

current is not necessarily determined with all equipment operating simultaneously as indicated in 646.5(1). The MDC is considered a continuous load; therefore, supply conductors must be sized for 125 percent of the marked full-load current.

(A) Size. The size of the supply conductor shall be such as to have an ampacity not less than 125 percent of the full-load current rating.

Informational Note No. 1: See the 0–2000-volt ampacity tables of Article 310 for ampacity of conductors rated 600 V and below.

Informational Note No. 2: See 430.22(E) and 430.26 for duty cycle requirements.

(B) Overcurrent Protection. Where overcurrent protection for supply conductors is furnished as part of the MDC, overcurrent protection for each supply circuit shall comply with 646.6(B) (1) through (B)(2).

(1) Service Equipment — Overcurrent Protection. Service conductors shall be provided with overcurrent protection in accordance with 230.90 through 230.95.

(2) Taps and Feeders. Where overcurrent protection for supply conductors is furnished as part of the MDC as permitted by 240.21, the overcurrent protection shall comply with the following:

- (1) The overcurrent protection shall consist of a single circuit breaker or set of fuses.
- (2) The MDC shall be marked “OVERCURRENT PROTECTION PROVIDED AT MDC SUPPLY TERMINALS.”
- (3) The supply conductors shall be considered either as feeders or as taps and be provided with overcurrent protection complying with 240.21.

646.7 Short-Circuit Current Rating.

(A) Service Equipment. The service equipment of an MDC that connects directly to a service shall have a short-circuit current rating not less than the available fault current of the service.

(B) MDCs Connected to Branch Circuits and Feeders. Modular data centers that connect to a branch circuit or a feeder circuit shall have a short-circuit current rating not less than the available fault current of the branch circuit or feeder. The short-circuit current rating of the MDC shall be based on the short-circuit current rating of a listed and labeled MDC or the short-circuit current rating established using an approved method.

Exception: This requirement shall not apply to listed and labeled equipment connected to branch circuits located inside of the MDC equipment enclosure.

Informational Note: See UL 508A-2018, *Standard for Industrial Control Panels, Supplement SB*, for an example of an approved method.

(C) MDCs Powered from Separate MDC System Enclosures. Modular data center equipment enclosures, powered from a

separate MDC system enclosure that is part of the specific MDC system, shall have a short-circuit current rating coordinated with the powering module in accordance with 110.10.

Informational Note: See UL 508A-2018, *Standard for Industrial Control Panels, Supplement SB*, for an example of an approved method for determining short-circuit current ratings.

646.8 Field-Wiring Compartments. A field-wiring compartment in which service or feeder connections are to be made shall be readily accessible and comply with the following:

- (1) Permit the connection of the supply wires after the MDC is installed
- (2) Permit the connection to be introduced and readily connected
- (3) Be located so that the connections may be readily inspected after the MDC is installed

646.9 Flexible Power Cords and Cables for Connecting Equipment Enclosures of an MDC System.

(A) Uses Permitted. Flexible power cords and cables shall be permitted to be used for connections between equipment enclosures of an MDC system where not subject to physical damage.

Informational Note: One example of flexible power cord usage for connections between equipment enclosures of an MDC system is between an MDC enclosure containing only servers and one containing power distribution equipment.

(B) Uses Not Permitted. Flexible power cords and cables shall not be used for connection to external sources of power.

Informational Note: Examples of external sources of power are electrical services, feeders, and premises branch circuits.

(C) Listing. Where flexible power cords or cables are used, they shall be listed as suitable for extra-hard usage. Where used outdoors, flexible power cords and cables shall also be listed as suitable for wet locations and shall be sunlight resistant.

(D) Single-Conductor Cable. Single-conductor power cable shall be permitted to be used only in sizes 2 AWG or larger.

Part II. Equipment

646.10 Electrical Supply and Distribution. Equipment used for electrical supply and distribution in an MDC, including fittings, devices, luminaires, apparatus, machinery, and the like, shall comply with Parts I and II of Article 110.

646.11 Distribution Transformers.

(A) Utility-Owned Transformers. Utility-owned distribution transformers shall not be permitted in an MDC.

(B) Non-Utility-Owned Premises Transformers. Non-utility-owned premises distribution transformers installed in the vicinity of an MDC shall be of the dry type or the type filled with a