IQ System Controller 2

The **IQ System Controller 2** connects the home to grid power, the IQ Battery 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. It consolidates interconnection equipment into a single enclosure and streamlines grid independent capabilities of PV and storage installations by providing a consistent, pre-wired solution for residential applications.

Easy to install

- Connects to service entrance[1] or main load center
- Supports main breaker
- Includes neutral-forming transformer
- Mounts on single-stud with centered brackets
- Provides conduit entry from bottom, left, or right
- Includes color coded wires for ease of wiring Enphase Energy System Shutdown Switch

Flexible

- Can be used for Sunlight Backup, Home Essentials Backup, or Full Energy Independence
- Integrates with select AC standby generators. See Generator Integration Tech Brief for list of generators

Safe and reliable

- Enphase Energy System Shutdown Switch can be used to disconnect PV, battery, and generator systems
- It acts as a rapid shutdown initiator of grid forming IQ8 PV Microinverters for safety of maintenance technicians/first responders
- IQ System Controller 2 has a 10-year limited warranty

1. IQ System Controller 2 is not suitable for use as service equipment in Canada.

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IQ System Controller 2

MODEL NUMBERS		
EP200G101-M240US01 **NOTE:** No longer sold separately.	IQ System Controller 2 with neutral-forming transformer (NFT) and microgrid interconnect device (MID). Streamlines grid-independent capabilities of PV and storage installations.	
EP200G-SC2-RSD-KIT	Includes the above plus Enphase Energy System Shutdown Switch (EP200G-NA-02-RSD) with red, black, orange and purple 12 AWG wires, and a breaker for powering IQ Gateway (refer to figure 1).	
EP200G-SC2-RSD-BRK-KIT	Includes the above plus three Eaton BR220B breakers for either IQ System Controller 2 or IQ Combiner, two Eaton BR240B breakers and one Eaton BR260 breaker for IQ System Controller 2, two X-IQ-NA-HD-125A hold-down kits for IQ Combiner, and two EP200G-NA-HD-200A hold-down kits for IQ System Controller 2 (refer to figures 2A and 2B).	
ACCESSORIES AND REPLACEMENT PARTS (ORDER SEPARATELY AS NEEDED)		
EP200G-NA-XA-E3	IQ System Controller 2 replacement printed circuit board	
EP200G-NA-HD-200A	Eaton type BR circuit breaker hold-down kit, BRHDK125	
CT-200-SPLIT	200 A split core current transformer for generator metering (± 2.5% accuracy)	
Circuit breakers (as needed)[2,3]		
• BRK-100A-2P-240V: Main breaker, 2-pole, 100 A, 25 kAIC, Eaton CSR2100N • BRK-125A-2P-240V: Main breaker, 2-pole, 125 A, 25 kAIC, Eaton CSR2125N • BRK-150A-2P-240V: Main breaker, 2-pole, 150 A, 25 kAIC, Eaton CSR2150N • BRK-175A-2P-240V: Main breaker, 2-pole, 175 A, 25 kAIC, Eaton CSR2175N • BRK-200A-2P-240V: Main breaker, 2-pole, 200 A, 25 kAIC, Eaton CSR2200N	• BRK-20A-2P-240V-B: Circuit breaker, 2-pole, 20 A, 10 kAIC, Eaton BR220B • BRK-30A-2P-240V-B: Circuit breaker, 2-pole, 30 A, 10 kAIC, Eaton BR230B • BRK-40A-2P-240V-B: Circuit breaker, 2-pole, 40 A, 10 kAIC, Eaton BR240B • BRK-60A-2P-240V: Circuit breaker, 2-pole, 60 A, 10 kAIC, Eaton BR260 • BRK-80A-2P-240V: Circuit breaker, 2-pole, 80 A, 10 kAIC, Eaton BR280	
BRK-20A40A-2P-240V	Quad breaker, 20 A/40 A, 10 kAIC, Eaton BQC220240	
EP200G-HNDL-R1	IQ System Controller 2 installation handle kit	
EP200G-LITKIT	IQ System Controller 2 literature kit. Includes labels, feed-through headers, screws, filler plates, and QIG	
EP200G-NA-02-RSD	2 pole Enphase Energy System Shutdown Switch	
ELECTRICAL SPECIFICATIONS		
Nominal voltage/range (L-L)	240 VAC/±20%	
Voltage measurement accuracy	±1% (±1.2V L-N and ±2.4V L-L)	
Auxiliary (Dry) contact for load control, excess PV control, and generator two-wire control	24 V, 1 A	
Nominal frequency/range	60 Hz/56-63 Hz	
Frequency measurement accuracy	±0.1 Hz	
Maximum continuous current rating	160 A	
Maximum input overcurrent protection device[4]	200 A	
Maximum output overcurrent protection device[4]	200 A	
Maximum overcurrent protection device rating for generator circuit	80 A	
Maximum overcurrent protection device rating for storage circuit	80 A	
Maximum overcurrent protection device rating for PV combiner circuit	80 A	
Internal busbar rating	200 A	
Neutral-forming transformer (NFT) • Breaker rating (pre-installed): 40 A between L1 and neutral; 40 A between L2 and neutral • Continuous rated power: 3600 VA	• Maximum continuous unbalanced current: 30 A @ 120 V • Peak rated power: 8800 VA for 30 seconds • Peak unbalanced current: 80 A @ 120 V for 30 seconds	
MECHANICAL DATA		
Dimensions (W x H x D)	50 cm x 91.6 cm x 24.6 cm (19.7 in x 36 in x 9.7 in)	
Weight	39.4 kg (87 lbs)	
Ambient temperature range	–40°C to 50°C (–40°F to 122°F)	
Cooling	Natural convection, solar shield	
Enclosure environmental rating	Outdoor, NEMA type 3R, polycarbonate construction	
Maximum altitude	2,500 meters (8,200 feet)	
WIRE SIZES		
Connections (All lugs are rated to 90°C)	• Main lugs and backup load lugs • CSR breaker bottom wiring lugs • AC combiner lugs, IQ Battery lugs, and generator lugs • Neutral lugs	Cu/Al: 1 AWG – 300 KCMIL Cu/Al: 2 AWG – 300 KCMIL 14 AWG – 2 AWG Cu/Al: 6 AWG – 300 KCMIL
Neutral and ground bars	Large holes (5/16-24 UNF) Small holes (10-32 UNF)	14 AWG – 1/0 AWG 14 AWG – 6 AWG
COMPLIANCE		
Compliance	UL1741, UL1741 SA, UL1741 SB, UL1741 PCS CRD, UL1998, UL869A[5], UL67[5], UL508[5], UL50E[5] CSA 22.2 No. 107.1, 47 CFR Part 15 Class B, ICES 003, ICC ES AC156. IQ System Controller 2 is approved for use as service equipment in the United States IFETEL homologation number: RCPENEP22-2078	

2. Compatible with BRHDK125 hold-down kit to comply with 2017 NEC 710.15E for back-fed circuit breakers.
3. The IQ System Controller 2 is rated at 22 kAIC.
4. CSR breakers are not included in EP200G-SC2-RSD-BRK-KIT. Installer must provide correctly rated breakers.
5. Sections from these standards were used during the safety evaluation and included in the UL1741 listing.

Figure 1: Wiring Enphase Energy System Shutdown Switch

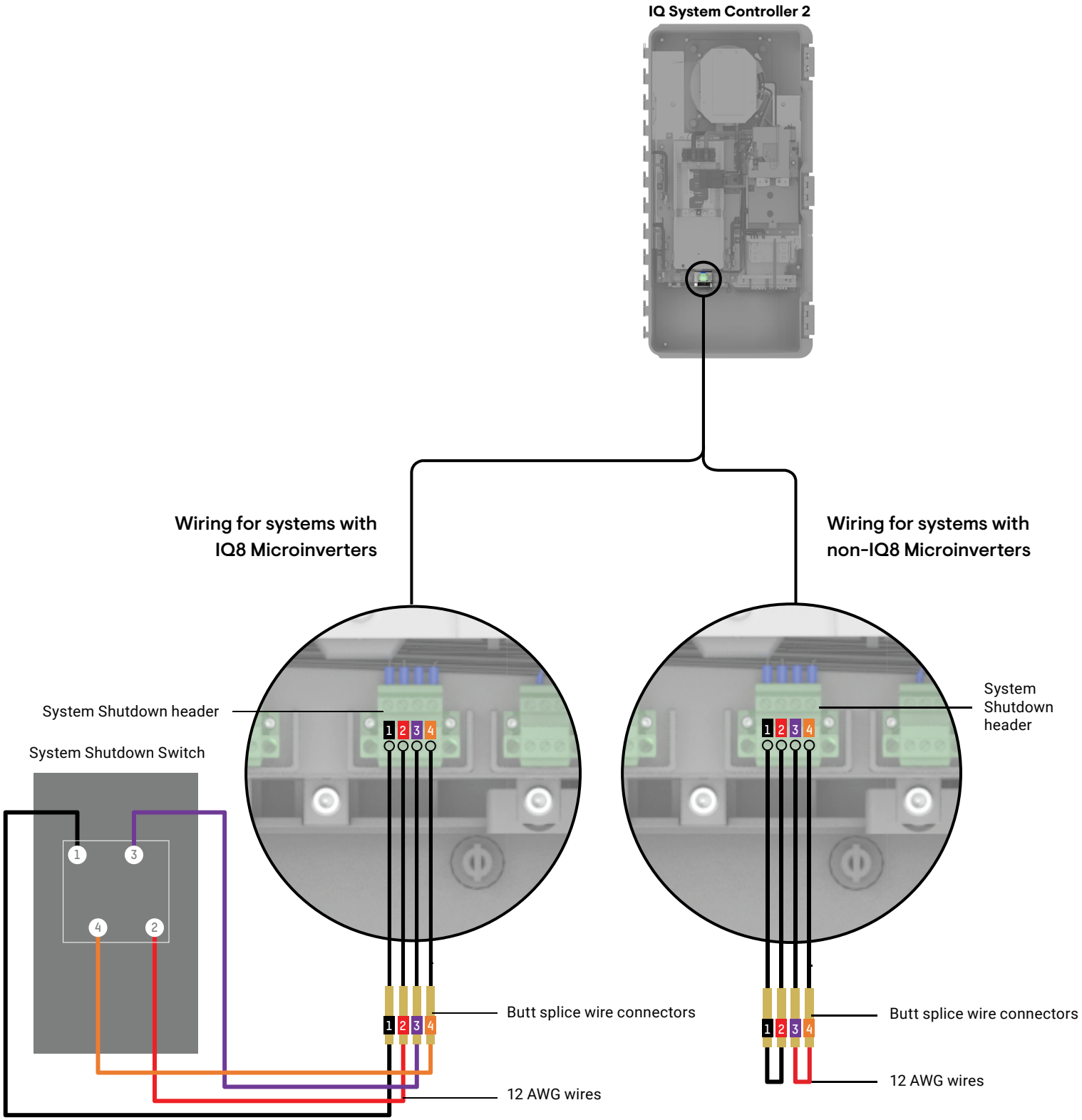


Figure 2A: Installing DER breakers for IQ8 System without generator

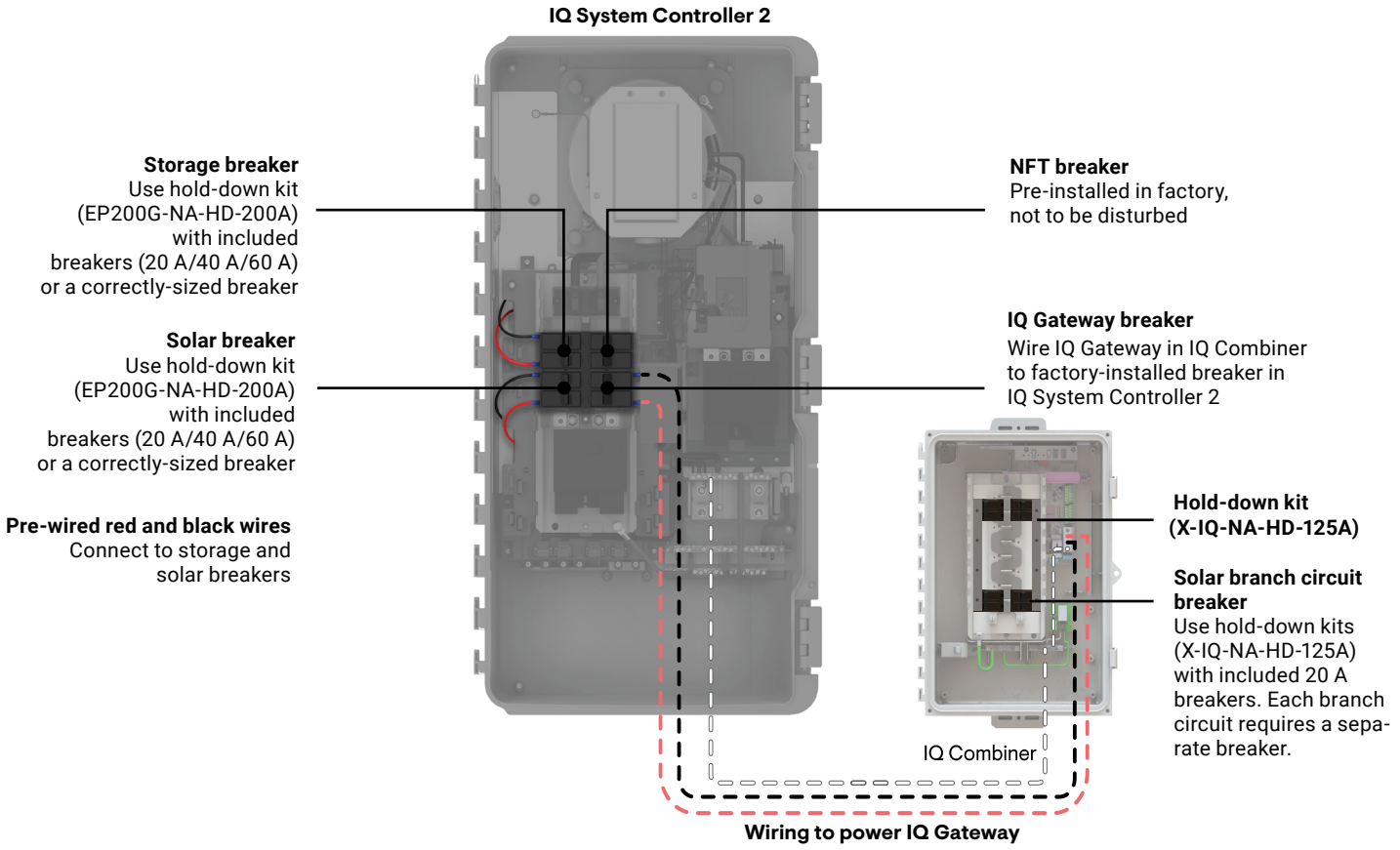
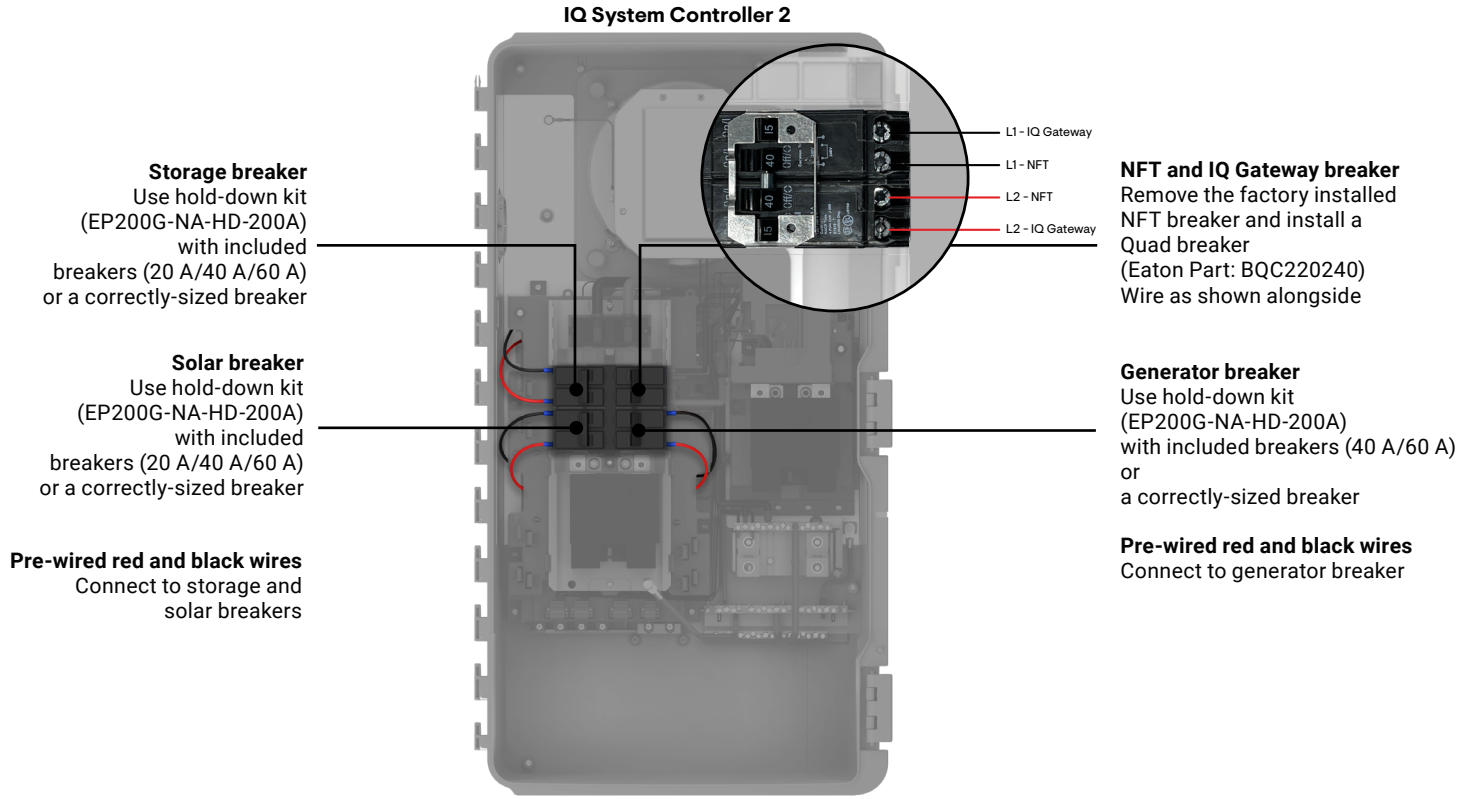


Figure 2B: Installing DER breakers for IQ8 System with generator



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Revision history

REVISION	DATE	DESCRIPTION
DSH-00163-1.0	July 2023	Updated wiring diagram in Figure 2A. Editorial updates.

Previous releases