

1. GENERAL

1.1 Product Data

- .1 Submit product data in accordance with Section 16010 - Electrical General Requirements.

2. PRODUCTS

2.1 Circuit Breakers

- .1 Indoor vacuum circuit breaker, 3 pole, single break, power operated, draw out breaker element, sized as indicated.
- .2 Circuit breaker shall be operated by a motor-charged spring stored energy mechanism. The spring may be charged manually in an emergency or during maintenance procedures.
- .3 Circuit breakers shall have three (3) vacuum interrupter assemblies that are separately mounted on 5 kV class insulators. The breaker front panel shall be removable when the compartment door is open for ease of inspection and maintenance of mechanism.
- .4 Breaker shall be electrically operated by 115 V AC close and AC capacitor trip.
- .5 Breaker shall be complete with control switcher and red and green indicating lights to indicate breaker contact position.
- .6 Control voltage shall be derived from within equipment.

2.2 Rating – Switch Gear, Switch and Circuit Breaker

- .1 The 5kV switchgear assembly rating shall be as follows:
 - .1 Maximum voltage 4.76 kV
 - .2 Basic impulse level 60 kV
 - .3 Available system 3 phase short circuit current to be confirmed with coordination study. 63 kA
 - .4 Nominal system voltage 4.16 kV 3 phase 3 wire solid ground
 - .5 Main cross bus continuous current rating 1200 A
- .2 The 5 kV breaker rating shall be as follows:
 - .1 Circuit breaker nominal 3 phase MVA class 350
 - .2 Short circuit current to be confirmed in short circuit coordination study.

2.3 Construction

- .1 The switchgear assembly shall consist of deadfront, completely metal – enclosed vertical section with drawout vacuum circuit breaker.

2.4 Bus

- .1 All buses shall be silver plated copper.
- .2 Ground bus conductor shall be silver plated copper.
- .3 Bus supports to be high strength and high creep, finned supports providing a minimum of 356 mm of creep between phase and ground.

2.5 Trip Unit

- .1 Microprocessor three phase protection relay.
- .2 Relay for phase time over current, instantaneous overcurrent and ground fault protection, ANSI 50/51, 50/51G shall be incorporated into a single device similar to a Cutler-Hammer Dgitrip DT 3010.

2.6 Equipment Identification

- .1 Provide equipment identification in accordance with Section 16010 – Electrical General Requirements.
- .2 Label Size: 7

2.7 Approved Manufacturer

- .1 Cutler-Hammer
- .2 Schnieder
- .3 Semiens

3. EXECUTION

3.1 Factory Testing

- .1 Standard factory tests shall be performed on circuit breaker elements in accordance with the latest version of ANSI, CSA and NEMA standards.

3.2 Field Quality Control

- .1 Provide services of a quality factory-trained manufacturer's representative to assist the Contractor in installation and start-up of equipment specified under this Section.

- .2 Perform test in accordance with Section 16980 – Testing, Adjusting and Balancing of Electrical Equipment and Systems.

3.3 Installation

- .1 Set and secure cubicle in place, rigid, plumb and square, on channel base.
- .2 Interconnect cubicles to adjacent equipment as indicated.
- .3 Check factory-made connectors for mechanical security and electrical continuity.
- .4 After finishing work, remove foreign material, including dust, before energizing substation.

END OF SECTION