

Retrofitting

Solutions for BRUSH bulk-oil VSI type circuit breakers

Circuit breaker retrofit is a cost-effective alternative to a complete switchgear replacement. ABB Service experts conduct site audits on existing installations to assess the condition of the equipment, recommend the most suitable solution and technically support the most appropriate investment.

The retrofit activity is carried out by replacing phased-out devices with circuit breakers of current production, suitably designed to adapt mechanically and electrically to the existing model in the plant.

The result is a great improvement in reliability, safety, maintenance and performance.

ABB Service is a complete system provider of retrofit solutions, from the proposal to design, manufacturing and testing, down to installation and commissioning.

Benefits

Reliability

- Significant extension of life
- Less maintenance
- Long-term availability of spare parts

Safety

- Great reduction in the risk of faults
- Additional incorporated safety features
- Improved operator protection

Technology

- Latest generation apparatus
- Designed according to the IEC 62271-100 Standard
- Tested and certified circuit breakers

Project

- Short replacement times
- Minimum switchgear downtime
- Simple plant activities

Investment

- Limited capital investment
- Minimization of all further maintenance activities
- ABB warranty on the retrofit package.

Facts

Bulk-oil circuit breakers manufactured by Brush Switchgear since the 60's as part of the VSI (single busbar system) and VTD (double busbar system) switchgear can be replaced with the latest generation ABB VD4 type vacuum circuit breakers. Other product variants, like the VSI/VAC version, come under the same solution.



BRUSH VSI

This equipment has been in service for 30 to 40 years and its replacement can easily extend the operational life of the switchgear for decades.

ABB vacuum retrofitting circuit breakers allow the bulk-oil based apparatus to be removed, thereby eliminating the fire hazard.

The use of the well-proven VD4 type circuit breaker allows the performances available with the ABB switchgear to be extended, even for products made by other manufacturers.

Minor modifications to the existing switchgear allow the requirements of the IEC Standards in force to be met.

The retrofit circuit-breakers can be fitted with medium voltage surge arresters on request.



VD4-BRUSH vacuum
circuit-breaker retrofit solution

Technical Data

A full range of retrofit solutions has been developed, based on the current ABB production of vacuum circuit breakers. ABB's offer proposes the best apparatus for each switchgear unit, according to the characteristics of the apparatus inserted in the network and to the specific operating requirements of each unit.

The following basic technical data are required in order to provide standard retrofitting solutions:

- rating plate data and serial number
- photos of all four sides
- photo of the interior of the switchgear compartment
- existing functional electric circuit diagram
- generator data (only for these units).

Ratings

Type	Mid-low range	High range
Rated voltage [kV]	...12	12
Rated current [A]	...1250	...1250
Rated short-circuit current [kA]	...31.5	...40

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1VOP000379 – Rev. -, en – 2011.10 (Technical Flyer) (mt)

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