MITSUBISHI ELECTRIC
Changes for the Better

5 kV Vacuum Circuit Breaker

Many Challenges... One MITSUBISHI ELECTRIC

Product Description

Mitsubishi Electric is providing a revolutionary 5 kV Circuit Breaker that incorporates Mitsubishi Electric patented modular switchgear technology. This technology incorporates all high voltage and operational elements into one assembly that has wheels and can easily be slid in and out of the Circuit Breaker. This single critical assembly provides plug N play service capability.

Furthermore, this unit is a ventless NEMA 3RX rated device that protects the Circuit Breaker from dust, water, corrosion, wind and foreign objects. Its temperature range of operation surpasses ANSI/IEEE maximum operating temperature and overload capability. The Bushings are designed using an outdoor rated, hydrophobic, cycloaliphatic, epoxy material. This is superior in weight, tensile strength, UV protection and structural integrity.

The 5 kV Circuit Breaker also incorporates a low voltage control panel that is housed within the 2 foot by 2 foot enclosure. When needed, the clamshell-designed control panel can be extended, swung open and unfolded to provide an ergonomic interface (see back page illustration). This unit provides all controls, relays, customer connections and other required operational devices.

Product Features

- Purpose built design to replace legacy oil circuit breakers in power distribution substations and industrial applications.
- Ultra-low maintenance design provides superior total cost of ownership.
- Fourth Generation design incorporates a highly reliable spring-spring mechanism.
- Applicable for indoor installations, or outdoor installations with optional pedestal.
- Meets or exceeds ANSI/IEEE C37.06, C37.09, C37.04 standards.
- Capable of 800 Ampere or 600 Ampere configurations.
- Standard operating temperature range of +50° C to -30° C.

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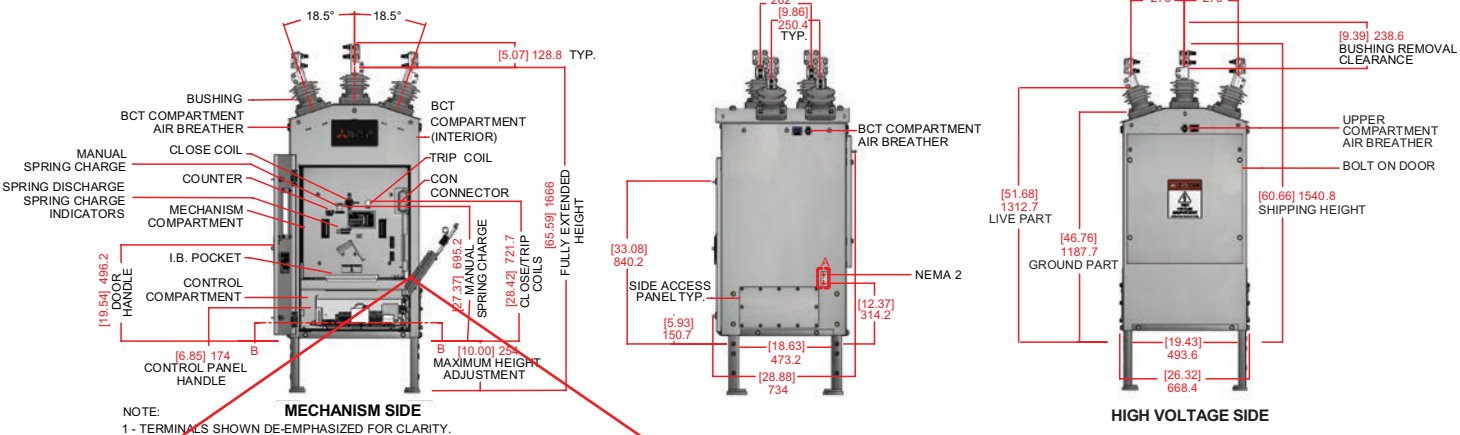
Mitsubishi 5 kV Vaccum Circut Breaker Technical Specifications

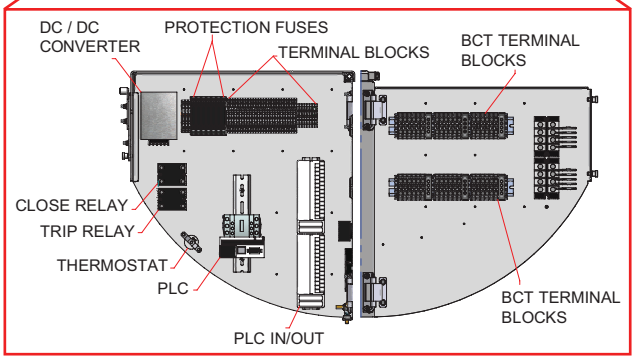
Vacuum Circuit Breaker Specifications		
Breaker Designation		5DV25
Rated Maximum Voltage Input		4.76 kVolts
Compliance		IEEE C37 & IEC 62271-100
Operation Duty Cycle		O-0.3s-CO-10s-CO
Instalation Location		Outdoor or Indoor
Rated Maximum Continous Current		
	Dual Bus	800 Amps
	Single Bus	600 Amps
	Busbar Material	Copper; Silver Plated
Rated Frequency		60 Hz
Short Time Current Duration		2 Seconds
Short Circuit Current Rating (SCCR)		25 kAmps
Rated Dry Withstand Voltage (60 Hz)		19 kVolts
Rated Interrupting Time		3 Cycles
Rated Full Wave Impulse Voltage		60 kVolts
Out of Phase Switching Current		65 kAmps
Percent DC Voltage - X/R		57%-20
Mechanism Endurance		10,000 ops; M2 per IEC
Load Current Operations		25,000 ops
Full Current Faults		10 ops
Time to First Routine Maintenance		6 Years
Ambient Operation Temperature		-30°C to +50°C
Capacitive Current Switching		10A Cable Charging, Class C2
Motor Control Voltage		90-140 VDC @125V (1)
Motor Current at Rated Voltage (AC)		
	Start	1.9 Amps @125V (1)
	Run	0.4 Amps @125V (1)
Closing Control Voltage Range		90-140 VDC @125V (1)
Tripping Control Voltage Range		70-140 VDC @125V (1)
Closing Current at Rated Voltage		6.0 Amps @125V (1)
Tripping Current at Rated Voltage		6.0 Amps @125V (1)

Notes:
(1) 48V Control Option also available
(2) Other colors available on request

Enclosure Specifications		
Breaker Weight (Approximate)		800 Lbs.
Support Structure		Hot Dipped Galvanized
Enclosure Housing		Powder Coated
Color		ANSI 70 Light Grey (2)
Environmental Protection Rating		Ventless NEMA 3RX
Dynamic Loading		
	Horizontal (Acting along C/L)	0.33 kN [74 Lbs]
	Vertical Up (Acting Through CG)	1.62 kN [385 Lbs]
	Vertical Down (Acting Through CG)	2.10 kN [472 Lbs]
Bushing Specifications		
Material		E07-CYCLOALIPHATIC
Conductor		6061-T6511 Aluminum, Tin Plated
Voltage Class		5 kVolts
BIL		60 kVolts
Minimum Creepage Distance		254 mm [10 inches]
Pollution Class		Very Heavy
Temperature Classification		-50°C to +105°C
Approximate weight		5.45 kGrams [12 Lbs]
Static Horizontal Longitudinal Force (Inline)		750 N [169 Lbs]
Static Horizontal Transverse Force (Right Angle to Axis)		500 N[112 Lbs]
Static Vertical Force (Upwards and Downwards)		750 N [169 Lbs]

Product Illustrations





Configuration Guide

1	2	3	4	5	6
5DV25	- 06	- 125	125	F01	TS

Example Configuration: 5DV25-06-125125F01TS

Product Designation	Continuous Current	Trip Coil Voltage	Close Coil & Motor Voltage	Support Frame Nominal Height to Live Parts	Bushing Terminals
5DV25	06: 600A	048: 48VDC	048: 48VDC	F00: No Frame	T0: No Terminals
	08: 800A	125: 125VDC	125: 125VDC	F01: 6' 0"	TS: Single Cable (#2-1000kcmil)
		CTP: Capacitive Trip	120: 120AC	F02: 8' 6"	TD: Double Cable (#2-1000kcmil)
				* Adjustable +2", +6" & -4" from nominal	TN: NEMA 4
					* Other options on request

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