



DATA SHEET

IQ8 and IQ8+ Microinverters

Our newest IQ8 Microinverters are the industry's first microgrid-forming, software-defined microinverters with split-phase power conversion capability to convert DC power to AC power efficiently. The brain of the semiconductor-based microinverter is our proprietary application-specific integrated circuit (ASIC), which enables the microinverter to operate in grid-tied or off-grid modes. This chip is built using advanced 55-nm technology with high-speed digital logic and has super-fast response times to changing loads and grid events, alleviating constraints on battery string for home energy systems.



Part of the Enphase Energy System, IQ8 Series Microinverters integrate with the IQ Battery, IQ Gateway, and the Enphase App monitoring and analysis software.



Connect PV modules quickly and easily to IQ8 Series Microinverters using the plug-and-play MC4 connectors.



IQ8 Series Microinverters redefine reliability standards with more than one million cumulative hours of power-on testing, enabling an industry-leading limited warranty of up to 25 years.



IQ8 Series Microinverters are UL Listed as PV rapid shutdown equipment and are certified for use in accordance with the instructions.

*Meets UL 1741 only when installed with IQ System Controller 2.

**IQ8 and IQ8+ support split-phase, 240 V installations only.

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IQ8 and IQ8+ Microinverters

INPUT DATA (AC)	UNITS	IQ8 (UL 1741-SA)	IQ8+ (UL 1741-SB)
Commonly used module pairings ¹	W	235-350	235-440
Module compatibility	-	To meet compatibility, PV modules must be within maximum input DC voltage and maximum module I_{sc} listed below. Module compatibility can be checked at https://enphase.com/installer/module-compatibility-calculator .	
MPP1 voltage range	V	27-37	27-45
Operating range	V	16-48	16-58
Minimum/Maximum start voltage	V	22/48	22/58
Maximum input DC voltage	V	50	60
Maximum continuous input DC current	A	10	12
Maximum input DC short-circuit current	A	25	25
Maximum module I_{sc}	A	20	20
Overvoltage class DC port	-	II	II
DC port backfeed current	mA	0	0
PV array configuration	-	1+ Ungrounded array; no additional DC side protection required; AC side protection required; maximum 20 A per branch circuit.	

OUTPUT DATA (AC)	UNITS	IQ8 (UL 1741-SA)	IQ8+ (UL 1741-SB)
Peak output power	VA	245	300
Maximum continuous output power	VA	240	290
Nominal grid voltage (L-L)	V	240, split-phase (L-L), 180 ²	
Minimum and Maximum grid voltage ³	V	21-264	
Maximum continuous output current	A	10	12.1
Nominal frequency	Hz	60	
Extended frequency range	Hz	47-88	
AC short-circuit fault current over three cycles	Amps	2	
Maximum units per 20 A (L-L) branch circuit ⁴	-	16	13
Total harmonic distortion	%	<5	
Overvoltage class AC port	-	III	
AC port backfeed current	mA	30	
Power factor setting	-	1.0	
Grid-tied power factor (adjustable)	-	0.85 leading--0.85 lagging	
Peak efficiency	%	97.7	
CEC weighted efficiency	%	97	
Nighttime power consumption	mW	23	25

RELIABILITY DATA	UNITS	IQ8 (UL 1741-SA)	IQ8+ (UL 1741-SB)
Ambient temperature range	-	-40°C to 60°C (-40°F to 140°F)	
Relative humidity range	-	4% to 100% (condensing)	
DC connector type	-	MC4	
Dimensions (H x W x D)	-	232 mm (8.3 in.) x 175 mm (6.9 in.) x 30.2 mm (1.2 in.)	
Weight	-	1.08 kg (2.38 lb)	
Cooling	-	Natural convection--no fans	
Approved for wet locations	-	Yes	
Pollution degree	-	PD3	
Enclosure	-	Class II double-insulated, corrosion-resistant polymeric enclosure	
Environmental category (UV exposure rating)	-	NEMA Type 6/Outdoor	

EMPS (EMF)

CA Rule 2 (UL 1741-SA), UL 62109-1, IEEE 1547-2018 (UL 1741-SB 3rd Ed.), FCC Part 15 Class B, ICES-0005 Class B, CAN/CSA-C22.2 NO. 1071-01

This product is UL listed as PV rapid shutdown equipment and conforms with NEC 2014, NEC 2017, NEC 2020, and NEC 2023 section 680.12 and C22.2-2018 Rule 04-218 rapid shutdown of PV systems, for AC and DC conductors, when installed according to the manufacturer's instructions.

¹ Maximum DC voltage.

² Maximum voltage range can be extended beyond nominal if required by the utility.

³ Units may vary. Refer to local requirements to define the number of microinverters per branch in your area.

⁴ IQ8P-124-05H-010077-2-0-EN-US-2023-10-13



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EQUIPMENT SPECIFICATION NOTES

- ALL ELECTRICAL EQUIPMENT SHALL BE CERTIFIED ACCORDING TO AHJ AND NATIONAL REQUIREMENTS BY A NATIONALLY RECOGNIZED TESTING LABORATORY (NRTL).
- FOR DOCUMENTATION SHOWING NRTL CERTIFICATION, SEE MANUFACTURER WEBSITE.
- ALL EQUIPMENT SHALL BE INSTALLED ACCORDING TO MANUFACTURER INSTRUCTION.

SCALE
NTS

DATE
4.11.2024

PROJECT INFO
MARIE WHITAKER
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ERWIN, NC 28339

SHEET NAME
MFG SPEC. SHEETS

SHEET NUMBER
PV-7

IQ Combiner 4/4C

The **IQ Combiner 4/4C** with IQ Gateway and integrated LTE-M1 cell modem (included only with IQ Combiner 4C) consolidates interconnection equipment into a single enclosure. It streamlines IQ Microinverters and storage installations by providing a consistent, pre-wired solution for residential applications. It offers up to four 2-pole input circuits and Eaton BR series busbar assembly.

Smart

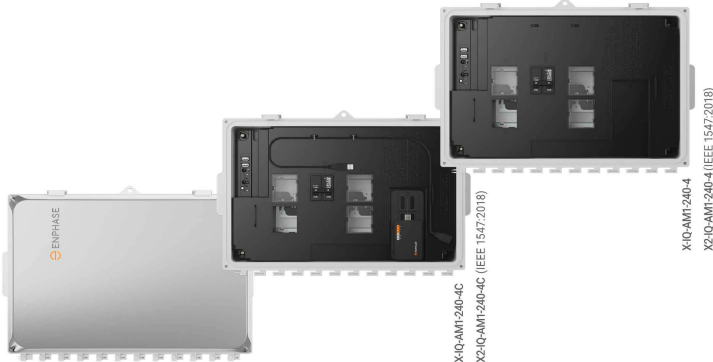
- Includes IQ Gateway for communication and control
- Includes Mobile Connect cellular modem (CELLMODEM-M1-06-SP-05), included only with IQ Combiner 4C
- Includes solar shield to match Enphase IQ Battery aesthetics and deflect heat
- Supports Wi-Fi, Ethernet, or cellular connectivity
- Optional AC receptacle available for PLC bridge
- Provides production metering and consumption monitoring

Simple

- Mounts on single stud with centered brackets
- Supports bottom, back and side conduit entry
- Allows up to four 2-pole branch circuits for 240VAC plug-in breakers (not included)
- 80A total PV or storage branch circuits

Reliable

- Durable NRTL-certified NEMA type 3R enclosure
- Five-year limited warranty
- Two-year labor reimbursement program coverage included for both the IQ Combiner SKUs
- UL listed
- X2-IQ-AM1-240-4 and X2-IQ-AM1-240-4C comply with IEEE 1547.2018 (UL 1741-SB, 3rd Ed.)



X-IQ-AM1-240-4C

X2-IQ-AM1-240-4C (IEEE 1547.2018)

X-IQ-AM1-240-4

X2-IQ-AM1-240-4 (IEEE 1547.2018)



To learn more about Enphase offerings, visit [enphase.com](https://www.enphase.com)

IQ-C-4C-0S-0103-EN-US-12-29-2022

IQ Combiner 4/4C

MODEL NUMBER

IQ Combiner 4	IQ Combiner 4 with IQ Gateway printed circuit board for integrated revenue grade PV production metering (ANSI CT12.20 ± 0.5%) and consumption monitoring (± 2.5%). Includes a silver solar shield to match the IQ Battery and IQ System Controller 2 and to deflect heat.
X-IQ-AM1-240-4	IQ Combiner 4C with IQ Gateway printed circuit board for integrated revenue grade PV production metering (ANSI CT12.20 ± 0.5%) and consumption monitoring (± 2.5%). Includes Mobile Connect cellular modem (CELLMODEM-M1-06-SP-05), a plug-and-play industrial grade cell modem for systems up to 40 microinverters. (Available in the US, Canada, Mexico, Puerto Rico, and the Caribbean. Not available for use in Europe and other international areas). Includes a silver solar shield to match the IQ Battery and IQ System Controller, and to deflect heat.
IQ Combiner 4C	
X-IQ-AM1-240-4C	
X2-IQ-AM1-240-4C (IEEE 1547.2018)	

ACCESSORIES AND REPLACEMENT PARTS (not included, order separately)

Supported microinverters	IQ6, IQ7, and IQ8. (Do not mix IQ6/7 Microinverters with IQ8)
Communications Kit	- Includes COMMS KIT-01 and CELLMODEM-M1-06-SP-05 with 5-year Sprint data plan - Includes X-IQ-AM1-240-4C with 5-year AT&T data plan - 4G based LTE-M1 cellular modem with 5-year AT&T data plan
COMMS-CELLMODEM-M1-06-SP-05	
CELLMODEM-M1-06-AT-05	
Circuit Breakers	Supports Eaton BR210, BR215, BR220, BR230, BR240, BR250, and BR260 circuit breakers.
BRK-10A-2-240V	Circuit breaker 2 pole, 10A, Eaton BR210
BRK-15A-2-240V	Circuit breaker 2 pole, 15A, Eaton BR215
BRK-20A-2P-240V	Circuit breaker 2 pole, 20A, Eaton BR220
BRK-25A-2P-240V	Circuit breaker 2 pole, 25A, Eaton BR225
BRK-30A-2P-240V	Circuit breaker 2 pole, 30A, Eaton BR230 with hold-down kit support
BRK-40A-2P-240V	Circuit breaker 2 pole, 40A, Eaton BR240 with hold-down kit support
BRK-50A-2P-240V	Circuit breaker 2 pole, 50A, Eaton BR250 with hold-down kit support
BRK-60A-2P-240V	Circuit breaker 2 pole, 60A, Eaton BR260 with hold-down kit support
XX-SOLASHIELD-ES	Replacement solar shield for IQ Combiner 4/4C
XX-PLUG-120-3	Accessory receptacle for Power Line Carrier in IQ Combiner 4/4C (required for EPC-01)
X-IQ-NA-HD-125A	Hold-down kit for Eaton circuit breaker with screws
	A pair of 200A split core current transformers

ELECTRICAL SPECIFICATIONS

Consumption monitoring CT (CT-200-SPLIT/CT-200-CLAMP)	
Rating	Continuous duty
System voltage	120/240VAC, 60 Hz
Eaton BR series busbar rating	125A
Max. continuous current rating	65A
Max. continuous current rating (input from P/storage)	64A
Max. fuse/circuit rating (output)	90A
Branch circuits (solar and/or storage)	Up to four 2-pole Eaton BR series Distributed Generation (DG) breakers only (not included)
Max. total branch circuit breaker rating (input)	80A of distributed generation/95A with IQ Gateway breaker included
IQ Gateway breaker	10A or 15A rating GE/Siemens/Eaton included
Production metering CT	200A solid core pre-installer and wrist to IQ Gateway

MECHANICAL DATA

Dimensions (WxHxD)	37.5 cm x 49.5 cm x 16.8 cm (14.75 in x 19.5 in x 6.63 in). Height is 53.5 cm (21.06 in) with mounting brackets.
Weight	7.5 kg (16.5 lb)
Ambient temperature range	-40°C to +49°C (-40°F to 119°F)
Cooling	Natural convection, plus heat shield
Enclosure environmental rating	Outdoor: NRTL-certified, NEMA type 3R, polycarbonate construction
Wire sizes	<ul style="list-style-type: none"> • 20A to 50A breaker inputs: 14 to 4 AWG copper conductors • Main busbar inputs: 14 to 4 AWG copper conductors • Main leg combined outputs: 10 to 2/0 AWG copper conductors • Neutral and ground: 14 to 1/0 copper conductors • Always follow local code requirements for conductor sizing.
Altitude	Up to 3,000 meters (9,842 feet)

INTERNET CONNECTION OPTIONS

Integrated Wi-Fi	IEEE 802.11n/g/n
Cellular	CELLMODEM-M1-06-SP-05, CELLMODEM-M1-06-AT-05 (4G based LTE-M1 cellular modem). Note that a Mobile Connect cellular modem is required for all Enphase Energy System installations.
Ethernet	Optional: IEEE 802.3, Cat5E (or Cat6) UTP Ethernet cable. (not included)

COMPLIANCE

Compliance, IQ Combiner	<ul style="list-style-type: none"> CA Rule 21 (UL 1741-SA) IEEE 1547.2018 - UL 1741-SB, 3rd Ed. (X2-IQ-AM1-240-4 and X2-IQ-AM1-240-4C) CAN/CSA C22.2 No. 1071, Title 47 CFR, Part 15, Class B, ICES 003 UL 6801-1 (UL 1741-SB, 3rd Ed.) Construction metering enclosure class 2, 3 UL 6960-1/CAN/CSA 22.2 No. 01010-1
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