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| Version | Date | Description of Revisions |
| 1 | August 30, 2006 | Approved final document. |
| 2 | February 19, 2010 | Modified ‘Related Sections’ |
| 3 | March 23, 2011 | Minor edits |
| 4 | June 25, 2013 | Final Draft – Consolidated Comments Spec Update Project Incorporation of new Commissioning and Computerized Maintenance Management System Data Requirements Specification cross references. |
| 5 | August 5, 2014 | Changes to reflect renaming of commissioning specification and final review (AV). |
| **6** | **February 9, 2015** | **Updated, Finalized Specification – Reference eDOCS #5630508 v5 (AV)** |
| 7 | February 10, 2017 | Removed all listed manufacturers (CPD, PMO, OMM) (AV)  Updated Reference Standards (ANSI/IEEE C37.13-2015, IEEE Standard 1015-2006/Cor 1-2007, C22.2 No. 5-16) (AAM) |

NOTE:

This is a CONTROLLED Document. Any documents appearing in paper form are not controlled and should be checked against the on-line file version prior to use.

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**The on-line copy is the current version of the document.**

# GEneral

## Related Sections

### [Under "Related Sections", identify other Sections that are related to, and/or dependent on, the work results or information specified elsewhere. The list should be limited to Sections with specific information that the reader might expect to find in this Section, but is specified elsewhere. For example, if hardware for aluminum entrances is specified in the aluminum entrance Section, a cross-reference would be appropriate in the finish hardware Section. The purpose of this cross-referencing is for information only, to aid in finding those other requirements—not to define the scope of the Section.

### Cross-referencing here may also be used to coordinate assemblies or systems whose components may span multiple Sections and which must meet certain performance requirements as an assembly or system.

### Contractor is responsible for coordination of the Work. Contractor is responsible for being familiar with and incorporating all required elements of cross-referenced Specifications cited.

### This Section is to be completed/updated during the design development by the Consultant. If it is not applicable to the section for the specific project it may be deleted.]

### [List Sections specifying installation of products supplied but not installed under this Section and indicate specific items.]

### Section [\_\_\_\_\_\_ – \_\_\_\_\_\_\_\_\_\_\_\_]: Execution requirements for ...[item]... specified under this Section.

### [List Sections specifying products installed but not supplied under this Section and indicate specific items.]

### Section [\_\_\_\_\_\_ – \_\_\_\_\_\_\_\_\_\_\_\_]: Product requirements for ...[item]... for installation under this Section.

### [List Sections specifying related requirements.]

### Section [\_\_\_\_\_\_ – \_\_\_\_\_\_\_\_\_\_\_\_]: [Optional short phrase indicating relationship].

### Section 01250 – Substitutions

### Section 01300 – Submittals

### Section 01425 – Computerized Maintenance Management System Data Requirements

### Section 01810 – Equipment Testing and Facility Commissioning

### Section 16010 – Electrical General Requirements

### Section 16031 – Inspection and Testing

### [Division 13 – SCADA and Instrumentation -insert applicable specifications]

### Product requirements for [item]... for installation under this Section

## References

### American National Standards Institute (ANSI) / Institute of Electrical and Electronics Engineers (IEEE)

#### Air circuit breaker in accordance with ANSI/IEEE C37.13-2015, IEEE Standard for Low-Voltage AC Power Circuit Breakers Used in Enclosures IEEE Standard 1015-2006/Cor 1-2007, IEEE Recommended Practice for Applying Low-Voltage Circuit Breakers Used in Industrial and Commercial Power Systems.

### Canadian Standards Association (CSA)

#### C22.2 No. 5-16, Molded-case Circuit Breakers, Molded-case Switches and Circuit-breaker Enclosures (Tri-national standard, with UL 489 and NMX-J-266-ANCE-2016).

## Shop Drawings

### Submit shop drawings in accordance with Section 01300 – Submittals.

### Include time-current phase protection co-ordination characteristic curves for breakers.

## Field Quality Control

### Perform tests in accordance Section 16031 – Inspection and Testing, Section 16010 – Electrical General Requirements and Section 01810 – Equipment Testing and Facility Commissioning.

### Check factory made connections for mechanical security and electrical continuity.

### Check trip unit settings to ensure the proper functioning and protection of components.

# PRODUCT

## Air Circuit Breaker

### Drawout type, 600 V class.

#### Continuous current rating: [\_\_\_\_\_\_] A.

#### Trip rating: [\_\_\_\_\_\_] A.

#### Interrupting rating: [\_\_\_\_\_\_] kA, RMS symmetrical.

### Include a solid-state tripping system consisting of one current sensor per pole, one solid-state trip unit and self-powered trip actuator equipped with long, short, instantaneous, ground fault function and ground fault indication.

### Provide breakers with normal stored energy, and a closing mechanism to provide quick-make operation as indicated in the Contract Documents for all ratings.

### Provide breakers with motor charged, stored energy, quick-make, closing mechanism with emergency manual spring charging handle and isolating switch to isolate power supply to spring charging motor as indicated in the Contract Documents.

### Provide breakers with an on-off indicator and spring charged/discharged indicator.

### Provide interlocks in order to prevent circuit breaker draw out when in the closed position and to prevent closing unless fully engaged or in the test position.

### Current limiting fuses in series and internally mounted up to 2,000 A frame size. Provide in parallel, to current limiting fuses, anti-single-phasing coils which act on tripper bar to prevent single phasing. Coordinate the time current limiting characteristics of fuses with the time current tripping characteristics of the circuit breaker.

## Additional Features

### Shunt trip.

### Auxiliary switches: [\_\_\_\_\_\_] N.O., [\_\_\_\_\_\_] N.C.

### Under-voltage tripping device with instantaneous and time delay.

### Alarm switch.

### Pilot light.

### Control relay.

### [Electric] [key] interlock where required.

### Remote open and close.

### Lockout devices.

### Padlocking provision.

### Operation counter.

# EXECUTION

## Installation

### Install air circuit breakers as indicated in the Contract Documents.

## Commissioning

### For all commissioning activities on systems where components of this Section are integral to functionality, refer to Section 01810 – Equipment Testing and Facility Commissioning. All inspection and testing activities shall be completed in accordance with the commissioning plan that shall be provided to the Consultant prior to the commencement of commissioning activities.

**END OF SECTION**