

DIVISION 16 – ELECTRICAL

Section 16470 - Panelboards

Introduction

Design and/or replace panelboards in a manner that provides for expansion for future requirements. For this reason no panel (as a part of the original design) should have more than 60% of the panel filled.

Panelboards shall be readily accessible where located for use by the maintenance personnel.

Wherever possible we would like to see them isolated from view of the general population in localized electrical closets so that unauthorized persons can not operate the breakers.

The general size and construction of the panelboard should be per the required load of the area plus at least 30% spare capacity (calculated).

Minimum AIC ratings for the panel should be 10,000 AIC for 120/208 volt panels, and 14,000 AIC for 277/480 panelboards. All AIC Ratings shall be calculated and displayed on drawings. Series rating is not allowed except with approval of the UA Electrical Engineer.

No Load centers.

Must be readily accessible.

Do not install in doorways.

All circuits from multi pole breakers shall terminate in a single device or piece of equipment. Do not tie more than one receptacle from a multi pole breaker.

Main Breakers shall be fully electronic LSI type. Equal to Cutler Hammer digitrip OPTIMA.

Part 1- General

- Submittals will be required on all panelboards. Suggested manufacturers are GE, Cutler Hammer, Siemens or approved equal.

Part 2 - Products

- All busses shall be full capacity copper.
- Full capacity neutral bus.
- Computer rooms or areas with intensive (200% rated) electronic equipment shall use oversized neutral bus.
- Ground bus isolated from ground.
- Door in door piano hinged front panel.
- Factory installed main breaker with bolted connections to the enclosed bus bars.
- Main circuit breaker required where source is not within line of sight.
- 20" wide minimum cabinets.
- Cans shall be galvanized steel with blank end walls. Knockouts to be field punched.

- 120/208 volt panels shall have bolt on circuit breakers.
 - 100 A panels shall be a minimum 30 circuit.
 - 125 to 225 A panels or larger should be minimum of 42 circuit.
 - Panel sizes shall be based on full size breakers.
 - Back fed mains are unacceptable.
- 277/480 panels and distribution panelboards, shall have bolt on type circuit breakers.
- Use plated bus in NEMA 3R applications.
- Multi pole breakers shall be manufactured for that purpose and shall not be single pole breakers tied together.
- Series rated equipment shall not be used unless approved by UA Electrical Engineer.
- Distribution panelboards shall utilize fully electronic circuit breakers, LSI for sizes 100 amperes and larger.
- Fusible panelboards are not permitted.

Part 3 - Execution

- Support to 500% safety factor.
- For panels mounted flush in walls provide 1 spare 1" conduit per each 3 spare circuits or spaces. Route spare conduits to above lights or to an accessible location.
- Provide Plastic Laminate Label per Section 16195.
- Mount flush wherever possible if not in electric room or equipment room. When installing in an existing building either cut into existing wall and properly support or fir out the wall.
- Maximum mounting height 6'7" to highest breaker (center line).
- Exterior Panels shall be mounted a minimum of 12" above finished grade.

End of Section 16470