F400
1 to 40.5 kV
Air-insulated switchboard

Withdrawable SF6 circuit-breaker

Make the most of your energy
Schneider Electric has developed protection, monitoring and control solutions specifically dedicated to Medium Voltage networks for over 40 years. F400 switchgear has been specifically designed on the basis of that extensive experience. It also incorporates some very new solutions, giving the best in terms of continuity of service and operators’ safety.

**High-performance breaking devices**

![High-performance breaking devices diagram](image)

**A comprehensive solution**

F400 switchgear is fully compatible with:
- PowerMeter and Circuit Monitor metering units.
- GemControl management system specifically dedicated to control & monitoring functions.
- Sepam multi-function protection relays
  - Protection.
  - Measurements and diagnosis.

F400 switchboards can thus be easily integrated into any monitoring and control system.
- Local & remote indication and operation.

**Enclosures able to withstand internal arcing**

- Internal Arc Classification: AFLR.
- Arc protection unit available, able to detect any arc flash in the installation and to trip the feeding breaker.

**Locating F400 in MV networks**

*F400, a truly professional solution! More than 50,000 items of switchgear installed world-wide.*
F400 is suitable for all electrical power distribution requirements from 1 to 40.5 kV

F400 metal-enclosed switchgear consists of withdrawable units designed for indoor installation. F400 is designed for the MV section of HV/MV substations and high-power MV/MV substations.

F400 offers you:
- Pre-engineered solutions that can be adapted to your specific requirements
- Significantly reduced maintenance
- Local support centres throughout the world.

F400 gives you the advantages of:
- Continuity of service for your networks
- Enhanced safety for your staff and operations
- Optimized investment throughout the life of your installation
- The possibility of incorporating your medium voltage switchboard in a monitoring and control system.

Applications

Power distribution
- Distribution substation
- Delivery substation
- Secondary transmission substation.

Industry
- Oil & gas
- Chemical industry
- Metallurgy
- Car industry
- Mining
- Cement plants
- Etc.

Infrastructures
- Airports
- Ports
- Water treatment
- Etc.
Continuity of service and complete safety

F400 is solidly based on extensive experience acquired throughout the world and provides your networks with a high level of dependability and safety.

F400 incorporates a host of innovative solutions designed around proven techniques: high-performance switchgear, digital protection, monitoring and control systems, enclosures capable of withstanding internal arcing.

From the design stage, F400 allows for three key user requirements:

Reliability
- Type testing was carried out for each performance level in the F400 range.
- The design, manufacturing and testing of F400 was carried out according to the ISO 9001:2008 quality standard.
- Three-dimensional computer modelling techniques were used to study electrical fields.

Simplicity
- A user interface which is easily understood by everybody.
- Interlocks and padlocks preventing operator errors.
- Sepam-type protection units enabling on-site information retrieval without any additional devices.
- Maintenance limited to simple, routine operating checks and cleaning and greasing every 5 to 10 years.
- Easy installation due to identical civil engineering dimensions for all cubicles.

Safety
- All operations are performed from the front (operation of rotary type voltage transformer and installation of medium voltage cable connections from the rear side).
- Racking in or out is only possible with the door closed.
- The power-on indicator is situated on the front of the functional unit.
- The earthing switch has making capacity.
- “Anti-reflex” handles are used for all operations.
- Internal arc withstand developed for all functional units.
F400 provides the most efficient means to control and protect a wide range of applications. Due to the devices it comprises, F400 can be easily integrated into a monitoring and control system.

Sepam protection relays

Sepam series 20, series 40, series 60 and series 80 digital protection relays take full advantage of Schneider Electric's experience in electrical network protection. Sepam series 20, series 40, series 60 and series 80 provide all the necessary functions:
- Effective protection of people and property
- Accurate measurements and detailed diagnosis
- Integrated equipment control
- Local or remote indication and operation.

Easy upgrading

Communication, digital I/O’s, analogue output and temperature acquisition systems can be added due to its modular design.

PowerMeter and Circuit Monitor metering units

The PowerLogic PowerMeter replaces a whole set of basic analogue meters. This cost-effective, high-performance meter provides a full range of accurate true-rms metering values. The PowerLogic series 3000/4000 Circuit Monitor is designed for critical power users and large energy consumers, to provide the information needed to confidently enter the evolving world of deregulation. It can be adapted to meter almost any time-of-use or real-time rate.

Monitoring and control

F400 can be easily:
- Integrated into an existing monitoring and control system: Sepam digital relay or PowerMeter/Circuit Monitor metering device through a standard protocol (Modbus)
- Integrated into a SMS PowerLogic electrical installation monitoring system.

Vamp arc flash protection

The arc protection unit detects an arc flash in an installation and trips the feeding breaker. Arc flash protection maximizes personnel safety and minimizes material damage to the installation in the most hazardous power system fault situations.

GemControl

Smart switchgear management: a basic unit for control, monitoring, measurement, processing and data transmission.
**General**

F400 switchboards incorporate Web technologies so that you can find out information about your electrical installation as easily as opening a Web page. All you need is a standard Web browser and a PC connected to your local area network.

**Simple choice**

A simple choice between WRM-1 and WRM-2 service levels allows you to easily order your Web Remote Monitoring F400 switchboard. A customized level is also available. Your Web Remote Monitoring F400 switchboard comes equipped with a Web server including Web pages dedicated to power equipment data.

**Easy commissioning**

Web Remote Monitoring equipment is delivered ready to connect and commission. A Quick Start guide, packaged with your switchboard, provides three easy-to-follow steps.

**Functionalities provided**

<table>
<thead>
<tr>
<th></th>
<th>WRM-1</th>
<th>WRM-2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Instantaneous readings</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Displays automatically updated meter values</td>
<td><img src="image1.png" alt="Image" /></td>
<td><img src="image2.png" alt="Image" /></td>
</tr>
<tr>
<td><strong>Circuit summary</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Displays the RMS current 3-phase average (A), the real power (kW), the power factor, the circuit-breaker status (if applicable), etc.</td>
<td><img src="image3.png" alt="Image" /></td>
<td><img src="image4.png" alt="Image" /></td>
</tr>
<tr>
<td><strong>Load current summary</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Displays the current RMS value for each phase (A), for all circuits</td>
<td><img src="image5.png" alt="Image" /></td>
<td><img src="image6.png" alt="Image" /></td>
</tr>
<tr>
<td><strong>Demand current summary</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Displays the average demand current value for each phase (A), for all circuits</td>
<td><img src="image7.png" alt="Image" /></td>
<td><img src="image8.png" alt="Image" /></td>
</tr>
<tr>
<td><strong>Power summary</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Displays the present demand (kW), the peak demand (kW) and the times and dates of the records</td>
<td><img src="image9.png" alt="Image" /></td>
<td><img src="image10.png" alt="Image" /></td>
</tr>
<tr>
<td><strong>Energy summary</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Displays the energy (kWh), the reactive energy (kvarh), and the times and dates of the records</td>
<td><img src="image11.png" alt="Image" /></td>
<td><img src="image12.png" alt="Image" /></td>
</tr>
<tr>
<td><strong>Instantaneous readings, all devices</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Basic historical data logging, energy and trending</td>
<td><img src="image13.png" alt="Image" /></td>
<td><img src="image14.png" alt="Image" /></td>
</tr>
<tr>
<td>Displays automatically updated meter values for all the communicating devices in the equipment</td>
<td><img src="image15.png" alt="Image" /></td>
<td><img src="image16.png" alt="Image" /></td>
</tr>
<tr>
<td><strong>Log displays</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Displays data as time curves, or tables</td>
<td><img src="image17.png" alt="Image" /></td>
<td><img src="image18.png" alt="Image" /></td>
</tr>
<tr>
<td><strong>Export of data tables</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Allows data tables to be exported in a standard Windows format</td>
<td><img src="image19.png" alt="Image" /></td>
<td><img src="image20.png" alt="Image" /></td>
</tr>
</tbody>
</table>
General

F400, a comprehensive solution
(cont.)

Schneider Electric Services, by your side throughout the life of your installation

Specifying
We help you to define your solutions: selection guide, technical assistance, advice, etc.

Implementing
We oversee the completion and commissioning of your installation: design, cost optimization, guaranteed performance and dependability, commissioning tests, etc.

Operating
We help run your daily operations in real time: maintenance contract, technical assistance, supply of replacement parts, corrective and preventive maintenance, operation and maintenance training, etc.

Modernizing
We can bring the performance of your installation up to date: installation audit, switchgear diagnosis, adaptation and modification, end-of-life recycling, etc.

Strict and systematic checks
During manufacture, each F400 functional unit is subject to systematic routine testing to check the quality and conformity of the following features:

- Sealing test
- Filling pressure test
- Measurement of opening and closing speeds
- Measurement of operating torque
- Dielectric test
- Testing of safety systems and interlocks
- Testing of low voltage components
- Conformity with drawings and diagrams.

The results obtained are recorded and approved by the quality control department on each device’s test certificate. This therefore guarantees product traceability.

- Checking SF6 switchgear
  - sealing test
  - filling pressure test.

Examples of services provided

Warranty extension
A warranty extension is proposed if your installation is checked by us before being commissioned.

Circuit-breaker diagnosis
Throughout the life of the equipment, it is possible to carry out routine measurement of its characteristics in order to optimize maintenance. This service may be part of an overall installation maintenance contract.

End-of-life recycling
Schneider Electric Services has an operational subsidiary allowing you to recycle your medium voltage switchgear.
Certified quality: ISO 9001

A major asset
In each of its units, Schneider Electric has a functional organization whose main role is to check quality and monitor compliance with standards. This procedure is:
- Uniform throughout all departments
- Recognized by many customers and approved organizations.

But above all, it is its strict application that has allowed us to obtain the recognition of an independent organization: The French Quality Assurance Association (AFAQ).

The quality system for the design and manufacture of F400 is certified as in conformity with the requirements of the ISO 9001:2008 quality assurance standard.

Protected environment
As part of the group’s environmental policy, Schneider Electric Services has an operational subsidiary to recover your medium voltage switchgear and thus eliminate any discharge into the atmosphere.

To help you protect the environment and to relieve you of any concerns regarding storage or dismantling, Schneider Electric Services offers to take back your equipment at the end of its life.

F400 has been designed with environmental protection in mind:
- The materials used, insulators and conductors are identified, easily separable and recyclable
- The SF6 can be recovered at the end of the equipment’s life and reused after treatment
- Production sites are certified compliant with ISO 14001.
A few references

Energy and Infrastructures

- **Electrical energy**
  - Sonelgas: Algeria
  - SEC: KSA
  - OETC: Oman
  - NIPP: Nigeria
  - JEPCO: Jordan
  - PowerCo: New Zealand
  - Wind farm: Turkey

- **Oil & Gas**
  - Petro Amazonas: Ecuador
  - Sonatrach: Algeria
  - QatarPetroleum: Qatar
  - Exxon Mobil: Netherland
  - OMSK refinery: Russia
  - NURLAT refinery: Russia

- **Infrastructures**
  - Metro of Mexico: Mexico
  - Industrial Zones: Turkey

- **Airports**
  - Girona Airport: Spain

**Industry**

- **Mining, Minerals and Metals**
  - Rio Tinto: Australia
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<td>16</td>
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<td>17</td>
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</tbody>
</table>
Composition of an F400 switchboard

- F400 switchboards are made up of several interconnected functional units.
- Power connections are made between functional units within a switchboard via a single busbar.
- The electrical continuity of all metal frames is provided by the connection of each functional unit’s earthing busbar to the switchboard’s main earthing circuit.
- Low voltage wiring trays are provided in the switchboard above the LV control cabinets.
- LV control cables can enter the switchboard through the top and bottom of the cubicle.
Description of a functional unit
A functional unit comprises all the devices in the main and auxiliary circuit which together provide a protection function. Each functional unit contains all the components which are required to perform this function:
- The cubicle
- The protection, monitoring and control system
- The withdrawable part.

The cubicle
The cubicle is of LSC2B (Loss of Service Continuity Category) type as defined by IEC standard 62271-200, in other words, the medium voltage parts are compartmented using metal partitions (PM class) which are connected to earth and which separate:
- The withdrawable part (circuit-breaker, disconnector unit or earthing unit)
- The busbars
- Medium voltage connections, earthing switch, current and voltage transformers as required.

The F400 cubicle is available in 2 versions:
- A standard version
- An internal arcing version with IAC-AFLR classification.

The F400 is available with functional and/or DIN current transformers.

The low voltage auxiliaries and monitoring unit are in a low voltage control cabinet separated from the medium voltage section.

The basic functional units provided are:
- Incomer or feeder with circuit-breaker AD6
- Feeder with fuses FD6
- Direct incomer RD6
- Direct line incomer AL6
- Bussectioning CL6 - GL6
- Busbar metering (with earthing) TT6
- Busbar metering (with fuses) PT6
- Current and voltage metering BM6

**LSC2B**
(Loss of Service Continuity IEC 62271-200): this category defines the possibility of keeping other compartments energised (in service) when opening a main circuit compartment.

**IAC (internal arc classification)**
The different sides of metal-enclosed switchgear can have different classes of accessibility. The following codification is used to identify these panels (in accordance with IEC 62271-200).
- A: accessibility restricted to authorized personnel
- F: access to the front panel
- L: access to the side panels
- R: access to the rear panel

F400 cubicle with IAC-AFLR internal arcing
Technical characteristics of the F400 range

The values below are given for normal operating conditions as defined in IEC 62271-200 and IEC 62271-1.

<table>
<thead>
<tr>
<th>Rated voltage</th>
<th>$U_r$ (kV)</th>
<th>36</th>
<th>40.5 (2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated frequency</td>
<td>$f_r$ (Hz)</td>
<td>50/60</td>
<td>50/60</td>
</tr>
<tr>
<td>Rated insulation level</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power frequency withstand voltage</td>
<td>$U_d$ (kV)</td>
<td>70</td>
<td>85 (4)</td>
</tr>
<tr>
<td>Lightning impulse withstand voltage</td>
<td>$U_p$ (kV peak)</td>
<td>170</td>
<td>185</td>
</tr>
</tbody>
</table>

**Nominal current and maximum rated short-time withstand current**

| Functional unit with circuit-breaker (1) | | |
| Rated short-time withstand current $I_{th}$ max | $I_{th}/I_k$ (kA 3 s) | 25 (3) | 25 | 31.5 | 31.5 |
| | | 40 | – | |
| Rated normal current | $I_{n}$ max busbars | 1250 | 1250 |
| | $I_{n}$ CB | 2500 | – |
| Functional unit with fuse (FD6 cubicle) | | |
| Rated current | $I_{n}$ max | 20 | – |

**Internal arc withstand**

| | (kA/1 s) | 25 | 25 |
| | (kA/0.5 s) | 31.5 | 31.5 |
| | (kA/0.15 s) | 40 | – |

**Protection degree**

| | Enclosure | IP3X | IP3X |
| | LV control cabinet | IP4X | IP4X |

(1) For functional units equipped with circuit-breakers, the breaking capacity is equal to the rated short-time withstand current.
(2) For F400 version with functional current transformers.
(3) Only 50 Hz for SF1.
(4) $U_d$ 95 kV 50 Hz 1 min possible.
Operating conditions

Normal operating conditions in accordance with IEC 62271-1 for indoor switchgear

- Ambient air temperature:
  - Less than or equal to 40°C
  - Less than or equal to 35°C on average over 24 hours
  - Greater than or equal to –5°C.
- Altitude:
  - Less than or equal to 1000 m
  - Above 1000 m, a derating coefficient is applied (please consult us).
- Atmosphere:
  - Little or no dust, smoke, salt, corrosive or flammable gases or vapours (clean industrial air).
- Humidity:
  - Average relative humidity over 24 hours ≤ 95%
  - Average relative humidity over 1 month ≤ 90%
  - Average vapour pressure over 24 hours ≤ 2.2 kPa
  - Average vapour pressure over 1 month ≤ 1.8 kPa.

Specific operating conditions (consult us)
F400 has been developed to meet the following specific conditions:
- Temperature (possible derating)
- Altitudes (possible derating).

Storage conditions
In order to retain all the functional unit’s qualities when stored for prolonged periods, we recommend that the equipment is stored in its original packaging, in dry conditions sheltered from the sun and rain at a temperature of between –25°C and +55°C.

Standards
The F400 range meets the following international standards:
- IEC 62271-1: clauses common to high-voltage switchgear
- IEC 62271-200: metal-enclosed switchgear for alternating current at rated voltages between 1 and 52 kV
- IEC 62271-100: high-voltage alternating current circuit-breakers
- IEC 62271-102: alternating current disconnectors and earthing switches
- IEC 60255: measurement relay and protection unit (Sepam)
- IEC 60044-1: current transformers
- IEC 60044-2: voltage transformers
- IEC 60044-8: electronic current transformers (for LPCT).

GOST certification
- The F400 is in accordance with the GOST certification.
Annex A of IEC 62271-200 defines the “method for testing the metal-enclosed switchgear under conditions of arcing due to an internal fault”. The F400 cubicle conforms to this standard and has successfully passed all the type tests specified by this standard. The F400 cubicle is therefore designed to provide the highest possible degree of protection for operators in the event of an internal fault.

F400 internal arc
(in conformance with IEC 62271-200)
The F400 internal arc protection is AFLR type in order to protect operators when they go around the cubicle. The F400 switchboard is installed in a room with a minimum height of 4 m (for installation in a room under 4 m, please consult us). F400 is designed to eliminate the effects of internal arcing safely, by:
- Locating metal flaps above the enclosure to limit overpressure in the compartments in the event of an internal fault
- Using non-flammable materials for the cubicle.
- F400 can be fitted with an optional system to detect internal arcing and disconnect the power supply in order to limit the duration of the fault current to less than 140 ms.

Switchboard operations
The switchboards are installed, operated and maintained from the front panel. Certain installation and maintenance operations are performed from the rear of the cubicle:
- Installation of medium voltage cables
- Operation of voltage transformers.

Dependable mechanical control devices
The switchboards are operated from the front panel. The user is guided through icon-diagrams on each front panel, making it very easy to understand the operating sequence and the device’s status. Interlocks and padlocks prevent operator errors. Several additional levels of security also protect operators:
- Racking in and out is only possible with the door closed.
- The very extensive set of mechanical and electrical interlocks prevent operator error. These can be supplemented by keylocks or padlocks according to specific operating procedures. Each selector can be fitted with one to three padlocks.
- All operations are carried out from the front panel.
- The voltage present indicator is located on the front panel of the functional unit, in the immediate vicinity of the earthing switch control.

Options
- Circuit-breaker disabling during extraction. This function enables the circuit-breaker control springs to be disabled during the extraction process.
- Rack-in inhibition. This function prevents the withdrawable part from being racked in.

PE40326
Earthing switch control
4-position selector
Open pushbutton
Circuit-breaker control
Voltage indicators (VPIS)
Earthing switch position indicator
Keylock
Rack-in inhibition
Rack-in/out
Rack-in/out indicator
Extraction
Test
Rack-in
In operation

Annex A of IEC 62271-200 defines the “method for testing the metal-enclosed switchgear under conditions of arcing due to an internal fault”. The F400 cubicle conforms to this standard and has successfully passed all the type tests specified by this standard. The F400 cubicle is therefore designed to provide the highest possible degree of protection for operators in the event of an internal fault.

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</tr>
<tr>
<td>FD6     Feeder with fuses</td>
<td>23</td>
</tr>
<tr>
<td>RD6     Direct incomer</td>
<td>24</td>
</tr>
<tr>
<td>AL6     Direct line incomer</td>
<td>25</td>
</tr>
<tr>
<td>CL6 - GL6 Bus sectioning</td>
<td>26</td>
</tr>
<tr>
<td>TT6     Busbar metering (with earthing)</td>
<td>27</td>
</tr>
<tr>
<td>PT6     Busbar metering (with fuses)</td>
<td>28</td>
</tr>
<tr>
<td>BM6     Current and voltage metering</td>
<td>29</td>
</tr>
</tbody>
</table>
The F400 range comprises several functional applications. The table below can be used to link requirements to functional units and gives information on the general composition of each unit.

**Selection:**
You want to supply power to a transformer. 
You have selected a transformer feeder/breaker. 
The corresponding functional unit will therefore be a TF-B, comprising an AD cubicle fitted with a withdrawable circuit-breaker and a transformer application Sepam.

<table>
<thead>
<tr>
<th>Function</th>
<th>Incomer (1)</th>
<th>Feeder</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Line</td>
<td>Transformer</td>
</tr>
<tr>
<td></td>
<td>Generator</td>
<td>Line</td>
</tr>
<tr>
<td>Functional unit</td>
<td>LI-B</td>
<td>TI-B</td>
</tr>
<tr>
<td></td>
<td>GI-B</td>
<td>LF-B</td>
</tr>
<tr>
<td></td>
<td>TF-B</td>
<td>MF-B</td>
</tr>
<tr>
<td></td>
<td>CB-B</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cubicle</th>
<th>AD6</th>
<th>AD6</th>
<th>AD6</th>
<th>AD6</th>
<th>AD6</th>
<th>AD6</th>
<th>AD6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Device</td>
<td>Circuit-breaker</td>
<td>Circuit-breaker</td>
<td>Circuit-breaker</td>
<td>Circuit-breaker</td>
<td>Circuit-breaker</td>
<td>Circuit-breaker</td>
<td>Circuit-breaker</td>
</tr>
<tr>
<td>Sepam protection relays</td>
<td>Substation</td>
<td>Transformer</td>
<td>Generator</td>
<td>Substation</td>
<td>Transformer</td>
<td>Motor</td>
<td>Capacitor</td>
</tr>
</tbody>
</table>

**F400 single-line diagrams**

(1) The direct incomer is implemented using a specific cubicle: RD6 (same as AD6 without circuit-breaker) or AL6 (only cable connection).
## Choice of functional units (cont.)

### Cubicle description

<table>
<thead>
<tr>
<th>Bus sectioning</th>
<th>Busbar metering</th>
</tr>
</thead>
<tbody>
<tr>
<td>Switchboard</td>
<td>Substation</td>
</tr>
<tr>
<td>BS-B</td>
<td>SS-B</td>
</tr>
<tr>
<td>BB-V</td>
<td>BB-V</td>
</tr>
<tr>
<td>BB-CV</td>
<td></td>
</tr>
</tbody>
</table>

### CL6 and GL6
- Circuit-breaker

### AD6
- Circuit-breaker

### TT6 (with earthing)
- Busbar

### PT6 (with fuses)
- Busbar

### BM6
- Busbar

![Cubicle diagram](image-url)
Cubicle description

**AD6**
Incomer or feeder

**AD6 type 1**
(version with functional current transformers)

**AD6 type 2**
(version with DIN current transformers)

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**Characteristics**

<table>
<thead>
<tr>
<th></th>
<th>AD6 type 1</th>
<th>AD6 type 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated voltage (kV)</td>
<td>36</td>
<td>40.5</td>
</tr>
<tr>
<td>Rated insulation level (kV 50 Hz - 1 min)</td>
<td>70</td>
<td>85 (4)</td>
</tr>
<tr>
<td></td>
<td>170</td>
<td>165</td>
</tr>
<tr>
<td>Rated current (A)</td>
<td>630</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1250</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2500</td>
<td></td>
</tr>
<tr>
<td>Breaking capacity (kA)</td>
<td>25 / 31.5 / 40</td>
<td>25 / 31.5</td>
</tr>
<tr>
<td>Rated short-time withstand current (kA 3 s)</td>
<td>25 / 31.5 / 40</td>
<td>25 / 31.5</td>
</tr>
<tr>
<td>Dimensions (mm)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Width</td>
<td>900 / 1100</td>
<td>1100</td>
</tr>
<tr>
<td>Height</td>
<td>2255 (1) / 2335</td>
<td>2255 (1)</td>
</tr>
<tr>
<td>Depth</td>
<td>2670 / 3020 / 3220 (3)</td>
<td>3020 / 3220 (3)</td>
</tr>
<tr>
<td>Depth internal arc</td>
<td>3074 / 3274 (3)</td>
<td></td>
</tr>
<tr>
<td>Approximate weight (kg)</td>
<td>1467 / 1929</td>
<td>1929</td>
</tr>
</tbody>
</table>

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(1) Without voltage transformers
(2) Fully equipped cubicle
(3) With DIN current transformers
(4) Ud 95 kV 50 Hz 1 min possible.

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**MV components**

1. Busbars for cubicle interconnection
2. Withdrawable part (SF6 circuit-breaker)
3. MV connections by cables accessible from the rear
4. Earthing switch
5. Current transformers
6. Voltage transformers (fixed or withdrawable with fuses)

**LV control cabinet**

7. Low voltage auxiliaries and protection, monitoring and control unit are in one control cabinet, separated from the medium voltage part.