

NFPA 70®-2020 Edition

National Electrical Code®

TIA Log No.: 1593

Reference: Section 210.8(F)

Comment Closing Date: July 19, 2021

Submitter: Dean Hunter, Minnesota Department of Labor & Industry

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

210.8 Ground-Fault Circuit-Interrupter Protection for Personnel. ...

(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 on January 1, 2023 for mini-split-type heating/ventilating/air-conditioning (HVAC) equipment and other HVAC units employing power conversion equipment as a means to control compressor speed.

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 multistage 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, for the purpose of covering exterior outlets through 250-volts at dwelling units, is a necessary enhancement for electrical safety. Code Making Panel 2 supported the expansion of GFCI protection to cover these outdoor outlets based on the electrocution of a young boy who came into contact with the energized enclosure of an outdoor HVAC unit.

The purpose of this TIA is not to eliminate the GFCI protection for *all* HVAC outdoor equipment, but to extend the date of enforcement for the circuit supplying the HVAC units employing power conversion equipment.

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.

In the state of Minnesota, we began enforcing Section 210.8(F) on April 5, 2021 and we have already documented many cases of operational tripping occurrences which have been difficult for inspectors and electricians to resolve. The only solution at this time is for the AHJ to approve a temporary allowance for the installation of a circuit breaker without GFCI protection so that these HVAC units can operate.

The language in this TIA is in direct alignment with the once-proposed TIA 1529 that was supported by Code Making Panel 2 for Technical and Emergency Nature. The Correlating Committee also agreed that no correlating issues existed with this language; however, the TIA narrowly failed ballot with regards to the Emergency Nature. Recently, proposed TIA 1564, which included “all HVAC equipment” failed ballot, but had multiple voting member comments supporting the language in TIA 1529. Also, TIA 1564 language contains substantiation to support reasons for delaying the date to address the operational GFCI tripping.

As we enter into the peak cooling season in Minnesota and in other states where the 2020 NEC has been adopted, it is expected that this issue will continue to grow and be problematic for the enforcement and installation community. Delaying the implementation date allows for the affected stakeholders to reach a solution to the operational tripping occurrences and provides AHJs with the ability to permit installations of cooling equipment that is essential to the health and safety of residents in warm climates.

Anyone may submit a comment by the closing date indicated above. Please identify the TIA number and forward to the Secretary, Standards Council. [SUBMIT A COMMENT](#)