Contactors

CH715, CH815, CH500, CH800, CH801, CH1030

1 pole HV contactors for voltages up to 3 kV DC / AC

Catalogue F170.en
## CH715, CH815, CH500, CH800, CH801, CH1030 Single pole high-voltage contactors

### Applications

- **Category 1, class B**
- **30/h at 50 Hz**
- **Un (UIC 550)**
- **a = 70°C**
- **Un (UIC 550)**
- **OV3**

### Specifications

#### Features

- Compact design
- Double-break contacts
- Coil tolerance: -30% to +25%
- Coil suppression: resistor/diode combination
- Switching capacity 16 up to 70 kW AC / DC max.

#### Applications

- Line contactor of power supply systems and utilities
- Main or controlling contactor for registers of HVAC systems

#### Series

<table>
<thead>
<tr>
<th>Series</th>
<th>CH715 – CH815</th>
<th>CH500 – CH800 – CH801</th>
<th>CH1030</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main contacts</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type of voltage</td>
<td>DC, unidirectional / AC (f &lt; 60 Hz)</td>
<td>DC, unidirectional / AC (f &lt; 60 Hz)</td>
<td>DC, unidirectional / AC (f &lt; 60 Hz)</td>
</tr>
<tr>
<td>Configuration</td>
<td>1x SPST-NO</td>
<td>1x SPST-NO</td>
<td>1x SPST-NO</td>
</tr>
<tr>
<td>Nominal voltage U_e (UIC 550)</td>
<td>3 kV</td>
<td>3 kV</td>
<td>3 kV</td>
</tr>
<tr>
<td>Rated insulation voltage U_e (DIN EN 50124-1)</td>
<td>3 kV</td>
<td>4.3 kV</td>
<td>4.3 kV</td>
</tr>
<tr>
<td>Pollution degree</td>
<td>PD3</td>
<td>PD3</td>
<td>PD3</td>
</tr>
<tr>
<td>Overvoltage category</td>
<td>OV3</td>
<td>OV3</td>
<td>OV3</td>
</tr>
<tr>
<td>Conventional thermal current I_th at T_e = 70°C, wire cross-section 25 mm²</td>
<td>50 A</td>
<td>80 A</td>
<td>120 A</td>
</tr>
<tr>
<td>Breaking capacity</td>
<td>3 kV DC, L/R &lt; 1 ms: 30 A</td>
<td>4 kV DC, L/R &lt; 1 ms: 80 A</td>
<td>4 kV DC, L/R &lt; 1 ms: 80 A</td>
</tr>
<tr>
<td>Operating cycles</td>
<td>1.5 kV AC 50 Hz, cos φ 1.0: 10 A</td>
<td>4 kV AC 50 Hz, cos φ 1.0: 130 A</td>
<td>4 kV AC 50 Hz, cos φ 1.0: 130 A</td>
</tr>
<tr>
<td>Magnetic blowout</td>
<td>120/h at 16 kW</td>
<td>30/h at 50 kW</td>
<td>30/h at 50 kW</td>
</tr>
<tr>
<td>Critical current range</td>
<td>&lt; 1 A (A/kV)</td>
<td>&lt; 1 A (A/kV)</td>
<td>&lt; 1 A (A/kV)</td>
</tr>
<tr>
<td>Design: Material Terminals</td>
<td>AgNi M3 screw, torque 2 Nm max.</td>
<td>AgNi M3 screw, torque 2 Nm max.</td>
<td>AgNi M3 screw, torque 2 Nm max.</td>
</tr>
<tr>
<td>Aux. switches</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>CH715</td>
<td>CH500</td>
<td>CH1030</td>
</tr>
<tr>
<td>1x snap-action switch S800</td>
<td>CH815</td>
<td>CH800</td>
<td></td>
</tr>
<tr>
<td>2x snap-action switch S800</td>
<td>CH801</td>
<td>CH801</td>
<td></td>
</tr>
<tr>
<td>Utilization category Terminals</td>
<td>AC-15: 230 V / 3.0 A; DC-13: 110 V / 1.0 A M3 screw, torque 0.9 Nm max.</td>
<td>AC-15: 230 V / 3.0 A; DC-13: 110 V / 1.0 A M3 screw, torque 0.9 Nm max.</td>
<td>AC-15: 230 V / 3.0 A; DC-13: 110 V / 1.0 A M3 screw, torque 0.9 Nm max.</td>
</tr>
<tr>
<td>Magnetic drive</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coil voltage U_e</td>
<td>24 / 110 / 120 V DC</td>
<td>24 / 110 / 120 V DC</td>
<td>24 / 110 / 120 V DC</td>
</tr>
<tr>
<td>Coil tolerance</td>
<td>-30 % ... +25 % at T_e = 70°C max. approx. 10 W at U_e and T_e = 20°C approx. 8 W at U_e and T_e = 20°C Resistor/diode combination M3 screw, torque 2 Nm max.</td>
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</tr>
<tr>
<td>Power dissipation</td>
<td>cold coil</td>
<td>cold coil</td>
<td>cold coil</td>
</tr>
<tr>
<td>Space utilization</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IP rating (IEC 60529, IP code)</td>
<td>IP00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mechanical endurance</td>
<td>1 million cycles</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shock / vibration (IEC 61373)</td>
<td>Category 1, class B</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Duty cycles</td>
<td>100 %</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mounting orientation</td>
<td>Upside down, coil pointing downwards</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temperature Operating temperature T_e</td>
<td>-50°C ... +70°C</td>
<td>-50°C ... +70°C</td>
<td>-50°C ... +70°C</td>
</tr>
<tr>
<td>Storage temperature T_s</td>
<td>-50°C ... +80°C</td>
<td>-50°C ... +80°C</td>
<td>-50°C ... +80°C</td>
</tr>
<tr>
<td>Weight</td>
<td>CH715: 3.3 kg</td>
<td>CH500: 4.2 kg</td>
<td>CH1030: 5 kg</td>
</tr>
<tr>
<td></td>
<td>CH815: 3.4 kg</td>
<td>CH800: 4.3 kg</td>
<td></td>
</tr>
</tbody>
</table>
CH715 Dimension and circuit diagram

**Dimension diagram**

- Clearance between plasma exit and earthed parts
- Main contact M5
- Earth connection M5
- Arc chamber
- Main contact M5
- Coil terminal M5
- Mounting plate
- 4x Borings Ø7 mm

**Circuit diagram**

- Subject to technical alterations / Dimensions in mm

**Stock items**

<table>
<thead>
<tr>
<th>Series</th>
<th>Coil</th>
<th>Aux. switch</th>
</tr>
</thead>
<tbody>
<tr>
<td>CH715 24ER</td>
<td>24 V / -30…+25 % / resistor/diode combination</td>
<td>---</td>
</tr>
<tr>
<td>CH715 36ER</td>
<td>36 V / -30…+25 % / resistor/diode combination</td>
<td>---</td>
</tr>
<tr>
<td>CH715 110ER</td>
<td>110 V / -30…+25 % / resistor/diode combination</td>
<td>---</td>
</tr>
<tr>
<td>CH715 120ER</td>
<td>120 V / -30…+25 % / resistor/diode combination</td>
<td>---</td>
</tr>
</tbody>
</table>

**Mounting holes**

- 4 x Ø7 or M6
- Mounting plate

**Note:**

Presented in this catalogue are only stock items which can be supplied in short delivery time. For some variants minimum quantities apply. Please do not hesitate to ask for the conditions.

**Special variants:**

If you need a special variant of the contactor, please do not hesitate to contact us. Maybe the type of contactor you are looking for is among our many special designs. If not, we can also supply customized designs. In this case, however, minimum order quantities apply.

Subject to technical alterations / Dimensions in mm
CH815 Dimension and circuit diagram

- **Dimension diagram**

  - Clearance between plasma exit and earthed parts
  - Main contact M5
  - Earth connection M5
  - Arc chamber
  - Main contact M5
  - Coil terminal M5
  - Mounting 4x Borings Ø7 mm
  - Aux. switch 2x S800

- **Circuit diagram**

- **Stock items**

<table>
<thead>
<tr>
<th>Series</th>
<th>Coil</th>
<th>Aux. switch</th>
</tr>
</thead>
<tbody>
<tr>
<td>CH815 24ER-N1</td>
<td>24V / -30...+25 % / resistor/diode combination</td>
<td>1x S800</td>
</tr>
<tr>
<td>CH815 110ER-N1</td>
<td>110V / -30...+25 % / resistor/diode combination</td>
<td>1x S800</td>
</tr>
<tr>
<td>CH815 120ER-N1</td>
<td>120V / -30...+25 % / resistor/diode combination</td>
<td>1x S800</td>
</tr>
</tbody>
</table>

- **Mounting holes**

  - 4 x Ø7 or M6
  - Mounting plate

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**CH500 Dimension and circuit diagram**

- **Dimension diagram**
  - Clearance between plasma exit and earthed parts
  - Main contact M6
  - Arc chamber
  - Illustration without arc chamber
  - Earth connection M5
  - Main contact M6
  - Coil terminal M5
  - Mounting 4x Borings Ø7 mm

- **Circuit diagram**

**Stock items**

<table>
<thead>
<tr>
<th>Series</th>
<th>Coil</th>
<th>Aux. switch</th>
</tr>
</thead>
<tbody>
<tr>
<td>CH500 24ER</td>
<td>24 V / -30...+25 % / resistor/diode combination</td>
<td>---</td>
</tr>
<tr>
<td>CH500 120ER</td>
<td>120 V / -30...+25 % / resistor/diode combination</td>
<td>---</td>
</tr>
</tbody>
</table>

**Mounting holes**

- 4 x Ø7 or M6
- Mounting plate

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Subject to technical alterations / Dimensions in mm
**CH800 Dimension and circuit diagram**

**Dimension diagram**
- Clearance between plasma exit and earthed parts
- Main contact M6
- Arc chamber
- Illustration without arc chamber
- Earth connection M5
- Main contact M6
- Coil terminal M5
- Mounting 4x Borings Ø7 mm
- Aux. switch 2x S800

**Circuit diagram**

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**Stock items**

<table>
<thead>
<tr>
<th>Series</th>
<th>Coil</th>
<th>Aux. switch</th>
</tr>
</thead>
<tbody>
<tr>
<td>CH800 24ER-N1</td>
<td>24 V / -30…+25 % / resistor/diode combination</td>
<td>1x S800</td>
</tr>
<tr>
<td>CH800 110ER-N1</td>
<td>110 V / -30…+25 % / resistor/diode combination</td>
<td>1x S800</td>
</tr>
<tr>
<td>CH800 120ER-N1</td>
<td>120 V / -30…+25 % / resistor/diode combination</td>
<td>1x S800</td>
</tr>
</tbody>
</table>

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**Mounting holes**

- Mounting plate

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Dimensions in mm / Subject to technical alterations
**CH801 Dimension and circuit diagram**

- **Dimension diagram**

  - Clearance between plasma exit and earthed parts
  - Main contact M6
  - Arc chamber
  - Illustration without arc chamber
  - Earth connection M5
  - Main contact M6
  - Coil terminal M5
  - Mounting 4x borings Ø7 mm
  - Aux. switch 2x S800

- **Circuit diagram**

- **Stock items**

<table>
<thead>
<tr>
<th>Series</th>
<th>Coil</th>
<th>Aux. switch</th>
</tr>
</thead>
<tbody>
<tr>
<td>CH801 24ER-O2</td>
<td>24V / -30...+25 % / resistor/diode combination</td>
<td>2x S800</td>
</tr>
<tr>
<td>CH801 36ER-O2</td>
<td>36V / -30...+25 % / resistor/diode combination</td>
<td>2x S800</td>
</tr>
<tr>
<td>CH801 72ER-O2</td>
<td>72V / -30...+25 % / resistor/diode combination</td>
<td>2x S800</td>
</tr>
<tr>
<td>CH801 110ER-O2</td>
<td>110V / -30...+25 % / resistor/diode combination</td>
<td>2x S800</td>
</tr>
<tr>
<td>CH801 120ER-O2</td>
<td>120V / -30...+25 % / resistor/diode combination</td>
<td>2x S800</td>
</tr>
</tbody>
</table>

- **Mounting holes**

  - **Note:**
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    - Special variants:
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  - Subject to technical alterations / Dimensions in mm
**CH1030 Dimension and circuit diagram**

- **Dimension diagram**
  - Clearance between plasma exit and earthed parts
  - Main contact M8
  - Arc chamber
  - Illustration without arc chamber
  - Earth connection M5
  - Main contact M8
  - Coil terminal M5
  - Mounting 4x Borings Ø7 mm
  - Aux. switch 2x S800

- **Circuit diagram**

**Stock items**

<table>
<thead>
<tr>
<th>Series</th>
<th>Coil</th>
<th>Aux. switch</th>
</tr>
</thead>
<tbody>
<tr>
<td>CH1030 24ER-O2</td>
<td>24 V / -30...+25 % / resistor/diode combination</td>
<td>2x S800</td>
</tr>
<tr>
<td>CH1030 110ER-O2</td>
<td>110 V / -30...+25 % / resistor/diode combination</td>
<td>2x S800</td>
</tr>
<tr>
<td>CH1030 120ER-O2</td>
<td>120 V / -30...+25 % / resistor/diode combination</td>
<td>2x S800</td>
</tr>
</tbody>
</table>

**Mounting holes**

- 4 x Ø7 or M6

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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
- Enabling switches
- 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

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