Possibilities of application

Characteristics

NXAIR C versions

- Circuit-breaker panel
- Disconnecting panel
- Bus sectionalizer – circuit-breaker panel
- Bus sectionalizer – bus riser panel
- Switch-disconnector panel
- Metering panel
- Busbar connection panel

Features
Safety
Technology
Room planning
Standards
Possibilities of application

Requirements and solutions for the industrial sectors

General requirements of the applications

- Reliable power supply
- High number of operating cycles
- Maximum availability
- Space-saving panels
- Protection of small distribution transformers
- Setup of billing metering systems
- Protection of the switchgear room from the effects of an internal arc
- Fire protection

Solution with NXAIR C

- Through SION-type vacuum circuit-breakers with up to 30,000 operating cycles
- No handling of insulating gas; no pressure monitoring
- Factory-assembled, type-tested switchgear
- Compact design enabling constructional efficiency
- Short-circuit protection via HV HRC fuses with switch-disconnector/fuse combination
- Availability of metering panel
- Horizontal pressure relief ducts for evacuation of the hot gases out of the switchgear room (building)
- Shortening the effective arc duration through optional light-sensitive or pressure-sensitive sensors
- Minimum use of insulation material
Characteristics

Features

Compact design
Thanks to the ingenious design – with a panel depth starting from 1025 mm and a panel height starting from 2100 mm and leading to a required ceiling height of only ≥ 2200 mm –, NXAIR C enables constructional efficiency and the realization of alternative substation concepts. Thus:

- Existing switchgear rooms and substation rooms can be used effectively
- New constructions cost little
- Costly city-area space is saved.

Peace of mind
NXAIR C, from the platform concept of NXAIR family, has concrete advantages for smooth operation, exemplary availability, and optimum safety.

- No handling of insulating gas; no pressure monitoring
- As insulating medium, air is always available
- Factory-assembled, type-tested switchgear according to IEC 62271-200
- Platform concept with centrally controlled development
- Use of standardized components available worldwide
- More than 510,000 air-insulated switchgear panels of Siemens in operation worldwide
- Use of maintenance-free vacuum circuit-breakers or switch-disconnectors
- Type testing of the switching devices and the make-proof earthing switch in the panel
- Flexibility regarding the low-voltage equipment via removable low-voltage compartment and plug-in wires
- Quality assurance in accordance with DIN EN ISO 9001.

Increased productivity
A high level of operational reliability through:

- Partition class PM (PI for switch-disconnector)
- Use of standardized instrument transformers
- Cable testing without isolating the busbar
- Use of maintenance-free switching devices
- Control cables in metallic wiring ducts
- Easy access to all panel components.

Digitally enhanced
The use of digitally enabled secondary systems and combined protection/control devices make NXAIR C able to:

- Connect to on-site substation control services
- Connect to cloud-based remote control services without boundaries, thanks to the open protocol OPC UA
- Easily integrate in process control systems
- Flexibly adapt to new system conditions and thus cost-efficient operation.

Service life
Under normal operating conditions, the expected service life of air-insulated switchgear NXAIR C is at least 30 years. The service life is limited by the maximum number of operating cycles of the switching devices installed:

- For circuit-breakers according to the endurance class defined in IEC 62271-100
- For earthing switches according to the endurance class defined in IEC 62271-102
- For switch-disconnectors according to the endurance class defined in IEC 62271-105 for transformer switches or IEC 62271-103 for cable switches.

Recycling
The switchgear can be recycled in ecological manner in compliance with the existing legislation.
Switchgear type NXAIR C is approved with internal arc classification IAC A FLR, loss of service continuity category LSC 2A, and partition class PM. This makes it a suitable product for high requirements regarding personal safety.

Personal safety
- All operations with closed high-voltage door
- Safe-to-touch metallic enclosure, earthed shutters and partitions
- Internal arc classified switchgear according to IAC A FLR; front, lateral and rear accessibility for all short-circuit currents and an arc duration of 1 s
- Unambiguous position indicators and control elements on the high-voltage door
- Optional capacitive voltage detecting system to verify safe isolation from supply
- Comfortable cable access from front, eliminating the need for additional surveillance and ensuring effective supervision during site activities

- Standard degree of protection IP4XD
- Logical mechanical interlocking system preventing maloperation
- Make-proof earthing type-tested inside the switchgear.

Reliability
- Type- and routine-tested as per IEC 62271-200
- Standardized production processes
- Quality assurance in accordance with DIN EN ISO 9001
- More than 510,000 air-insulated switchgear panels of Siemens in operation worldwide for many years.

* Partition class PI for switch-disconnector
Characteristics

General

- Air as insulating medium; always available and absolutely neutral to the environment
- Make-proof earthing switch
- Maintenance-free circuit-breakers
- Wall-standing or free-standing arrangement
- Comfortable cable connection access from front
- Integrated mimic diagram on high-voltage door with display of the respective a) switch positions for circuit-breaker and switch-disconnector b) service and disconnected positions of the withdrawable parts c) position of the earthing switch
- Unambiguous assignment of actuating openings and control elements to the corresponding position indicators
- All switching operations always with closed high-voltage door
- Ergonomically favorable height for all control and indication elements
- Option: Flexible pressure relief duct systems.

Interlocks

- According to IEC 62271-200
- Logical mechanical interlocks prevent maloperation
- The operation of the feeder earthing switch is prevented unless the switching device is in the disconnected or removed position
- Racking the switching device in or out is prevented unless it is in the OPEN position
- Racking the switching device in is prevented unless the earthing switch is in the OPEN position
- Operation of the switching device is prevented unless it is either in service position, in interlocked disconnected position, or in removed position
- Beyond the specifications of the standards:
  - Switching devices can be interchanged only if the ratings are the same; this is verified with a coding system
  - Interlocking between the high-voltage door and the position of the withdrawable part
  - Interlocking between the high-voltage door and the position of the earthing switch
  - Option: Electromagnetic interlocks and padlocks.

Vacuum circuit-breaker

- SION vacuum circuit-breakers type 3AES for different switching duties
- According to IEC 62271-100
- Spring-operated/stored-energy mechanism with both motor or manual charging possibility
- Racking the circuit-breaker with manual operating mechanism, optionally with motor operating mechanism
- Truck-type or withdrawable circuit-breaker
- 64-pole low-voltage plug connector between circuit-breaker and fixed part of the panel
- Maintenance-free under normal ambient conditions according to IEC 62271-1 and for the max. permissible number of operating cycles
- No relubrication or readjustment
- Up to 10,000 operating cycles
- Option: Up to 30,000 operating cycles
- Vacuum-tight for life.

Switch-disconnector

- According to IEC 62271-105 for transformer switch and IEC 62271-103 for cable switch
- Making capacity suitable for transformers and cables
- Short-circuit protection via HV HRC fuses for switch-disconnector/fuse combination
- Maintenance-free under normal ambient and operating conditions up to the max. permissible number of operating cycles
- Low operating torques.

Instrument transformers

- Block-type current transformers based on the inductive principle according to IEC 61869-2
  - Standardized, available worldwide
  - Cast-resin insulated
  - Certifiable
  - Secondary multiratio possible
  - Option: With capacitive layer for capacitive voltage detecting systems
- Voltage transformers based on the inductive principle according to IEC 61869-3
  - Cast-resin insulated
  - Single-pole
  - Option: With earth-fault winding
  - Option: Double-pole.
Characteristics

Technology

Sensors
To prevent the effects of the thermal phase and to significantly reduce the gas discharge by shortening the effective arc duration, NXAIR C is optionally equipped with:

- **Option 1** – Light sensitive sensors for immediate detection of an internal arc, in combination with overcurrent sensing
- **Option 2** – Pressure sensors for immediate detection of an internal arc.

Low-voltage compartment
- Customary protection, measuring and control equipment
- **Option**: Numerical multifunction protection relay with integrated protection, control, communication, operating and monitoring functions
- Can be integrated in process control systems
- Partitioned safe-to-touch off the high-voltage part
- **Option**: Capacitive voltage detecting system for the feeder or for the busbar, also with integrated test sockets acc. to LR specification in IEC 61243-5, to be used for phase comparison and phase sequence test
- **Option**: Higher version of low-voltage compartment
- Low-voltage compartment removable, plug-in bus wires from panel to panel.

Color of the panel front
RAL 7035 / light gray.

Modular design
Panel replacement and extension possible without modification of existing panels. In the case of extensions, just by replacing the end walls and joining further panels.
12 kV pressure relief inside switchgear room
24 kV pressure relief inside switchgear room
12 kV pressure relief outside switchgear room
24 kV pressure relief outside switchgear room

Switchgear installation
- For single-busbar applications:
  - Wall-standing arrangement
  - Free-standing arrangement.

Room and door dimensions
See dimension drawings above.

Weights
12 kV panels: 600 mm: approx. 475 kg
12 kV panels: 800 mm: approx. 560 kg
24 kV panels: 800 mm: approx. 680 kg

1 Width of end-wall
2 1250 mm including LV compartment
3 Aisle for operating in front of the switchgear
4 Aisle for panel replacement
Overview of applicable standards

The switchgear complies with the relevant standards and specifications applicable at the time of type tests. The NXAIR C switchgear is suitable for application in indoor installations under normal operating conditions as defined in the standard IEC 62271-1.

The NXAIR C switchgear is suitable for application in indoor installations under normal operating conditions as defined in the standard IEC 62271-1.

**Dielectric strength**

- The dielectric strength is verified by testing the switchgear with rated values of short-duration power-frequency withstand voltage according to IEC 62271-1 (see table "Dielectric strength").
- The rated values are referred to sea level and to normal atmospheric conditions (air pressure 1013 hPa, temperature 20 °C, absolute humidity 11 g/m³ according to IEC 60071).

For low-voltage auxiliary and control equipment, no special precautions need to be taken if the altitude is lower than 2000 m. For higher altitudes, refer to the standard IEC 60664-1.

The NXAIR C switchgear is suitable for application in indoor installations under normal operating conditions as defined in the standard IEC 62271-1.

**Degree of protection**

NXAIR C fulfills the following degrees of protection:

| Degree of protection for the enclosure | IP4X |
| Degree of protection for the partitions | IP2X |
| Degree of protection against mechanical impacts from outside | IK07 |

according to the following standards:

<table>
<thead>
<tr>
<th>Standard</th>
<th>IEC standard</th>
<th>VDE standard</th>
<th>EN standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Switchgear NXAIR</td>
<td>IEC 62271-1</td>
<td>VDE 0671-1</td>
<td>EN 62271-1</td>
</tr>
<tr>
<td>Devices</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Circuit-breakers</td>
<td>IEC 62271-200</td>
<td>VDE 0671-200</td>
<td>EN 62271-200</td>
</tr>
<tr>
<td>Disconnectors and earthing switches</td>
<td>IEC 62271-100</td>
<td>VDE 0671-100</td>
<td>EN 62271-100</td>
</tr>
<tr>
<td>Switch-disconnectors</td>
<td>IEC 62271-102</td>
<td>VDE 0671-102</td>
<td>EN 62271-102</td>
</tr>
<tr>
<td>Switch-disconnector/fuse combination</td>
<td>IEC 62271-103</td>
<td>VDE 0671-103</td>
<td>EN 62271-103</td>
</tr>
<tr>
<td>HV HRC fuses</td>
<td>IEC 60282-1-K1</td>
<td>VDE 0671-104</td>
<td>EN 62271-104</td>
</tr>
<tr>
<td>Voltage detecting systems</td>
<td>IEC 62262</td>
<td>VDE 0671-105</td>
<td>EN 62271-105</td>
</tr>
<tr>
<td>Degree of protection</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IP-code</td>
<td>IEC 60529</td>
<td>VDE 0470-1</td>
<td>EN 60529</td>
</tr>
<tr>
<td>IK-code</td>
<td>IEC 62262</td>
<td>VDE 0470-100</td>
<td>EN 50102</td>
</tr>
<tr>
<td>Insulation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>–</td>
<td>IEC 60071</td>
<td>VDE 0111</td>
<td>EN 60071</td>
</tr>
<tr>
<td>Instrument transformers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>–</td>
<td>IEC 61869-1</td>
<td>VDE 0414-9-1</td>
<td>EN 61869-1</td>
</tr>
<tr>
<td>Current transformers</td>
<td>IEC 61869-2</td>
<td>VDE 0414-9-2</td>
<td>EN 61869-2</td>
</tr>
<tr>
<td>Voltage transformers</td>
<td>IEC 61869-3</td>
<td>VDE 0414-9-3</td>
<td>EN 61869-3</td>
</tr>
<tr>
<td>Installation, erection</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>–</td>
<td>IEC 61936-1</td>
<td>VDE 0101-1</td>
<td>EN 61936-1</td>
</tr>
</tbody>
</table>

**Altitude derating**

As the site altitude increases, the density and dielectric strength (insulating property) of air decreases. This reduction is permitted up to a site altitude of 1000 m according to IEC and VDE.

For site altitudes above 1000 m (above sea level), special service conditions shall be taken into account and a higher insulation withstand level must be selected by multiplying the rated insulation levels for 0 to 1000 m by the altitude correction factor $K_a$ (see figure on the right).

**Table – Dielectric strength**

<table>
<thead>
<tr>
<th>Rated voltage (r.m.s. value)</th>
<th>7.2</th>
<th>12</th>
<th>15</th>
<th>17.5</th>
<th>24</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated short-duration power-frequency withstand voltage (r.m.s. value)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>– Between phases and to earth</td>
<td>20</td>
<td>28</td>
<td>36</td>
<td>38</td>
<td>50</td>
</tr>
<tr>
<td>– Across isolating distances</td>
<td>23</td>
<td>32</td>
<td>40</td>
<td>45</td>
<td>60</td>
</tr>
<tr>
<td>Rated lightning impulse withstand voltage (peak value)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>– Between phases and to earth</td>
<td>60</td>
<td>75</td>
<td>95</td>
<td>95</td>
<td>125</td>
</tr>
<tr>
<td>– Across isolating distances</td>
<td>70</td>
<td>85</td>
<td>105</td>
<td>110</td>
<td>145</td>
</tr>
</tbody>
</table>

**Example:**

- Site altitude = 3000 m above sea level
- Rated voltage of switchgear = 17.5 kV
- Rated lightning impulse withstand voltage = 95 kV
- Corrected rated lightning impulse withstand voltage shall be $= 95 \text{ kV} \times 1.28 = 122 \text{ kV}$

**Result:**

Instead of a 17.5 kV rated voltage switchgear, a 24 kV rated voltage switchgear with a rated lightning impulse withstand voltage of 125 kV is to be selected.

1) Secondary devices (e.g. protection devices, meters, measuring transducers, etc.) must be suitable for the given operating conditions.
2) Heater in the low-voltage compartment and operating mechanism box of the circuit-breaker
**Circuit-breaker panel**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>7.2</th>
<th>12</th>
<th>24</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated voltage (U_r)</td>
<td>kV</td>
<td>7.2</td>
<td>12</td>
</tr>
<tr>
<td>Frequency</td>
<td>Hz</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>Rated normal current of feeders (I_r)</td>
<td>A</td>
<td>630, 1250, 2000</td>
<td>630, 1250, 2000</td>
</tr>
<tr>
<td>Rated short-time withstand current (I_{s1}) for rated duration of short circuit (t_k) = 1 s and 3 s</td>
<td>kA</td>
<td>16</td>
<td>16</td>
</tr>
<tr>
<td>Rated peak withstand current (I_{p})</td>
<td>kA</td>
<td>20, 25</td>
<td>20, 25</td>
</tr>
<tr>
<td>Rated short-circuit making current (I_{ma})</td>
<td>kA</td>
<td>40, 50, 63</td>
<td>40, 50, 63</td>
</tr>
<tr>
<td>Rated short-circuit breaking current (I_{sc})</td>
<td>kA</td>
<td>16, 20, 25</td>
<td>16, 20, 25</td>
</tr>
<tr>
<td>Rated lightning impulse withstand voltage (U_p)</td>
<td>kV</td>
<td>60</td>
<td>75</td>
</tr>
<tr>
<td>Rated short-duration power-frequency withstand voltage</td>
<td>kV</td>
<td>20</td>
<td>28</td>
</tr>
<tr>
<td>Rated duration of short circuit (t_k)</td>
<td>1 s, 3 s</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resistance to internal arc faults</td>
<td>IAC A FLR, 1 s</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Electrical endurance of vacuum circuit-breakers**
- at rated normal current  
- at rated short-circuit breaking current  
- endurance classes acc. to IEC 62271-100  
   - 10,000 operating cycles  
   - 30 to 70 breaking operations based on the breaking current  
   - M2, E2, C2

**Endurance classes acc. to IEC 62271-102**
- isolating distance (withdrawable part)  
- earthing switch  
   - M0  
   - M0, E1
NXAIR C versions
Circuit-breaker panel

Overview
- Circuit-breaker panel
- Disconnecting panel
- Bus sectionalizer - circuit-breaker panel
- Bus sectionalizer - bus riser panel
- Switch-disconnector panel
- Metering panel
- Busbar connection panel

Technical data
Configuration

Busbar compartment

Switching-device compartment

Cable / instrument transformer compartment

Legend configuration
- Make-proof busbar earthing switch
- Capacitive voltage detecting system
- Circuit-breaker withdrawable unit
- Reserve unit prepared for vacuum circuit-breaker
- Cable connection
- Voltage transformer
- Capacitive voltage detecting system
- Current transformer
- Make-proof earthing switch
- Surge arrester
- Zero-sequence current transformer
Technical data

### Disconnecting panel

<table>
<thead>
<tr>
<th>Specification</th>
<th>7.2</th>
<th>12</th>
<th>24</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated voltage $U_r$</td>
<td>kV</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frequency</td>
<td>Hz</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rated normal current of feeders $I_r$</td>
<td>A</td>
<td>630, 1250, 2000</td>
<td>630, 1250, 2000</td>
</tr>
<tr>
<td>Rated short-time withstand current $I_{\text{sh}}$ for rated duration of short circuit $t_k = 1 \text{ s and } 3 \text{ s}$</td>
<td>kA</td>
<td>16, 20, 25</td>
<td>16, 20, 25</td>
</tr>
<tr>
<td>Rated peak withstand current $I_p$</td>
<td>kA</td>
<td>40, 50, 63</td>
<td>40, 50, 63</td>
</tr>
<tr>
<td>Rated short-circuit making current $I_{\text{ma}}$</td>
<td>kA</td>
<td>40, 50, 63</td>
<td>40, 50, 63</td>
</tr>
<tr>
<td>Rated short-circuit breaking current $I_{\text{sc}}$</td>
<td>kA</td>
<td>16, 20, 25</td>
<td>16, 20, 25</td>
</tr>
<tr>
<td>Rated lightning impulse withstand voltage $U_{\text{lp}}$</td>
<td>kV</td>
<td>60</td>
<td>75</td>
</tr>
<tr>
<td>Rated short-duration power-frequency withstand voltage</td>
<td>kV</td>
<td>20</td>
<td>28</td>
</tr>
<tr>
<td>Rated duration of short circuit $t_k$</td>
<td>s</td>
<td>1 s, 3 s</td>
<td></td>
</tr>
<tr>
<td>Resistance to internal arc faults</td>
<td>IAC A FLR, 1 s</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Endurance classes acc. to IEC 62271-102</td>
<td></td>
<td>M0</td>
<td></td>
</tr>
<tr>
<td>– isolating distance (drawable part)</td>
<td></td>
<td>M0, E1</td>
<td></td>
</tr>
<tr>
<td>– earthing switch</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Overview**
- Circuit-breaker panel
- Disconnecting panel
- Bus sectionalizer - circuit-breaker panel
- Bus sectionalizer - bus riser panel
- Switch-disconnector panel
- Metering panel
- Busbar connection panel

**Technical data**
- Wiring diagram

**Legend configuration**
- Make-proof busbar earthing switch
- Capacitive voltage detecting system
- Disconnecting unit
- Reserve unit prepared for vacuum circuit-breaker
- Cable connection
- Voltage transformer
- Capacitive voltage detecting system
- Current transformer
- Make-proof earthing switch
- Surge arrester
- Zero-sequence current transformer

**Configuration**
- Busbar compartment
- Switching-device compartment
- Cable / instrument transformer compartment
**Overview**

- Circuit-breaker panel
- Disconnecting panel
- Bus sectionalizer - circuit-breaker panel
- Bus sectionalizer - bus riser panel
- Switch-disconnector panel
- Metering panel
- Busbar connection panel

**Technical data**

<table>
<thead>
<tr>
<th>Technical data</th>
<th>Configuration</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bus sectionalizer - circuit-breaker panel</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Technical data</strong></td>
<td><strong>Configuration</strong></td>
</tr>
<tr>
<td><strong>Bus sectionalizer - circuit-breaker panel</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Overview</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Technical data</strong></td>
<td><strong>Configuration</strong></td>
</tr>
<tr>
<td><strong>Bus sectionalizer - circuit-breaker panel</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Technical data</strong></td>
<td><strong>Configuration</strong></td>
</tr>
<tr>
<td><strong>Bus sectionalizer - circuit-breaker panel</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Technical data</strong></td>
<td><strong>Configuration</strong></td>
</tr>
<tr>
<td><strong>Bus sectionalizer - circuit-breaker panel</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Technical data</strong></td>
<td><strong>Configuration</strong></td>
</tr>
<tr>
<td><strong>Bus sectionalizer - circuit-breaker panel</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Technical data</strong></td>
<td><strong>Configuration</strong></td>
</tr>
<tr>
<td><strong>Bus sectionalizer - circuit-breaker panel</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Technical data</strong></td>
<td><strong>Configuration</strong></td>
</tr>
<tr>
<td><strong>Bus sectionalizer - circuit-breaker panel</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Technical data</strong></td>
<td><strong>Configuration</strong></td>
</tr>
<tr>
<td><strong>Bus sectionalizer - circuit-breaker panel</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Technical data</strong></td>
<td><strong>Configuration</strong></td>
</tr>
<tr>
<td><strong>Bus sectionalizer - circuit-breaker panel</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Technical data</strong></td>
<td><strong>Configuration</strong></td>
</tr>
<tr>
<td><strong>Bus sectionalizer - circuit-breaker panel</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Technical data</strong></td>
<td><strong>Configuration</strong></td>
</tr>
<tr>
<td><strong>Bus sectionalizer - circuit-breaker panel</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Technical data</strong></td>
<td><strong>Configuration</strong></td>
</tr>
<tr>
<td><strong>Bus sectionalizer - circuit-breaker panel</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Technical data</strong></td>
<td><strong>Configuration</strong></td>
</tr>
<tr>
<td><strong>Bus sectionalizer - circuit-breaker panel</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Technical data</strong></td>
<td><strong>Configuration</strong></td>
</tr>
<tr>
<td><strong>Bus sectionalizer - circuit-breaker panel</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Technical data</strong></td>
<td><strong>Configuration</strong></td>
</tr>
<tr>
<td><strong>Bus sectionalizer - circuit-breaker panel</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Technical data</strong></td>
<td><strong>Configuration</strong></td>
</tr>
<tr>
<td><strong>Bus sectionalizer - circuit-breaker panel</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Technical data</strong></td>
<td><strong>Configuration</strong></td>
</tr>
<tr>
<td><strong>Bus sectionalizer - circuit-breaker panel</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Technical data</strong></td>
<td><strong>Configuration</strong></td>
</tr>
<tr>
<td><strong>Bus sectionalizer - circuit-breaker panel</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Technical data</strong></td>
<td><strong>Configuration</strong></td>
</tr>
<tr>
<td><strong>Bus sectionalizer - circuit-breaker panel</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Technical data</strong></td>
<td><strong>Configuration</strong></td>
</tr>
<tr>
<td><strong>Bus sectionalizer - circuit-breaker panel</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Technical data</strong></td>
<td><strong>Configuration</strong></td>
</tr>
<tr>
<td><strong>Bus sectionalizer - circuit-breaker panel</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Technical data</strong></td>
<td><strong>Configuration</strong></td>
</tr>
<tr>
<td><strong>Bus sectionalizer - circuit-breaker panel</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Technical data</strong></td>
<td><strong>Configuration</strong></td>
</tr>
<tr>
<td><strong>Bus sectionalizer - circuit-breaker panel</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Technical data</strong></td>
<td><strong>Configuration</strong></td>
</tr>
<tr>
<td><strong>Bus sectionalizer - circuit-breaker panel</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Technical data</strong></td>
<td><strong>Configuration</strong></td>
</tr>
<tr>
<td><strong>Bus sectionalizer - circuit-breaker panel</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Technical data</strong></td>
<td><strong>Configuration</strong></td>
</tr>
<tr>
<td><strong>Bus sectionalizer - circuit-breaker panel</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Technical data</strong></td>
<td><strong>Configuration</strong></td>
</tr>
<tr>
<td><strong>Bus sectionalizer - circuit-breaker panel</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Technical data</strong></td>
<td><strong>Configuration</strong></td>
</tr>
<tr>
<td><strong>Bus sectionalizer - circuit-breaker panel</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Technical data</strong></td>
<td><strong>Configuration</strong></td>
</tr>
<tr>
<td><strong>Bus sectionalizer - circuit-breaker panel</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Technical data</strong></td>
<td><strong>Configuration</strong></td>
</tr>
<tr>
<td><strong>Bus sectionalizer - circuit-breaker panel</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Technical data</strong></td>
<td><strong>Configuration</strong></td>
</tr>
<tr>
<td><strong>Bus sectionalizer - circuit-breaker panel</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Technical data</strong></td>
<td><strong>Configuration</strong></td>
</tr>
<tr>
<td><strong>Bus sectionalizer - circuit-breaker panel</strong></td>
<td></td>
</tr>
</tbody>
</table>
NXAIR C versions
Bus sectionalizer - circuit-breaker panel

Overview
Circuit-breaker panel
Disconnecting panel
Bus sectionalizer - circuit-breaker panel
Bus sectionalizer - bus riser panel
Switch-disconnector panel
Metering panel
Busbar connection panel

Legend configuration

Make-proof busbar earthing switch
Capacitive voltage detecting system
Circuit-breaker withdrawable unit
Disconnecting unit
Reserve unit prepared for vacuum circuit-breaker or for disconnecting unit
Current transformer
Capacitive voltage detecting system

Technical data

Configuration

Busbar compartment
Switching-device compartment
Cable / instrument transformer compartment

Side view
Bus sectionalizer - bus riser panel

### Technical data

<table>
<thead>
<tr>
<th>Parameter</th>
<th>$U_r$ (kV)</th>
<th>7.2</th>
<th>12</th>
<th>24</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
<td>Hz</td>
<td>50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$I_n$</td>
<td>A</td>
<td>630, 1250, 2000</td>
<td>630, 1250, 2000</td>
<td>630, 1250</td>
</tr>
<tr>
<td>$I_{k1}$</td>
<td>kA</td>
<td>16</td>
<td>16</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td></td>
<td>20, 25</td>
<td>20, 25</td>
<td>20, 25</td>
</tr>
<tr>
<td>$I_{k2}$</td>
<td>kA</td>
<td>40, 50, 63</td>
<td>40, 50, 63</td>
<td>40, 50, 63</td>
</tr>
<tr>
<td>$I_{k3}$</td>
<td>kA</td>
<td>40, 50, 63</td>
<td>40, 50, 63</td>
<td>40, 50, 63</td>
</tr>
<tr>
<td>$I_{m}$</td>
<td>kA</td>
<td>16, 20, 25</td>
<td>16, 20, 25</td>
<td>16, 20, 25</td>
</tr>
<tr>
<td>$U_p$</td>
<td>kV</td>
<td>60</td>
<td>75</td>
<td>125</td>
</tr>
<tr>
<td>$U_{p2}$</td>
<td>kV</td>
<td>20</td>
<td>28</td>
<td>50</td>
</tr>
<tr>
<td>$t_k$</td>
<td>s</td>
<td>1, 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resistance to internal arc faults</td>
<td>IAC A FLR, 1 s</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Endurance classes acc. to IEC 62271-102</td>
<td>M0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>– isolating distance (drawable part)</td>
<td>M0, E1</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**NXAIR C versions**

**Bus sectionalizer - bus riser panel**

### Overview
- Circuit-breaker panel
- Disconnecting panel
- Bus sectionalizer - circuit-breaker panel
- Switch-disconnector panel
- Metering panel
- Busbar connection panel

### Technical data

**Legend configuration**

- Capacitive voltage detecting system
- Make-proof busbar earthing switch
- Disconnecting unit
- Metering unit
- Voltage transformer
- Current transformer
- Capacitive voltage detecting system

### Configuration

- **Busbar compartment**
- **Switching-device compartment**
- **Cable / instrument transformer compartment**
**Technical data**

### Switch-disconnector panel

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Symbol</th>
<th>Units</th>
<th>7.2</th>
<th>12</th>
<th>24</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated voltage</td>
<td>(U_r)</td>
<td>kV</td>
<td>7.2</td>
<td>12</td>
<td>24</td>
</tr>
<tr>
<td>Frequency</td>
<td>(f)</td>
<td>Hz</td>
<td>50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rated normal current of feeders (I_r) (without HV HRC fuse)</td>
<td>(I_r)</td>
<td>A</td>
<td>630</td>
<td>630</td>
<td>630</td>
</tr>
<tr>
<td>Rated normal current of feeders (I_r) (with HV HRC fuse)*</td>
<td>(I_r)</td>
<td>A</td>
<td>80</td>
<td>80</td>
<td>100</td>
</tr>
<tr>
<td>Rated short-time withstand current (I_k) for rated duration of short circuit (t_k) = 1 s and 3 s</td>
<td>(I_k)</td>
<td>kA</td>
<td>16</td>
<td>16</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>20, 25</td>
<td>20, 25</td>
<td>20, 25</td>
</tr>
<tr>
<td>Rated peak withstand current (I_p)</td>
<td>(I_p)</td>
<td>kA</td>
<td>40, 50, 63</td>
<td>40, 50, 63</td>
<td>40, 50, 63</td>
</tr>
<tr>
<td>Rated short-circuit making current (I_{ma})</td>
<td>(I_{ma})</td>
<td>kA</td>
<td>40, 50, 63</td>
<td>40, 50, 63</td>
<td>40, 50, 63</td>
</tr>
<tr>
<td>Rated short-circuit breaking current (I_{sc})</td>
<td>(I_{sc})</td>
<td>kA</td>
<td>16, 20, 25</td>
<td>16, 20, 25</td>
<td>16, 20, 25</td>
</tr>
<tr>
<td>Rated lightning impulse withstand voltage (U_{p})</td>
<td>(U_{p})</td>
<td>kV</td>
<td>60</td>
<td>75</td>
<td>125</td>
</tr>
<tr>
<td>Rated short-duration power-frequency withstand voltage</td>
<td>(U_{bus})</td>
<td>kV</td>
<td>20</td>
<td>28</td>
<td>50</td>
</tr>
<tr>
<td>Rated duration of short circuit (t_k)</td>
<td>(t_k)</td>
<td>s</td>
<td>1, 3 s</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resistance to internal arc faults</td>
<td>IAC A FLR, 1 s</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Endurance of switch-disconnectors</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- mechanical operations</td>
<td></td>
<td></td>
<td>1500 operating cycles</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- at rated short-circuit making current</td>
<td></td>
<td></td>
<td>2 operations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- endurance classes acc. to IEC 62271-103</td>
<td></td>
<td></td>
<td>E1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Endurance classes acc. to IEC 62271-102</td>
<td></td>
<td></td>
<td>M0, E1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Max. permissible in-panel current depends on the max. permissible let-through current of the HV HRC fuse-link to be used*
NXAIR C versions
Switch-disconnector panel

Overview
Circuit-breaker panel
Disconnecting panel
Bus sectionalizer - circuit-breaker panel
Bus sectionalizer - bus riser panel
Switch-disconnector panel
Metering panel
Busbar connection panel

Technical data

Legend configuration
- Capacitive voltage detecting system
- Switch-disconnector with fuse combination
- Switch-disconnector without fuse
- Cable connection
- Capacitive voltage detecting system
- Current transformer
- Make-proof earthing switch (standard)
- Zero-sequence current transformer

Configuration

Busbar compartment
Switching-device compartment
Cable / instrument transformer compartment
 NXAIR C versions
 Metering panel

Overview
Circuit-breaker panel
Disconnecting panel
Bus sectionalizer - circuit-breaker panel
Bus sectionalizer - bus riser panel
Switch-disconnector panel
Metering panel
Busbar connection panel

Technological data

<table>
<thead>
<tr>
<th>Metric</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated voltage $U_r$</td>
<td>7.2, 12, 24 kV</td>
</tr>
<tr>
<td>Frequency $F$</td>
<td>50 Hz</td>
</tr>
<tr>
<td>Rated short-time withstand current $I_{k}$ for rated duration of short circuit $t_k = 1$ s and $3$ s</td>
<td>16, 20, 25 kA</td>
</tr>
<tr>
<td>Rated peak withstand current $I_{pk}$</td>
<td>40, 50, 63 kA</td>
</tr>
<tr>
<td>Rated short-circuit making current $I_{ma}$</td>
<td>40, 50, 63 kA</td>
</tr>
<tr>
<td>Rated short-circuit breaking current $I_{sc}$</td>
<td>16, 20, 25 kA</td>
</tr>
<tr>
<td>Rated lightning impulse withstand voltage $U_p$</td>
<td>60, 75, 125 kV</td>
</tr>
<tr>
<td>Rated short-duration power-frequency withstand voltage</td>
<td>20, 28, 50 kV</td>
</tr>
<tr>
<td>Rated duration of short circuit $t_k$</td>
<td>1 s, 3 s</td>
</tr>
<tr>
<td>Resistance to internal arc faults</td>
<td>IAC A FLR, 1 s</td>
</tr>
<tr>
<td>Endurance classes acc. to IEC 62271-102 – isolating distance (withdrawable part)</td>
<td>M0</td>
</tr>
</tbody>
</table>

Front view
Overview
- Circuit-breaker panel
- Disconnecting panel
- Bus sectionalizer - circuit-breaker panel
- Bus sectionalizer - bus riser panel
- Switch-disconnector panel

Metering panel
- Busbar connection panel

Legend configuration
- Make-proof busbar earthing switch
- Capacitive voltage detecting system
- Metering unit

Technical data

Configuration
- Busbar compartment
- Switching-device compartment
- Cable / instrument transformer compartment
### NXAIR C versions

**Busbar connection panel**

#### Overview
- Circuit-breaker panel
- Disconnecting panel
- Bus sectionalizer - circuit-breaker panel
- Bus sectionalizer - bus riser panel
- Switch-disconnector panel
- Metering panel
- **Busbar connection panel**

#### Technical data

|                       | Rated voltage $U_r$ (kV) | Frequency (Hz) | Rated normal current of feeders $I_r$ (A) | For rated duration of short circuit $t_k = 1$ s and $3$ s | Rated peak withstand current $I_{pk}$ (kA) | Rated short-circuit making current $I_{ma}$ (kA) | Rated short-circuit breaking current $I_{sc}$ (kA) | Rated lightning impulse withstand voltage $U_{ip}$ (kV) | Rated short-duration power-frequency withstand voltage (kV) |
|-----------------------|--------------------------|----------------|------------------------------------------|-------------------------------------------------|-----------------------------------------------|-------------------------------------------------|-------------------------------------------------|-------------------------------------------------|-------------------------------------------------|-------------------------------------------------|
|                       | 7.2                      | 50             | 630, 1250, 2000                           | 630, 1250, 2000                                  | 40, 50, 63                                    | 40, 50, 63                                    | 40, 50, 63                                    | 60                                              | 20                                              |
|                       | 12                       |                | 630, 1250, 2000                           | 630, 1250, 2000                                  | 40, 50, 63                                    | 40, 50, 63                                    | 40, 50, 63                                    | 75                                              | 28                                              |

#### Configuration

**Front view**

**Busbar connection panel**

- Rated voltage $U_r$ (kV): 7.2, 12, 24
- Frequency (Hz): 50
- Rated normal current of feeders $I_r$ (A): 630, 1250, 2000
- For rated duration of short circuit $t_k = 1$ s and $3$ s
- Rated peak withstand current $I_{pk}$ (kA): 16, 20, 25
- Rated short-circuit making current $I_{ma}$ (kA): 40, 50, 63
- Rated short-circuit breaking current $I_{sc}$ (kA): 16, 20, 25
- Rated lightning impulse withstand voltage $U_{ip}$ (kV): 60, 75, 125
- Rated short-duration power-frequency withstand voltage (kV): 20, 28, 50
- Rated duration of short circuit $t_k$: 1 s, 3 s
- Resistance to internal arc faults: IAC A FLR, 1 s
Attention:
You will obtain the comprehensive functionality of the ipdf by using Acrobat reader, or the browser Chrome. For use on an ipad, the free PDF viewer version 3.4 from PSPDFKit is suitable.

Overview

Circuit-breaker panel
Disconnecting panel
Bus sectionalizer - circuit-breaker panel
Bus sectionalizer - bus riser panel
Switch-disconnector panel
Metering panel
Busbar connection panel

Imprint

Published by
Siemens AG
Smart Infrastructure
Distribution Systems
Mozartstraße 31 C
91052 Erlangen, Germany
For further information, please contact our Customer Support Center:
Phone: +49 180 524 70 00
Fax: +49 180 524 24 71
E-mail: support.energy@siemens.com
siemens.com/nxair
© Siemens 2020
Subject to changes and errors. The information given in this document only contains general descriptions and/or performance features which may not always specifically reflect those described, or which may undergo modification in the course of further development of the products. The requested performance features are binding only when they are expressly agreed upon in the concluded contract.

For the U.S. published by
Siemens Industry Inc.
100 Technology Drive
Alpharetta, GA 30005
United States