

Melbourne, April 21st, 2021

Two Phase Installations with Enphase

Enphase microinverters can be installed into dual phase (415 V L1 – L2) and split phase (480 V L1 – L2) connections, using the following method:

The microinverter solar system is connected using a two-phase circuit. Within each of the 25A circuit phases, single phase Q-cable is required for each of the L1 and L2 phases throughout the solar PV arrays. **Please note you cannot use three-phase Q-cable for a two-phase installation.**



For each 25A solar circuit, L1 and L2 solar phases are connected into the 25A multi-phase Q-relay. The relay is programmed to 2-phases to satisfy interlocking requirements and perform loss of phase protection. The solar circuit neutral conductor(s) are also connected into the Neutral terminal at the Q-relay. A two pole 25A circuit breaker is required for each 25A PV solar circuit.

To program the multi-phase Q-relay to 2-phase, hold down the test button until only the V1 and V2 lights are flashing red, then let go, once this is done, green lights should appear only on V1 and V2.

A two-pole circuit breaker is required for two-phase envoy circuit, so that each voltage line reference is present at the envoy.

It is recommended to utilise a PV sub-board for all Enphase equipment on site, this can be made prior to the installation date or pre-purchased from an authorised wholesaler.

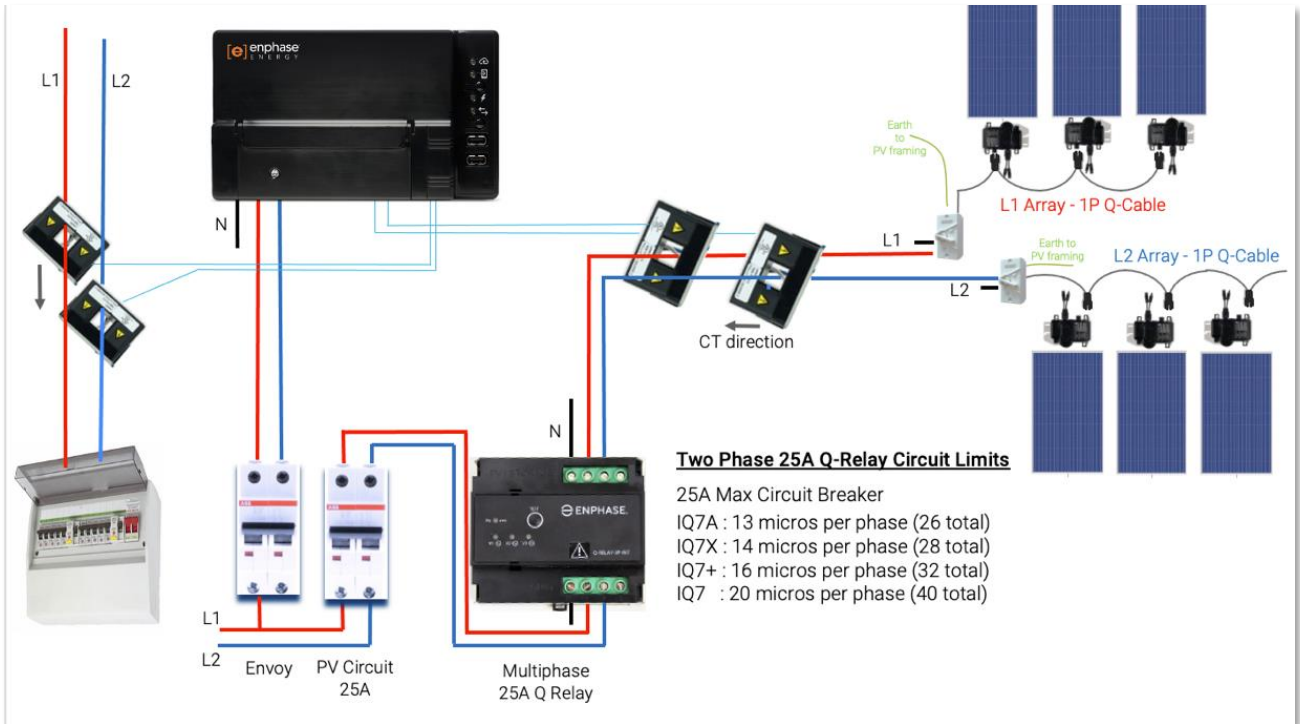
Confirm the phase imbalance threshold with the local DNSP

DNSPs usually allow 21.7A (5 kW phase imbalance between phases), however some DNSP’s have a lower requirement for 2-phase systems. This phase imbalance threshold can be adjusted in an Enphase grid profile. For optimal performance Enphase recommends that each two-phase 25A circuit is installed relatively balanced e.g., 1 x 10 microinverters on L1 circuit 1 and 1 x 10 microinverters on L2 circuit 2.

It is important to not exceed 25A per microinverter circuit. If your installation is more than the maximum number of microinverters listed below, then you will require additional circuits and multi-phase Q-relays for your installation.

Microinverter type	Number of microinverter per phase (25 A circuit)
IQ7A	13
IQ7+	16
IQ7	20
IQ7X	14

Wiring diagram of a typical single circuit two-phase site



Contact Enphase APAC

Should you require any additional help and information please contact Enphase.

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Web Form and Live Chat: <https://enphase.com/en-au/support/contact>