



INDUSTRIAL CONTROL PANEL DESIGN

Electrical Control Panel

Electrical control panels are an integral part of any automated manufacturing process. At a basic level, control panels house various electronic devices that provide signals to direct the operation of equipment and machinery. While control systems are a fundamental aspect of electrical engineering, key control panel components required to function safely and reliably.

Design & Fabrication

Industrial Electrical control panel design begins with weighing design requirements, and specifications and preparing power and control schematics depending on application, but the design process can be quite complex to ensure that all applicable regulatory standards and safety requirements are met. An electrical enclosure is fabricated to protect electrical or electronic equipment and prevent electrical shock. Enclosures are usually made from rigid plastics or such metals as steel, stainless steel, or aluminium. Enclosures are rated to designate protection against hazardous, non-hazardous, and other specific environmental conditions.

Electrical Control Panel



Control panel for motors and pumps

VFD Control Panels are designed to control the speed of electric motor and feed pump. They are widely used in drilling, pumping, and other large machine applications. The VFD panels are widely used in extrusion plants, rolling Mills, tube mills, paper mills, cable industry, pump industry. Adjustment of the speed of the motor is the application, which is required in all the processes of industries and machinery. VFD is used as an energy-saving device for some of the machines to save power during no load where the speed of the motor is changed to control one of the parameters. Some of the applications are provided with manual speed control of the motors. These are open loop control applications.

Power and Control Circuit Protection

Control circuits provide the logic for the operation of the power circuit components. These circuits are typically lower-voltage for safety, and components such as relays, timers, sensors are used in simple control applications where the need is to ON & OFF the circuit based upon the input signal.

Electrical Control Panel maintenance

Maintenance is another key consideration for the electrical control panels. Facilitating maintenance is a critical element of custom electrical control panel design. Maintenance should include:

- Clearly labelled components wiring and terminals.
- Capability to monitor the status of the various electrical connections.
- Control of particulates and dust within the enclosure.
- Pest control measures

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