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Contactors

C193 series

Single pole
NO contactors

Catalogue B193.en

More information
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C193 – 1 pole NO contactors

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

C193 series

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.

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

Ordering code

C193 series

Example: **C193A/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*

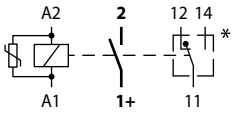
Note:
Presented in this catalogue are only stock items which can be supplied in short delivery time. For some variants minimum quantities apply. Please do not hesitate to ask for the conditions.

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

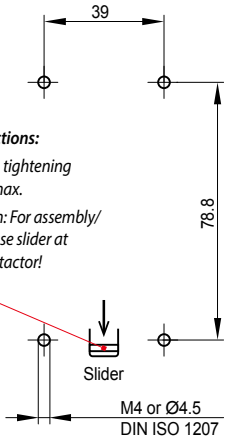
C193 series

Circuit diagram:



* *Auxiliary switches with mirror contact function according to EN 60947-4-1, annex F*

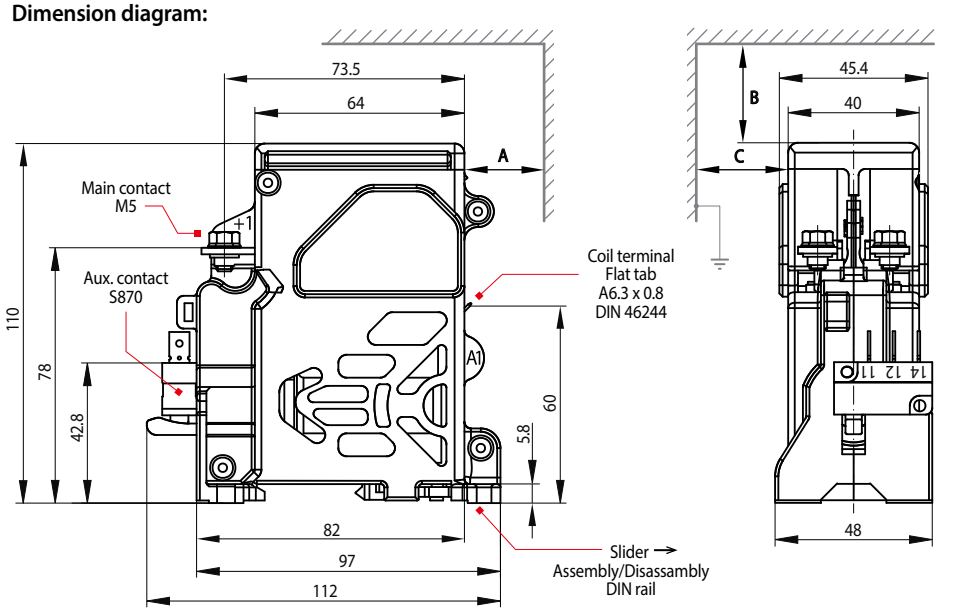
Mounting:



Mounting instructions:

- *Screws: 4x M4, tightening torque 2 Nm max.*
- *DIN rail 35 mm: For assembly/ disassembly, use slider at bottom of contactor!*

Dimension diagram:



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

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

Specifications

C193 series

C193 series, version		A	B	S	T
Main contacts					
Type of voltage		DC	AC	DC	AC
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	IEC 60947-1	1,200 V	1,200 V	1,200 V	1,200 V
Rated impulse withstand voltage U_{imp}	IEC 60947-1	8 kV	8 kV	8 kV	8 kV
Pollution degree / Overvoltage category		PD3 / OV3	PD3 / OV3	PD3 / OV3	PD3 / OV3
Conventional thermal current I_{th} @ T_a = 70°C, Wire cross-section 10 mm²		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, cosφ 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 chamber for DC / AC operation		● (integrated)	● (integrated)	---	---
Blowout, magnetic		●	---	●	---
Material		$AgSnO_2$			
Terminals		M5, tightening torque 3 Nm max.			
Auxiliary contacts					
Number of, configuration		1x snap-action switch S870, SPDT, optional (see also catalogue D70.en)			
Mirror contact function	EN 60947-4-1	●			
Utilization category		AC-15: 1.5 A @ 230 V AC; DC-13: 0.5 A @ 60 V DC or 2.0 A @ 24 V DC			
Terminals		Quick-connect 6.3 x 0.8 mm			
Magnetic drive					
Rated control supply voltage U_s		24 / 36 / 72 / 110 V DC			
Operating range of U_s		–30 % ... +25 % @ T_a = 70° C max.			
Coil power dissipation (T_a = 20° C / U_s)		Cold coil approx. 15 W, warm coil approx. 9 W			
Coil temperature		155° C @ $T_{a\,max}$ and $U_{s\,max}$			
Coil suppression		Varistor			
Terminals		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	IEC 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			

Schaltbau GmbH

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

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Find your worldwide contact person. We are here for you, personally!

with compliments:

IRIS Certification

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

Schaltbau GmbH ISO 14001 certified since 2002

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

Schaltbau GmbH ISO 9001 certified since 1994

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
- Snap-action switch made of robust polyetherimide (PEI)
- Snap-action switch with two galvanically isolated contact bridges
- Special switches to suit customer requirements

Contactors
Emergency disconnect switches

- 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

B1890/2401/0 Catalogue available as PDF