NORTH AMERICA | PRELIMINARY | DATA SHEET

IQ Combiner 6C

The IQ Combiner 6C consolidates interconnection equipment into a single enclosure, simplifying the installation of IQ Series Microinverters. It integrates the IQ Gateway to provide a consistent, pre-wired solution for residential applications. It is as an all-in-one electrical solution that includes breaker spaces for PV, battery, EV charger, and additional home loads while reducing install 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 V~/±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)	64 A (supports up to 80 A at lower ambient temperatures)
Maximum continuous battery current	2 × 59 A
Maximum continuous EVSE current	1 × 48 A
Maximum continuous integrated load controller current	1 × 48 A (supports up to 64 A at lower ambient temperatures)
Maximum continuous DER current	160 A
Maximum continuous backfeed current	100 A
Maximum PV aggregate (PVA) 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, forced 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. Consumption/load/third-party PV monitoring and EV charger monitoring is also supported.

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 batteries, and one EV charger branch 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 Rapid Shutdown initiator if IQ Combiner 6C is installed outdoors.

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).
PV aggregate breaker	Pre-installed (60 A) UL 489 certified breaker usable as Rapid Shutdown initiator for outdoor installs.
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 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 PV aggregate (integrated Rapid Shutdown Device).
Integrated production metering	Integrated meter with solid-core current transformer (CT), accurate up to ±0.5%, ANSI C12.20 class 0.5 compliant.
Integrated battery metering	Integrated meter with two solid-core CTs, accurate up to ±0.5%, ANSI C12.20 class 0.5 compliant.
Integrated backfeed monitoring	Integrated monitoring using two solid-core CTs, accurate up to ±2.5%.
Integrated monitoring in the built-in load controller	Integrated monitoring using two solid-core CTs, accurate up to ±0.5%.
EV charger monitoring	Supports monitoring of EV charger; accuracy up to ±2.5%.[4]
Breaker spaces	Total 8 × double-pole breakers with integrated hold-down kit. Up to 4 × 20 A breakers for PV.[5] Up to 1 × 100 A PV Aggregate (PVA) breaker.[6] Up to 2 × 80 A breakers for batteries.

[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 60 microinverters.
[4] One unit of CT-200-CLAMP or CT-200-SPLIT 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] Also supports five 20 A PV branches using three double-pole breaker and one quadplex breaker. Refer to the QIG for information about specific spaces that can be used with the quadplex breakers.
[6] Ships with a factory-installed 60 A breaker. The PV aggregate breaker can be used as a PV disconnecting means. If IQ Combiner 6C is installed outdoors, the PV aggregate breaker can be the Rapid Shutdown initiator.

Features	
	Up to 1 × 60 A breaker for EV Charger. Up to 1 × 80 A breaker for integrated load controller.
Rapid Shutdown initiator (options)	PV aggregate breaker (if combiner is installed outdoors)[7] OR External AC disconnect (located outdoors) installed between the IQ Combiner 6C and the back-fed panel.[8] OR External AC disconnect (located outdoors) on PV aggregate breaker.[9]
Cellular data plan	5-year data plan included.[10]

Electrical specifications	
Nominal voltage/Range (L-L)	240 V~/±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	64 A (at ambient temperatures ranging from –40°C to 46°C or –40°F to 115°F) 80 A (at ambient temperatures ranging from –40°C to 38°C or –40°F to 100°F)
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	48 A (at ambient temperatures ranging from –40°C to 46°C or –40°F to 115°F) 64 A (at ambient temperatures ranging from –40°C to 38°C or –40°F to 100°F)
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 back-fed panel)	125 A
Maximum short circuit current	10 kA
Maximum rating for PV aggregate breaker	100 A[11]
Maximum breaker rating for PV aggregate feed-in if combining branch circuits on external panel board	100 A[12]
Internal PV busbar rating	100 A
Internal DER busbar rating	200 A
Auxiliary/Dry contacts	1 × NO/NC (120 V, 3 A) on the Combiner Controller Board 1 × NO (240 V, 3 A) on the IQ Gateway

[7] The pre-installed PV aggregate breaker has been evaluated as the Rapid Shutdown (RSD) initiation device and can be used accordingly.
[8] AC disconnect requires a three-pole disconnect with the third pole connected to the AC-sense or a double-pole disconnect with auxiliary contacts connected to the AC-sense of IQ Combiner 6C.
[9] If placing the AC disconnect inline with the PV aggregate breaker or using a separate panel for PV branch circuits, place the AC disconnect on the PV aggregate feed-in to the IQ Combiner 6C.
[10] 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.
[11] Ships with a 60 A breaker preinstalled. Replace with 100 A breaker if wiring more than three PV branch circuits.
[12] Refer to the QIG for information about the placement of the 100 A breaker on the PV busbar. The PV aggregate breaker must also be replaced with a 100 A breaker. Do not connect the aggregate feed-in directly to the PV aggregate breaker.

Connections and wire sizes	
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, 6–2/0 AWG
Breaker connections[13]	PV breakers, Cu: 10 AWG maximum Battery breaker, Cu: 3 AWG maximum EV Charger breaker, Cu: 4 AWG maximum[14] PV aggregate breaker, Cu: 4 AWG Integrated load controller breaker, Cu: 2 AWG maximum
Neutral and Ground Connections	Neutral and Ground bar (large screws): 3–1/0, 14–3 AWG Neutral and Ground bar (small screws): 6–8, 10–14 AWG
Other connections	4 × Control (CTRL) headers (5-pin), Cu: 18 AWG[15] 1 × NO/NC (120V,3 A, 3-pin), Cu: 28–16 AWG 1 × NO (240V, 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 (RSD), Cu: 28–12 AWG EV Charger CT; Cu: 28–16 AWG[16] Ride Through power supply[17] Rope CT connector

Accessories (order separately)	
Compatible circuit breakers for PV, battery, EV charger, and integrated load controller[18]	Eaton BR2xx (20/40/60/80/100 A) Eaton (quad breaker) BRDC220220 xx: Indicates the current values specified for the breaker manufacturer's model number Use applicable breakers according to the maximum ratings of PV, battery, EV charger, and loads connected to the integrated load controller.
IQ Meter Collar	IQ Meter Collar with integrated consumption metering SKU: MC-200-011-V01
Clamp-type CTs	2 × 200 A clamp-type current transformers for metering (accuracy: ±2.5%) SKU: CT-200-CLAMP
Split-core (CTs)	2 × 400 A split-core current transformers for metering (accuracy: ±2.5%) SKU: CT-400-SPLIT-R6
Enphase Control Cable	Control cable, 500 ft. spool. SKU: CTRL-SC3-NA-01
Rope CTs	Coming soon: Rope-style CT kit with voltage to the current board.[19] SKU: RC-200-V2IPCBA
Power supply board with capacitors	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")

[13] Wire gauges are specified based on the wire-bending space requirements in National Electrical Code. Follow NEC for the selection of wire gauges, also refer to the breaker manufacturer's guidance for breaker-specific wire gauges.
[14] A minimum of four AWG cables must be used with the 60 A breaker in the EV charger space.
[15] Control wiring does not require a separate drain header, a single header can accommodate all five wires (CTRL L, CTRL H, GND, 24V, DRAIN).
[16] CTs are available as accessories.
[17] 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.
[18] The combiner includes hold-down kit functionality for field-installed branch circuit breakers. Special breakers from manufacturers that support hold-down functionality are not required.
[19] Applies only to the IQ Combiner 6C. It must be connected to the IQ Combiner controller board and not be used with a standalone IQ Gateway.

Mechanical data	
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, forced air cooling[20]
Altitude	Up to 3000 meters (9842 feet)

Compliance	
IQ Combiner (under progress)	UL 1741 FCC & IC (ICES-003:2014)- 47 CFR Part 15 Class B, ICES 003, ICC ES AC156
IQ Gateway (under progress)	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 4.2 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 CELLMODEM-M1-06-SP-05 or CELLMODEM-M1-06-AT-05 (also supported)
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[21]	15 years (Enphase Mobile Connect - 5 years)

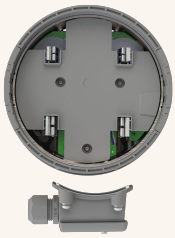
Compatibility	
IQ Meter Collar	MC-200-011-V01
IQ Battery	IQ Battery 10C
Microinverters	IQ6, IQ7, and IQ8 Series Microinverters
Third-party PV or legacy Enphase PV	Supported through integrated load controller[22]

[20] The IQ Combiner 6C monitors its internal temperature and controls current from DER to ensure it operates within safe thermal limits.
[21] IQ Combiner 6C is not service-entrance rated. Generator and off-grid usage are not supported.
[22] 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-00585-2.0	February 2025	Updated the introduction and specifications.
DSH-00585-1.0	September 2024	Initial release.