SECTION 262913 – ENCLOSED CONTROLLERS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. This Section specifies the contactors and motor controllers for buildings and structures.

2. Provide all labor, materials, and equipment as necessary to complete all work as indicated on the drawings, and as specified herein for a complete operating system.

B. Related Sections:

1. Applicable sections of Division 26 - Electrical

1.3 SUBMITTALS

A. Shop Drawings

1. Contactors
2. Motor controllers

1.4 QUALITY ASSURANCE

A. Comply with requirements of NEC as applicable to motors and ancillary equipment.

B. Comply with NEMA Std. Pub. No. ICS 2 pertaining to construction, testing, and installation of motor control.

C. Comply with applicable requirements of U.L. Provide motor starters and ancillary equipment that is U.L. listed and labeled.

D. Comply with applicable requirements of IEEE Std. 241 pertaining to construction and installation of motor control equipment.

PART 2 - PRODUCTS

2.1 GENERAL

A. All motor starter enclosures shall have interlock defeaters for maintenance purposes.

2.2 COMBINATION MOTOR STARTERS

A. Combination starters shall be used on all three phase motors. Starters shall be furnished for all equipment including that furnished by the Mechanical Contractor, except where the starter is built into the equipment or other special application.

When supply and exhaust fans compose a system, the controls of paired supply and exhaust fans shall be arranged so that the exhaust fan shall start when the supply fan starts.

Designate in the specifications or on the drawings what components are needed for each motor starter.

B. Combination starters shall be furnished with the following components as specified or shown on the drawings:

1. Fused disconnect with interlock defeater for maintenance purposes.
2. 120 Volt control transformer, fused.
3. Red and green pilot lights in cover, red light indicating running condition.
4. Holding coil rated 120 volts.
5. Hand-Off-Auto selector switch in cover for motors requiring automatic control.
6. Stop-Start buttons in cover for motors requiring push button stations.
7. Overload protection.
8. Two spare auxiliary contacts, in addition to the number of auxiliary contacts needed for each application.
9. Disconnect switch interlock where indicated.

Reduced voltage starters shall be used for fans over 20 hp.

C. Starters for all motors 20 HP and larger shall include time delay relays to provide an adjustable time delay on starting from 0 to 3 minutes.

D. Combination starters shall be minimum size no. 1 and shall be as manufactured by General Electric, Allen Bradley, Cutler Hammer, Square D, or Siemens.

2.3 MANUAL STARTERS

Include low-voltage protection when automatic startup after power loss is not desirable.

A. Manual starters shall be provided for all single phase, fractional HP motors. Starters shall be Square D Class 2510, single or double pole as required, with pilot light and thermal overload protection and general purpose enclosure, unless otherwise noted on the drawing. Approved equal manufacturers are Cutler-Hammer, General Electric, and Siemens.

B. Integral horsepower manual starters for small single or polyphase motors shall be Square D, Type M and T, size and number of poles as noted on drawing, with pilot light, thermal overload protection, and general purpose enclosure, unless otherwise noted. Approved manufacturers are Cutler-Hammer, General Electric, and Siemens.

2.4 MAGNETIC STARTERS FOR A.C. WINDOW UNITS

Time switches for window and thru-wall air conditioning units are specified in 262700.

A. Magnetic starters for window a.c. units controlled by spring wound 6 hour timers, shall be such as Square D Telemecanique Type D Model LC1 in a Type 1 non-fusible enclosure Model LE1UD, 230 volt, single phase, with 120 volt holding coil for separate 120 volt control source, or approved equal, General Electric, Cutler-Hammer, or Siemens.

Use above paragraph when twist-timer is to be used. Use following paragraph when other control scheme is used.

B. Magnetic starter for window air conditioners shall be Square D Telemecanique Type D Model LC1 in a Type 1 non-fusible enclosure Model LE1UD, 230 volt, single phase, 120 volt holding coil for separate 120 volt control source, or approved equal by General Electric, Cutler-Hammer, or Siemens.

2.5 COMBINATION MAGNETIC CONTACTORS

A. Furnish and install combination magnetic contactors controlled by emergency-off system, quantity and sizes as noted and shown on drawing.

B. Contractors shall be such as Square D Type S, Class 8903, or approved equal, General Electric, Cutler-Hammer, or Siemens, electrically held, surface mounting.

PART 3 - EXECUTION

3.1 EQUIPMENT SUPPORTS

A. Electrical equipment shall be mounted on ½" spacers when mounted in a room on a below grade exterior wall.

B. Motor starters, and variable frequency drives shall be mounted on separate structures. They shall not be mounted on HVAC housings, duct work, pump frames, etc.

END OF SECTION 262913