

**Part 1 GENERAL**

**1.1 REFERENCES**

- .1 CSA International
  - .1 CSA C22.2 No. 5, Molded-Case Circuit Breakers, Molded-Case Switches and Circuit-Breaker Enclosures (Tri-national standard with UL 489, and NMX-J-266-ANCE-2010).

**1.2 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 circuit breakers and include product characteristics, performance criteria, physical size, finish and limitations.
- .3 Include time-current characteristic curves for breakers with ampacity of 400 A and over or with interrupting capacity of 22,000 A symmetrical (rms) and over at system voltage.
- .4 Certificates:
  - .1 Prior to installation of circuit breakers in either new or existing installation, Contractor must submit 3 copies of a production certificate of origin from the manufacturer. Production certificate of origin must be duly signed by factory and local manufacturer's representative certifying that circuit breakers come from this manufacturer and are new and meet standards and regulations.
    - .1 Production certificate of origin must be submitted to Departmental Representative for approval.
  - .2 Delay in submitting production of certificate of origin will not justify any extension of contract and additional compensation.
  - .3 Any work of manufacturing, assembly or installation to begin only after acceptance of production certificate of origin by Departmental Representative. Unless complying with this requirement, Departmental Representative reserves the right to mandate manufacturer listed on circuit breakers to authenticate new circuit breakers under the contract, and to Contractor's expense.
  - .4 Production certificate of origin must contain:
    - .2 Manufacturer's name and address and person responsible for authentication. Person responsible must sign and date certificate.
    - .3 Licensed dealer's name and address and person of distributor responsible for Contractor's account.
    - .4 Contractor's name and address and person responsible for project.
    - .5 Local manufacturer's representative name and address. Local manufacturer's representative must sign and date certificate.
    - .6 Name and address of building where circuit breakers will be installed:
      - .1 Project title: NAFC Main Electrical Upgrade.
      - .2 End user's reference number: R.072210.001.

### **1.3 DELIVERY, STORAGE AND HANDLING**

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements and 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 circuit breakers indoors in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
  - .2 Store and protect circuit breakers from nicks, scratches, and blemishes.
  - .3 Replace defective or damaged materials with new.

## **Part 2 PRODUCTS**

### **2.1 BREAKERS GENERAL**

- .1 Moulded-case circuit breakers, Circuit breakers and ground-fault circuit-interrupters, protectors: to CSA C22.2 No. 5
- .2 Bolt-on moulded case circuit breaker: quick- make, quick-break type, for manual and automatic operation with temperature compensation for 40 degrees C ambient.
- .3 Common-trip breakers: with single handle for multi-pole applications.
- .4 Magnetic instantaneous trip elements in circuit breakers to operate only when value of current reaches setting.
  - .1 Trip settings on breakers with adjustable trips to range from 3-8 times current rating.
- .5 Circuit breakers with interchangeable trips as indicated.
- .6 Circuit breakers to have minimum 18,000 symmetrical rms interrupting capacity rating, but no less than the interrupting capacity rating of the existing breakers in the panelboard where they will be installed.

### **2.2 THERMAL MAGNETIC BREAKERS DESIGN A**

- .1 Moulded case circuit breaker to operate automatically by means of thermal and magnetic tripping devices to provide inverse time current tripping and instantaneous tripping for short circuit protection.

### **2.3 OPTIONAL FEATURES**

- .1 Include:
  - .1 On-off locking device.

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**Part 3            EXECUTION**

**3.1                EXAMINATION**

- .1      Verification of Conditions: verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for installation in accordance with manufacturer's written instructions.
  - .1      Visually inspect substrate in presence of Departmental Representative.
  - .2      Inform Departmental Representative of unacceptable conditions immediately upon discovery.
  - .3      Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Departmental Representative.

**3.2                INSTALLATION**

- .1      Install circuit breakers as indicated.

**3.3                CLEANING**

- .1      Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
  - .1      Leave Work area clean at end of each day.
- .2      Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.

**END OF SECTION**