

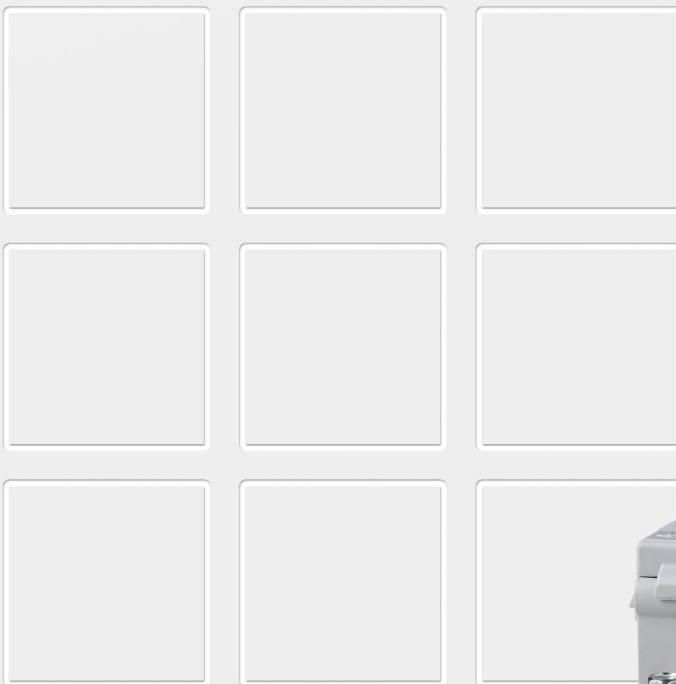
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Contactors

C294 Series

Double pole
NO contactors

Catalogue B294.en



More information
schaltbau.com

C294 – 2 pole NO contactors

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:

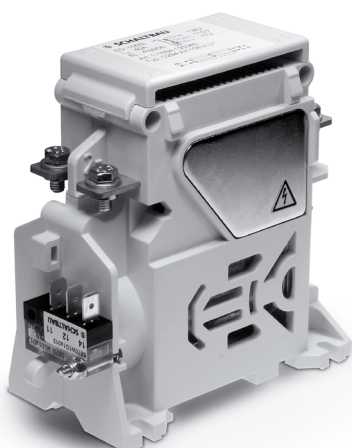
- **IEC 60077-1** Railway applications – Electric equipment for rolling stock – Part 1: General service conditions and general rules.
- **IEC 60077-2** Railway applications – Electric equipment for rolling stock – Part 2: Electrotechnical components; General rules.

Ordering code

C294 series

Example: **C294A/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.

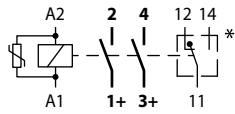
Special variant:

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

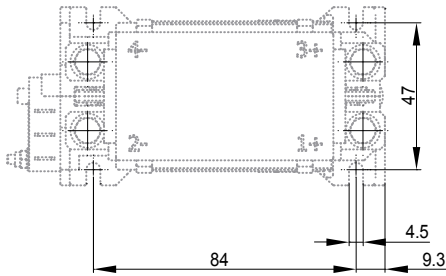
C294 series

Circuit diagram:



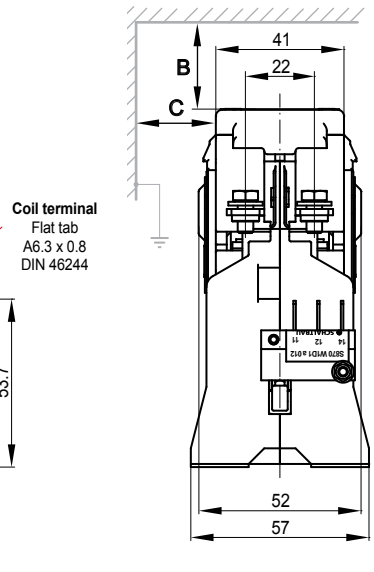
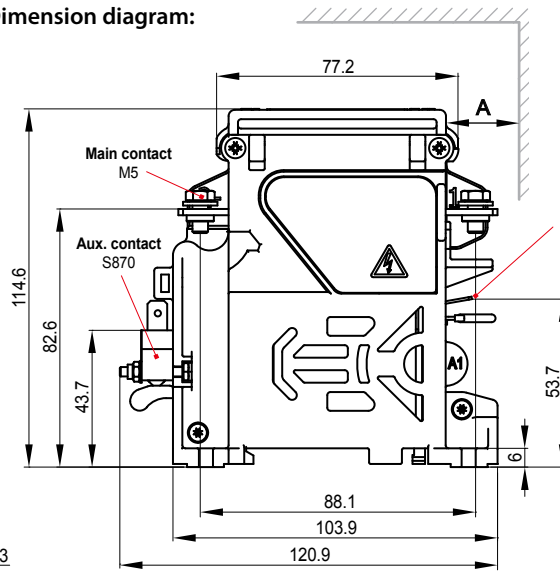
i * Auxiliary switches with mirror contact function according to EN 60947-4-1, annex F

Mounting:



i 4x screw fastening M4, tightening torque 2 Nm max, use washer

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

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

Specifications

C294 series

C294 series, version		A
Main contacts		
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 ²)		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
Breaking capacity		
per contact system		1,200 V DC, L/R = 1 ms: 60 A; L/R = 15 ms: 13 A
main contacts connected in series		1,500 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 chamber for DC operation		•
Blowout, magnetic		•
Contact 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	IEC 60947-5-1	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 % @ $T_a = 70^\circ\text{C}$ 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 @ $T_{a,max}$ 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	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 or coil terminals point downwards
Temperature		
Operating temperature / storage temperature		-40° C ... +70° C / -40° C ... +70° C
Weight		1.0 kg

Schaltbau GmbH

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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
- 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