

**NFPA 70®-2020 Edition**  
**National Electrical Code®**

**TIA Log No.: 1529**

**Reference:** 210.8(F)

**Comment Closing Date: September 23, 2020**

**Submitter:** Donald Cook, Shelby County, AL Development Services

[www.nfpa.org/70](http://www.nfpa.org/70)

*1. Revise 210.8(F) to read as follows:*

**210.8(F) Outdoor Outlets.** All outdoor outlets for dwellings, other than those covered in 210.8 (A)(3), Exception to (3), that are supplied by single-phase branch circuits rated 150 volts to ground or less, 50 amperes or less, shall have ground-fault circuit-interrupter protection for personnel. This requirement shall become effective for ductless mini-split-type heating/ventilating/air-conditioning (HVAC) equipment and other HVAC units employing power conversion equipment as a means to control compressor speed on January 1, 2023.

Informational Note: Power conversion equipment is the term used to describe the components used in HVAC equipment that is commonly referred to as a variable speed drive. The use of power conversion equipment to control compressor speed differs from multi-stage compressor speed control.

*Exception: Ground-fault circuit-interrupter protection shall not be required on lighting outlets other than those covered in 210.8(C).*

**Substantiation:** This expansion of GFCI protection in the 2020 NEC to cover exterior outlets on dwelling units other than just those rated 125V is a necessary enhancement to safety. Code Making Panel 2 supported the expansion of GFCI protection to cover outdoor outlets rated 250V based on the electrocution of a young boy who came in contact with the energized enclosure of an outdoor HVAC unit. However recent field experience with new installations performed in accordance with the 2020 NEC has demonstrated some random opening of the GFCI devices protecting ductless mini splits. It has also become apparent that random opening may also occur with other equipment employing power conversion equipment controlling the speed of the compressor.

The purpose of this TIA is not to eliminate the GFCI protection but provide time for the industry to understand and address the field tripping on ductless mini splits and units containing power conversion equipment. This TIA extends the date of enforcement for the industry to address the present tripping issues that are occurring in the field on these specific equipment types.

**Emergency Nature:** The proposed TIA intends to correct a circumstance in which the revised NFPA Standard has resulted in an adverse impact on a product or method that was inadvertently overlooked in the total revision process or was without adequate technical (safety) justification of the action.

While the 2020 NEC text clearly enhances safety of electrical workers, HVAC technicians and the general public, the application of the newly revised requirements in 210.8 (F) inadvertently has an unintended consequence on ductless mini split systems and other units employing power conversion equipment. Without this TIA, designers, installers, AHJs, and consumers are forced to choose between a compliant and an operational installation. Additional time is necessary for the industry to resolve the operational aspects of these specific types of equipment while retaining the enhanced safety benefit for other outdoor installations.