



# Power Plant Electrical Technologies (Pty) Ltd



## GEN-FLEX MEDIUM VOLTAGE

Compact Gen-Flex Panel | 12kV - 1250A - 25kA

[www.ppetech.co.za](http://www.ppetech.co.za) | 013 752 3570 | [sales@ppetech.co.za](mailto:sales@ppetech.co.za)

# INTRODUCTION

A compact and modular design for all customer application  
The Gen-Flex is a single standing, non-modular solution, and as the drive to more modular solutions is the objective, it was decided to initiate a revision to the design. Thus, we would like to extend the Gen-Flex to a more modular and flexible approach such as a horizontal busbar system for a multi-unit application or additional plus codes for client satisfaction.

We have developed a technically competent medium voltage switchgear solution specifically intended for power generation through generators, which enable us to compete in the South African and African markets as well as internationally.

We therefore have developed a cost competitive, flexible and modular power generation switchgear solution, which can be marketed and sold as a standard product, utilising our existing ABB circuit breakers, current transformers and protection relay products. Whilst retaining a flexible and competitive design, we are to ensure good quality, and a high service reliability with better than average service life expectation of the product.

Whether your choice will be for ready-to-buy, easy configuration and design, with short delivery time, or whether you need a tailor-made solution to suit your specific requirements, Power Plant Electrical Technologies has the solution. We offer a large choice of functions to meet any kind of application: switches, circuit breakers, and metering equipment.

## TABLE OF CONTENTS

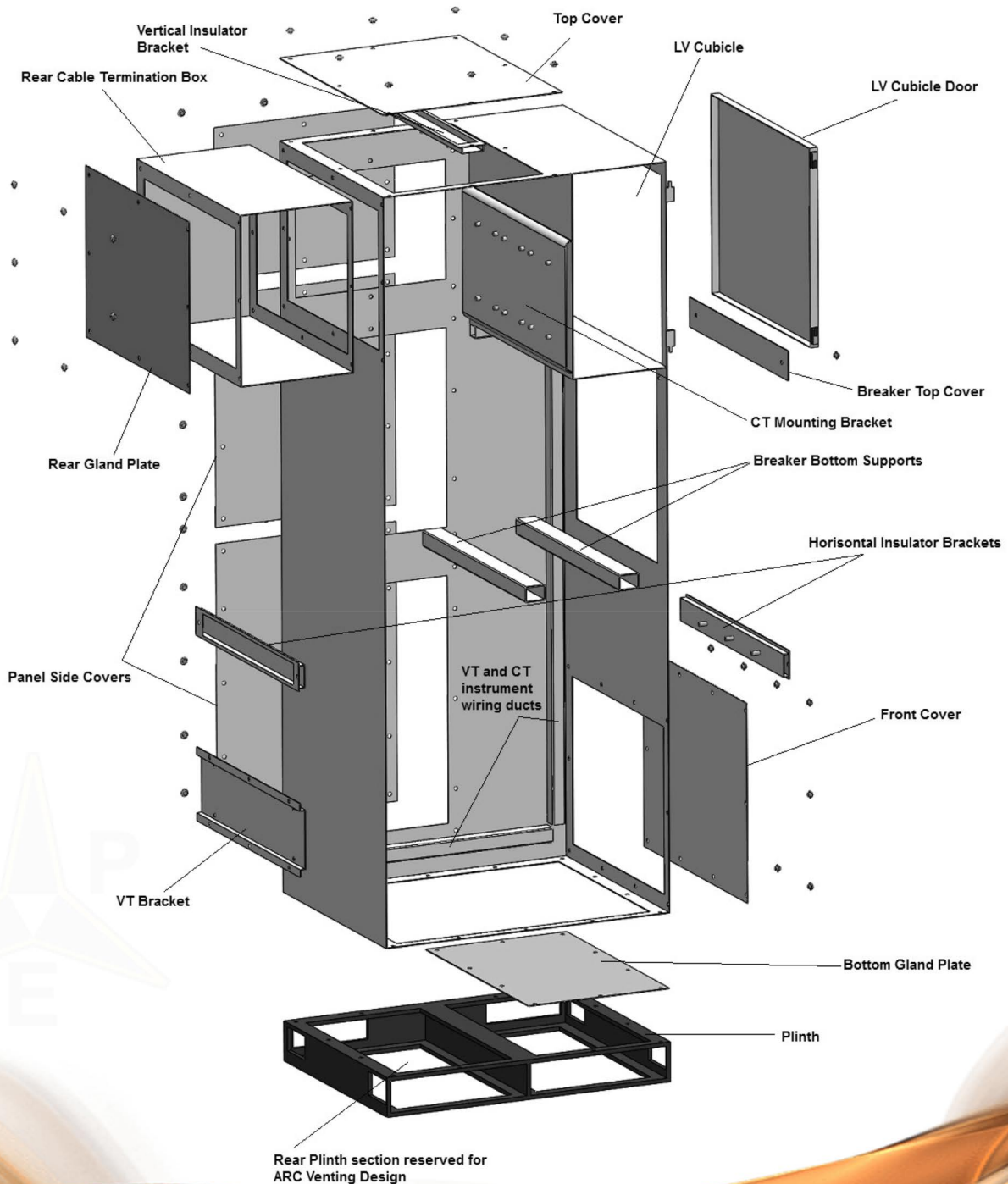
<u>Introduction</u>	<u>01</u>
<u>General</u>	<u>02</u>
<u>Drive Meganism</u>	<u>03</u>
<u>Figures</u>	<u>04-05</u>
<u>Main Technical Parameters</u>	<u>06-07</u>
<u>Control Module Potition Indicator</u>	<u>08</u>
<u>Circuit Diagram with Cable</u>	<u>09-10</u>



# OUR GEN-FLEX SOLUTIONS OFFERS THE FOLLOWING:

- Reliability of a brand-new switchgear.
- Saving on CAPEX by renewing only the worn-out parts while benefiting from new technologies.
- OPEX is reduced due to the modern maintenance free ABB vacuum circuit breaker.
- Increased personnel safety:
  - Mitigate risks of electrical flash fatalities.
  - Mitigate risks of power outages resulting in dangerous accidents.
- No modifications are necessary on the fixed part of the switchgear.
- No changes to existing main busbar.
- No changes to existing relay and breaker control wiring or connecting plug.

## GENERAL





### General specification for Compact for MV Gen-Flex Panel

GenFlex type	Single Busbar
Delivery version	Complete panel
Standard	IEC 62271
Packing	RSA – Bubble Wrapping
FAT	Nelspruit RSA
Altitude of installation	Less than 1000 m
Rated voltage	12 kV
Service voltage	12 kV
Rated frequency	50 Hz
Power frequency withstand voltage	28 kV rms
BIL (1.2/50 micro-sec. wave)	95 kV peak
BIL (derated) at altitude <= 1000 m	75 kV peak
Short time withstand current	25 kA rms - 3 s
Peak withstand current	63 kA peak
Internal arc withstand current	25 kA rms - 1 s
Busbar rated current	1250 A
Insulated busbars	No
Main circuit Cu bars coating	No
Busbars partitioning	Yes, TC rules
Loss of service continuity	LSC 2B
Internal arc classified	IAC AFLR
Partition class	PM
Protection degree outer cover (IEC 60529)	IP4X
Protection degree inner partitions (IEC 60529)	IP20
Ambient temperature (IEC 60694)	-5 to +40 °C
Painting colour	RAL 7035
Painting treatment	Standard
Mimic diagram	On relay
Gasduct	Gas duct with bottom chimneys
Fault limiting device	Lth sensors
Feeder and apparatus doors closing version	Central handle
LV compartment closing doors version	Central lock
LV compartment internal support	Aluminium profile
Floor fixing	Not in scope (Only anti-vibration mounts)
Anticondensation heater	In cable compartment & apparatus compartment
LV compartment internal lighting	No
Apparatus spring loading voltage	110 VDC
Control auxiliary voltage	110 VDC
Signalling auxiliary voltage	110 VDC
Lighting & heating voltage	220 VAC 50Hz
Control circuits wires section	1.5 mm <sup>2</sup>
Voltage circuits wires section	2.5 mm <sup>2</sup>
Current circuits wires section	2.5 mm <sup>2</sup>
Earthing circuits wires section	2.5 mm <sup>2</sup>
Wiring cables type	Standard
Wiring cables rated voltage	0.6/1 kV
Wiring cables colour	Customized
Colour of Auxiliary AC	BLK
Colour of Auxiliary DC	GRY
Colour of CT circuits	RW-B
Colour of VT circuits	RW-B
Colour of Earthing circuits	Y-G
Panel control	ABB IEDs
Communication protocol 1	IEC 61850 Single
IEC 61850 Edition	1
Communication connection media	Metallic
Number of Operations	30,000 mechanical operations
Electromagnetic compatibility	Conforming to IEC 62271-1
Overall dimensions and weight	
Height	1950 mm
Depth	1050 mm
Width	600 mm
Minimum switchgear room height	2600 mm
Estimated overall weight including accessories	+ 800 kg

## TECHNICAL DATA SHEET

The Power Plant Electrical Technologies Flex Range aims to provide solutions that are robust, reliable, sustainable and efficient.

The design and engineering philosophy used in our manufacturing approach speak to solutions that provide the best results for your company, your process, and your profits.

The MV switchgear is suitably rated and manufactured in compliance with IEC 62271 standards and is manufactured under an ISO 9001-2015 standard of quality.






# CONTACT US



[www.ppetech.co.za](http://www.ppetech.co.za) 

[sales@ppetech.co.za](mailto:sales@ppetech.co.za) 

Gauteng: +27 (0)12 940 3971  
Mpumalanga: +27 (0)13 752 3570   
Western Cape: +27 (0)87 057 4001  
KwaZulu-Natal: +27 (0)79 354 2105

Mpumalanga: 3 Christie Crescent Vintonia Ext.2, Nelspruit, 1200  
Cape Town: Unit 1 Oro Three 5 Junction Rd, Killarney Junction, 7441   
Gauteng: 477 Jasmyn Street, Silverton, 0184  
KwaZulu-Natal: 7 Moreland Drive, La Lucia, 4159

