
Part 1 General

1.1 RELATED SECTIONS

- .1 Section 26 05 00 - Common Work Results for Electrical.

1.2 REFERENCES

- .1 CSA International.
 - .1 CSA C22.2 No.14-10, Industrial Control Equipment.
- .2 National Electrical Manufacturers Association (NEMA).
 - .1 NEMA ICS 1-2000(R2008), Industrial Control and Systems: General Requirements.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for control devices and include product characteristics, performance criteria, physical size, finish and limitations.
- .3 Shop Drawings:
 - .1 Submit drawings stamped and signed by professional engineer registered or licensed in Province of Québec, Canada.
 - .2 Include schematic, wiring, interconnection diagrams.

1.4 QUALITY ASSURANCE

- .1 Conduct tests in accordance with Section 26 05 00 - Common Work Results for Electrical.

1.5 CLOSEOUT SUBMITTALS

- .1 Submit in accordance with Section 01 78 00 - Closeout Submittals.
- .2 Operation and Maintenance Data: submit operation and maintenance data for control devices for incorporation into manual.

1.6 DELIVERY, STORAGE, AND HANDLING

- .1 Deliver, store, and handle materials in accordance with manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.

- .3 Storage and Handling Requirements:
 - .1 Store materials off ground, indoors, and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Store and protect control devices from nicks, scratches, and blemishes.
 - .3 Replace defective or damaged materials with new.

Part 2 Products

2.1 AC CONTROL RELAYS

- .1 Control Relays: to CSA C22.2 No.14 and NEMA ICS 1.
- .2 Coil Rating: 120 V. Contact rating: 120 V, 10 A.

2.2 RELAY ACCESSORIES

- .1 Standard contact cartridges: normally-open - convertible to normally-closed in field.

2.3 SOLID STATE TIMING RELAYS

- .1 Construction: AC operated electronic timing relay with solid-state timing circuit to operate output contact.
- .2 Operation: on-delay or off-delay.
- .3 Potentiometer: to provide time interval adjustment.
- .4 Temperature Range: -20°C to +60°C.
- .5 Output contact rating: maximum voltage 300 VAC or DC. Current: 10 A to NEMA ICS 1.

2.4 INSTANTANEOUS TRIP CURRENT RELAYS

- .1 Enclosure: CSA Type 1.
- .2 Contacts: NO, NC automatic reset with adjustable tripping point.
- .3 Control: 3 wire, with provision for shorting contacts during accelerating period of motor.
- .4 Contact rating: 120 V, 10 A AC to NEMA ICS 1.

2.5 PUSHBUTTONS

- .1 Pushbuttons: Illuminated, heavy duty, oil tight, surface, Green for running and red for shutdown, with 1-NO and 1-NC contacts rated at 120 V, 10 A, AC, labels as indicated.
- .2 Emergency stop pushbuttons, mushroom type, coloured red, provision for padlocking in depressed position labelled "emergency stop".

2.6 SELECTOR SWITCHES

- .1 Maintained, 2or 3 position, as indicated, operators heavy duty, oil tight, contact arrangement as indicated, rated standard wing lever; rated 120 V, 10 A, AC.

2.7 INDICATING LIGHTS

- .1 Indicating lights: Heavy duty, oil tight, full voltage, LED type, lens colour: red, amber, green, as indicated, supply voltage: 120 VAC, lamp voltage: 120 VAC.

2.8 CONTROL CIRCUIT TRANSFORMERS

- .1 Single phase, dry type.
- .2 Primary: 600 V, 60 Hz AC.
- .3 Secondary: 120 VAC.
- .4 Rating: 500 VA.
- .5 Secondary fuse: 10 A.
- .6 Close voltage regulation as required by magnet coils and solenoid valves.

2.9 THERMOSTAT (LINE VOLTAGE)

- .1 Wall mounted.
- .2 Full load rating: 8 A at 120 VAC.
- .3 Temperature setting range: 0°C to 30°C.
- .4 Markings in 5°C increments.

Part 3 Execution

3.1 INSTALLATION

- .1 Install control devices and interconnect them.

END OF SECTION