

(B) Line Isolation Monitor.

(1) Characteristics. In addition to the usual control and over-current protective devices, each isolated power system shall be provided with a listed continually operating line isolation monitor that indicates total hazard current. The monitor shall be designed such that a green signal lamp, conspicuously visible to persons in each area served by the isolated power system, remains lighted when the system is adequately isolated from ground. An adjacent red signal lamp and an audible warning signal (remote if desired) shall be energized when the total hazard current (consisting of possible resistive and capacitive leakage currents) from either isolated conductor to ground reaches a threshold value of 5 mA under nominal line voltage conditions. The line monitor shall not alarm for a fault hazard of less than 3.7 mA or for a total hazard current of less than 5 mA.

Exception: A system shall be permitted to be designed to operate at a lower threshold value of total hazard current. A line isolation monitor for such a system shall be permitted to be approved, with the provision that the fault hazard current shall be permitted to be reduced but not to less than 35 percent of the corresponding threshold value of the total hazard current, and the monitor hazard current is to be correspondingly reduced to not more than 50 percent of the alarm threshold value of the total hazard current.

See Exhibit 517.6 for an example of a hospital isolated power system panel.

(2) Impedance. The line isolation monitor shall be designed to have sufficient internal impedance such that, when properly connected to the isolated system, the maximum internal current that can flow through the line isolation monitor, when any point of the isolated system is grounded, shall be 1 mA.

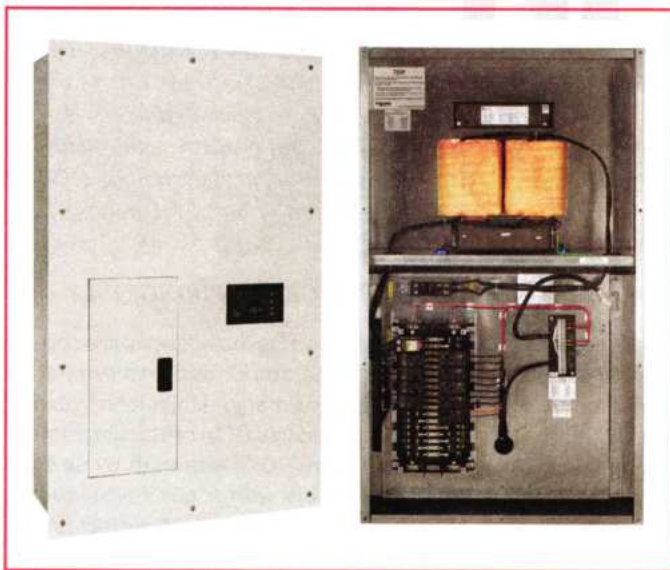


EXHIBIT 517.6 An example of a hospital isolated power system panel with built-in isolation transformer, line isolation monitor, load center, and grounded busbar. (Courtesy of Schneider Electric)

Exception: The line isolation monitor shall be permitted to be of the low-impedance type such that the current through the line isolation monitor, when any point of the isolated system is grounded, will not exceed twice the alarm threshold value for a period not exceeding 5 milliseconds.

Informational Note: Reduction of the monitor hazard current, provided this reduction results in an increased “not alarm” threshold value for the fault hazard current, will increase circuit capacity.

(3) Ammeter. An ammeter calibrated in the total hazard current of the system (contribution of the fault hazard current plus monitor hazard current) shall be mounted in a plainly visible place on the line isolation monitor with the “alarm on” zone at approximately the center of the scale.

Exception: The line isolation monitor shall be permitted to be a composite unit, with a sensing section cabled to a separate display panel section on which the alarm or test functions are located.

Informational Note: It is desirable to locate the ammeter so that it is conspicuously visible to persons in the anesthetizing location.

ARTICLE 518

Assembly Occupancies

518.1 Scope. Except for the assembly occupancies explicitly covered by 520.1, this article covers all buildings or portions of buildings or structures designed or intended for the gathering together of 100 or more persons for such purposes as deliberation, worship, entertainment, eating, drinking, amusement, awaiting transportation, or similar purposes.

Informational Note: See NFPA 101-2021, *Life Safety Code*, or the local building code for methods of determining population capacity.

Article 518 applies to assembly occupancies designed or intended for 100 or more persons with the population capacity determined by methods utilized in NFPA 101®, *Life Safety Code*®. Article 518 would apply, for example, to a church chapel or an auditorium for occupancy of 100 or more persons but not to a supermarket. Even though a supermarket might contain 100 or more persons at any given time, it is not specifically designed or intended for the assembly of persons. Article 518 does not apply to office buildings or schools, even though such buildings, as a rule, are designed for occupancy by 100 or more persons. The article does, however, apply to assembly halls, restaurants, and assembly areas such as large meeting or conference rooms, cafeterias, gymnasiums, and auditoriums within an office or school building if these parts of the building are designed or intended for the assembly of 100 or more persons. Note that the production and audience areas of theaters within a building are subject to the requirements of Article 520.

The following information for determining new assembly occupancy capacity is extracted from NFPA 101: