

SECTION 26 05 84.00 – MECHANICAL EQUIPMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Refer to documents of other divisions for further requirements associated with equipment and devices that are addressed in this section. This section includes supplemental information related to electrical work associated with mechanical equipment and other equipment furnished and/or installed under all other divisions or by others. Information included in this section applies not only to traditional mechanical equipment, but also to equipment of any kind that is furnished and/or installed by any supplier or installer.

PART 2 - PRODUCTS - REFER TO APPLICABLE SPECIFICATION SECTIONS

PART 3 - EXECUTION

3.1 GENERAL

- A. Common Requirements:
 - 1. Provide all necessary electrically related work as required to render all mechanical equipment (including plumbing, heating, ventilating and air conditioning equipment) fully operational and fully compliant with NEC. This includes, prior to ordering materials or commencing with rough-in, reviewing equipment submittal data and coordinating with installing contractors to ensure the correct size, rating and quantity of conductors are provided.
 - 2. Refer to Coordination Schedules on drawings. Provide disconnects, controllers, starters, accessories, wiring, connections, services, etc. where defined as “EC” in the schedule. Information in this section supplements the information in the HECS.
 - 3. Provide power wiring and connections for all equipment (including motor dampers, accessories, etc. as applicable) as required to render equipment fully operational.
 - 4. Provide engraved plates at all local disconnects and/or controllers with equipment identification and mark indicated.
 - 5. Install local disconnects and/or controllers at 48 inches to top of outlet box or enclosure as applicable above finished floor/slab/grade; provide flush mounted units in finished areas. Provide key operated controllers where accessible to general staff and/or general public.
 - 6. Drawn locations of equipment and devices are shown only for schematic indication of wiring requirements. Coordinate with locations and rough-in requirements as required to determine actual locations and termination requirements. Refer to

- all contract documents for additional electrical requirements and concerns, and for further representation of this work.
7. Provide raceway, wiring, connections, and terminations for power and interlocks for electrically operated equipment. Provide disconnect switches and/or starters for mechanical equipment unless specifically indicated otherwise herein or on the drawings.
 8. Provide disconnect switch ahead of all equipment, including controls, unless the mechanical equipment comes with integral NEC-compliant disconnect(s). Provide NEMA 3R enclosures where installed outdoors and where installed indoors in areas subject to moisture. Ground metal frames of equipment by connecting frames to the grounded metal raceway or to a full size green ground conductor or both. Provide the necessary electrical connections between the specified equipment and the junction box near equipment with flexible metallic conduit (liquid-tight outdoors) and matched connectors (see Section 26 05 33). Where mechanical equipment lugs cannot accommodate conductor sizes shown on drawings, provide ILSCO ClearTap Insulated Multi-Tap Connectors.
 9. Sizes, electrical ratings, etc. of equipment and wiring shown on drawings are based on the respective equipment design base manufacturers. If different manufacturer(s) or model(s) are actually supplied, provide necessary coordination in field (prior to ordering materials and prior to rough-in) and provide the necessary size of related electrical equipment, wiring, conduit, etc.
 10. Prior to furnishing submittals and prior to rough-in, determine exact electrically related characteristics, loads, voltages, disconnects and/or starters, and accessory requirements, locations, mounting heights, connection points, etc. of mechanical equipment.
 11. Provide lugs, lug kits and related accessory work as required to accommodate the conductor sizes and quantities needed for each application. Coordinate with single-line diagram, field conditions, equipment installers, etc.
 12. Coordinate in field with the respective trades and determine case by case, which equipment is factory listed for use with Heating and Air Conditioning Rated (HACR) breakers. In an effort to minimize requirements for stocking of fuses by the Owner, utilize HACR breakers at the source panelboards as the NEC required overcurrent protection wherever possible (in lieu of fusing local disconnect switches).
 13. Disconnect Switch and/or Starter Locations: Locations shown on drawings are indicated for schematic purposes only. Determine exact locations in field so that they are compliant with NEC Article 110.26.
- B. Maintenance Receptacles for Equipment: Provide duplex receptacle within 25 feet of all electrically operated equipment of any nature that requires periodic testing or maintenance. Provide Type WR duplex GFCI weatherproof receptacle for outdoor applications (including rooftops) and for applications subject to high humidity or moisture.
- C. Equipment and Systems:
1. HVAC Equipment with Multiple Integral Electrically-Operated Components: Provide separate power feeds or single power feed as directed in field by the HVAC installer (field verify prior to rough-in). Modify disconnect and/or starter

requirements accordingly, if required. Provide additional dedicated 120V, 20A branch circuit for each unit from nearest panelboard (if not indicated clearly on the electrical drawings) for internal factory-installed lighting and receptacles. Provide conduit, wiring, and overcurrent protection for this work, and terminations to connections within the heat recovery units for this lighting and convenience power.

2. Control Wiring:

- a. General: Unless specifically indicated as empty conduit on drawings or herein, provide electrical control and interlock work as shown on drawings. Provide additional control work as specifically indicated herein. Coordinate HVAC thermostat and sensor locations in field (case by case) with Design Professionals, Owner's Representative and equipment installer to ensure that they are placed in locations that will not interfere with furniture, equipment, artwork, wall-hung specialties, room finishes, etc. Field-verify these wall locations case by case, prior to rough-in, since locations shown on drawings are schematic only.
- b. Schematic Thermostat and Sensor Locations: Refer to HVAC drawings and documents to determine locations and quantities if locations are not shown on electrical drawings, and to confirm locations and quantities even if locations are shown on electrical drawings.
- c. Low Voltage Thermostats and Sensors: Provide 4-inch square by 2-1/8 inch deep wall outlet boxes at 46 inches above finished floor to center of outlet box (with single-gang rings) for each unit. Provide one 3/4-inch empty conduit from each location, turned out above accessible ceilings (in joist space or against overhead slab/deck). Identify conduit in ceiling cavity; provide sweep bends, bushings and drag line.
- d. Line Voltage Thermostats and Sensors: Provide 4-inch square by 2-1/8 inch deep wall outlet boxes at 46 inches above finished floor to center of outlet box (with single-gang rings) for each unit. Provide line voltage power wiring, in 3/4-inch conduit, and connections from thermostats and sensors to respective equipment that is to be controlled by same. Install thermostats and sensors.
- e. Motor Operated Dampers: Provide wiring associated with interlock of motors to associated motor dampers for exhaust fans. Provide local disconnect at each motor damper if fan is not furnished with one. Where HVAC equipment or exhaust fans are controlled by VFC/VFD units, wire motor operated dampers (MOD's) back to the respective VFC/VFD unit separately from the respective exhaust fan power wiring, with (2) #12 AWG in 3/4 inch conduit. Provide local disconnect for each such MOD.

END OF SECTION 26 05 84.00