

Wiring Cabinet Construction



Article Overview

Wiring cabinet construction involves careful planning, component layout, wiring, and adherence to safety standards to ensure reliable and efficient operation.

Planning and Design

The first step in wiring cabinet construction is conceptualization and design. This includes defining the cabinet's purpose—whether for industrial automation, building control, or machine operation—and determining the required components such as protective devices, PLCs, HMIs, power supplies, and communication modules . Modern design often uses software like Eplan P8 to simulate layouts, plan wiring, and ensure compliance with standards such as NFPA 70, UL 60947-4-1, and NFPA 79 . A clear schematic and component list help streamline procurement and assembly .

Component Layout

Components should be arranged logically for ease of access, safety, and maintenance. Terminals are typically installed at the top or bottom rails, with neutral (N) strips on the right and protective earth (PE) strips on the left . Residual current devices (RCDs) and overcurrent protection devices are installed below the terminals, with three-phase circuits often positioned on the right side. Leave about 30% reserve space for future expansion or additional modules . Modular components like KNX devices or UPS units are usually placed at the bottom for stability and accessibility .

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3. Wire identification resp. labeling of conductors The wire identification must always correspond to the documentation (circuit

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