

## § 111.70-1

Type MC cable used and for the environment in which they are installed.

[CGD 94-108, 62 FR 23908, May 1, 1997, as amended by USCG-2003-16630, 73 FR 65199, Oct. 31, 2008]

### Subpart 111.70—Motor Circuits, Controllers, and Protection

#### § 111.70-1 General.

(a) Each motor circuit, controller, and protection must meet the requirements of ABS Steel Vessel Rules, sections 4-8-2/9.17, 4-8-3/5.7.3, 4-8-4/9.5, and 4-8-3/5; ABS MODU Rules, Part 4, Chapter 3, sections 4/7.11 and 4/7.17; or IEC 60092-301 (all three standards incorporated by reference; see 46 CFR 110.10-1), as appropriate, except for the following circuits:

(1) Each steering gear motor circuit and protection must meet part 58, subpart 58.25, of this chapter.

(2) Each propulsion motor circuit and protection must meet subpart 111.35 of this part.

(b) In ungrounded three-phase alternating current systems, only two motor-running protective devices (overload coil or heater type relay within the motor and controller) need be used in any two ungrounded conductors, except when a wye-delta or a delta-wye transformer is used.

(c) The motor disconnecting means must be an externally operable switch or circuit breaker.

[CGD 74-125A, 47 FR 15236, Apr. 8, 1982, as amended by CGD 94-108, 61 FR 28281, June 4, 1996; 62 FR 23909, May 1, 1997; USCG-2003-16630, 73 FR 65199, Oct. 31, 2008; USCG-2013-0671, 78 FR 60153, Sept. 30, 2013]

#### § 111.70-3 Motor controllers and motor-control centers.

(a) *General.* The enclosure for each motor controller or motor-control center must meet either NEMA ICS 2 and NEMA ICS 2.3, or Table 5 of IEC 60092-201 (all three standards incorporated by reference; see 46 CFR 110.10-1), as appropriate, for the location where it is installed. In addition, each such enclosure in a hazardous location must meet subpart 111.105 of this part. NEMA ICS 2.4 (incorporated by reference; see 46 CFR 110.10-1) provides guidance on the differences between devices meeting

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NEMA and those meeting IEC for motor service.

(b) *Low-voltage release.* Each motor controller for a fire pump, elevator, steering gear, or auxiliary that is vital to the vessel's propulsion system, except a motor controller for a vital propulsion auxiliary which can be restarted from a central control station, must have low-voltage release if automatic restart after a voltage failure or its resumption to operation is not hazardous. If automatic restart is hazardous, the motor controller must have low-voltage protection. Motor controllers for other motors must not have low-voltage release unless the starting current and the short-time sustained current of the additional low-voltage release load is within the capacity of one ship's service generator. Automatic sequential starting of low-voltage release controllers is acceptable to meet this paragraph.

(c) *Low-voltage protection.* Each motor controller must have low-voltage protection, except for the following motor controllers:

(1) A motor controller that has low-voltage release under paragraph (b) of this section.

(2) A motor controller for a motor of less than 2 horsepower (1.5 kW).

(d) *Identification of controllers.* (1) Each motor controller and motor control center must be marked externally with the following information:

(i) Manufacturer's name or identification.

(ii) Voltage.

(iii) Number of phases.

(iv) Current.

(v) kW (Horsepower).

(vi) Identification of motor being controlled.

(vii) Current rating of trip setting.

(2) Each controller must be provided with heat durable and permanent elementary wiring/schematic diagrams of the controller located on the door interior.

[CGD 94-108, 61 FR 28281, June 4, 1996; 61 FR 33045, June 26, 1996, as amended by USCG-2003-16630, 73 FR 65199, Oct. 31, 2008; USCG-2013-0671, 78 FR 60153, Sept. 30, 2013]

#### § 111.70-5 Heater circuits.

(a) If an enclosure for a motor, master switch, or other equipment has an