7.2 kV Medium Voltage Switchgear

VC-V6A(VCB)
VC-VS6A(VCS)
Comply with IEC62271-200
The VC-V6A and VC-VS6A conforms to IEC 62271 and manufactured utilizing Fuji Electric state-of-

**IEC compliance (including third-party testing)**

- IEC 62271-1 Common specifications
- IEC 62271-200 Metal-enclosed switchgear
- IEC 62271-100 Circuit-breakers
- IEC 62271-102 Earthing switch
- IEC 62271-106 Contactors

**Safety Feature**

- Loss of service continuity: LSC2B
- Partition class: PM
- Internal arc classification: AFLR
- Automatic metallic shutters
- VCB and VCS interlocked with compartment door
- Rear cover interlocked with Earthing switch
- Gas cooler (option compatible)
200 standard and is designed -the- art technology.

**Easy Maintenance and Installation**

- VCB and VCS does not need to be lifted at withdraw out of switchgear.
- Separate protection and control on top of VCB and VCS compartment.
- Test terminal located on the front of LV panel.
- Easy access for the main-cable termination.

**Components**

- VCB is compatible with NE type of Fuji Electric.
- Accomodate cast-resin, ring-type CTs for VCB and wound-type CTs for VCS.
- The voltage transformer for busbar is draw-out type and can be performed Maintenance easily and safety.
01 Busbar Compartment

Busbar up to 2,000 A normal current 25/31. 5/40 kA short circuit current
Copper busbar, air insulated, epoxy coated
31.5 kA is arc fault withstand

02 Automatic Shutters

- Individually operated
- (Automatic reset when breaker is inserted)
- Can be padlock in closed position

03 Earthing Switch

- Operated from front of switchgear
- ‘Closed/Open’ status visible from front circuit breaker window
- Mechanical interlock option with the cable compartment door

04 Automatic Earthing Switch

Mechanical interlock with the circuit breaker compartment such that:
- Earth switch cannot be ‘Closed’ with the circuit breaker in the ‘Service’ position
- Circuit breaker can only be moved from ‘Test-Disconnected’ to ‘Service’ position when Earthing Switch is ‘Open’

05 Circuit Breaker/Vacuum Contactors Compartment

Circuit Breaker Racking Mechanism
- Manual circuit breaker/contactor truck racking mechanism
- Safety interlocks
- Compartment door is mechanically interlocked with the circuit breaker/contactor truck such that door can only be opened with the truck is in the ‘Test-Disconnected’ position
- Breaker secondary contact interlocked with the breaker and can only be removed in the Test position
- Viewing window provides visual indication of the position of the circuit breaker/contactor truck
### Electrical Ratings/Dimensions

<table>
<thead>
<tr>
<th>Type</th>
<th>VC-V6A</th>
<th>VC-VS6A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applied standard</td>
<td>IEC 62271-200</td>
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<tr>
<td>Rated voltage</td>
<td>7.2 kV</td>
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<tr>
<td>Rated frequency</td>
<td>50 Hz, 60 Hz</td>
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<td>Busbar rated current</td>
<td>630 A, 1250 A, 2000 A</td>
<td>200 A, 400 A</td>
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<tr>
<td>Load side rated current</td>
<td>630 A, 1250 A, 2000 A</td>
<td>200 A, 400 A</td>
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<tr>
<td>Rated short time withstand current</td>
<td>31.5 kA 3s, 40 kA 3s</td>
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<tr>
<td>Internal arc classification (IAC)</td>
<td>AFLR 31.5 kA 1 sec</td>
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<tr>
<td>Rated power-frequency withstand voltage</td>
<td>20 kV 1 min</td>
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<tr>
<td>Rated lightning impulse withstand voltage</td>
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<td>Loss of service continuity category</td>
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<td>Dimensions</td>
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<tr>
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<tr>
<td>Depth</td>
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<tr>
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<td>2000 A</td>
<td>750 mm</td>
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</table>

*1: Gas cooler dimensions are excluded

### Single line diagram

The single line diagram shows the electrical connections and components of the circuit, including VCB, VCS, M, and Tr.
Type Testing

Type Testing on the VC-V6A(VCB), VC-VS6A(VCS) was performed based on the International Standard IEC62271-200, and the main typing tests performed are as follows.

Dielectric Tests

This test verified that the main circuit can withstand the applied voltage when the standard rated lighting impulse withstand voltage and power-frequency withstand voltage are applied.

Temperature Rise Test

The temperature rise of the various parts of the switchgear or auxiliary equipment for which limits are specified, shall not exceed the values specified in IEC62271-1.

Short Time and Peak Withstand Current Test

Main circuits and, where applicable, the earthing circuits of the switchgear and controlgear shall be subjected to a test to prove their ability to carry the rated peak withstand current and the rated short-time withstand current.

Internal arc Test

The internal arc test is intended to verify the effectiveness of the design in protecting persons in case of an internal arc, when the switchgear and controlgear is in normal service condition. The internal arc test is only applicable to metal-enclosed switchgear and controlgear, intended to be qualified as IAC classified.

IEC certification

VC-V6A has been certified (IEC62271-200 ed2.0) by a third-party certification body with STL member.