximum continuous EV charger current	1 × 48 A
Maximum continuous DER current	160 A
Maximum continuous current supported by integrated load controller	64 A
Maximum continuous backfeed current	100 A
Maximum breaker rating for PV branch circuit	20 A
Maximum breaker rating for battery branch circuit	80 A
Maximum breaker rating for EV charger	60 A
Maximum breaker rating for integrated load controller	80 A
Maximum breaker rating for backfeed (breaker located in the backfed panel)	125 A
Maximum short circuit current	10 kA
Maximum rating for aggregate PV breaker	100 A[12]
Maximum breaker rating for aggregate PV feed-in if combining branch circuits on external panel board	100 A[13]
Internal PV busbar rating	100 A
Internal DER busbar rating	200 A
Auxiliary/Dry contacts	1 × NO/NC (120 VAC, 3 A) on the Combiner Controller Board

[8] The pre-installed aggregate PV breaker has been evaluated as the Rapid Shutdown (RSD) initiation device and can be used accordingly.
[9] AC disconnect requires a three-pole disconnect with the third pole connected to the AC-sense header on IQ Combiner 6C. or a double-pole disconnect with auxiliary contacts connected to the AC-sense header on IQ Combiner 6C.
[10] If placing the AC disconnect inline with the aggregate PV breaker or using a separate panel for PV branch circuits, place the AC disconnect on the aggregate PV feed-in to the IQ Combiner 6C.
[11] Enphase requires Wi-Fi or Ethernet-based internet connectivity for battery systems. A cellular modem is a backup connection for systems with batteries. The cellular modem can be used as the primary internet connection for PV-only systems. However, Enphase recommends connecting Wi-Fi or Ethernet in addition.
[12] Ships with a 60 A breaker preinstalled. Upsize to an 80/100 A breaker if wiring more than three PV branch circuits.
[13] Refer to the QIG for information about the placement of the 100 A breaker on the PV busbar. The aggregate PV breaker must also be replaced with a 100 A breaker. Do not connect the aggregate feed-in directly to the aggregate PV breaker on the right side.

Electrical specifications	
	1 × NO (240 VAC, 3 A) on the IQ Gateway
Connections and wire sizes[14]	
Conduit location	Top side left, top side right, bottom side left, bottom side right, bottom, bottom rear
Lugs connections	Backfeed lugs, Cu: 6–2/0 AWG Neutral lug, Cu: 6–2/0 AWG
Breaker connections[15]	PV breakers, Cu: 10 AWG maximum Battery breaker, Cu: 3 AWG maximum EV charger breaker, Cu: 4 AWG maximum[16] Aggregate PV breaker, Cu: 4 AWG[17] [18] Integrated load controller breaker, Cu: 2 AWG maximum
Neutral and ground connections	Neutral lug: 6–2/0 AWG (one space) Neutral bar: • Large holes: 3–1/0 AWG (three spaces) • Small holes: 14–6 AWG (nine spaces) Ground bar: • Large holes: 3–1/0 AWG (five spaces) • Small holes: 14–6 AWG (thirteen spaces)
Other connections	4 × Control (CTRL) headers (5-pin), Cu: 18 AWG[19] 1 × NO/NC (120 VAC, 3 A, 3-pin), Cu: 28–16 AWG 1 × NO (240 VAC, 3 A, 2-pin), Cu: 28–14 AWG 1 × RS-485 (3-pin), Cu: 28–16 AWG 1 × AC sense for external Rapid Shutdown Device (240 VAC, <1 A), Cu: 16–12 AWG EVSE CT, Cu: 28–16 AWG[20] Ride Through the power supply board[21] Rope CT connector
Accessories (order separately)	
Applicable circuit breakers for PV, battery, EV charger, and integrated load controller[22] [23]	Eaton BR2xx (xx: 20/40/60/80/100 A) Eaton quad breaker BRDC220220, BQC220220 Eaton quad breaker BQ2xx2xx (xx: 20–20/40–40/30–50 A) Siemens Q2xx (xx: 20/40/60/80/100 A) Siemens quad breaker Q22020CT Siemens Q2xxxxCT2 (xx: 20–20/40–40/30–50 A)
IQ Meter Collar	IQ Meter Collar with integrated consumption metering SKU: MC-200-011-V01
Clamp-type CTs (for use as an EVSE CT)	1 × 200 A clamp-type current transformers for metering (accuracy: ±2.5%) SKU: CT-200-CLAMP
Clamp-type CTs (for use as consumption CTs)	2 × 200 clamp-type current transformers for metering (accuracy: ±2.5%) with color-coded cables for L1, L2; black/red cable to monitor consumption L1; brown/purple cable to monitor L2 SKU: CT-200-CLAMP-2A
Enphase Control Cable	Control cable, 500 ft. spool.

[14] Use a 90°C-insulated wire for all field-wired connections.
[15] Wire gauges are specified based on the wire-bending space requirements in the National Electrical Code. Follow NEC for the selection of wire gauges, also refer to the breaker manufacturer's guidance for breaker-specific wire gauges.
[16] A minimum of four AWG cables must be used with the 60 A breaker in the EV charger space.
[17] Pre-wired to connect an aggregate PV breaker using a 4 AWG cable with a 105°C insulation.
[18] When using an inline PV disconnect, match the disconnect rating to the aggregate PV breaker rating and ensure compliance with local and national codes and standards.
[19] The control header accommodates CTRL L, CTRL H, GND, 24V, and DRAIN. The drain wire of the control cable can be grounded via the control header eliminating the need for a separate ground header.
[20] CTs are available as an accessory.
[21] A power supply board with capacitors is required in solar-only systems if the utility requires the IEEE 2030.5 connection to be powered during low voltage ride through.
[22] The combiner includes hold-down kit functionality for all branch circuit breakers. Special breakers from manufacturers that support hold-down functionality are not required.
[23] Breakers on each space may have restrictions. Refer to the quick install guide (QIG) for detailed information on each breaker space with applicable breaker manufacturer.

Accessories (order separately)	
	SKU: CTRL-SC3-NA-01
Ride Through power supply board	Required for solar-only systems if the utility requires the IEEE 2030.5 connection to be powered during low voltage ride through. SKU: X-IQ-NA-PSBECAP-R6
Mobile Connect	Cellular modem with a 5-year data plan and dual network provider support (AT&T and T Mobile) SKU: CELLMODEM-07-NA

Mechanical data	
Dimensions (H × W × D)	680 mm (26.77") × 460 mm (18.11") × 220 mm (8.66")
Weight	~18 kg (40 lb)
Ambient temperature range	–40°C to 46°C (–40°F to 115°F)
Enclosure rating	Outdoor NEMA 3R
Cooling	Solar shield, active air cooling[24]
Altitude	Up to 3000 meters (9842 feet)[25]

Compliance	
IQ Combiner	UL 1741, CSA C22.2 #107.1:16, CSA C22.2 #330:23 FCC & IC (ICES-003:2014)- 47 CFR Part 15 Class B, ICES 003, ICC ES AC156
IQ Gateway	UL 61010-1, CAN/CSA 22.2 No. 61010-1, IEEE 2030.5/CSIP Compliant Production and storage metering: ANSI C12.20 accuracy class 0.5

Communication interfaces	
Integrated Wi-Fi	802.11b/g/n (dual band 2.4 GHz/5 GHz), for connecting the Enphase Cloud via the internet
Wi-Fi range (recommended)	10 m
Bluetooth	Bluetooth low energy compliant with Bluetooth 5.0 specification
Ethernet	Optional, 802.3, Cat5E (or Cat 6) UTP Ethernet cable (not included), for connecting to the Enphase Cloud via the internet
Mobile Connect	CELLMODEM-07-NA
Digital I/O	Digital input/output for grid operator control
USB 2.0	For Mobile Connect
Access point (AP) mode	For connection between the IQ Gateway and a mobile device running the Enphase Installer App
Power line communication (PLC)	90–110 kHz (Class B) to microinverters
RS-485	For remote metering or MODBUS (with IQ Combiner 6C as a secondary)
Web API	Refer to https://developer-v4.enphase.com
Local API	Refer to the guide for local API

Limited warranty	
IQ Combiner 6C[26]	15 years (Enphase Mobile Connect - 5 years)

Compatibility	
IQ Meter Collar	MC-200-011-V01

[24] The IQ Combiner 6C continuously monitors its internal temperature to ensure it operates within safe thermal limits.
[25] Verify the altitude specifications in each component's data sheet to ensure the system meets the altitude requirements of the installation location.
[26] IQ Combiner 6C is not service-entrance rated. IQ Combiner 6C does not support generator integration and fully off-grid systems (that is, without a utility supply).

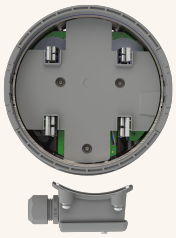
Compatibility	
IQ Battery	IQ Battery 10C
Microinverters	IQ6, IQ7, and IQ8 Series Microinverters
Third-party PV or legacy Enphase PV	Supported through integrated load controller[27]

[27] Integrated gateway does not support legacy Enphase PV or a third-party PV.

Components of the Enphase Energy System

IQ Microinverters

IQ Series Microinverters pack more power into less space than other rooftop solar systems and make rooftop solar more productive, reliable, smart, and safe.



IQ Meter Collar

IQ Meter Collar enables full home backup with IQ Battery 10C, IQ Series Microinverters, and IQ Combiner 6C.

IQ Battery 10C

IQ Battery 10C is a compact, powerful, reliable and safe AC Battery. It has a total usable energy capacity of 10.0 kWh and includes four embedded, grid-forming microinverters with a 7.08 kVA continuous power rating. It provides backup capability, and installers can quickly design the right system size to meet the customer needs.

Revision history

Revision	Date	Description
DSH-00585-3.0	April 2025	Updated the footnotes and specifications.
DSH-00585-2.0	February 2025	Updated the introduction and specifications.
DSH-00585-1.0	September 2024	Initial release.