

## Retrofit

# ABB solutions for minimum oil circuit breakers

ABB's circuit breaker retrofit service is a cost-effective alternative to the complete replacement of switchgear. ABB Service experts conduct site audits on existing installations to assess the condition of the equipment and recommend the ideal solution to ensure the optimum return on investment.

The retrofit service covers the replacement of phased-out devices by circuit breakers that are currently available and adapting them both mechanically and electrically to suit the existing engineering. The result is a major improvement in reliability, safety, maintenance needs and performance.

ABB Service is a full system provider for retrofit solutions, from the initial recommendation and design, through manufacturing and testing, up to installation and commissioning

### Our retrofit solutions for minimum oil circuit breakers

ABB has built on its extensive experience in retrofit projects, combined with its manufacturing expertise, to develop retrofit solutions tailored especially for the ABB family\* of minimum oil circuit breakers. This makes it possible to eliminate the use of oil insulation by replacing it with vacuum or gas interrupting technology.

ABB retrofit solutions for the now technically outdated oil circuit breakers are based on circuit breakers with embedded poles. This latest pole manufacturing technique guarantees process stability and quality and environmental stress, as well as providing the vacuum interrupter with optimum protection from moisture, dust and external damage.

All of ABB's retrofit solutions for the exchange of minimum oil circuit breakers are tailor made to suit each installation. This enables us to guarantee that the bushings and truck of the retrofit solution will match the customer's existing panel, so that only a short downtime is required for the exchange.



ABB minimum oil circuit breaker



ABB retrofit solution equipped with VD4

### Benefits

#### Reliability

- Significant life time extension
- Lower maintenance requirements
- Long term availability of spare parts

#### Safety

- Strong fault risk reduction
- Additional embedded safety features
- Improved operator protection

#### Technology

- Latest generation apparatus
- Designed according to IEC 62271-100 Standard
- Tested and certified products

#### Project

- Short implementation time for replacement
- Minimum shutdown of the switchboard
- Smooth site activity

#### Investment

- Limited capital investment
- Minimization of further maintenance costs
- Warranty on the conversion work

### Certification

.ABB will recommend the most appropriate apparatus for each switchgear unit, according to the conditions of the complete network equipment and the specific feeder operational characteristics.

The following basic details are necessary for providing standard retrofit solutions:

- Technical information and serial number from the data label
- Pictures from all four sides.
- Compartment inner pictures.
- Existing panel schematic diagram.
- Generator data for the relevant feeders

\*ABB family meaning: ABB, ASEA, BBC, Calor Emag, SACE, Strömberg, Gardy, EJF, ITE,

**Ratings of Retrofit solutions with VD4 breaker:**

Standards		VDE 0670, part 10/IEC 60694 and VDE 0671, part 100/IEC62271-100 and IEC60068-2-30				
Operating Sequence		O – 0,3 s – CO – 3 s – CO				
Rated Frequency fr (HZ)		50 / 60				
Impulse Withstand Voltage UP (kV)		95				
Type	Rated Current Ir (A)	Rated Voltage Ur (kV)	Impulse Withstand Voltage Up (kv)	Rated Breaking Capacity ISC (kA)	Making Capacity Ip (kA)	Rated Short time Current Ik (kA) 3 sec
VD4	630 ... 4000	12	75	16 ... 40	40 ... 100	16 ... 40
VD4	630 ... 4000	17,5	95	16 ... 40	40 ... 100	16 ... 40
VD4	630 ... 2500	24	125	16 ... 25	40 ... 63	16 ... 25

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