3

Contactors

Series CS115/10
4 pole DC and AC contactors for voltages up to 800 V
Catalogue C50.en
CS115/10 – 4 pole DC and AC contactors

Multi-pole unidirectional DC or AC contactor up to 800 V and 30 A of continuous current.

With the 4 pole CS115/10 Series Schaltbau has expanded its product line of contactors. Designed for the low and medium power range, the switching devices are universally applicable and available in many versions. The 30 A control contactor for voltages up to 800 V is available with various contact arrangements. Optionally up to 4 snap-on auxiliary switches can be mounted to it.

Application

The contactor is specifically designed for small and medium loads in DC and AC applications, such as:

- Locking
- Signalling
- Controlling power contactors.

Features

- Compact, rugged Design
- Nominal voltage Un, 800 V DC or AC
- Conv. thermal current Ith, 30 A
- DIN rail mounting acc. to IEC 60715
- Double-break contacts
- Various coil voltages
- Possible contact configurations:
  - 4 NO
  - 3 NO / 1 NC
  - 2 NO / 2 NC
- 4 optional aux. contacts NO or NC max. that can be configured individually

Ordering code

Series CS

- CS115/10 series 4 pole contactor

  Example: CS115/10-31-72ET

<table>
<thead>
<tr>
<th>Series</th>
<th>Main contacts, Configuration</th>
<th>Coil voltage</th>
<th>Coil tolerance</th>
<th>Coil suppression</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS115/10</td>
<td>4x NO</td>
<td>24 / 36 / 48 / 72 / 96 / 110 V DC</td>
<td>-30 % … +25 % Un</td>
<td>T Suppressor diode, standard</td>
</tr>
<tr>
<td>40</td>
<td>3x NO, 1x NC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>31</td>
<td>2x NO, 2x NC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- AS115 series auxiliary switch

  Example: AS115/10

<table>
<thead>
<tr>
<th>Series</th>
<th>Configuration</th>
<th>Single pole snap-on auxiliary switch for CS115/10 series contactor</th>
</tr>
</thead>
<tbody>
<tr>
<td>AS115/</td>
<td>10</td>
<td>1x NO, red release button</td>
</tr>
<tr>
<td>01</td>
<td>1x NC, yellow release button</td>
<td></td>
</tr>
</tbody>
</table>

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.

Applicable standards

Series CS

- IEC 60947-4-1  Low-voltage switchgear and controlgear – Part 4-1: Contactors and motor-starters – Electromechanical contactors and motor-starters
- IEC 60077-2  Railway applications – Electric equipment for rolling stock – Part 2: Electrotechnical components; General rules
- IEC 61373  Railway applications – Rolling stock equipment – Shock and vibration tests
CS115/10-40-xxET, CS115/10-31-xxET, CS115/10-22-xxET Dimensions, Configuration, Mounting

Series CS

- **Dimension diagram**

  Mounting borings
  4x screw M4

  Mounting
  35 mm top hat rail

  1x...4x Aux. switches
  AS115 optionally

  Blow out magnets

  Main terminal screw M3.5

  Coil terminal screw M3.5

- **Main contacts, Configuration**

  CS115/10-40-xxET
  CS115/10-31-xxET
  CS115/10-22-xxET

- **Possible mounting orientations**

  - horizontal
  - vertical

- **Mounting holes**

CS115/10-40-xxET, CS115/10-31-xxET, CS115/10-22-xxET Circuit diagrams

Series CS

- **CS115/10-40-xxET (NO-NO-NO-NO)**

- **CS115/10-31-xxET (NO-NO-NO-NC)**

- **CS115/10-22-xxET (NO-NC-NC-NO)**

Example: Polarity-correct series connection of all main contacts to increase the rated operating voltage \( U_e \), s. a. table «Specifications».

Dimensions in mm / Subject to technical alterations
**AS115/10, AS115/01 Series** auxiliary switches, dimension and circuit diagrams

- **AS115/10** Auxiliary switch 1x NO
  - Release button red
  - Aux. contact terminal (\(\Rightarrow\))
  - Screw M3.5

- **AS115/01** Auxiliary switch 1x NC
  - Release button yellow
  - Aux. contact terminal (\(\Rightarrow\))
  - Screw M3.5

- **Circuit diagram**

- **Use of auxiliary switches**

<table>
<thead>
<tr>
<th>Possible configurations</th>
<th>Circuit diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mounting orientation horizontal</td>
<td>Mounting orientation vertical</td>
</tr>
<tr>
<td>AS115/10</td>
<td>AS115/01</td>
</tr>
<tr>
<td>4x max. NO</td>
<td>2x max. NC</td>
</tr>
<tr>
<td>4x max. NO</td>
<td>2x max. NC</td>
</tr>
</tbody>
</table>

* The rated minimum pull-in voltage can rise to 0.8 \(U_{sn}\) at temperatures < 70 °C and working contactor (warm coil)

**Maintenance and safety instructions**

**Maintenance:**
- CS115/10 Series contactors are maintenance free.
- Make regular in-depth visual inspections once or twice a year.

**Safety instructions:**
- The device must be used according to the intended purpose as specified in the technical documentation. You are obliged to observe all specifications depending on operating temperature, degree of pollution etc. that are relevant to your application.
- Without further safety measures the CS Series contactors are not suited for use in potentially explosive atmospheres.
- In case of malfunction of the device or uncertainties stop using it any longer and contact the manufacturer instantly.
- Tampering with the device can seriously affect the safety of people and equipment. This is not permitted and leads to an exclusion of liability and warranty.
- Coil suppression for reducing surges when the coil is switched off is optimally attuned to the contactor's switching behaviour. The existing opening characteristic must not be negatively influenced by parallel connection with an external diode.
- Contactors running permanently may heat up. So make sure that the contactor has sufficiently cooled down before you start any inspection or maintenance work.
- When installing CS contactors with magnetic blowout make sure to do it in such a way that no magnetizable parts can be attracted by the permanent magnets that are also capable of destroying all data of swipe cards.
- Strong electromagnetic induction caused when switching off can influence other components installed near the contactor.
- Improper handling of the contactor, e.g. when hitting the floor with some impact, can result in breakage, visible cracks and deformation.

**Defective parts must be replaced immediately!**

Dimensions in mm / Subject to technical alterations
### Specifications

#### Series CS

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</tr>
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</table>

#### Main contacts

- **Type of voltage**: 
  - Nominal voltage $U_n$ 
  - Rated operating voltage $U_{op}$ 
  - Rated insulation voltage $U_{inst}$ 
  - Rated impulse withstand voltage $U_{imp}$ 

- **Pollution degree / Overvoltage category**: 
  - Conventional thermal current $I_{op}$ 
  - Rated operational current $I_{rat}$ 

- **Component category**: 
  - Operational frequency: C2 

- **Utilization category**: 
  - AC-1 (cos $\phi = 0.8$), DC-1 (L/R = 1ms) 

- **Design**: 
  - Wires with sleeve* 
  - Terminal screw acc. DIN 46228-1 

- **Wire gauge**: 
  - AWG, stripping length 8

#### Auxiliary contacts

- **Configuration**: 
  - Nominal voltage $U_n$ 
  - Rated operating voltage $U_{op}$ 
  - Rated insulation voltage $U_{inst}$ 
  - Rated impulse withstand voltage $U_{imp}$ 

- **Conventional thermal current $I_{th}$**: 
  - Component category: C2 

- **Operating frequencies**: 
  - Operation $= 1$ ms, $I_{op}$ = 1ms 

- **Short-circuit making capacity**: 
  - Breaking capacity: $I_{br}$ 

- **Magnetic drive**: 
  - Coil voltage $U_c$ 
  - Coil suppression 
  - Pull-in time, typ. at $\Delta T = 20 \, ^\circ C$ 

- **Design**: 
  - Terminal screw / torque 
  - Wire gauge 

#### General data

- **IP rating (IEC 60529)**: IP00 

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* | After mounting mind the clearance distances! | **2** | Values at PD2 for seldom switching! | **3** | End sleeve according DIN 46228-1 | **4** | Values at PD2 for seldom switching! | **5** | End sleeve according DIN 46228-1 | **6** | Values at PD2 for seldom switching! | **7** | End sleeve according DIN 46228-1

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Subject to technical alterations

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*20 A @ 2.5 mm² cross section* 

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*20 A @ 4 mm² cross section with forked cable lug* 

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Subject to technical alterations
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

Schaltbau GmbH manufactures in compliance with RoHS.

The production facilities of Schaltbau GmbH have been IRIS certified since 2008.

Certified to DIN EN ISO 14001 since 2002. For the most recent certificate visit our website.

Certified to DIN EN ISO 9001 since 1994. For the most recent certificate visit our website.