

Design and Installation Parameters for IQ8 Back-up Configurations

The IQ8 family of microinverters adds exciting new grid forming capabilities. As a result of these new requirements, there are several new requirements from the National Electric Code that systems must adhere to. This changes installation and wiring methods that installers must account for during the sales, design, and installation process.

The new requirements only apply to IQ8 systems with back-up power configurations (sunlight back-up without storage, or back-up configurations w/ IQ8s and IQ Batteries). The changes do not apply to a grid tied-only configuration of IQ8 (no back-up functionality). In a grid-tied only configuration, an IQ8 PV system would have the same design and installation parameters of a grid tied-only IQ7 system.

Differences between back-up configurations of IQ8 and IQ7

FEATURE	IQ7 BACK-UP CONFIGURATIONS	IQ8 PV BACK-UP CONFIGURATIONS
PV only back-up configuration	No	Yes. IQ Load Controller (EP-NA-LK02-040) and / IQ System Controller 2 (EP200G101-M240US00) Required
PV black start	No	Yes
PV size limit	96A while off grid Note: PV shedding with IQ System Controller 1/2 and IQ Load Controller available for larger PV sizes while on grid	64A. PV must be landed on lugs in System Controller 2
PV:ESS power ratio limit	1.5	No power limit Note: Systems with a single IQ Battery 3/3T limited to max 48 IQ8s (any model) on a IQ Battery 3/3T
PV Breaker Type for IQ Combiner	Standard 20A 2 pole breaker	Eaton BR220B breakers (BRK-20A-2P-240V-B)
PV plugin breaker tiedown kit requirement	No	Yes (X-IQ-NA-HD-125A from Enphase or BREQS125 from Eaton) - One per two PV Breakers in IQ Combiner and EP200G-NA-HD-200A from Enphase or BRHDK125 from Eaton in IQ System Controller 2
PV Rapid Shutdown initiator	PV system disconnect	External Rapid shutdown initiator (EP200G-NA-02-RSD) required – must be used with IQ System Controller 2
IQ Gateway (Envoy) breaker location	IQ Combiner (PV array)	IQ System Controller. IQ Gateway re-wiring required to move IQ Gateway breaker from IQ Combiner to IQ System Controller either on Generator location or Quad breaker in Autotransformer location
IQ Gateway (Envoy) physical location	Near PV array	Near IQ System Controller 2
System Controller Type	System Controller 1 or 2	System Controller 2 only
Hold down kit for storage breaker in System Controller	Yes	Yes. Now available for purchase from Enphase (EP200G-NA-HD-200A)
IQ Combiner Type	IQ Combiner 3/3C or 4/4C	IQ Combiner 4 or 4C (X-IQ-AM1-240-4 or X-IQ-AM1-240-4C)
Cell modem required	Yes	Yes