

The use of this **Nuisance Current Blocker (NCB)** is supported by code, specifically ANSI/NFPA 70, the US “National Electrical Code” (NEC) to remove 250.6(A) “objectionable current”, and meets the criteria for “an effective ground-fault current path” in accordance with Section 250.4(A)(5) and complies with Section 250.6(E) as an AC coupling/DC isolating device, thereby enabling its use as an AC grounding device.

Section 250.4(A)(5) Effective Ground Fault Current Path. Electrical equipment and wiring and other electrically conductive material likely to become energized shall be installed in a manner that creates a low- impedance circuit facilitating the operation of the overcurrent device or ground detector for high- impedance grounded systems. It shall be capable of safely carrying the maximum ground-fault current likely to be imposed on it from any point on the wiring system where a ground fault may occur to the electrical supply source. The earth shall not be considered as an effective ground-fault current path.

Section 250.6(E) Isolation of Objectionable Direct-Current Ground Currents. Where isolation of objectionable DC ground currents from cathodic protection systems is required, a listed AC coupling/DC isolating device shall be permitted in the equipment grounding conductor path to provide an effective return path for AC ground-fault current while blocking DC current.

250.6 Objectionable Current.

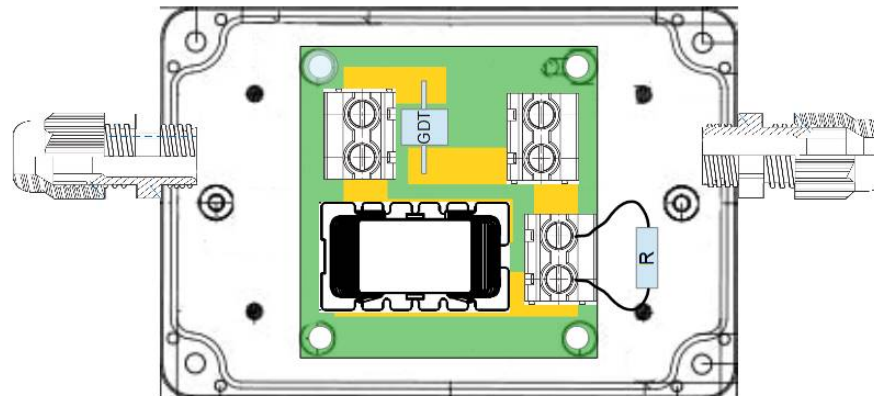
(A) Arrangement to Prevent Objectionable Current. “The grounding of electrical systems, circuit conductors, ... and conductive normally non- current carrying metal parts of equipment, shall be installed and arranged in a matter that will prevent objectionable current.”

(B) Alterations to Stop Objectionable Current.

- 1) Discontinue one or more but not all of such grounding connections.
- 2) Change the locations of the grounding connections.
- 3) Interrupt the continuity of the conductor or conductive path causing the objectionable current.
- 4) Take other suitable remedial and approved action.

NCB Quick Look

<https://www.brighteon.com/30f2b7c6-502c-4991-a7f8-bd714cced15d>



Another device that is compliant to be installed in series in equipment grounding conductors.

Dairyland PCRX

Commonly used to decouple electric equipment from grounding systems, for AC mitigation projects, or other isolation and grounding applications...¹

Underwriters Laboratories (UL) has listed the PCRX as meeting the criteria for “an effective ground-fault current path” in accordance with Section 250.4(A)(5) of ANSI/NFPA 70, US “National Electrical Code” (NEC) thereby enabling its use as an AC grounding device.²



Non Conductive Enclosure

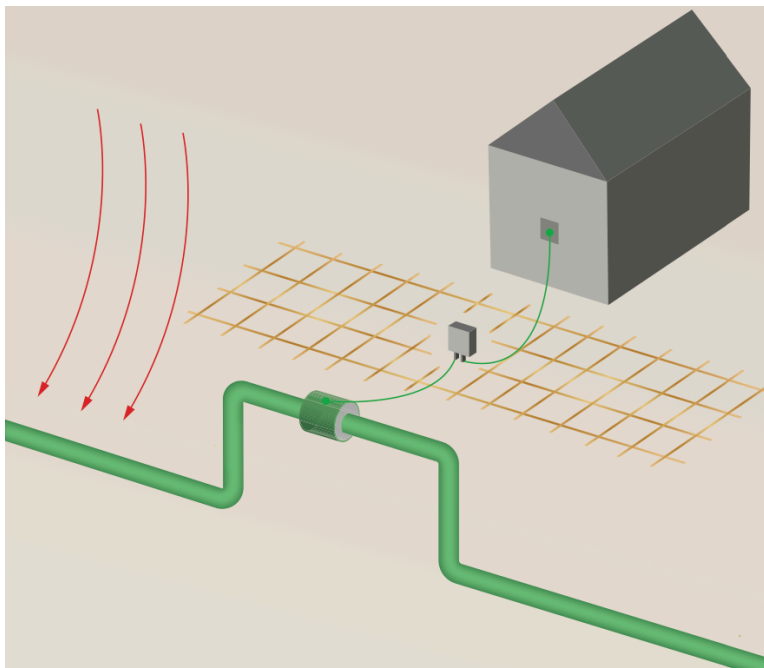
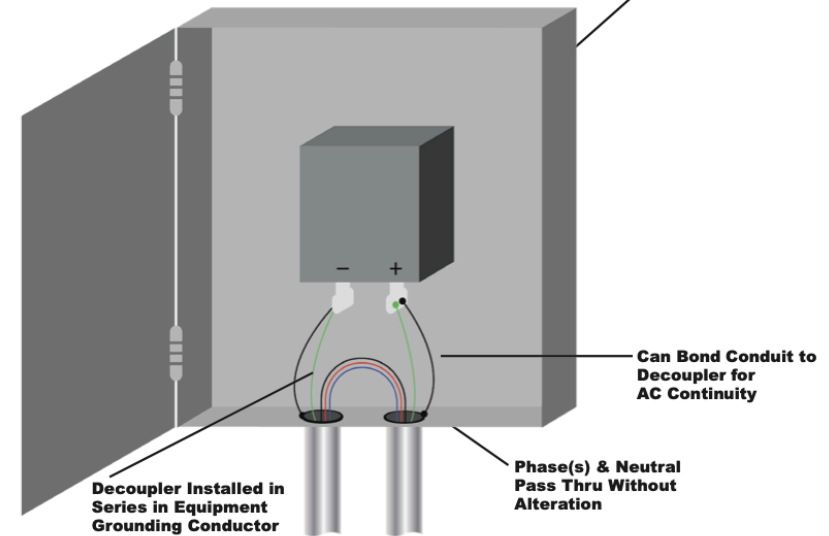


Figure 2: Decoupling blocks CP current in equipment grounding conductor

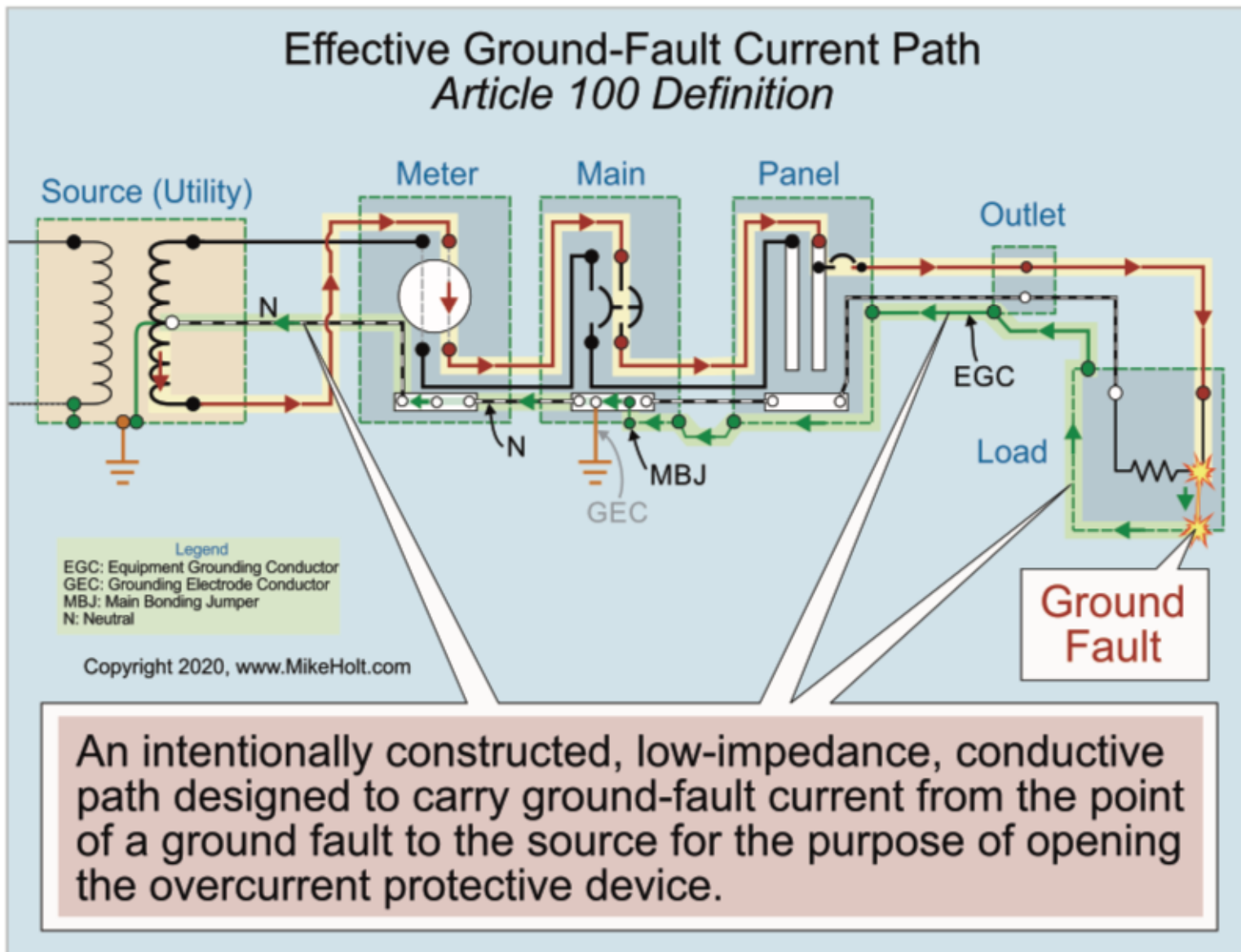


Equipment Grounding conductor From CP Structure to Decoupler Negative Terminal. Positive Terminal to Supply Panel Grounding Bus.

Figure 7: Decoupler isolating grounding conductor and conduit

¹ <https://www.dairyland.com/knowledge-base/pcrx-literature/>

² https://www.dairyland.com/wp-content/uploads/2021/01/PCRX_Literature_200023.pdf



► **Figure 250-9**

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