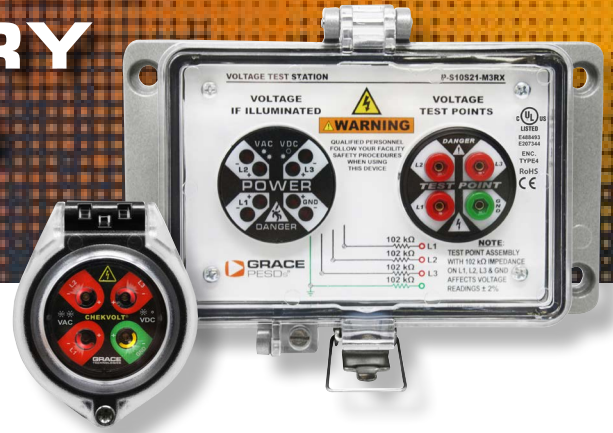


Absence of Voltage Testing & NFPA 70E Compliance:

WHY AN EXCEPTION IS NOT NECESSARY FOR TEST POINTS



INTRODUCTION

Permanent Electrical Safety Devices (PESDs) are listed to UL 61010 and have been aiding employers and qualified individuals in meeting NFPA 70E standards for more than a decade. These devices were designed to conform to the regulatory requirements outlined in the standard. PESDs, such as voltage indicators, provide LED voltage presence indication while panel mounted test points provide absence of voltage testing capabilities when using an adequately rated Portable Test Instrument (PTI).

In recent years, new products have introduced an additional method for absence of voltage testing although it does not replace nor negate previous methods using UL 61010 devices. An exception was added to the 2018 Edition of NFPA 70E to account for these devices, known as Absence of Voltage Testers (AVTs). Compliance using UL 61010 PESDs remains valid, and no exception is required.

“Section 120.5 Item (7) does not prohibit the use of the proposed devices to extend test points when used with portable test instruments, and therefore no exception is needed.”

-NFPA 70E Technical Committee (Source: Public Input No. 367-NFPA 70E-2021, Committee EEW-AAA)

PESDs & AVTs

Absence of voltage testing is a regulatory requirement under OSHA’s 29 CFR 1910.333 (b)(2)(iv)(B) and NFPA 70E, 120.5 (Process for Establishing and Verifying an Electrically Safe Work Condition). There are different methods of testing for absence of voltage in electrical equipment, including the use of PTIs, PESDs, and AVTs. The latter two methods are designed to reduce exposure to electrical hazards and meet the safety standards set by NFPA 70E:

- **Permanent Electrical Safety Devices** are installed in electrical equipment to provide voltage presence indication and/or test for absence of voltage using an adequately rated PTI. They reduce exposure to electrical hazards, meet NFPA 70E 120.5(7), and are listed to UL 61010.

- **Permanently Mounted Absence of Voltage Testers**
are installed in electrical equipment to detect and indicate voltage status. When installed properly, they are an alternative method of verifying de-energization, meet NFPA 70E 120.5(7), Exception No. 1, and are listed to UL 1436.



EXCEPTION VS. RULE

PESDs may not be explicitly mentioned in the standard but are compliant without exceptions. NFPA 70E offers two options for absence of voltage testing: (1) using an adequately rated PTI per 120.5(7) or (2) a permanently mounted AVT per 120.5(7) Exception No. 1. The following tables directly reference the NFPA 70E standard to compare the following information:

- Table 1: How voltage test point PESDs used with PTIs comply with 120.5(7)
- Table 2: How AVTs comply with 120.5(7), Exception No. 1

NFPA 70E, 2021 Edition, Article 120.5(7)	Voltage Test Point + PTI	Absence of Voltage Tester
Use an adequately rated portable test instrument to test for the absence of voltage	Yes	No
Test each phase conductor or circuit part both phase-to-phase and phase-to-ground	Yes	Yes
Before and after each test, determine that the test instrument is operating satisfactorily through verification on any known source	Yes	No
Meets Article 120.5(7), Listed and Labeled to UL 61010	Yes	No

Table 1, Source: NFPA 70E, 2021 Edition, Article 120.5(7) (p. 70E-23)

NFPA 70E, 2021 Edition, Article 120.5(7), Exception No. 1	Voltage Test Point + PTI	Absence of Voltage Tester
Permanently mounted and installed in accordance with the manufacturer's instructions	Yes	Yes
Tests the conductors and circuit parts at the point of work	N/A	Yes
Listed and labeled to UL 1436 for the purpose of testing for the absence of voltage	No	Yes
Tests each phase conductor or circuit part both phase-to-phase and phase-to-ground	Yes	Yes
Verified as operating satisfactorily on any known voltage source before and after testing for the absence of voltage	N/A	Yes

Table 2, Source: NFPA 70E, 2021 Edition, Article 120.5(7), Exception No. 1 (p. 70E-23)

NFPA TECHNICAL COMMITTEE STATEMENT

The inclusion of 120.5(7), Exception No. 1 in the 2018 version of NFPA 70E has resulted in misunderstandings regarding the compliance of voltage test points. To obtain clarification, we filed a public input with the NFPA 70E Technical Committee during the 2021 revision cycle. The committee evaluated our submission and issued a coherent statement: “Section 120.5 Item (7) does not prohibit the use of the proposed devices to extend test points when used with portable test instruments, and therefore no exception is needed.”

The Technical Committee’s resolution confirms that there is no need to provide additional clarification or an exception for the use of PESDs under 120.5(7) of the NFPA 70E standards. The context of the response message pertains specifically to absence of voltage testing, and it explicitly allows the use of PESDs that are listed and labeled under UL 61010.

CONCLUSION

As stated by the NFPA Technical Committee, an exception is not necessary for the UL 61010 PESDs that have been used for over a decade because they meet the longstanding rule. An exception to the rule was made for UL 1436 AVTs that are new to the market. PESDs do not need to meet any exception for a qualified person to compliantly test for absence of voltage using a PTI.

To put it simply, voltage test point PESDs enable qualified personnel to conduct absence of voltage testing using an adequately rated PTI, without requiring an exception designed for AVTs.