SFG
Gas-insulated indoor switch disconnector
The SFG switch disconnector has three positions as standard: Close, Open and Earth.

There are two types of operating mechanisms: the single spring device and the double spring device. The double spring device is aimed at tripping with fuse, coil or push button. Motor operation can be added to both types of operating mechanisms.

The switch has two thermo-plastic windows for visual inspection of the switch position. The enclosure also incorporates capacitive dividers for voltage indication.

Insulation is achieved with SF₆ gas at 1.45 bar pressure. The SFG is sealed for life (i.e. 30 years) and it is virtually maintenance free. As an option, gas pressure monitoring is available.

Mechanical endurance is guaranteed to 1000 closed/open and 1000 open/earth operations. Optionally, the Top Unit metallic frame (AluZink) and the Bushing Unit for direct busbar connection can be added to the SFG.

**Technical data**

**Compliance with IEC standards:** IEC 60694; IEC 60265-1; IEC 60129; IEC 60420; IEC 60282-1; IEC 62271-102; IEC 62271-105

<table>
<thead>
<tr>
<th>Ratings</th>
<th>Unit</th>
<th>Value</th>
<th>Value</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated voltage</td>
<td>kV</td>
<td>12</td>
<td>17.5</td>
<td>24</td>
</tr>
<tr>
<td>Rated lighting impulse withstand voltage</td>
<td>kV</td>
<td>75</td>
<td>95</td>
<td>125</td>
</tr>
<tr>
<td>Across the isolating distance</td>
<td>kV</td>
<td>85</td>
<td>110</td>
<td>145</td>
</tr>
<tr>
<td>Rated short duration power frequency withstand voltage</td>
<td>kV</td>
<td>28</td>
<td>38</td>
<td>50</td>
</tr>
<tr>
<td>Across the isolating distance</td>
<td>kV</td>
<td>32</td>
<td>45</td>
<td>60</td>
</tr>
<tr>
<td>Rated frequency</td>
<td>Hz</td>
<td>50/60</td>
<td>50/60</td>
<td>50/60</td>
</tr>
<tr>
<td>Rated current Ir</td>
<td>A</td>
<td>800</td>
<td>800</td>
<td>630</td>
</tr>
<tr>
<td>Rated short time withstand current</td>
<td>kA</td>
<td>25</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>Rated duration of short circuit</td>
<td>s</td>
<td>2</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Rated peak withstand current</td>
<td>kA</td>
<td>62.5</td>
<td>50</td>
<td>50</td>
</tr>
</tbody>
</table>

**Making and breaking tests (IEC 60265-1, lass E3) for the SFG switch**

<table>
<thead>
<tr>
<th>Making and breaking tests</th>
<th>Unit</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mainly active load current</td>
<td>A</td>
<td>800</td>
</tr>
<tr>
<td>Closed-loop distribution circuit current</td>
<td>A</td>
<td>800</td>
</tr>
<tr>
<td>Cable charging current</td>
<td>A</td>
<td>50 and 10</td>
</tr>
<tr>
<td>Line charging current</td>
<td>A</td>
<td>20</td>
</tr>
<tr>
<td>Cable and line charging current under earth faults</td>
<td>A</td>
<td>87</td>
</tr>
<tr>
<td>Short circuit making current</td>
<td>kA</td>
<td>62.5</td>
</tr>
</tbody>
</table>

**Making and breaking tests (IEC 60420) for the SFG switch – fuse combination**

| Withstanding and making the cut-off current of the fuse | kA | 25 | 20 | 20 |
| Breaking test with long prearc time of fuse | ok | ok | ok |
| Breaking capacity at rated transfer current | A | 1530 | 1260 | 920 |

**Mechanical performance**

| Mechanical endurance of switch close/open | Operations | 1000 | 1000 | 1000 |
| Mechanical endurance of switch open/earth | Operations | 1000 | 1000 | 1000 |

**Ambient temperature**

| Maximum value | ºC | +40 | +40 | +40 |
| Maximum value of 24 h mean | ºC | +35 | +35 | +35 |
| Minimum value | ºC | -5 | -5 | -5 |
| Altitude above sea level | m | ≤ 1000 | ≤ 1000 | ≤ 1000 |

1) Higher values in accordance with national standards on request  
2) Higher altitudes on request  
3) Lower ambient temperature on request
Options

Top Unit 375

SFG Top Unit 375 with single spring device 1VFM111056R2

SFG Top Unit 375 with double spring device 1VFM111063R2

Bushing Unit 375 1VFM111072R2

Top Unit 500

SFG Top Unit 500 with single spring device 1VFM111057R2

SFG Top Unit 500 with double spring device 1VFM111064R2

Bushing Unit 500 1VFM111073R2
### Accessories

**Motor operation device for single spring mechanism**
- Motor operation device 1VFU110001R2-24DC
- Motor operation device 1VFU110001R2-48DC
- Motor operation device 1VFU110001R2-110DC
- Motor operation device 1VFU110001R2-220DC

**Motor operation device for double spring mechanism**
- Motor operation device 1VFU110002R2-24DC
- Motor operation device 1VFU110002R2-48DC
- Motor operation device 1VFU110002R2-110DC
- Motor operation device 1VFU110002R2-220DC

**Control unit for single spring mechanism**
- Control unit 2183-2632CNTHBR1 24VDC
- Control unit 2183-2632CNTHBR2 48VDC
- Control unit 2183-2632CNTHBR3 110VDC
- Control unit 2183-2632CNTHBR4 220VDC
- Control unit 2183-2634CNTHBR1 110VAC
- Control unit 2183-2634CNTHBR2 220VAC

**Control unit for double spring mechanism**
- Control unit 2183-2636CNTHBR1 24VDC
- Control unit 2183-2636CNTHBR2 48VDC
- Control unit 2183-2636CNTHBR3 110VDC
- Control unit 2183-2636CNTHBR4 220VDC
- Control unit 2183-2638CNTHBR1 110VAC
- Control unit 2183-2638CNTHBR2 220VAC

**Connection material for SFG/cable side**
- Connection bars (3 phase) 1VFM114023R2
- Field control ball, only for 24kV 1VFM184006P1

**Connection material for SFG/busbar side**
- Mid panel 12…17.5kV 630A 1VFM114013R2
- Right or left panel 12…17.5kV 630A 1VFM114027R2

**Fuse tripping and indication system**
- Fuse tripping incl. indicator 1VFM113039R2

**Fuse bases**
- Fuse base/insulator with C1(capacitor)/inst.bracket with integrated EF 12kV 1VFM 113049R2CN
- Fuse base/insulator with C1(capacitor)/inst.bracket with integrated EF 24kV 1VFM 113055R2

- For more information please contact:

ABB High Voltage Switchgear Co. Ltd., Beijing
12 Jingyuan Street
Beijing Economic-Technological Development Area
Beijing 100076, P.R. China
Phone: +86 10 6781 8000
Fax: +86 10 6781 8001

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