

3

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

Series C193

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.
- IEC 60077-2 Railway applications – Electric equipment for rolling stock – Part 2: Electrotechnical components; General rules.

Ordering code

Series C193

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

Series

Version

- | | |
|---|---|
| A | for DC operation with splitters for arc quenching |
| B | for AC operation with splitters for arc quenching* |
| S | for DC operation without splitters |
| T | for AC operation without splitters* |

Coil voltages

24 / 36 / 72 / 110 V DC

Tolerance

E +25 % ... -30 %

Coil suppression

- | | |
|---|----------|
| V | Varistor |
| X | none |

Auxiliary contacts

- | | |
|----|---|
| 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° |

* AC version without magnetic blowout and without outward pole sheet



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



Note:

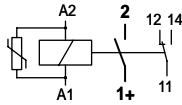
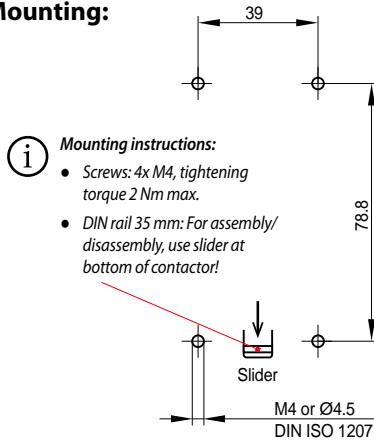
Presented in this catalogue are only stock items which can be supplied in short delivery time. For some variants minimum quantities apply. Please do not hesitate to ask for the conditions.

Special variant:

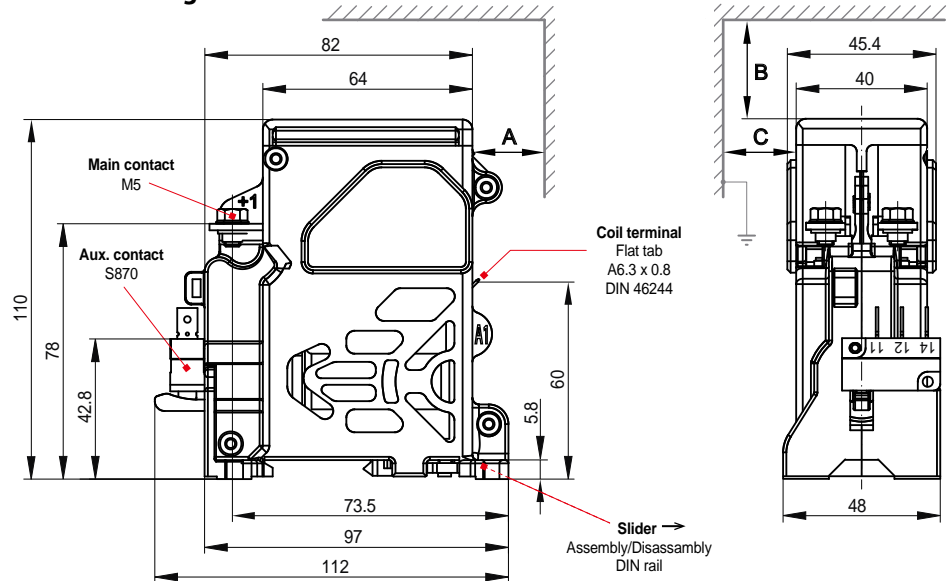
If you need a special variant of the contactor, please do not hesitate to contact us. Maybe the type of contactor you are looking for is among our many special designs. If not, we can also supply **customized designs**. In this case, however, minimum order quantities apply.

Circuit and dimension diagram, Mounting

Series C193

Circuit diagram:

Mounting:


Note:
 Clearance towards live or earthed parts ≥ 10 mm!

Dimension diagram:


Clearance towards plasma exit (see diagram):	A	B	C
P < rated power	10 mm	10 mm	10 mm
P \geq rated power	10 mm	10 mm	50 mm

Reduced scale diagrams / dimensions in mm

Specifications

Series C193

C193 Series, Version	A	B	S	T
Type of voltage	DC	AC	DC	AC
Main contacts, Number of, Configuration	1x SPST-NO	1x SPST-NO	1x SPST-NO	1x SPST-NO
Nominal voltage U_n	1,000 V	1,000 V	220 V	220 V
Rated insulation voltage U_i to IEC 60947-1	1,200 V	1,200 V	1,200 V	1,200 V
Rated impulse withstand voltage U_{imp} to IEC 60947-1	8 kV	8 kV	8 kV	8 kV
Pollution degree	PD3	PD3	PD3	PD3
Overtoltage category	OV3	OV3	OV3	OV3
Conventional thermal current I_{th} at $T_a = 70^\circ\text{C}$, Wire cross-section 10 mm ²	50 A	50 A	50 A	50 A
Making capacity (resistive, T = 0 ms)	600 A	600 A	600 A	600 A
Breaking capacity	1,000 V DC, L/R 1 ms: 90 A L/R 15 ms: 25 A	1,000 V AC, cos ϕ 1.0: 140 A	220 V DC, L/R 1 ms: 1,200 A L/R 15 ms: 800 A	---
Switching off, no motor reversing circuits	only in one direction	---	only in one direction	---
Arc chute for DC / AC operation	• (integral part)	• (integral part)	---	---
Blowout, magnetic	•	---	•	---
Main contacts: Material Terminals	AgSnO ₂ M5, tightening torque 3 Nm max.			
Auxiliary contacts: Number of, configuration Utilization category Terminals	1x snap-action switch S870, SPDT, optional (see also catalogue D70e) 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 Quick-connect 6.3 x 0.8 mm			
Magnetic drive: Rated control supply voltage U_s Operating range of U_s Coil power dissipation ($T_a = 20^\circ\text{C} / U_s$) Coil temperature Coil suppression Terminals	24 / 36 / 72 / 110 V DC -30% ... +25% at $T_a = 70^\circ\text{C}$ max. Cold coil approx. 15 W, warm coil approx. 9 W 155°C at $T_{a,max}$ and $U_{s,max}$ Varistor Quick-connect 6.3 x 0.8 mm			
Degree of protection (IEC 60529)	IP00			
Mechanical endurance	> 5 million operating cycles			
Electrical endurance	600,000 operating cycles ($U_n = 1,000$ V DC, $I_{th} = 30$ A, L/R = 1 ms)			
Shock / Vibration (DIN EN 61373)	5g (20 ms half sinus) / 2g (5 ... 150 Hz)			
Duty cycle	100%			
Mounting position	Any, except: do not mount upside down, so that mounting plate points upwards			
Temperature: Operating temperature Storage temperature	-40°C ... +70°C -40°C ... +80°C			
Weight	0.7 kg	0.7 kg	0.7 kg	0.7 kg

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with compliments:



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.

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