Contactors

C193 Series
Single pole
NO contactors
Catalogue B193.en
Single pole NO contactor, C193 Series

Single pole high-voltage contactor of compact design:
Notwithstanding its small size, the C193 Series contactor features an extraordinary switching capacity for DC applications up to 1,000 V. Best suited for the harsh environment of public transport, the C193 has proven to be a transportation system component of high reliability which has an electrical life that is above average.

Features
- Suitable for years of continuous duty
- Intended for high ambient temperatures
- Compact design
- Double-break contacts
- Versions for AC and DC operation
- DC versions with blowout magnets for arc quenching
- DIN rail mount option

Applications
Typical applications are to be found in traffic engineering equipment, particularly in heating circuits, air conditioning equipment and conversion engineering of complex power supplies.

Standards
Contactors meet requirements for industrial applications to:
- **IEC 60947-1** Low-voltage switchgear and controlgear – Part 1: General rules.
- **IEC 60947-4-1** Low-voltage switchgear and controlgear – Part 4-1: Contactors and motor starters – Electromechanical contactors and motor starters.

Meet requirements for railway applications to:
- **IEC 60077-1** Railway applications – Electric equipment for rolling stock – Part 1: General service conditions and general rules.

Ordering code
Example: **C193 A/24EV-U1**

Series
- **A** for DC operation
- **B** for AC operation
- **S** for DC operation without blowout magnets
- **T** for AC operation without blowout magnets

Version
- **U1** 1x snap-action switch S870 W1D1 a 012, pushbutton, silver plated contacts
- **J1** 1x snap-action switch S870 W1D4 a 063, gold plated contacts, terminals angled 45°

Coil voltages
- 24 / 36 / 72 / 110 V DC

Tolerance
- **E** ±25% ... -30%

Coil suppression
- **V** Varistor
- **X** none

Auxiliary contacts

**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 variant:**
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.

Single pole NO contactor C193 A/72EV-U1
Specifications

### C193 Series, Version

<table>
<thead>
<tr>
<th>I</th>
<th>A</th>
<th>B</th>
<th>S</th>
<th>I</th>
<th>T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of voltage</td>
<td>DC</td>
<td>AC</td>
<td>DC</td>
<td>AC</td>
<td></td>
</tr>
<tr>
<td>Main contacts, Number of, Configuration</td>
<td>1x SPST-NO</td>
<td>1x SPST-NO</td>
<td>1x SPST-NO</td>
<td>1x SPST-NO</td>
<td></td>
</tr>
<tr>
<td>Nominal voltage ( U_n )</td>
<td>1,000 V</td>
<td>1,000 V</td>
<td>220 V</td>
<td>220 V</td>
<td></td>
</tr>
<tr>
<td>Rated insulation voltage ( U_{\text{m}} ) to IEC 60947-1</td>
<td>1,200 V</td>
<td>1,200 V</td>
<td>1,200 V</td>
<td>1,200 V</td>
<td></td>
</tr>
<tr>
<td>Rated impulse withstand voltage ( U_{\text{imp}} ) to IEC 60947-1</td>
<td>8 kV</td>
<td>8 kV</td>
<td>8 kV</td>
<td>8 kV</td>
<td></td>
</tr>
<tr>
<td>Pollution degree</td>
<td>PD3</td>
<td>PD3</td>
<td>PD3</td>
<td>PD3</td>
<td></td>
</tr>
<tr>
<td>Overvoltage category</td>
<td>OVS</td>
<td>OVS</td>
<td>OVS</td>
<td>OVS</td>
<td></td>
</tr>
<tr>
<td>Conventional thermal current ( I_n ) at ( T_a = 70^\circ \text{C} ), Wire cross-section 10 mm²</td>
<td>50 A</td>
<td>50 A</td>
<td>50 A</td>
<td>50 A</td>
<td></td>
</tr>
<tr>
<td>Making capacity (resistive, ( T = 0 \text{ ms} ))</td>
<td>600 A</td>
<td>600 A</td>
<td>600 A</td>
<td>600 A</td>
<td></td>
</tr>
<tr>
<td>Breaking capacity</td>
<td>1,000 V DC, L/R ( 1 \text{ ms}: 90 \text{ A} )</td>
<td>1,000 V AC, L/R ( 1 \text{ ms}: 140 \text{ A} )</td>
<td>220 V DC, L/R ( 1 \text{ ms}: 1,200 \text{ A} )</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td>Switching off, no motor reversing circuits</td>
<td>only in one direction</td>
<td>---</td>
<td>only in one direction</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td>Arc chute for DC / AC operation</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td></td>
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<tr>
<td>Blowout, magnetic</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td>Main contacts: Material Terminals</td>
<td>AgSnO₂</td>
<td>M5, tightening torque 3 Nm max.</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Auxiliary contacts: Number of, configuration Utilization category Terminals</td>
<td>1x snap-action switch S870, SPDT, optional (see also catalogue D70e)</td>
<td>AC-15: 1.5 A at 230 V AC; DC-13: 0.5 A at 60 V DC or 2.0 A at 24 V DC</td>
<td>Quick-connect 6.3 x 0.8 mm</td>
<td></td>
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<tr>
<td>Magnetic drive: Rated control supply voltage ( U_s )</td>
<td>24 / 36 / 72 / 110 V DC</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Operating range of ( U_s )</td>
<td>(-30% \ldots +25% \text{ at } T_a = 70^\circ \text{C} ) max.</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Coil power dissipation ( \left( T_u = 20^\circ \text{C} / \text{U} \right) )</td>
<td>Cold coil approx. 15 W, warm coil approx. 9 W</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Coil temperature</td>
<td>155°C at ( T_u_{\text{max}} ) and ( U_{\text{m}}_{\text{max}} )</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Coil suppression Terminals</td>
<td>Varistor</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Degree of protection (IEC 60529)</td>
<td>IP00</td>
<td></td>
<td></td>
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<tr>
<td>Mechanical endurance</td>
<td>&gt; 5 million operating cycles</td>
<td></td>
<td></td>
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<tr>
<td>Electrical endurance</td>
<td>600,000 operating cycles (( U_n = 1,000 \text{ V DC}, I_n = 30 \text{ A}, L/R = 1 \text{ ms} ))</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Shock / Vibration (DIN EN 61373)</td>
<td>5 g (20 ms half sinus) / 2g (5 ... 150 Hz)</td>
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<tr>
<td>Duty cycle</td>
<td>100 %</td>
<td></td>
<td></td>
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<tr>
<td>Mounting position</td>
<td>Any, except: do not mount upside down, so that mounting plate points upwards</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temperature</td>
<td>Operating temperature</td>
<td>(-40^\circ \text{C} \ldots +70^\circ \text{C} )</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Storage temperature</td>
<td>(-40^\circ \text{C} \ldots +80^\circ \text{C} )</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>0.7 kg</td>
<td>0.7 kg</td>
<td>0.7 kg</td>
<td>0.7 kg</td>
<td></td>
</tr>
</tbody>
</table>
Schaltbau GmbH

For detailed information on our products and services visit our website – or give us a call!

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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

We reserve the right to make technical alterations without prior notice.
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