

# General Guidance

## Standards for portable UPS devices

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## Standards for portable UPS devices

This guidance material is to clarify relevant standards to apply to portable UPS devices for certification in the EESS.

### Question

Q1/ What standard should apply to a portable UPS for certification

Q2/ if the portable UPS also has a dc battery charging function, to charge external batteries, what standard should be applied for certification

### Answer

Q1/ A portable uninterruptible power supply (UPS) should be certified to AS 62040.1 (latest edition)

Q2/ A portable uninterruptible power supply (UPS) with DC output used for charging external batteries should be certified to AS 62040.1 (latest edition) and AS/NZS 60335.2.29 (latest edition)

NOTE 1: a portable UPS is a pluggable device that has internal battery or external battery (that is charged from the mains supply) and the device has a function to provide low voltage ac supply (by inverting the dc battery supply to ac supply) in the event the mains supply is not available. While it may be considered as electronic equipment it is not suitable to use AS/NZS 62368 as the relevant standard for certification as there is a more relevant standard. Similarly, while it may be considered as having an inverter functionality it is actually a UPS and so it is not suitable to use AS/NZS 4777.2 (or IEC 62109) as the relevant standard for certification.

NOTE 2: the certificate must describe the device as an Uninterruptible Power Supply (UPS), not an 'inverter' as there is a difference between the two descriptions.

Note 3: Separate to the above advice, a certifier will need to ensure a risk assessment has been conducted to identify if there are any other functions or safety issues that may require assessment to other standards to address the identified risks. That is the above standards are a minimum that must be applied but may not be all that is required in any situation.

### Background

AS 62040.1 is the relevant Australian standard for interruptible power supplies, and it includes portable pluggable UPS within its scope.

AS/NZS 62040.1 does not include UPS that have a DC output used to charge external batteries – so while AS 62040.1 can be applied for the UPS function, another standard must also be applied to address the safety issues of a DC output. As a DC output can be used for charging external batteries that standard should be AS/NZS 60335.2.29 (battery chargers)

AS/NZS 62368 (or AS/NZS 60950) are standards for electronic equipment, and while a UPS may be considered electronic equipment there is a specific standard for UPS (AS 62040.1) so the use of AS/NZS 62368 (or AS/NZS 60950) is not suitable for a UPS. Noting AS 62040.1 may reference AS/NZS 60950 (or did in previous editions – but now references IEC 62477-1) for part of the requirements to be met – further indicating AS/NZS 62368 (or AS/NZS 60950) would not cover all identified safety issues.

Also, AS/NZS 62368 indicates in its Annex M that it does not cover equipment that charges external batteries, further indicating this standard is not suitable for UPS devices with DC outputs

If the device has dc input from a renewable energy source, as well as ac input, then it is likely it is an inverter with a UPS function, and so is not included in the advice of this guidance notice. However, it is noted, inverters should consider AS 4763 for portable inverters and AS/NZS 4777.2, noting a portable plug-in type device is prohibited by AS/NZS 4777.2. Use of IEC 62109 as a standard for inverters without considering AS/NZS 4777.2 may not be suitable to address Australian certification requirements.