

SECTION 22 01 90 - ELECTRIC WIRING

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. Provide labor, materials, equipment and services to perform operations required for the complete installation and related Work as required in Contract Documents.
- B. Provide "control" wiring circuits for equipment and associated control devices. Control wiring includes 120 volt and lower wiring for control signals directing equipment operation.
- C. Provide certain "power" wiring as called for. Power wiring includes 120 volt and higher branch circuit wiring required for equipment operation.
- D. Assistance, as required and coordination with Division 26, "Electric".

1.2 QUALIFICATIONS

- A. Wiring installed in compliance with NEC, local governing codes, and applicable requirements of Division 26, "Electric".
- B. Wiring installed only by qualified electricians.

1.3 COORDINATION

- A. Provide complete wiring diagrams for equipment and systems. Deliver wiring diagrams to proper parties in time for roughing of conduit, equipment connections, and avoid delay in construction schedule. Wiring diagrams and roughing information to clearly indicate items to be mounted and/or wired as part of the work of Division 26, "Electric".

PART 2 - PRODUCTS

2.1 WIRING MATERIALS

- A. Refer to Division 26 "Electric" for information regarding conduit, wire, insulation, wiring devices and methods.

PART 3 - EXECUTION

3.1 GENERAL

- A. Check electrical wiring pertaining to equipment for completeness and correctness of connections. Correct any misapplied motor and/or motor starter, improper thermal overload device, or device which fails to function and resultant damage, whether due to incorrect connections or improper information on wiring

diagrams.

3.2 WIRING FOR CONTROL SYSTEMS

- A. Provide control wiring for equipment.
- B. Wiring circuits shall be in conduit. Rigid type below slabs, wet locations, exposed to weather and hazardous locations. EMT in dry, non-hazardous locations for concealed or exposed work. Provide 18 in. maximum length flexible, jacketed conduit at motors and devices subject to vibration. Conduit supported on 5 ft. centers. Do not attach directly to hot surfaces, piping, or ductwork.
- C. Control wiring shall be in separate conduit from power wiring.
- D. Provide green grounding wire circuits from starter, and run ground wire through conduit to each remote auxiliary relay, pushbutton station, remote panel, or other device with potentials in excess of 50 volts contained within. Size ground wire per NEC.
- E. Furnish pushbutton stations, pilot lights, selector switches, auxiliary starter contacts, and other devices required for functions specified.

3.3 MISCELLANEOUS ELECTRIC WIRING

- A. Provide power and control wiring between sections of equipment, between shipping splits, between remote panels, and disconnect switches.

3.4 FIELD WIRING IN STARTERS, CONTROLLERS AND PANELS

- A. Wiring within starters, controllers, and control panels, shall be routed neatly in gutter space, away from moving and/or heat producing parts.
- B. Provide 30 ampere, 600 volt rated terminal blocks. Do not place more than two wire connections on pilot device or relay terminal. Where more than two circuit connections are required use terminal blocks.
- C. Provide nylon self-insulated, locking type spade lugs for all control wires.
- D. Cables and wires shall be neatly bundled and lashed with nylon cable straps.

3.5 HAZARDOUS LOCATIONS

- A. Provide installation in hazardous locations as follows:
 - 1. Provide seal-offs for hazardous Class 1 locations according to NEC Article 501 "Class 1 Locations".
 - 2. Follow NEC requirements for special occupancies, wiring methods, sealing, fittings and other NEC rules and articles as applicable.

END OF SECTION