



SECTION 26 29 13 – ENCLOSED CONTROLLERS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes manual motor controller, fractional horsepower controller, motor starting switch, and full voltage and reduced voltage non-reversing controllers.

1.2 SUBMITTALS

- A. Product Data: Submit catalog sheets showing voltage, controller size, ratings and size of switching and overcurrent protective devices, short circuit ratings, control schematics, dimensions, and enclosure details.
- B. Test Report: Indicate field test and inspection procedures and test results.

PART 2 - PRODUCTS

2.1 ENCLOSED CONTROLLERS

- A. Manufacturers
 1. **Cutler-Hammer.**
 2. **GE Electric.**
 3. **Square D.**

2.2 MANUAL MOTOR CONTROLLER

- A. Product Description: NEMA ICS 2, AC general-purpose, Class A, manually operated, full-voltage controller with overload element, red pilot light, one NO and one NC auxiliary contact, and toggle operator.
- B. Enclosure: NEMA ICS 6, Type 1 or to meet conditions of installation. NEMA Type 4 or Type 3R Stainless Steel, or better for outdoor installations.

2.3 FRACTIONAL-HORSEPOWER MANUAL CONTROLLER

- A. Product Description: NEMA ICS 2, AC general-purpose, Class A, manually operated, full-voltage controller for fractional horsepower induction motors, with thermal overload unit, red pilot light and toggle operator.
- B. Enclosure: NEMA ICS 6, Type 1 or to meet conditions of installation. NEMA Type 4 or Type 3R Stainless Steel, or better for outdoor installations.



2.4 MOTOR STARTING SWITCH

- A. Product Description: NEMA ICS 2, AC general-purpose Class A manually operated, full-voltage controller for fractional horsepower induction motors, without thermal overload unit, with red pilot light and toggle operator.
- B. Enclosure: NEMA ICS 6, Type 1 or to meet conditions of installation. NEMA Type 4 or Type 3R Stainless Steel, or better for outdoor installations.

2.5 FULL-VOLTAGE AND REDUCED VOLTAGE NON-REVERSING CONTROLLERS

- A. Product Description: NEMA ICS 2, AC general-purpose Class A magnetic controller for induction motors rated in horsepower.
- B. Control Voltage: as required.
- C. Overload Relay: NEMA ICS 2; melting alloy.
- D. Product Features:
 - 1. Auxiliary Contacts: NEMA ICS 2, with 4 each normally closed field convertible contacts in addition to seal-in contact.
 - 2. Cover Mounted Pilot Devices: NEMA ICS 5, heavy duty oiltight type.
 - 3. Pilot Device Contacts: NEMA ICS 5, Form Z, rated A150.
 - 4. Pushbuttons: Shielded, Covered and Lockable type.
 - 5. Indicating Lights: LED type.
 - 6. Selector Switches: Rotary type.
 - 7. Relays: NEMA ICS 2.
 - 8. Control Power Transformers: 120 volt secondary. Furnish fused primary and secondary, and bond unfused leg of secondary to enclosure.
 - 9. Reduced-Voltage starters to have delta/wye wiring arrangement.
- E. Combination Controllers: Combine motor controllers with disconnect in common enclosure, using thermal magnetic circuit breaker conforming to NEMA AB 1, with integral thermal and instantaneous magnetic trip in each pole.
- F. Enclosure: NEMA ICS 6, to meet conditions. Fabricate enclosure from steel finished with manufacturer's standard gray enamel.
 - 1. Interior Dry Locations: Type 1.
 - 2. Exterior Locations: Type 4 or Type 3R Stainless Steel, or better.



PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install enclosed controllers plumb. Provide supports.
- B. Height: 5 feet to operating handle.
- C. Select and install overload heater elements in motor controllers to match installed motor characteristics.
- D. Install engraved nameplates.
- E. Neatly type label and place inside each motor controller door identifying motor served, nameplate horsepower, full load amperes, code letter, service factor, and voltage/phase rating. Place label in clear plastic holder.

END OF SECTION 26 29 13