

# 3

## Contactors

C294 Series

Double pole  
NO contactors

Catalogue B294.en



More information here:  
[schaltbau-gmbh.com](http://schaltbau-gmbh.com)

## Double pole NO contactor, C294 Series

### Double pole high-voltage contactor of compact design:

Notwithstanding its small size, the C294 Series contactor features an extraordinary switching capacity for DC applications up to 1,000 V per contact system or 1,500 V when main contacts connected in series.

Best suited for the harsh environment of public transport, the C294 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
- DC versions with blowout magnets for arc quenching

### 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.

C294 series

### Standards

Contactors meet requirements for industrial applications to:

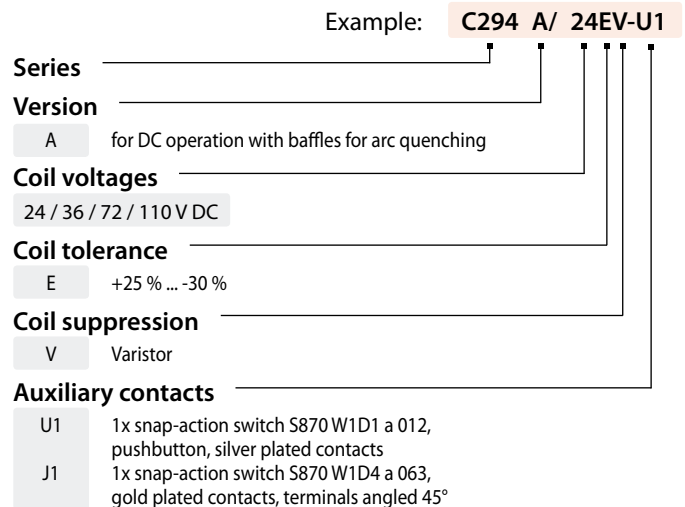
- **IEC 60947-1** Low-voltage switchgear and controlgear – Part 1: General rules.
- **IEC 60947-4-1** Low-voltage switchgear and controlgear – Part 4-1: Contactors and motor starters – Electromechanical contactors and motor starters.
- **UL 60947-4-1** Low-Voltage Switchgear and Controlgear – Part 4-1: Contactors and Motor-Starters – Electromechanical Contactors and Motor-Starters  
Approval according to UL 60947-4-1: UL file no. E116641

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

C294 series



Double pole NO contactor C294 A/ 110EV-U1



#### Note:

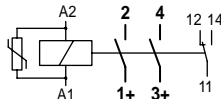
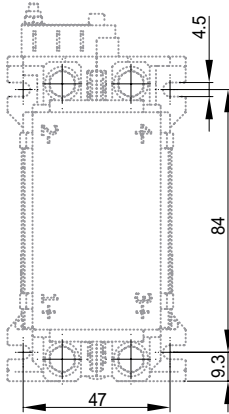
Presented in this catalogue are only stock items which can be supplied in short delivery time. For some variants minimum quantities apply. Please do not hesitate to ask for the conditions.

#### Special variant:

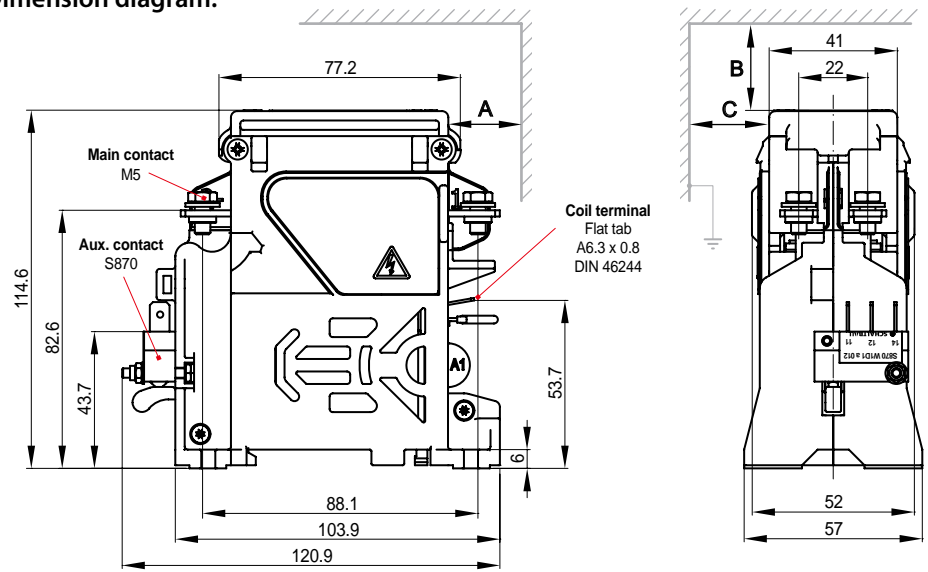
If you need a special variant of the contactor, please do not hesitate to contact us. Maybe the type of contactor you are looking for is among our many special designs. If not, we can also supply **customized designs**. In this case, however, minimum order quantities apply.

**Circuit and dimension diagram, Mounting**

C294 series

**Circuit diagram:**

**Mounting:**


M4, tightening torque 2 Nm max.4,  
use washer

**Dimension diagram:**


**Note:** Observe clearance of at least 10 mm  
towards live or earthed parts!  
Dimensions in mm

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

**Specifications**

C294 series

C294 series, version	A
<b>Main contacts</b>	
Type of voltage	DC
Main contacts, Number of, Configuration	2x SPST-NO
Nominal voltage $U_n$	1,000 V per contact system / 1,500 V when main contacts connected in series
Rated insulation voltage $U_i$	1,200 V according to DIN EN 60077 / 1,500 V according to DIN EN 60947
Rated impulse withstand voltage $U_{imp}$	12 kV
Pollution degree / Overvoltage category	PD3 / OV3
Conventional thermal current $I_{th}$ @ $T_a = 70^\circ\text{C}$ , AWG 3/0 (10 mm <sup>2</sup> )	40 A
Rated short-time withstand current $I_{cw}$	1,500 A / 100 ms
Making capacity (resistive, T = 0 ms)	550 A
Utilization category DC-1	1,500 V, 30 A when main contacts connected in series
<b>Breaking capacity</b>	
per contact system	1,200 V DC, L/R = 1 ms: 60 A; L/R = 15 ms: 13 A
main contacts connected in series	1,200 V DC, L/R = 1 ms: 120 A; L/R = 15 ms: 30 A; 1,500 V, 30 A (DC-1)
Switching off, no motor reversing circuits	only in one direction
Arc chute for DC operation	•
Blowout, magnetic	•
Contact material	AgSnO <sub>2</sub>
Terminals	M5, tightening torque 3 Nm max.
<b>Auxiliary contacts</b>	
Number of, configuration	1x snap-action switch S870, SPDT, optional (see also catalogue D70e)
Utilization category (IEC 60947-5-1)	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
Terminals	Quick-connect 6.3 x 0.8 mm
<b>Magnetic drive</b>	
Rated control supply voltage $U_s$	24 / 36 / 72 / 110 V DC
Operating range of $U_s$	-30 % ... +25 % at $T_a = 70^\circ\text{C}$ max.
Coil power dissipation ( $T_a = 20^\circ\text{C} / U_s$ )	Cold coil approx. 18 W, warm coil approx. 13 W
Coil temperature	155° C at $T_{a,max}$ and $U_{s,max}$
Coil suppression	Varistor
Terminals	Quick-connect 6.3 x 0.8 mm
Degree of protection (IEC 60529)	IP00
Mechanical endurance	> 3 million operating cycles
Electrical endurance	600,000 operating cycles ( $U_i = 1,200$ V DC, $I_{th} = 30$ A, L/R = 1 ms, per contact system)
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 or coil terminals point downwards
Temperature	
Operating temperature / storage temperature	-40° C ... +70° C / -40° C ... +70° C
Weight	1.0 kg

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

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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