



# Powered Device Limits

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# Loop Characterization

- **The response from ISO/IEC JTC 1/ 25/WG 3 has provided our project the following physical limits pertinent to powering over customer premises cabling.**
  - ➔ **The single pair 100m LAN drop channel has a maximum value of 25 Ohms for the metallic loop resistance, or 12.5 Ohms per one way conductor, which results in 6.25 Ohms per phantom feed pair.**
  - ➔ **The maximum allowable continuous current in a conductor is not to exceed 0.175 Amps, which gives 0.35 Amps per phantom feed pair.**

# Maximum Power Limit

- **With the previous values the following parameters can be derived to determine the maximum power limit for the Powered Device (PD):**
  - ➔ **The total resistance for two pair phantom power feed has a value of 12.5 Ohms for a 100m LAN drop;**
  - ➔ **The maximum allowable current is 350 mA for the two pair phantom feed;**
  - ➔ **For tolerance the Power Sourcing Equipment (PSE) nominal supply of 48 Volts DC is assumed to be a minimum of 46.1 Volts DC.**
- **Using these values the maximum power available to the input terminal of the Powered Device is:**

$$PD_{Max} = [46.1 - (12.5 \times 0.35)] \times 0.35 = 14.6 \text{ Watts.}$$

# Power Sourcing Equipment

- **A proposed power supply specification will be submitted to the group via the reflector within the next two weeks.**
- **The intent of this specification is to enable the members to consider the implications of its parameters to their respective applications.**
- **The goal is to use this document as a base from which we would develop the specification for the Power Sourcing Equipment.**
- **The target being to work towards an approval of these specification requirements at the next group meeting.**