

Electrical Power Connector

Overview in Australia

NOTICE

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All Australian power connectors are now formally defined in the 'Australian Standards' publications distributed by SAI Global Limited. www.standards.com.au

All Australian power outlet sockets always have switches on them for safety and isolation purposes.

The original design of the Australian power plug originated in 1930, as a "gentlemen's agreement" between Fred Cook of Ring-Grip, Geoffrey Gerard of Gerard Industries and Brian Harper Miller of the SECV. This occurred prior to the formation of any standards body in Australia.

The design originally drew on a power connector in the USA at that time. The US connector was also the basis of the Argentinean and Chilean connectors around the same period. China adopted a variant of this connector some years later.

The key advantages of the Australian connector was its low price to manufacture, utilised a fraction of the material of other power connectors. Oddly, the original US connector which prompted this design has subsequently disappeared into obscurity.

The Australian power plug is similar in appearance [but not compatible] to the power connector plugs used in Israel, Peoples Republic of China, Argentina and Chile.

The existing Australian power connectors were then provisionally floated as formal standard number C112(1937), and then ratified as a formal standard C112 in 1938. AS3112 was first issued in 1990.

240 VAC General Purpose Outlets 10amp – AS/NZS 3112 Standard

This plug is the generic power connector used in Australia and its external territories, New Zealand, Papua New Guinea, Fiji and the Solomon Islands. It can also be found in parts Timor Leste given the influence Australia has with this Country.

The standard plug has an earthing pin and two flat pins forming a V-shape. There is an unearthed version of this plug as well, with just two flat V-aligned pins for double insulated appliances. These flat contacts measure ¼ inch wide by 1/16 inch thick and are set 30° to the vertical on a nominal pitch of 5/8 inch. (The Australian standard now calls up the metric equivalents). It is possible to bend them straight with pliers to force them into American power sockets, but is definitely not recommended. The alternative is also true, American 2 pin plugs can be bent to fit the Aussie power outlet, but is definitely not recommended.

The earth pin is always longer than the 2 power pins.

The plug does have a specific pinout configurations for the power pins (active and neutral) conductors.

The 15amp and 20amp plug tops will not mate with 10amp rated sockets. There are an additional two 10amp plug variants, one fitted with two round power pins, and the other fitted with a round earth pin; specifically used for clocks or controlled circuits like hotel room lamps, electric curtains etc.

As a guide, nominal cable sizes of 0.75sqmm to 1sqmm are accommodated.

A standards revision now mandates partially insulated pins by 2005, not shown here.



10 amp Plug top (disassembled)



250Vac 10 amp dual GPO

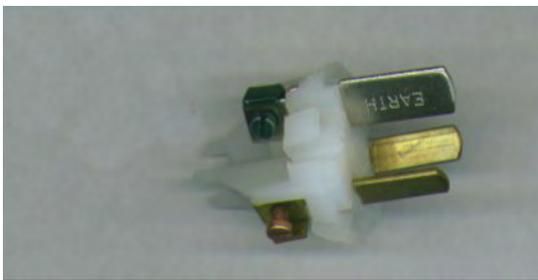
240 VAC General Purpose Outlets 15amp - AS/NZS 3112

The plug has an earthing pin and two flat pins forming a V-shape.

It is functionally identical to the plug above, with an over-large earth pin. 10amp plugs will plug into 15 amp wall sockets. Generally used for air conditioners and medium duty welders.

As a guide, nominal cable sizes of 1.5sqmm to 2.5sqmm are accommodated.

The earth pin is always longer than the 2 power pins.



15 amp Plug Top (disassembled)

240 VAC General Purpose Outlets 20amp - AS/NZS 3112

The plug has an earthing pin and two flat pins forming a V-shape.

It is functionally identical to the plug above, with all pins over-large. 10amp and 15amp plugs will plug into 20 amp wall sockets if required. These connectors are generally used for stoves and theatrical lighting.

The earth pin is always longer than the 2 power pins.

As a guide, nominal cable sizes of 2.5sqmm to 3sqmm are accommodated.



20 amp Plug Top (disassembled)