

MV Air Insulated Switchgear, Model Unisafe MV Indoor Vacuum Circuit Breaker, Model VD4 Power^{IT}



Industrial^{IT}
enabled™

ABB

ABB - a global leader in power and automation technologies

ABB (www.abb.com) is a global leader in power and automation technologies that enable utility and industry customers to improve performance while lowering environmental impact. The ABB Group of companies operates in around 100 countries.

ABB's Power Technologies Division serves electric, gas and water utilities, as well as industrial and commercial customers with a wide range of products, services and solutions for power transmission and distribution. ABB offers turnkey solutions for substations, utility automation, HVDC and FACTS (Flexible AC Transmission System).

ABB's power technologies product portfolio includes outdoor and indoor circuit breakers, gas insulated switchgear, power transformers, instrument transformers, disconnectors, capacitor banks and reactive power compensators.

ABB's medium voltage product offering encompasses a complete range of innovative products, systems and technologies for applications in the 1 to 50 kV class. This includes indoor air insulated and gas insulated panels with vacuum and SF6 gas circuit breakers, outdoor vacuum and SF6 gas circuit breakers, ring main units, auto-reclosers, fuses, switch disconnectors and prefabricated modular solutions for power distribution.



Salient Features - Unisafe Cubicle

- Metal clad construction - all compartments are segregated from each other with metal sheets
- IP4X degree of protection externally & IP5X available as an option
- Internal arc tested
- Independent exhaust vents for all HT compartments
- Internal earthing switch (optional)
- The normal service performances are guaranteed under the following conditions:
 - Min. Ambient Temp.: -5°C
 - Max. Ambient Temp.: -40°C
 - Max. Rel. Humidity: 95%
- Small width panel - 600mm up to 1250A busbar rating
- Insulation level of 95kVp available on request
- Option of REF 542+, composite unit for protection, measurement, control, signalling, interlock, automation and communication

Industrial^{IT}

The Unisafe panel and VD4 circuit breaker are certified as complying with the ABB

Industrial^{IT} architecture.

In this architecture the Unisafe panel and VD4 circuit breaker are part of the Power^{IT} suite. The products complying with the Industrial^{IT} architecture can be effectively integrated in a system with high added value and a true 'Plug & Produce' mode.

This product has been tested and certified as Industrial^{IT} Enabled, Level 0 - Information. All product information is supplied in interactive electronic format, compatible with ABB Aspect Object™ technology. The Industrial^{IT} commitment from ABB ensures that every enterprise building block is equipped with the integral tools necessary to install, operate, and maintain efficiently throughout the product lifecycle.

Further information about the advantages of ABB Industrial^{IT} architecture is available at www.abb.com/industrialit.



Air insulated indoor switchgear cubicle type Unisafe

The Unisafe cubicle is designed and type tested to meet requirements of IEC 60694 / IS:3427.

Metering compartment

- Metering compartment with numerical / static / electromagnetic relays, indicating meters, lamps and control switches
- Protection and measuring apparatus customised as per requirement



Busbar compartment

- Spacious busbar compartment for adequate air clearances
- Option for busbar insulation available
- Option for shroud on joints available



Breaker compartment

- Test position of circuit breaker behind closed door
- Racking in/out of breaker from 'test' to 'service' position and vice-versa with cubicle door closed
- Mechanical interlock to prevent racking in/out of breaker, when breaker is in closed position
- Live parts covered by automatic metallic shutters when breaker is racked out



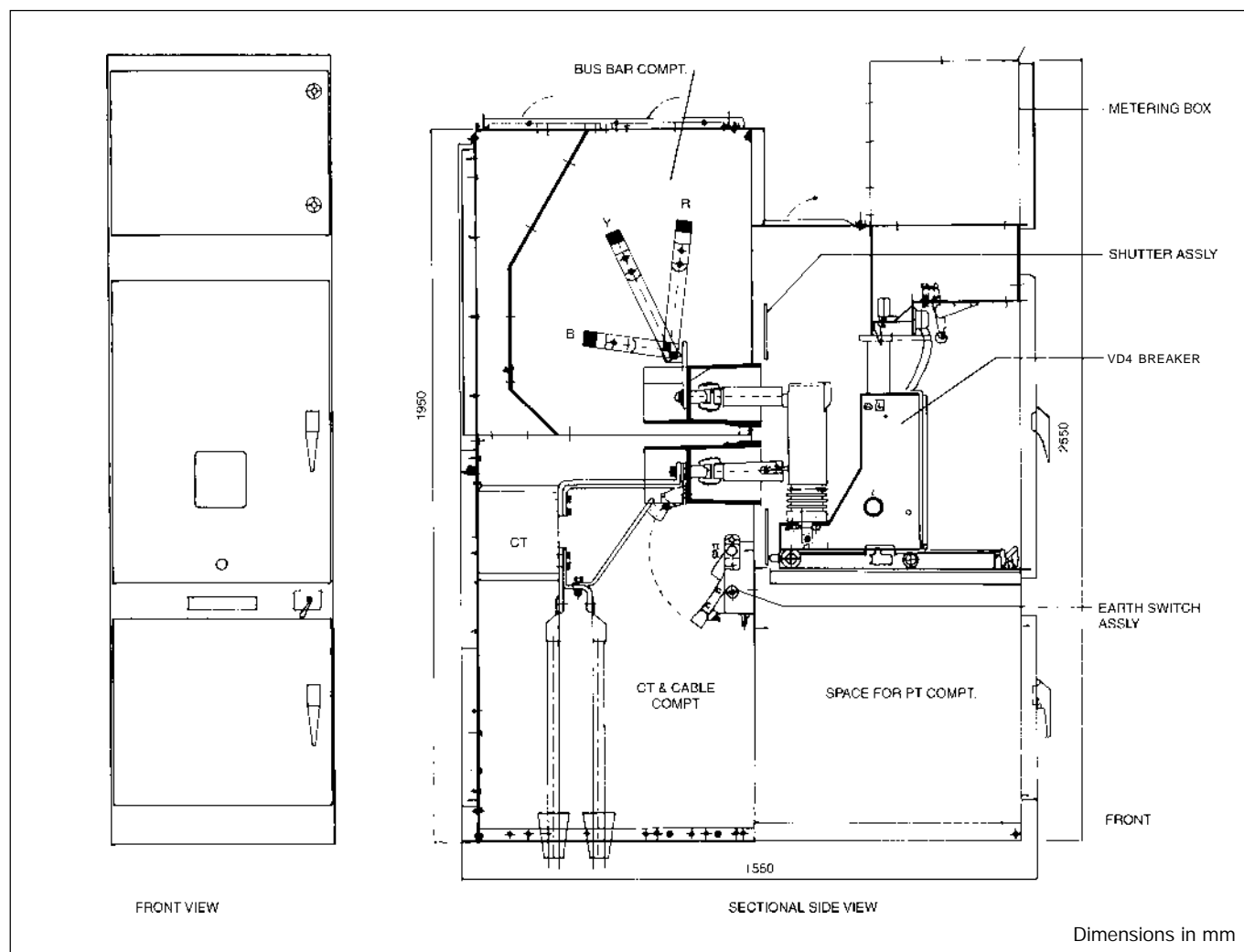
Cable and CT compartment

- Spacious compartment to accommodate 1 set of CTs and 2 runs of cable
- Option of rear extension to accommodate extra CTs or cables
- Adequate height for cable termination

PT compartment

- Withdrawable line PT provided in the breaker panel
- Removable fuses mounted on the PT
- Safety shutters between PT and cable compartment close automatically on PT withdrawal

General arrangement drawing



Technical details

Description	Unit	Rating
Rated Voltage	kV	12
Rated Frequency	Hz	50
Rated Busbar Current	A	up to 2000
Short time withstand current (3 sec)	kA kAp	26.3 66
Insulation levels	kVrms/kVp	28/75*
Width x Depth x Height up to 1250A above 1250A	mm mm	600 x 1550 x 2500 750 x 1550 x 2500
Weight with circuit breaker (approx)	Kg	1000
Degree of protection Enclosure	-	IP4X
Between the compartments	-	IP2X

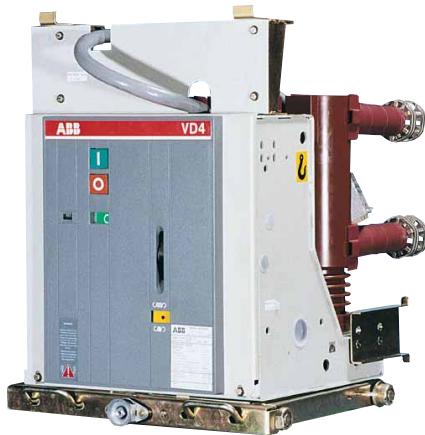
*95 kVp on request

Indoor switchgear – vacuum circuit breaker type VD4

The VD4 type circuit breaker is designed and tested to meet requirements of IEC - 62271-100 / IS: 13118.

Salient features

- Vacuum used as insulation and arc interruption medium
- Operationally safe and reliable in a wide range of ambient temperatures (-)5° to 40°C
- Capable of interrupting small magnetising and capacitive currents
- Features of operating mechanism:
 - O-C-O operation without recharging
 - Closing spring charged by motor in less than 15 seconds
 - Electrical anti-pumping
 - Provision for manual charging
 - Synchronisation and fast auto reclosure duty



Technical details

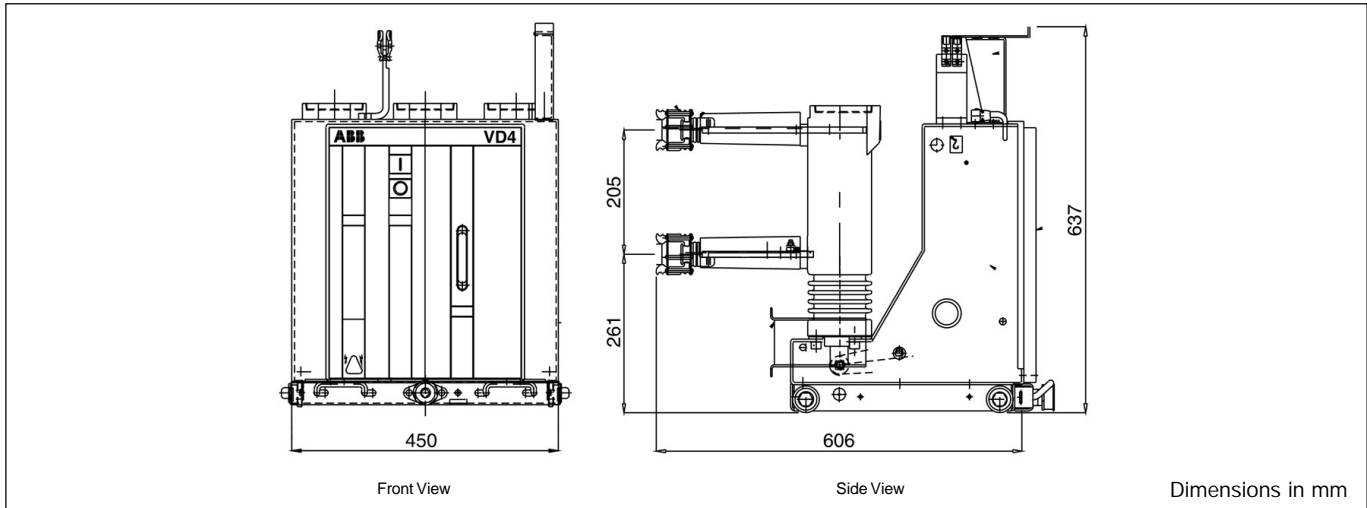
Description	Unit	Rating			
		12.06.13E	12.12.25	12.16.25	12.20.25
Type	VD4	12.06.13E	12.12.25	12.16.25	12.20.25
Rated Voltage	kV	12			
Insulation Levels	kVrms/kVp	28/75			
Normal Current (40°C amb.)	A	800	1250	1600	2000
Breaking Capacity	kA	13.1	26.3	26.3	26.3
Making Capacity	kAp	33	66	66	66
Short time withstand current	kA(3sec)	13.1	26.3	26.3	26.3
Opening time	ms	55 (max)			
Arcing time	ms	15 (max)			
Total Break time	ms	70 (max)			
Making time	ms	75 (max)			
Operating Sequence	-	0 - 3min - CO - 3min - CO/ 0 - 0.3sec - CO - 3min - CO			
Weight (approx.)	Kg	110	110	120	250

Quality assurance

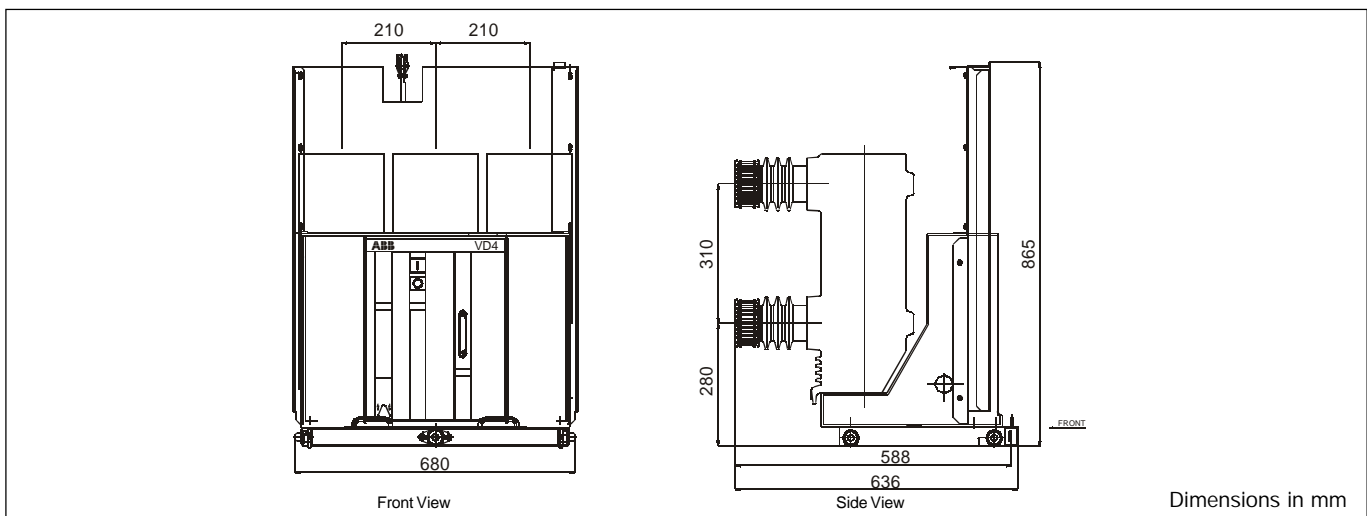
All of ABB's manufacturing facilities in India are ISO 9001 certified which reflects ABB's commitment to quality. ABB is equally committed to environmental sustainability. The Nashik facility is certified under ISO 14001.



Dimensional drawing of VD4 (up to 1600 A)



Dimensional drawing of VD4 (up to 2000 A)



Data and illustration without engagement. We reserve the right to make changes in the course of technical development.



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