

DIVISION 16 - ELECTRICAL

Section 16175 – Elevator Power and Controls

Introduction

There are unique University requirements. Refer to sample specification in the Appendix Section.

Part 1 - General

- Consultants shall provide details on plans, clearly reflecting the requirements within. The consultant shall not specify pre-manufactured equipment for machine room shunt trip and control requirements. Specifically note on the plans that the pre-manufactured items are not acceptable.
- **POWER**
 - The consultant shall specify generous circuitry that accommodates circuit sizing requirements by vendors notorious for requiring over sizing. Provide notations that require the contractor to provide system upgrades when elevator equipment requires larger capacity system components in excess of that shown on the construction documents. The consultant shall explicitly state in the specifications that these upgrades shall be performed without additional cost to the University. The consultant is directed to intentionally size feeders for worse case conditions.
 - Provide a minimum elevator machine room size of 100 square feet, exclusive of the area above the hoistway (for traction elevators), and without any odd corners, narrow passages or structural interferences.
 - Main electrical elevator feed shall employ a molded case shunt trip breaker and a suitably sized enclosure. Larger enclosures for electronic type breakers are to be avoided as they take up too much room in an already cramped service space. Requirements for electrical coordination to be accomplished upstream of the main elevator feed. Engineers will feed the elevator breaker from the building's main switchboard, so as to maintain a 4 to 1 separation in current trip settings between the elevator breaker and the switchboard main breaker. This is to be done regardless of the convenience of any closer distribution points that cannot afford the 4 to 1 separation.
 - Ancillary electrical elevator equipment shall be fed from a separate, solely dedicated, elevator electrical DEADFRONT LOAD CENTER 120/208V, 3 phase, 4 wire. This elevator load center shall only be used for elevator related equipment and devices. It will provide the required means to lockout the equipment for service. Required characteristics of elevator electrical Load center are: surface mounted, copper bus, no door, dead front, 14 inches wide, lockable (lockout) breakers and a maximum size of 12 full size breaker spaces. Additional spaces are authorized only where the number of elevator related loads increases above 12 spaces. Unused breaker spaces shall not have any spare breakers installed. Ancillary elevator equipment to be fed from this panel may be, but is not limited to, the following:
 - Shunt trip control feed
 - Machine room lights/receptacles
 - Elevator car lights
 - Elevator pit lights/GFI receptacle
 - Elevator pit sump pump
 - Machine room A/C
 - Elevator Fan (A/C)
 - Hydraulic oil cooler
- Power for the machine room load center shall be on the life safety engine generator, when available.

Part 2 – Products

- **SHUNT TRIP AND RELATED CONTROLS**

- The machine shunt trip breaker shall be enclosed in a HOFFMAN ENCLOSURE having a dust tight hinged door with external disconnecting handle for the breaker. The breaker shall be electronic type with LSI features, including short time adjustment. It shall have one N.O. and one N.C. contact for future use.
- The enclosure shall be oversized to accommodate the neat field wiring and installation of controls and relays associated with the requirements of all applicable codes.
- Terminal/barrier strips shall be 20 ampere rated, bakelite, industrial grade.
- Provide load center as described in Part 1, above.
- Provide 120 Volt control system with switch, Neon Pilot and Current Limiting (CL) fuse.
- Provide a schematic diagram and parts list for mounting within the enclosure.

Part 3 - Execution

End of Section 16175