How to arrange the electrical distribution box in the elevator machine room



Overview

NEC Article 620: Elevators, Part 2 Overcurrent devices and disconnects must be located in machine or control spaces, be lockable and provide a single means.

Key Takeaways

Elevator machine rooms may contain multiple distribution boxes, but all circuits must primarily serve elevator-related equipment, with proper disconnects and code-compliant installation.

NEC Requirements for Machine Room Circuits

Each elevator car, machine room, and hoistway pit must have dedicated branch circuits for lighting, receptacles, and HVAC systems. These circuits are protected by overcurrent devices located in the machine room or control space, and disconnects must be lockable and externally operable to ensure safety during maintenance (NEC Article 620. 51).

Lighting circuits in the machine room are not required to be GFCI-protected, but receptacles must have GFCI protection to safeguard maintenance personnel.

Placement and Number of Distribution Boxes

For machine rooms serving multiple elevators, it is common to install a panelboard or distribution board that consolidates circuits for all elevators. Each elevator may also require separate disconnects near the machine room door for quick access, especially in jurisdictions like NYC. These disconnects can be fused switches or circuit breakers and must be accessible to qualified personnel.

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Restrictions on Non-Elevator EquipmentThe NEC and local amendments generally restrict wiring in machine rooms to elevator-related equipment only. This includes circuits for car lighting, receptacles, ventilation, heating, air conditioning, fire detection, and pit sump pumps. Installing distribution boxes for unrelated equipment, such as air handling units, is typically not permitted unless local codes explicitly allow it, as it may violate safety and code requirements.

Wiring and Safety Considerations

Conduits and raceways should only enter the machine room to the extent necessary to connect elevator devices. Selective coordination is required for multi-elevator feeders to ensure proper overcurrent protection. Grounding and bonding must follow NEC Article 250.

Emergency or standby power may be used, provided regenerated energy is properly managed.

Summary

Having several electrical distribution boxes in an elevator machine room is acceptable if all circuits serve elevator-related functions, disconnects are properly installed and lockable, and wiring complies with NEC Article 620 and local amendments. Non-elevator equipment should generally be located elsewhere to avoid code violations and maintain safety. Proper planning ensures both operational efficiency and compliance with electrical safety standards.

Article Content

NEC Article 620: Elevators, Part 2

Overcurrent devices and disconnects must be located in machine or control spaces, be lockable and provide a single means to disconnect

Machine Room Elevator Floor Plan | PDF | Elevator | Electrical Wiring

The document outlines the ventilation, power, and lighting requirements for an elevator machine room. It specifies that the machine room must have (1) adequate ventilation through protected windows,

6-1 Elevator Machine Room, Control Room, and Machinery Space

For each elevator group, provide electrical power service from the main building electrical distribution panel to the elevator machine room. Designer must consider type of elevator drive specified and

Thyssenkrupp Elevator Electrical Specs | PDF | Elevator | Door

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This document provides the electrical and civil requirements for a machine room and hoistway shaft for an elevator project. It lists 15 electrical details needed including items like power switches, circuit

Machine Room Layout

Dry Power Units, travel and various other circumstances may require larger or smaller machine room sizes. Please consult your MEI representative for specific situation. A fused disconnect switch must

NEC Article 620: Elevators, Part I

We shall now take a look at the principle requirements of Article 620, with particular emphasis on wiring requirements for elevator shafts, machine rooms and cars.

Wiring in Hoistways, Machine Rooms, Control Rooms, Machinery

Electrical wiring, raceways, and cables associated with elevators and dumbwaiters are allowed in hoistways, machine rooms, and control spaces for various functions, including signaling,

Elevator Machine Room Layout Wrong? Fix Clearance & Cooling

Plan an elevator machine room layout with correct panel clearance, cooling load, cable trays, and 300–500 lux lighting for safe maintenance.

Elevator Machine Room Too Small? Layout Rules That Prevent

Plan an elevator machine room with correct clearances, cooling, lighting, and rigging access to avoid maintenance delays and code issues.

Elevator machine room layout | Information by Electrical Professionals ...

We are planning to locate the LPH-ELEV, TF-ELEV, LP-ELEV inside the elevator machine room. Is this acceptable by code? Are we violating any code provisions? The Elevator

The Electrical Ups and Downs of Elevator Design | EC&M

The many codes and guidelines that regulate the electrical design of an elevator can seem overwhelming, and dealing with the electrical inspector, elevator inspector, and Fire Marshal

6-1 Elevator Machine Room, Control Room, and Machinery Space

DoD UFC Elevators > Chapter 6 Electrical > 6-1 Elevator Machine Room, Control Room, and Machinery Space Go To Full Code Chapter

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ELEVATOR PLANNING

Machine room-less elevators are not only the most space-eficient option, they also consume less power than traditional geared traction elevators. Installing an eco-eficient KONE elevator solution can also

Electrical Panel inside elevator machine room | Information by ...

I have a job where there is no electrical room nearby an elevator machine room, from the main switchboard I run a feeder to an electrical panel installed inside elevator machine room, this

Machine Room Layout

A fused disconnect switch must be provided by others in the machine room, located adjacent to and visible from the elevator machinery. Machine room height to be 7′-0″ minimum. Others to provide

Building Elevator Systems

Elevator machine rooms shall be large enough for the elevator equipment, including space for controllers. Machine rooms and secondary machinery spaces shall provide required clearances

Elevator machine room layout | Information by Electrical Professionals ...

We are planning to feed the elevator motor from a 480V panel "LPH-ELEV". This panel is also feeding the step down transformer "TF-ELEV-30kVA" which in turn feeds the Panel "LP-ELEV".

Related Video Reference

This video was associated with the source search result. Verify technical details against current product documentation and project requirements.

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This document is for preliminary research. Verify specifications against current standards, product documentation and project requirements.

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