

# CI 104 Maintenance – Vpse clarification and MDI faults

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# Issue: Vpse & Vpd are each across the pair

We assume it but don't say it.... IEEE 802.3bt eliminated the definitions in 1.4 for VPSE and VPD, and put them in clause 145 in a similar section to 104.3 where there is a table similar to Tables 104-1 & 1a in 104.3.

104.3 is where VPSE and VPD are first introduced

- The proposed text is in the PoE clauses, but absent in Clause 104
- This issue has caused confusion with the IEEE PES Surge Protection folks, thinking it could be conductor to shield, allowing > 60V across the pair

- We show it, but don't say it in text:

Figure 104-3 illustrates the block diagram for a PoDL system.

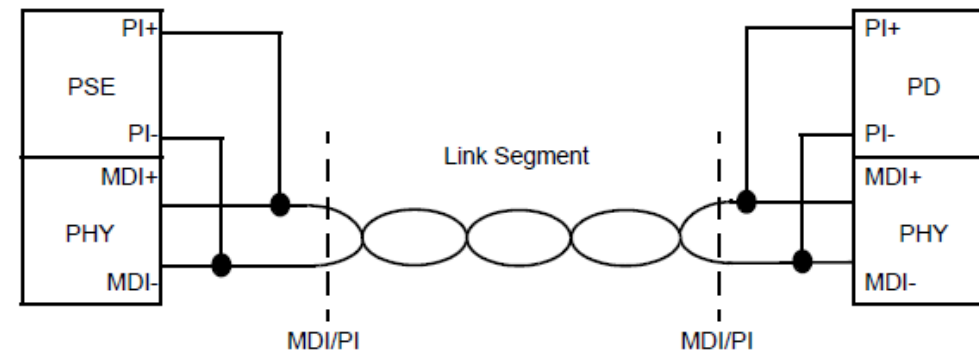


Figure 104-3—PoDL system block diagram

NOTE—PI elements that prevent loading of the data signal by the PSE and PD are not shown. PHY elements that block dc are not shown.

# Vpse/Vpd across pair (cont'd)

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Proposed Change: Insert the following 2 new paragraphs after the last sentence in 104.3:

VPSE is the voltage at the PSE PI. VPSE is measured between any positive conductor and any negative conductor at the PI.

VPD is the voltage at the PD PI. VPSE is measured between any positive conductor and any negative conductor at the PI.

To consider: Change the title of 104.3 from "Class power requirements" to "System Parameters"  
(same title as the similar section in .3bt)

# Issue: Isolation was never updated in .3cg

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The isolation requirement only reflects automotive requirements and should have been updated for the extended reach classes added in 802.3cg

## **104.6.1 Isolation**

In order to prevent the formation of a ground loop, a PD shall provide at least 1 M $\Omega$  dc isolation between all accessible external conductors, including frame ground (if any), and all MDI leads, when measured using a 5 V  $\pm$  20% source voltage.

BASE-T clauses have 2 M $\Omega$  at 500 V

Proposed change (so as not to add a new requirement) – Add the following sentence to the end of the paragraph above:

“Compliance with requirements of 104.8 may require greater isolation, particularly in applications outside of automotive or other contained systems.”