

**Change the second paragraph of 104.1.3 as shown:**

A Type A or Type C PSE and Type A or Type C PD are compatible with 10BASE-T1S and 100BASE-T1 PHYs. A Type B or Type C PSE and Type B or Type C PD are compatible with 1000BASE-T1 PHYs. A Type C PSE and Type C PD are compatible with 10BASE-T1S, 100BASE-T1, and 1000BASE-T1 PHYs. Type D PSEs and Type D PDs may be incompatible with IEEE 802.3 PHYs and may lack a data entity. A Type E PSE and Type E PD are compatible with 10BASE-T1L PHYs. A Type F PSE and Type F PD are compatible with 2.5GBASE-T1, 5GBASE-T1, and 10GBASE-T1 PHYs. A Type G PSE and Type G PD are compatible with 100BASE-T1L PHYs. A Type H PSE and Type H PD are compatible with 10BASE-T1L and 100BASE-T1L PHYs.

**Change 104.4.1 as shown:**

For PoDL systems there are multiple types of PSEs—Type A, Type B, Type C, Type D, Type E, ~~and~~ Type F, Type G, and Type H consistent with 104.1.3.

**Change the second paragraph of 104.4.7.3 as shown:**

A digital oscilloscope or data acquisition module with a differential probe is used to observe the voltage at the MDI/PI of the PSE device under test (DUT) as shown in [Figure 104–7](#). The input impedance,  $Z_{in}(f)$ , and transfer function,  $H_1(f)$ , of the differential probe are specified by [Equation \(104–1\)](#) and [Equation \(104–2\)](#), respectively. When measuring the ripple voltage for a Type A ~~or~~ Type C, or Type G PSE as specified by [Table 104–7](#) item (4a),  $f_1 = 31.8 \text{ kHz} \pm 1\%$ . When measuring the ripple voltage for a Type B or Type F PSE as specified in [Table 104–7](#) item (4a),  $f_1 = 318 \text{ kHz} \pm 1\%$ . When measuring the ripple voltage for a Type E or Type H PSE as specified in [Table 104–7](#) item (4a),  $f_1 = 3.18 \text{ kHz} \pm 1\%$ .

**Change the fifth paragraph in 104.4.7.3 as shown:**

When measuring the ripple voltages for a Type E or Type H PSE as specified by [Table 104–7](#) item (4b), the voltage observed at the MDI/PI with the differential probe where  $f_1 = 3.18 \text{ kHz} \pm 1\%$  is post-processed with transfer function  $H_2(f)$  specified in [Equation \(104–3\)](#) where  $f_2 = 0.1 \text{ MHz} \pm 1\%$ .

**Change 104.5.1 as shown:**

For PoDL systems there are ~~six~~eight types of PDs—Type A, Type B, Type C, Type D, Type E, ~~and~~ Type F, Type G, and Type H consistent with 104.1.3.

**Change the second, third, and fourth paragraphs of 104.5.7.4 as shown:**

The PD DUT is connected to a power supply through a dc bias coupling network as shown in [Figure 104–9](#). The ripple and transient specifications for a Type A or Type C PD shall be met for all operating voltages in the range of  $V_{PD}$  sourced through a dc bias coupling network with MDI return loss as specified by [Equation \(96–12\)](#), and over the range of  $P_{PD}$ . The ripple and transient specifications for a Type B PD shall be met for all operating voltages in the range of  $V_{PD}$  sourced through a dc bias coupling network with MDI return loss as specified by [Clause 97](#), and over the range of  $P_{PD}$ . The ripple and transient specifications for a Type E PD shall be met for all operating voltages in the range of  $V_{PD}$  sourced through a dc bias coupling network with MDI return loss as specified by [Clause 146](#) and over the range of  $P_{PD}$ . The ripple and transient specifications for a Type F PD shall be met for all operating voltages in the range of  $V_{PD}$  sourced through a dc bias coupling network with MDI return loss as specified by [Clause 149](#), and over the range of  $P_{PD}$ . The ripple and transient specifications for a Type G PD shall be met for all operating voltages in the range of  $V_{PD}$  sourced through a dc bias coupling network with MDI return loss as specified by [Clause 190](#) and over the range of  $P_{PD}$ . The ripple and transient specifications for a Type H PD shall be met for all operating voltages in the range of  $V_{PD}$  sourced through a dc bias coupling network with MDI return loss as specified by [Clause 146](#) and [Clause 190](#) and over the range of  $P_{PD}$ .

A digital oscilloscope or data acquisition module with a differential probe is used to observe the voltage at the MDI/PI. The input impedance,  $Z_{in}(f)$ , and transfer function,  $H_1(f)$ , of the differential probe are specified by Equation (104–1) and Equation (104–2), respectively. When measuring the ripple voltage for a Type A, ~~or~~ Type C, or Type G PD as specified by Table 104–11 item (3a),  $f_1 = 31.8 \text{ kHz} \pm 1\%$ . When measuring the ripple voltage for a Type B or Type F PD as specified by Table 104–11 item (3a),  $f_1 = 318 \text{ kHz} \pm 1\%$ . When measuring the ripple voltage for a Type E or Type H PD as specified by Table 104–11 item (3a),  $f_1 = 3.18 \text{ kHz} \pm 1\%$ .

When measuring the ripple voltages for a Type A, ~~or~~ Type C, or Type G PD as specified by Table 104–11 item (3b), the voltage observed at the MDI/PI with the differential probe where  $f_1 = 31.8 \text{ kHz} \pm 1\%$  shall be post-processed with transfer function  $H_2(f)$  specified in Equation (104–3) where  $f_2 = 1 \text{ MHz} \pm 1\%$ . When measuring the ripple voltages for a Type B or Type F PD as specified by Table 104–11 item (3b), the voltage observed at the MDI/PI with the differential probe where  $f_1 = 318 \text{ kHz} \pm 1\%$  shall be post-processed with transfer function  $H_2(f)$  specified in Equation (104–3) where  $f_2 = 10 \text{ MHz} \pm 1\%$ . When measuring the ripple voltages for a Type E or Type H PD as specified by Table 104–11 item (3b), the voltage observed at the MDI/PI with the differential probe where  $f_1 = 3.18 \text{ kHz} \pm 1\%$  shall be post-processed with transfer function  $H_2(f)$  specified in Equation (104–3) where  $f_2 = 0.1 \text{ MHz} \pm 1\%$ .

**Change the first paragraph of 104.6.2 as shown:**

The PI for Type A, Type B, Type C, and Type F PSEs and PDs shall meet the fault tolerance requirements as specified in 96.8.3. The PI for Type E, Type G, and Type H PDs shall meet the fault tolerance requirements as specified in 146.8.6.

**Add Type H PD/PSE to Table 104-13:**

Add “0 1 0 0 = Type H” to the bit definition of bits[15:12].

**Add Type H PSE to the PICS major capabilities table in Clause 104.9.3 after line \*PSETG:**

\*PSETH | Implements PSE Type H functionality | 104.1.3 | Provides support for requirements of Type H Power Sourcing Equipment | O | Yes [ ] No [ ]

**Add Type H PD to the PICS major capabilities table in Clause 104.9.3 after line \*PDTG:**

\*PDTH | Implements PD Type H functionality | 104.1.3 Provides support for requirements of Type H Powered Device Equipment | O | Yes [ ] No [ ]

**Add new entry to the Powered Device (PD) table in Clause 104.9.4.3 before line PD21:**

PD21 | Type H ripple and transients | 104.1.3 | In accordance with specifications shown in Table 104–11 for all operating voltages in the range of  $V_{PD}$  sourced through a dc bias coupling network with MDI return loss as specified by Clause 146 and Clause 190, and over the range of  $P_{PD}$  Power Sourcing Equipment | PDTH:M | Yes [ ] N/A [ ]

**Add new entry to the Powered Device (PD) table in Clause 104.9.4.3 before line PD23 (only, if possible, otherwise a maintenance comment would need to be filed):**

PD23 | Type E ripple and transients | 104.1.3 | In accordance with specifications shown in Table 104–11 for all operating voltages in the range of  $V_{PD}$  sourced through a dc bias coupling network with MDI return loss as specified by Clause 146, and over the range of  $P_{PD}$  Power Sourcing Equipment | PDTE:M | Yes [ ] N/A [ ]

**Modify entry of the Powered Device (PD) table in Clause 104.9.4.3 in line PD24:**

PD24 | Type A, ~~or~~ Type C, or Type G PD measured ripple voltage post-processing | 104.5.7.4 | With transfer function  $H_2(f)$  specified in Equation (104–3) where  $f_2=1 \text{ MHz} \pm 1\%$  | PDTA:M~~or~~ PDTC:M PDTG:M | Yes [ ] N/A [ ]

**Add new entry to the Powered Device (PD) table in Clause 104.9.4.3 before line PD26 (add Type E only, if possible, otherwise a maintenance comment would need to be filed):**

PD26 | [Type E](#) or Type H PD measured ripple voltage post-processing | 104.5.7.4 | With transfer function  $H_2(f)$  specified in [Equation \(104–3\)](#) where  $f_2=0.1 \text{ MHz} \pm 1\%$  | PDTE:M or PDTH:M | Yes [ ] N/A [ ]

**Modify entry COMEL2 in table in Clause 104.9.4.4:**

COMEL2 | Type E, [Type G](#), and [Type H](#) PSE and PD fault tolerance | 104.6.2 | The PI shall meet the fault tolerance requirements as specified in 146.8.6 | PSETE:M [PSETG:M](#) [PSETH:M](#) PDTE:M [PDTG:M](#) [PDTH:M](#) | Yes [ ] N/A [ ]