

Technical Specification for Conversion of Medium Voltage Air Magnetic to Vacuum / SF6 Contactors

Specification Number: 26 01 10.13

Product Name: Conversion of Air Magnetic to Vacuum/SF6 Contactors

1.01 SCOPE

1. This specification serves to define requirements for the conversion of existing air magnetic contactors to contactors of the same or less continuous and the same or less interrupting rating using vacuum interrupters. The converted contactors shall be fully compatible with the existing switchgear compartments with identical interlocks.

2.01 STANDARDS

1. The converted equipment shall conform to and tests shall be conducted in accordance with the latest applicable standards of the American National Standards Institute (ANSI), National Electrical Manufacturer Association (NEMA), and the Institute of Electrical and Electronics Engineers, Inc. (IEEE) unless otherwise stated herein.

3.01 GENERAL REQUIREMENTS

1. The 3-pole vacuum interrupter assembly and operating mechanism shall be mounted on the existing contactor frame for this conversion. The converted contactor shall be suitable for use in the existing metalclad switchgear.
2. Main current-carrying parts, insulators, supports, and housings of the converted contactor shall have sufficient mechanical strength to withstand, without incurring damage, the effect of rated short circuit currents. Short circuit currents will be interrupted by fuses.
3. The converted contactor with the same type and rating, shipped under the same proposal, shall be physically and functionally interchangeable.

4.01 CONVERTED CONTACTOR

1. The mechanism shall be sized to operate the existing contactor interlocks and shall be fully function tested according to ANSI C37.20.2, article 5.3.
2. Electrically operated mechanisms shall be designed to match the existing air magnetic circuits. Closing and tripping mechanisms shall operate satisfactorily over the voltage range in accordance with ANSI C37.06, table 1 0.
3. The vendor shall recondition all existing parts to be used in the breaker conversion to like new condition. All used breaker parts shall be dismantled to the smallest part, cleaned, checked to meet new part tolerances, replated and painted as needed. All parts not meeting new part tolerances shall be replaced with new parts or remanufactured to new part tolerances. Mechanism and moving parts shall be lubricated.
4. All primary current paths and fingers shall be replated with silver. All clusters which do not meet new requirements shall be replaced with new or remanufactured clusters.
5. Each converted contactor mechanism shall be equipped with the following:
 - (a) Operation counter
 - (b) Main contact position indicator or target
6. Each converted contactor shall retain the existing copper connection to the ground bus.
7. The converted contactor shall retain the existing racking mechanism and interlocks and be capable of moving the converted contactor and operating the

mechanical interlocks between the connected, test, and disconnected position as originally designed.

8. Converted contactors shall have interphase and outerphase barriers.
9. The converted contactor shall be equipped with a new electrically operated mechanism. All springs, coils, and motors shall be new manufacture.
10. The operating mechanisms shall be readily accessible for customer maintenance.

5.01 CONTROL AND INDICATING DEVICES

1. Control relays, auxiliary contacts, and small mechanisms shall be enclosed protected and accessible for maintenance.
2. All contacts displaying pitting and wear shall be replaced or dressed to like new condition.

6.01 TESTS AND INSPECTION

1. Production tests shall be made in accordance with ANSI C37.09, article 5.1 and C37.20.2, article 5.3 - tests are megger, 100 amp. micro-ohm meter, hi-pot, speed time test, and power factor.
2. The purchaser shall have the right to inspect at the factory all equipment covered by these specifications, at any time during manufacture and assembly, and shall have the right to be present during any tests made on the equipment.
3. The vendor, upon request, shall furnish the purchaser with advance notice of final assembly and testing.

7.01 DRAWINGS

1. Schematic Diagrams and nameplate information will be submitted to Vendor within (30) days of date of purchase order. Within thirty (30) days after receipt of schematic diagram and nameplate information from Purchaser, Vendor shall submit the following ACAD reproducible drawings for approval.
 - (a) Schematic control diagram of the converted contactor.
 - (b) Verification of nameplate designations as submitted by Purchaser.

8.01 DESCRIPTIVE MATERIALS AND TEST REPORTS

1. Instruction books, certified tests reports, complete parts list, and recommended spare parts lists shall be furnished with the converted contactors.

9.01 INSTALLATION

1. If requested, qualified installation technicians can be provided by the Vendor for installation conformance.

10.01 INSURANCE

1. Qualified converters/installers shall carry the following minimum insurance with insurance carriers rated A- or better by A. M. Best Company:

<u>Description of Coverage</u>	<u>Limit of Liability</u>
Comprehensive General Liability Limit Insurance	\$2 Million Combined Single Bodily Injury and Property Damage
Automobile Liability Insurance Limit Insurance	\$2 Million Combined Single Bodily Injury and Property Damage
Workers' Compensation	Statutory
Employer's Liability	\$2 Million Comprehensive Liability Coverage