

## Adding a Power Connector

When a panel or case mounted connector is used for the wall mounted transformer (or possibly a DC power supply), it is important it doesn't put one of the two wires in contact with the chassis as this could result in hum or a short between the transformer secondary wires (the ones exiting the wall unit), or, a short that comes and goes with shifting of the connector installation and it making/breaking contact with the chassis. Plan or consider the space an added connector will occupy so troubles aren't encountered when completing the case or panel assembly for a kit.

Some power connectors have one of the two wiring terminals common to a metal, threaded mounting bushing. If so, it must have this terminal wired to the circuit-common/ground wiring point (it is then the neutral or 0V end of the transformer secondary winding), while the other, used as the AC power is wired to the power switch or the low voltage AC input wiring point. Panel or case mounted phone jack sleeve terminals are in electrical contact with the threaded mounting bushing, and, wired back to the board ground/circuit-common. If the transformer wire used as the AC voltage meets the phone connector ground via the case, it will burn the transformer. Even if the power connector puts the neutral end of the transformer secondary in contact with the chassis, it being shared with the single-point ground on the board can result in some ac or ripple currents and hum in the audio referenced to the circuit-common/ground. *As an aside, either wire of a transformer secondary can be used as the circuit-common/ground or the AC voltage which goes to the rectifier diodes for conversion to DC, it is after one of the two connects to circuit-common/ground, that the other is the one with the AC voltage*

Some power connectors are plastic and neither of the two terminals contact the chassis. For this type it does not matter which terminal connects via wiring to the circuit-common/ground or AC input voltage points.

Insulating washers can be used, one flat – one shouldered, to prevent contact between the threaded mounting bushing (and shared contact/terminal) and the panel or case metal.

Some power connectors have three terminals with one being the pin and the other the barrel contact while the third is a shunt to the pin contact which opens when the power plug is inserted (so a battery power source can be interrupted as the external power source connection is made). Look for a diagram on the connector packaging, or a data sheet provided by the supplier, to identify the terminals. Or, use a multimeter to determine zero ohm or continuity between terminals of a non-wired plug and its non-wired socket. Sometimes even a close visual examination is enough to match a pin to its riveted terminal, etc.