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General

This guidance has arisen after instances of pluggable type B connections of grid connected inverters have been found in the market with live parts being accessible to the user from a connector or inlet that can be removed without the use of a tool. *AS/NZS4777.2 Grid connection of energy systems via inverters: Inverter requirements* requires inverters to have terminals for connection to fixed installation wiring. Clause 2.3.3.1 allows pluggable type B equipment under conditions but prohibits access to live parts.

Question

Can an inverter have detachable connectors, or have connectors or inlets where live parts are exposed?

Answer

No. Inverters may only have non-detachable connectors or an appliance inlet that can be matched to a connector, and these non-detachable connectors or inlets (Pluggable type B equipment) shall not incorporate:

- i. A connection by a connector or inlet conforming to any of the dimensional sheets of AS/NZS60320.1; or
- ii. A connection by a plug conforming to AS/NZS3112; or
- iii. A connection by a connector or inlet where hazardous voltages are accessible by the standard test finger.

This applies to all connectors on the inverter, or on a supply lead wired to the inverter, and the associated connector to be mated with the inverter mounted (or supply lead mounted) connector (i.e. the whole connector system – male and female parts - cannot expose live parts to contact).

Background

AS/NZS4777.2, clause 2.3.3.1 (iii) specifically prohibits a connection by a connector or inlet where hazardous voltages are accessible to the standard test finger.

This photograph depicts a connector that can be removed/disconnected without the user of a tool. It comes with the inverter and is attached by the electrician to a cable that is terminated in the switchboard. Such access to live pins is clearly prohibited by the standard.



This photograph depicts an outlet for a backup circuit that has exposed live pins and the connector used can be removed/disconnected without the use of a tool. Such access to live pins is clearly prohibited by the standard.

