



Power Plant Electrical Technologies (Pty) Ltd

www.ppetech.co.za | 013 752 3570 | sales@ppetech.co.za

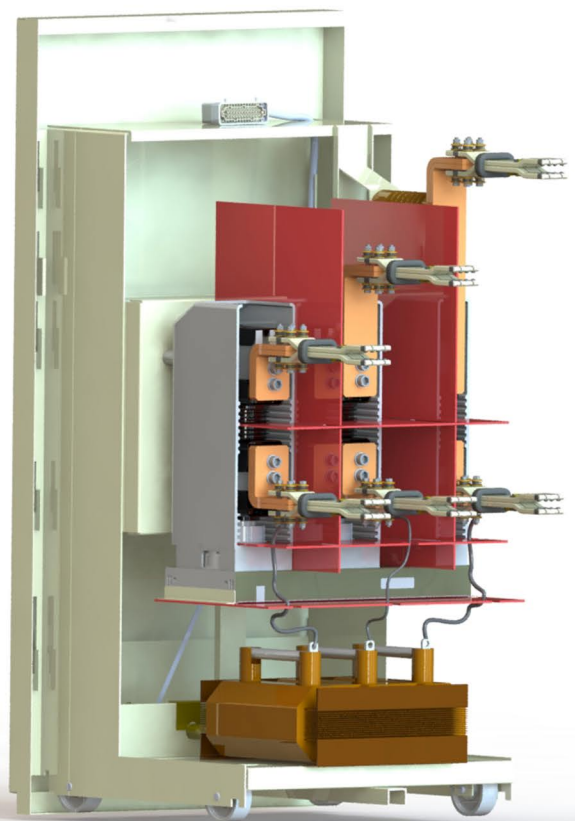
MV Retro-Flex Retrofit Solution

Retrofit for Siemens 3AF Vacuum Circuit Breakers

It is well understood that electrical components have a finite service life, and for medium voltage switchgear this is determined by the number of mechanical operations, which is shortened by the number of times the switchgear has cleared high load currents or fault currents. Failing to identify and replace aged switchgear often causes unwanted breakdowns and unforeseen downtime, with a risk of serious equipment damage or injury to personnel. As medium voltage switchgear begins to age, it is wise to prepare for replacement or modernisation of the full switchboard or the breaker equipment, in a structured manner, using a well-engineered solution.

The replacement of a full switchboard may not be practically possible, due to the considerable time required to remove old panels and install new. The cost of such a full switchboard may also be prohibitive and a safe alternative is often required. For these reasons, it is more feasible to replace selected switchboard components, thereby reducing risk, cost and potential down time.

PPE Technologies has therefore developed the MV Retro-Flex solution aimed at providing a quick, safe and cost effective retrofit option for customers wanting to retain their original switchboard investment. The MV Retro-Flex solution includes a breaker block replacement for Siemens 3AF type circuit breakers as used in Siemens 8BD1 switchboards. The MV Retro-Flex solution makes use of the original 3AF breaker truck, which we strip and refurbish. The busbar fingers are refurbished and retained and a new Tavrada vacuum circuit breaker block, with electronic control module is fitted.



The breaker face plate is replaced in such a manner as to retain the same look and feel as the original 3AF breaker, with the same racking mechanisms.

The MV Retro-Flex solution replaced only those components that are worn and at risk, thereby saving our customers considerable cost and lost time. With due planning we can refurbish and modernise all breakers in a switchboard in a relatively short period.

ISM15_Shell_2 Vacuum Circuit Breaker

The ISM15_Shell_2 is available in ratings up to 2000 amps, with a 31.5 kA fault interruption capacity.

The magnetic actuator eliminates the captured energy spring and recharge motor mechanism employed on the original 3AF breaker, thereby enhancing reliability and improving the safety and operation availability of the breaker as there is no heavy duty spring to be recharged.

The MV Retro-Flex breaker solution undergoes rigorous scrutiny and testing in our factory to ensure that the breaker racking devices and busbar connection arms align and control circuit wiring is compatible to the existing switchboard. Each Retro-Flex breaker is functionally tested and subject to high voltage and high current tests through the full power circuit to ensure our customers receive reliability and peace of mind.



TECHNICAL PARAMETERS

Type		3AF	VCB15_SHELL2
Rated voltage (Ur)	kV	≤ 12	≤ 17.5
Rated normal current (Ir)	A	1250	1250
Rated power frequency withstand voltage (Ud)	kV	28	38 (42)*
Rated lightning impulse withstand voltage (Up)	kV	75	95
Rated short-circuit breaking current (Isc)	kA	≤ 31.5	≤ 31.5
Rated peak withstand current (Ip)	kA	≤ 80	≤ 82
Rated frequency (fr)	Hz	50	50
Mechanical life (CO-cycles)		10 000	30 000
Operating cycles, (rated breaking current)		?	50
Closing time	ms	≤ 75	≤ 60(24)**
Opening time	ms	60/40	≤ 35(12)**
Break time	ms	75/55	≤ 45(24)**
Resistance of main circuit	μOhm	≤ ?	≤ 18
Interrupter Weight	kg	125	51
Temperature range	°C	-20 ... +40	-25 ... +55

MPUMALANGA NELSPRUIT HEAD OFFICE

Location: Nelspruit, 3 Christie Crescent
Vintonia Ext.2, Mpumalanga, 1200

Tel: +27 013 752 3570

Call Centre: +27 087 057 4000

sales@ppetech.co.za

WESTERN CAPE SALES AND SERVICE OFFICE

Location: Cape Town, Unit 1 Oro Three 5
Junction Rd, Killarney Junction, 7441

Tel: +27 087 057 4001

sales@ppetech.co.za

GAUTENG SALES AND SERVICE OFFICE

Location: Pretoria, 477 Jasmyn Street,
Silverton, 0184

Tel: +27 012 940 3971

sales@ppetech.co.za

KWAZULU-NATAL SALES AND SERVICE OFFICE

Location: 7 Moreland Drive, La Lucia, 4159

Tel: +27 031 020 2030

sales@ppetech.co.za