

## Grounding (Earthing)



Use of ground connections reduces the likelihood of problems in most telephony and data systems. This is especially important in buildings where multiple items of equipment are interconnected using long cable runs, for example phone and data networks.

All IP Office control units and external expansion modules must be connected to a functional ground. In some cases, such as ground start trunks, in addition to being a protective measure this is a functional requirement for the equipment to operate. In other cases it may be a locale regulatory requirement and or a necessary protective step, for example areas of high lightning risk.



### WARNING

During installation do not assume that ground points are correctly connected to ground. Test ground points before relying on them to ground connected equipment.

The ground point on IP Office control units and external expansion modules are marked with a  or  symbol. [Ground](#) connections to these points should use a 14 AWG solid wire with either a green sleeve for a functional ground or green and yellow sleeve for a protective ground.

### Additional protective equipment

In addition to grounding, additional protective equipment will be required in the following situations. Refer to "[Out of Building Telephone Installations](#)".

- On any Digital Station or Phones external expansion module connected to an extension located in another building.
- In the Republic of South Africa, on all Analog Trunk external expansion modules (ATM16) and on any control units containing an analog trunk cards (ATM4/ATM4U).



### Tools Required

- M4 Cross-Head Screwdriver.
- Tools suitable for crimping a cable spade.





### Parts and Equipment Required

- 14AWG Solid copper wire for ground connection.
- Cable sleeve matching local regulator requirements. Typically green for a functional ground and green/yellow for a protective ground.

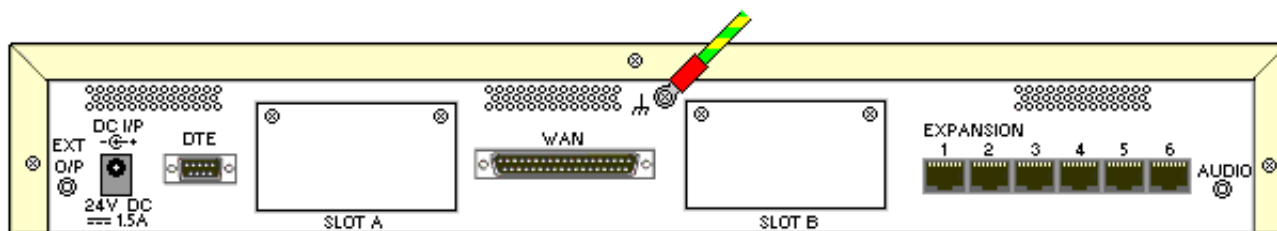


### Procedure

The ground point on IP Office control units and expansion modules are marked with a  or  symbol. [Ground](#) connections to these points should use a 14 AWG solid wire with either a green sleeve for a functional ground or green and yellow sleeve for a protective ground.

### IP400 Control Units

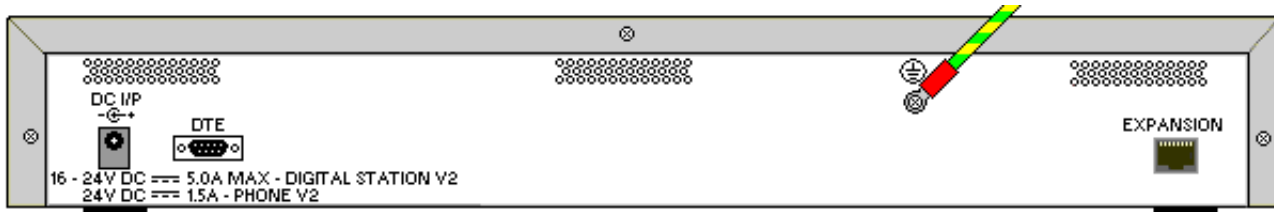
On IP406 V2 and IP412 control units, the ground point is a 4mm screw located adjacent to trunk card Slot B.



- On some older units, the dedicated ground point screw is not present. In those cases, the left-hand 3mm fixing screw on the Slot B blanking plate can be used as an alternate ground connection point. A toothed washer should be added to ensure good contact.

### Expansion Modules

On expansion modules, the ground point is a 4mm screw located towards the right on the rear of the module.



- On some older modules, the dedicated ground point screw is not present. In those cases, the top-center cover fixing screw (3mm) can be used as an alternative ground connection point. A toothed washer should be added to ensure good contact.

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