

# 3

## Contactors

C294 Series

Double pole  
NO contactors

Catalogue [B294.en](#)



## 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.

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

C294 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.

### Ordering code

C294 series

Example: **C294 A/ 24EV-U1**

#### Series

#### Version

A for DC operation with baffles for arc quenching

#### Coil voltages

24 / 36 / 72 / 110 V DC

#### Coil tolerance

E +25 % ... -30 %

#### Coil suppression

V Varistor

#### 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°



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.

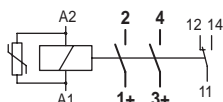
#### Special variant:

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.

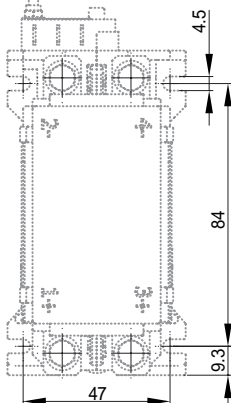
## Circuit and dimension diagram, Mounting

C294 series

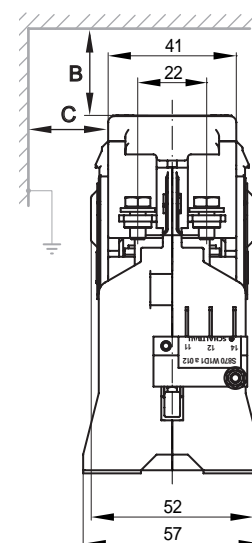
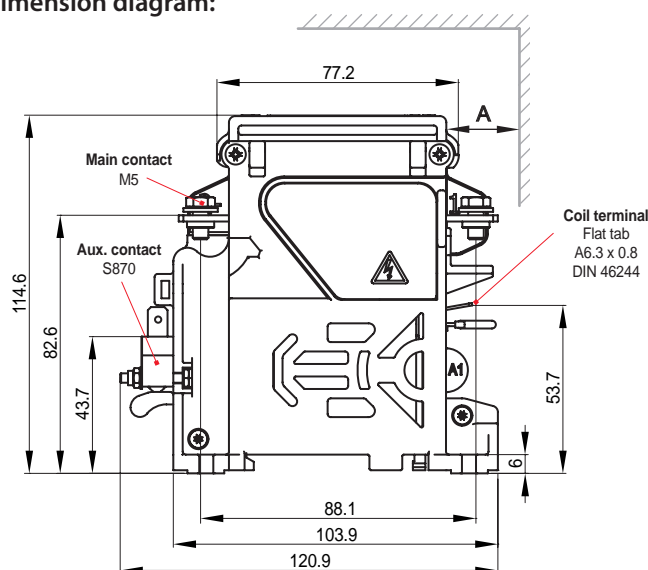
Circuit diagram:



Mounting:



Dimension diagram:



Reduced scale diagrams / dimensions in mm

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

**Note:**  
Clearance towards live or earthed parts  
≥ 10 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	I	A
Type of voltage		DC
Main contacts, Number of, Configuration		2x SPST-NO
Nominal voltage $U_n$		1,000 V
Rated insulation voltage $U_i$		1,200 V
Rated impulse withstand voltage $U_{imp}$		8 kV
Pollution degree / Overvoltage category		PD3 / OV3
Conventional thermal current $I_{th}$ at $T_a = 70^\circ\text{C}$ , 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
Breaking capacity per contact system main contacts connected in series		1,200 V DC, L/R 1 ms: 60 A, L/R 15 ms: 13 A 1,200 V DC, L/R 1 ms: 120 A, L/R 15 ms: 30 A
Switching off, no motor reversing circuits		only in one direction
Arc chute for DC operation		•
Blowout, magnetic		•
Main contacts: Material Terminals		AgSnO <sub>2</sub> M5, tightening torque 3 Nm max.
Auxiliary contacts: Number of, configuration Utilization category (IEC 60947-5-1) 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. 18 W, warm coil approx. 13 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		> 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		-25° C ... +70° C / -40° C ... +70° C
Weight		1.0 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