3

Contactors

CP Series
1 pole bi-directional
high-voltage contactors,
disconnectors,
changeover switches
for DC and AC

Flyer C40.en
Modular and compact switchgear for modern power converters

With the CP series Schaltbau is introducing once more an innovative concept to the switchgear market. The arc-handling is done exclusively by permanent-magnetic blowout. This patented technology ensures fully bi-directional breaking capability and a more compact design. By reducing dimensions and weight we save you valuable space.

For the first time the universal devices can be configured as NO/NC contactor, disconnector or changeover switch. This enables us to react flexibly to changing customer requirements. The high switching functionality and reliability ensure practical and cost effective operation.

The combination of innovative technology, compact design and high versatility makes the CP-power contactors particularly suitable for use in railway and industrial applications.

Thanks to its unique modular design, the new product family includes a variety of possible configurations catering to a wide range of applications.

### Features

#### Innovative Design
- Easily configurable as NO/NC contactor, disconnector or changeover switch
- DC bi-directional or AC up to 60 Hz max.
- Effective arc-handling – no critical currents and low wear of main contact system thanks to permanent-magnetic blowout
- High making capacity, also as disconnector and changeover switch
- Low total cost of ownership, modular and compact

#### Main contact system
- Conventional thermal current: 600 A / 1,200 A / 2,000 A
- Nominal voltage: 1.5 kV, 3 kV
- Double-break contacts
- 1, 2 pole versions

#### Easy maintenance:
- Toolless inspection of main contact tips
- Toolless replacement of the arc chamber

### Applications

#### Main contactor, optional with pre-charging contactor and high-voltage discharging contact for:
- Traction converters
- Inverters for auxiliary equipment

#### Switchgear for various mobile and stationary applications
- Locomotives and multiple-unit trains
- Photovoltaic systems, wind turbines, cranes, welding systems, mining

#### Contactor for:
- Field circuits of motors
- Conventional resistor based traction units
- Activating the brake unit for DC drives
- Starter and compressor motors, solar cells

#### Switchgear for the configuration of electrical system
- Selection from among various energy sources
- Filter configuration for multisytem operations
- Connect/disconnect the DC link

### Specification

<table>
<thead>
<tr>
<th>Type of voltage</th>
<th>DC (bi-directional) / AC (f &lt; 60 Hz)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal Voltage</td>
<td>1,500 V / 3,000 V</td>
</tr>
<tr>
<td>Rated operating voltage</td>
<td>1,800 V / 3,600 V</td>
</tr>
<tr>
<td>Rated insulation voltage</td>
<td>3,000 V * / 4,800 V *</td>
</tr>
<tr>
<td>Rated impulse withstand voltage</td>
<td>15 kV / 25 kV</td>
</tr>
<tr>
<td>Pollution degree / overvoltage category</td>
<td>PD3 / OV3 / PD1 / OV1</td>
</tr>
</tbody>
</table>

Conventional thermal current Ith:
- 600 A
- 1,200 A
- 2,000 A

Rated operating current Ie (at operational frequency C1):
- DC, Ue = 1,800 V (T2 = 1 ms)
- DC, Ue = 3,600 V (T2 = 1 ms)

Component category (EN 60077-2): NO: A2 – C1 / NC: A2 – C1 / CO: A4 – C1

Auxiliary contacts number of, type
- 1x S870 (a1) + 1x S870 (b0) + 2x S826 / 4x S826 – High-voltage discharging contact

Magnetic drive coil voltage Ue
- 24 V DC / 36 ... 48 V DC / 72 ... 110 V DC

*4,300 V with reinforced insulation in accordance to EN 50124*
Configure your switching device:

Contactor, disconnector, changeover switch: The performance and the magnetic drive are identical. Additional, a high-voltage discharging contact, a pre-charging contactor or several auxiliary contacts can be integrated. Multipole versions are also available.

### CP series

<table>
<thead>
<tr>
<th>Configuration</th>
<th>Conventional thermal current up to</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>600 A</strong></td>
<td></td>
</tr>
<tr>
<td><strong>1,200 A</strong></td>
<td></td>
</tr>
<tr>
<td><strong>2,000 A</strong></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type</th>
<th>NO</th>
<th>NC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contactor</td>
<td>CP1115/...</td>
<td>06</td>
</tr>
<tr>
<td></td>
<td>CP1130/...</td>
<td>06</td>
</tr>
<tr>
<td></td>
<td>CP2115/...</td>
<td>06</td>
</tr>
<tr>
<td></td>
<td>CP2130/...</td>
<td>06</td>
</tr>
<tr>
<td>Disconnector</td>
<td>CP1115/...</td>
<td>06</td>
</tr>
<tr>
<td></td>
<td>CP1130/...</td>
<td>06</td>
</tr>
<tr>
<td></td>
<td>CP2115/...</td>
<td>06</td>
</tr>
<tr>
<td></td>
<td>CP2130/...</td>
<td>06</td>
</tr>
<tr>
<td>Changeover switch</td>
<td>CP3115/...</td>
<td>06</td>
</tr>
<tr>
<td></td>
<td>CP3130/...</td>
<td>06</td>
</tr>
</tbody>
</table>

**Pre-charging contactor**: 1x CPP1115/02

**High-voltage discharging contact**: 1x CPD1115/02

**Auxiliary contacts**: 2x S870 a1/b0

**Auxiliary contacts**: 2x S870 a1/b0

Highly customer-configurable:

Find your ideal switching device and configure it as NO/NC contactor, disconnector or changeover switch.

### Switch

<table>
<thead>
<tr>
<th>NO</th>
<th>NC</th>
<th>600 A</th>
<th>1,200 A</th>
<th>2,000 A</th>
<th>1,500 V</th>
<th>3,000 V</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>monostable</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Disconnect

<table>
<thead>
<tr>
<th>NO</th>
<th>NC</th>
<th>600 A</th>
<th>1,200 A</th>
<th>2,000 A</th>
<th>1,500 V</th>
<th>3,000 V</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>bistable</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Changeover

<table>
<thead>
<tr>
<th>NO</th>
<th>NC</th>
<th>600 A</th>
<th>1,200 A</th>
<th>2,000 A</th>
<th>1,500 V</th>
<th>3,000 V</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>monostable or bistable</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Contactor**

- Breaking capacity: High
- Breaking capacity: Medium
- Breaking capacity: None

**Disconnector**

- Breaking capacity: High
- Breaking capacity: Medium
- Breaking capacity: None

**Changeover switch**

- Breaking capacity: None
- Cover only
Electrical Components and Systems for Railway Engineering and Industrial Applications

Connectors
- Connectors manufactured to industry standards
- Connectors to suit the special requirements of communications engineering (MIL connectors)
- Charging connectors for battery-powered machines and systems
- Connectors for railway engineering, including UIC connectors
- Special connectors to suit customer requirements

Snap-action switches
- Snap-action switches with positive opening operation
- Snap-action switches with self-cleaning contacts
- Snap-action switch made of robust polyetherimide (PEI)
- Snap-action switch with two galvanically isolated contact bridges
- Special switches to suit customer requirements

Contactors
- Single and multi-pole DC contactors
- High-voltage AC/DC contactors
- Contactors for battery powered vehicles and power supplies
- Contactors for railway applications
- Terminal bolts and fuse holders
- DC emergency disconnect switches
- Special contactors to suit customer requirements

Electrics for rolling stock
- Equipment for driver's cab
- Equipment for passenger use
- High-voltage switchgear
- High-voltage heaters
- High-voltage roof equipment
- Equipment for electric brakes
- Design and engineering of train electrics to customer requirements