

GUIDANCE ON INVERTER SETTINGS FOR NETWORK COMPATIBILITY

What are inverters?

Inverters are used to convert the energy generated by solar photovoltaic systems, or stored in battery systems, to a voltage that is compatible with the electricity distribution network. If the settings within an inverter are not configured correctly then they may contribute to voltage problems and nuisance inverter outages.

Inverter protective and volt response mode requirements

Inverter energy systems installed from 18 December 2021 onwards are to comply with the requirements of AS/NZS 4777.2:2020. Within Endeavour Energy’s network, inverters are required to be set to the **Australia A** Region (unless permission is given by Endeavour Energy to deviate from the Australia A setting).

The Australia A requirements include a protection setting for “sustained operation for voltage variations” that requires inverters to operate the automatic disconnection device within 3 seconds when the average voltage for a 10 minute period exceeds 258 volts ($V_{nom-max}$).

Furthermore, inverter energy systems will be required to have both the volt-watt and volt-var response modes active and operating concurrently. The Australia A set-point values for these response modes are given below.

<u>Volt-watt</u> response mode set-point	Voltage (V)	Inverter maximum active power output level (P) % of S_{rated}
V_{W1}	253	100%
V_{W2}	260	20%

<u>Volt-var</u> response mode set-point	Voltage (V)	Inverter reactive power level (Q) % of S_{rated}
V_{V1}	207	44% supplying
V_{V2}	220	0%
V_{V3}	240	0%
V_{V4}	258	60% absorbing

For technical enquires regarding these inverter settings, please contact reliability.powerquality@endeavourenergy.com.au

Voltage measurement prior to installation

As required by the NSW Service and Installation Rules, the voltage rise on the service, consumers mains and conductors between the main switchboard and inverter terminals must be calculated and comply with the Service and Installation limits.

It is advised that voltage measurements should be conducted prior to installation according to AS 61000.3.100. If the voltage is determined to be outside of limits when no load and generation is connected, then Endeavour Energy should be contacted for a voltage investigation prior to the installation of the inverter energy system. Please contact **133 718** (Mon to Fri – 8am to 6pm) to request a voltage investigation.

Check if your inverter is compliant

Please contact your inverter installer or manufacturer to ensure that your system complies with the above requirements and is compliant to AS/NZS 4777.2:2020.

A list of AS/NZS 4777.2:2020 compliant inverters can be found on the Clean Energy Council's website, at the following address:

<https://www.cleanenergycouncil.org.au/industry/products/inverters/approved-inverters>