 5	Title: YALE OFFICE OF FACILITIES PROCEDURE MANUAL Chapter: 01 - Yale Design Standard Division: Electrical Standards	Section: 26 24.04 Motor Control Centers
		Date: 6/15/16
		Author: Office of Facilities
CC: Project Folder		

Change History

Date	Description of Change	Pages / Sections Modified	Change Approver Initials
6/15/16	Updated division section from 16443 to 26 24 05, removed references to other section	-	mgl44
10/17/14	Add vendor under Section E.	20 – 16443, E. (Motor Control Centers; Manufacturers	SO

A. Summary

This section contains design criteria for motor control centers.

B. System Design and Performance Requirements

- Motor control centers must consist of the following components arranged in a single assembly, as described in this section. Additional or alternative devices may be provided, as necessary, to suit particular applications.
 - Disconnect switches, circuit breakers, and motor controllers, as described in [Sections Enclosed Switches and Circuit Breakers](#) and in [Motor Controllers](#).
 - Fuses, as described in [Section Fuses](#).
- Single-sided lineups are the preferred arrangement. Avoid back-to-back arrangements.

C. Submittals

Submit the following design and construction documentation.

1. Designer Submittals

Submit control center layout detail (on construction drawings).


2. Construction Documents

- Shop drawings and product data
- Service manuals for operation and maintenance

D. Product Standards

Ensure that all products conform to the following standards:

- NEMA ICS 2, Industrial Control Devices, Controllers, and Assemblies

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- UL 845, Electric Motor Control Centers

E. Manufacturers

Subject to compliance with the design requirements, provide products by one of the following manufacturers:


- Allen-Bradley
- Eaton / Cutler Hammer
- Furnas
- General Electric
- Square D

F. Equipment

1. Provide motor control centers with Class I, Type B wiring, track-mounted terminal blocks for power, and control wiring mounted in the units, unless the specific application and continuous through the length of MCC requires otherwise.
2. All bus bars must be tin-plated copper. The neutral bus must be half-size and run continuous through the length of MCC, unless design conditions require a larger neutral. Provide horizontal and vertical ground busses. Specify full bussing in all vertical sections, with a minimum of 25 percent of the layout available for future use.
3. Design motor control centers and their components for available short-circuit current from a submitted short circuit study, but not less than 42,000 amperes RMS symmetrical.
4. Provide motor control centers with bus barriers and bottom covers to reduce risk of accidental contact.
5. Specify NEMA 12 enclosures for motor control centers located in mechanical rooms.
6. Identify each motor control center and individual unit therein using an engraved nameplate, as described in Standard: Electrical Identification.
7. MCC shall be equipped with vertical wireways and top and bottom wiring troughs.

G. Installation Guidelines

Install motor control centers on a four-inch concrete housekeeping pad. Wherever

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possible, size and locate the pad to allow the addition of future vertical sections. Two size #4/0 ground conductors shall be provided from each two locations from the building grounding system for each complete MCC lineup.

H. Startup and Training

Follow the procedure recommended in standard NEMA PB 1.1 to energize motor control centers.

“END OF SECTION”