

C310

1 pole AC and bi-directional DC NO contactors for 150 A, 300 A and 500 A

C310 - 1 pole AC and bi-directional DC NO contactors

Compact single-pole NO contactors for AC and DC up to 1,500 volt rated insulation voltage. Making current up to 2,500 amps; conventional thermal current up to 500 amps; short-time current up to 3,000 amps.

The bi-directional DC contactors switch high powers in a small space. With a making capacity of up to 2,500 amps, the compact switchgear is suitable for applications with high inrush current or high capacities. All versions can continuously conduct up to 500 amps. In the event of a short circuit, 3,000 amps, can even flow for one second without the contacts welding. The contactor

therefore maintains its full function in order to disconnect high power ranges if necessary up to 500 amps and up to 1,500 volts – irrespective of the current direction. This full bi-directionality is important for systems with a charging and discharging process, such as in battery networks or electric vehicles. Other typical application areas are the DC circuit in inverters, combiner boxes in photovoltaic systems or the management of battery storage systems.

Features

$\label{eq:compact} \mbox{Compact dimensions - high rated insulation voltage U_i} \mbox{ up to 1,500 volts}$

Small dimensions - great performance! Nevertheless, all the air gaps in the contact area have been generously dimensioned. The rated insulation voltage is 1,500 volts. The arc chamber of the C310 is made of plastic. This is efficient and saves weight.

High making capacity I_{cm} of up to 2,500 amps

The C310 can switch on a current of up to 2,500 amps (monostable design in a horizontal installation position; L/R = 0 ms). A PWM controller regulates the coil current and ensures low-bounce switch on as well as a low holding power. High contact forces and optimised silver contacts both contribute to the excellent making capacity.

High thermal continuous current Ith of up to 500 amps

All versions of the C310 can continuously carry up to 500 amps. (Cross-section of the connections: 185 mm², maximum ambient temperature: 85° C; terminal heating: +65 Kelvin). The value is achieved through very high contact forces.

High short-time withstand current rating I_{cw} of up to 3,000 amps

The C310 can carry a current of up to 3,000 amps for one second without the contacts welding. This is enough time for the short circuit fuse to trip. The short-time withstand current rating is based on high contact forces and optimised silver contacts.

Full bi-directionality - reliable disconnection of high performances

All versions of the C310 can reliably disconnect high currents and voltages, irrespective of the current direction. These properties are achieved in the A and K versions through the special arrangement of blowout magnets and arcing chambers, high contact forces and generously dimensioned clearances in the contact aera.

Auxiliary switch with mirror contact function

Series C310 contactors are equipped with auxiliary switches with mirror contact function in accordance with DIN EN IEC 60947-4-1, annex F. Mirror contacts are required for the feedback circuits in safety controls. Mirror contacts ensure that the NC contact of the auxiliary contact is not closed at the same time as the NO main contact.

Standards

Contactors meet requirements for industrial applications to:

IEC 60947-4-1

Low-voltage switchgear and controlgear - Part 4-1: Contactors and motor starters - Electromechanical contactors and motor starters

ISO 16750-3

Road vehicles - Environmental conditions and testing for electrical and electronic equipment - Part 3: Mechanical loads

UL 60947-4-1

Low-Voltage Switchgear and Controlgear - Part 4-1: Contactors and Motor-Starters - Electromechanical Contactors and Motor-Starters.

GB/T 14048.4

Low-Voltage Switchgear and Controlgear - Part 4-1: Contactors and Motor-Starters - Electromechanical Contactors and Motor-Starters.

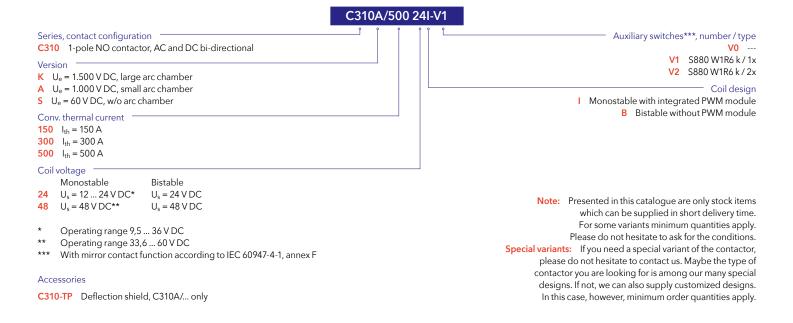
Reliable, robust and economical

Contactors of the C310 series are designed for continuous currents of 150 amps, 300 amps and 500 amps. The switchgear has both high making and breaking capacities, and a high short-time withstand current. This ensures high operational safety. An integrated electronic coil control ensures a constant and reliable switching behaviour independent of the ambient temperature. In addition, the energy consumption and associated heat development of the monostable design is noticeably reduced when switched on.

Inherent to its design, the bistable version consumes no power in either end positions.

Dependent on the application, high requirements can be placed on electromechanical components. The new DC contactors are highly resistant to shock and vibration loads and meet the high requirements of ISO 16750.

Ordering key



Applications

Thanks to many years of experience and competence developing electromechanical switchgear and the mastering DC arcs, Schaltbau has developed an innovative solution with new DC contactors that significantly simplifies applications with DC switching technology. Since the C310 series safely controls both current directions, the contactors are ideal for all applications involving energy recovery.

A typical example here is energy storage, where batteries are

Photovoltaics

- DC switching in central inverters
- Electrical cabinet (combiner boxes)
- Home energy storage systems

Battery energy storage systems

- Grid stabilization and battery energy storages
- Regenerative systems in industrial plants
- Battery management systems
- Home energy storages

repeatedly charged and discharged. Other application areas for the C310 series are regenerative systems, DC charging stations and photovoltaic systems. In battery powered and hybrid vehicles, the devices can be used directly as the main contactor in the battery disconnect unit (BDU). This reliably ensures the disconnection of both poles from the vehicle in the event of a short circuit.

E-mobility

- Electrical vehicles, hybrid vehicles and trolley busses
- DC charging station
- Battery test systems

C310 - Version «K» - Circuit diagram, dimension diagram



C310K/ - 1 pole NO contactor ${\sf AC}\, or\, bi\text{-}directional\, {\sf DC}$

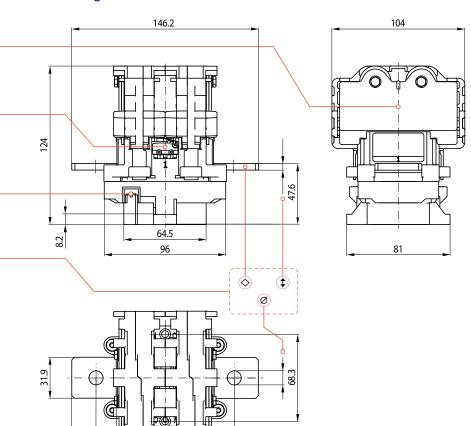
- Large arc chamber for significantly higher breaking capacity
- Rated insulation voltage U_i up to 1,500 V Rated short-circuit making capacity I_{cm} up to 2,500 A
- Conventional free air thermal current I_{th} up to 500 A
- Rated short-time withstand current I_{cw} up to 3,000 A

Circuit diagram

	Monostable *	Bistable **
C310K/ Main contacts 1x NO Number of auxiliary switches none	$ \begin{array}{c} A1 + & 1 \\ & \downarrow \\ A2 - & 2 \end{array} $	$ \begin{array}{c} A1 + /- \\ $
C310K/ Main contacts 1x NO Number of auxiliary switches*** 1x SPDT S880 W1R6 k	$ \begin{array}{c ccccc} A1 + & & & & 12 & 14 \\ \hline & & & & & & & & & & & \\ \hline & & & & & & & & & & \\ A2 - & & & & & & & & \\ \end{array} $	$ \begin{array}{c ccccc} A1 + / - & 1 & 12 & 14 \\ \hline & $
C310K/ Main contacts 1x NO Number of auxiliary switches*** 2x SPDT S880 W1R6 k	A1 + 1 12 14 22 24 1 - 1 1 15 14 22 24 A2 - 2 11 21	A1+/- 1 12 14 22 24 1 12 14 22 24

- $Coil \, suppression \, integrated, additional \, circuit \, is \, not \, allowed!$
- Switching by reversing the polarity, voltage pulse 0.5 sec max.
- *** Auxiliary switches with mirror contact function according to EN 60947-4-1, annex F

Dimension diagram C310K/...



108.2

Arc chamber main contact system

Highly efficient plastic arc chamber with permanent magnetic blowing

Aux. switch

S880, SPDT, flat tabs $2.8 \times 0.5 \, \text{mm}$

Coil terminal

Flat tabs 6.3 x 0.8 mm

Main contact terminals

	Main contact term	iiiais
Series	Material	\Diamond
C310K/150 C310K/300	Copper Copper	
C310K/500	Copper, silver plat	ed
Series	Thickness	(
C310K/150	3 mm	
C310K/300	5 mm	
C310K/500	5 mm	
Series	Diameter	0
C310K/150	ø9 mm	
C310K/300	Ø 11 mm	
C310K/500	Ø 11 mm	

Specifications - Version «K» for $U_e = 1,500 \text{ V DC}$

Series		C310K/150	C310K/300	C310K/500	
Type of voltage		DC, bi-directional / AC	, f ≤ 60 Hz		
Main contacts, configuration	1x NO				
Electrical data according to IEC/UL 60947-4-1, GE	3/T 14048.4				
Rated operational voltage U _e		1,000 V @ PD3 / 1,500 Y			
Rated insulation voltage U _i		1,000 V @ PD3 / 1,500 V @ PD2			
Rated impulse withstand voltage U _{imp}		8 kV			
Pollution degree / Overvoltage category		PD2, PD3: see U _e and U _i	/ OV3		
Conventional free air thermal current I _{th}	$T_a = 40^{\circ} \text{ C (cross section)}$	150 4 /50 2)	200 A (40F 2)	500 A (2x 150 mm²)	
Payer dissipation par pola L @ 40 °C	$T_a = 70^{\circ} \text{ C (cross section)}$	150 A (50 mm²) 3 W	300 A (185 mm²) 11 W	400 A (240 mm²) 30 W	
Power dissipation per pole I _{th} @ 40 °C	typ.				
Pole impedance Utilization category AC-1* U _e = 750 V	typ.	120 μΩ	120 μΩ	120 μΩ	
Rated operational current $l_e = 750 \text{ V}$	IEC 60947-4-1	60 A	60 A	60 A	
Utilization category DC-1* U _e = 750 V					
Rated operational current I _e IE	EC 60947-4-1, GB/T 14048.4	60 A	60 A	60 A	
Jtilization category DC-1* / DC general use $U_e = 6$		50.4	50.4		
Rated operational current I _e	UL 60947-4-1	50 A	50 A	50 A	
Frequency of operation (operations per hour) le	AC-1 & DC-1	360 h-1	360 h-1	360 h-1	
Rated short-time withstand current I _{cw}	t = 1 s	3,000 A			
Short circuit protection device for contactors (w/o J _e = 900 V DC, I _{prosp} = 10 kA, coord. type "2", fuse:		200 A	315 A	2x 250 A (parallel)	
Additional electrical ratings of main circuit	10 25 502 (alt 1) pc/		0.071	zazoo raparaner/	
Conventional free air thermal current I _{th}	T _a = 85 °C (cross section)	200 A (50 mm²)	350 A (120 mm²)	500 A (185 mm²)	
	Terminal heating	45 K	45 K	65 K	
Power dissipation per pole	I _{th} @ 40 °C, typ.	5 W	15 W	30 W	
Pole impedance	typ.	125 μΩ	120 μΩ	120 μΩ	
Rated short-circuit making capacity I_{cm} (L/R = 0 ms			al: 2,500 A, vertical: 2,000 A		
For mono- or bistable drive (depending on mount	* '	bistable: horizontal: 7	50 A, vertical: 750 A		
Breaking capacity $L_{max} = 0.25 \text{ r}$ Single contact	mH, other values on request $U_e = 1.500 \text{ V} / I_e = 300 \text{ A}$	10 operations			
Single contact	$U_e = 1.000 \text{ V} / I_e = 500 \text{ A}$ $U_e = 1.000 \text{ V} / I_e = 500 \text{ A}$	20 operations			
	$U_e = 900 \text{ V/I}_e = 700 \text{ A}$	25 operations			
	$U_e = 750 \text{ V/I}_e = 1.000 \text{ A}$	10 operations			
	$U_e = 500 \text{ V} / I_e = 1.500 \text{ A}$	15 operations			
Double contact circuit	$U_e = 1.500 \text{ V/I}_e = 1.000 \text{ A}$	10 operations			
Double contact circuit	$U_e = 1.000 \text{ V/I}_e = 1.500 \text{ A}$	15 operations			
	-6				
Electrical endurance		6,000 operations @ DC	$(L/R = 1 \text{ ms}), AC (\cos \varphi = 0.8): 750$	0V/60A	
Electrical endurance Main contacts		6,000 operations @ DC	$(L/R = 1 \text{ ms}), AC (\cos \varphi = 0.8): 750$	OV/60A	
Main contacts		6,000 operations @ DC AgSnO ₂	$(L/R = 1 \text{ ms}), AC (\cos \varphi = 0.8): 750$ $AgSnO_2$	OV/60 A AgSnO ₂	
Main contacts Contact material					
Main contacts Contact material Ferminals		AgSnO ₂	AgSnO ₂	AgSnO ₂	
Main contacts Contact material Terminals Torque		AgSnO ₂ M8	AgSnO ₂ M10	AgSnO₂ M10	
Main contacts Contact material Terminals Torque Auxiliary contacts		AgSnO ₂ M8	AgSnO ₂ M10 8 10 Nm	AgSnO₂ M10	
		AgSnO ₂ M8 4.8 6 Nm	AgSnO ₂ M10 8 10 Nm	AgSnO₂ M10	
Main contacts Contact material Ferminals Forque Auxiliary contacts Number, configuration / Contact material Making / Breaking capacity \$880		AgSnO ₂ M8 4.8 6 Nm 2x S880 W1R6 k max. / AC-15: 230 V AC / 1.0 A	AgSnO ₂ M10 8 10 Nm	AgSnO₂ M10	
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Main contacts Contact material Terminals Torque Auxiliary contacts Number, configuration / Contact material Making / Breaking capacity \$880 Minimum voltage / Current Terminals Magnetic drive (monostable) Rated control supply voltage U _s (Operating range Pollution degree / Overvoltage category Coil power dissipation, max. (Ta = 20 °C / U _s) Pull-In power (0.2 s) / Holding power Frequency of operation (operations per hour, no look pull-in time (Ta = 20 °C / U _s) / Drop-off time (Ta = 2 °C / U _s) Rated control supply voltage U _s Pollution degree / Overvoltage category Coil tolerance Coil power dissipation, max. (Ta = 20 °C / U _s) Frequency of operation (operations per hour, no look pull-in time (Ta = 20 °C / U _s) / Drop-off time (Ta = 20 °C / U _s)	pad) $T_a = 20 ^{\circ}\text{C} / 70 ^{\circ}\text{C}$ $0 ^{\circ}\text{C} / U_s)$ typ. pad) $T_a = 20 ^{\circ}\text{C} / 70 ^{\circ}\text{C}$ $0 ^{\circ}\text{C} / U_s)$ typ.	AgSnO ₂ M8 4.8 6 Nm 2x S880 W1R6 k max. / AC-15: 230 V AC / 1.0 A 5 V / 5 mA Flat quick connect 2.8 x 12 24 V DC (9.5 36 V PD3 / OV2 50 W (24 V) / 2.6 W 3,600 h-1 / 1,800 h-1 33 ms / 25 ms Suppressor diode / Flat 24 / 48 V DC @ ON time PD3 / OV2 -30 % +25 % U _s 35 W 1,800 h-1 / 1,800 h-1 20 ms / 13 ms Suppressor diode / Flat vertical / horizontal (mo	AgSnO ₂ M10 8 10 Nm Silver A DC-13: 60 V DC / 0.5 A 0.5 mm VDC) / 48 V DC (33.6 60 V DC) ttabs 6.3 x 0.8 mm 0.1 0.5 s max.	AgSnO ₂ M10 8 10 Nm	
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Main contacts Contact material Ferminals Forque Auxiliary contacts Number, configuration / Contact material Making / Breaking capacity \$880 Minimum voltage / Current Ferminals Magnetic drive (monostable) Rated control supply voltage U _s (Operating range Pollution degree / Overvoltage category Coil power dissipation, max. (T _a = 20 °C / U _s) Pull-In power (0.2 s) / Holding power Frequency of operation (operations per hour, no locally in time (T _a = 20 °C / U _s) / Drop-off time (T _a = 20 °C / U _s) Rated control supply voltage U _s Pollution degree / Overvoltage category Coil tolerance Coil power dissipation, max. (Ta = 20 °C / U _s) Frequency of operation (operations per hour, no locally in the control supply voltage U _s Pollution degree / Overvoltage category Coil tolerance Coil suppression (integrated) / Coil terminal Mounting position Degree of protection Mechanical endurance main control Shock / Vibration	pad) $T_a = 20 ^{\circ}\text{C} / 70 ^{\circ}\text{C}$ $0 ^{\circ}\text{C} / \text{U}_s$ typ. $T_a = 20 ^{\circ}\text{C} / 70 ^{\circ}\text{C}$	AgSnO ₂ M8 4.8 6 Nm 2x S880 W1R6 k max. / AC-15: 230 V AC / 1.0 A 5 V / 5 mA Flat quick connect 2.8 x 12 24 V DC (9.5 36 M PD3 / OV2 50 W (24 V) / 2.6 W 3,600 h ⁻¹ / 1,800 h ⁻¹ 33 ms / 25 ms Suppressor diode / Flat 24 / 48 V DC @ ON time PD3 / OV2 -30 % +25 % U _s 35 W 1,800 h ⁻¹ / 1,800 h ⁻¹ 20 ms / 13 ms Suppressor diode / Flat vertical / horizontal (mo) IP00 2,000,000 operations / 1,000,000 operations	AgSnO ₂ M10 8 10 Nm Silver A DC-13: 60 V DC / 0.5 A 0.5 mm VDC) / 48 V DC (33.6 60 V DC) ttabs 6.3 x 0.8 mm 0.1 0.5 s max. ttabs 6.3 x 0.8 mm unting see page 11) 100,000 operations lass C	AgSnO ₂ M10 8 10 Nm	
Main contacts Contact material Terminals Torque Auxiliary contacts Number, configuration / Contact material Making / Breaking capacity \$880 Minimum voltage / Current Terminals Magnetic drive (monostable) Rated control supply voltage U _s (Operating range Pollution degree / Overvoltage category Coil power dissipation, max. (T _a = 20 °C / U _s) Pull-In power (0.2 s) / Holding power Frequency of operation (operations per hour, no locate power (T _a = 20 °C / U _s) / Drop-off time (T _a = 20 °C / U _s) Magnetic drive (bistable) Rated control supply voltage U _s Pollution degree / Overvoltage category Coil tolerance Coil power dissipation, max. (Ta = 20 °C / U _s) Frequency of operation (operations per hour, no locate power dissipation, max. (Ta = 20 °C / U _s) Frequency of operation (operations per hour, no locate power dissipation, max. (Ta = 20 °C / U _s) Frequency of operation (operations per hour, no locate power dissipation, max. (Ta = 20 °C / U _s) Frequency of operation (operations per hour, no locate power dissipation, max. (Ta = 20 °C / U _s) Frequency of operation (operations per hour, no locate power dissipation, max. (Ta = 20 °C / U _s) Frequency of operation (operations per hour, no locate power dissipation, max. (Ta = 20 °C / U _s) Frequency of operation (operations per hour, no locate power dissipation, max. (Ta = 20 °C / U _s) Frequency of operation (operations per hour, no locate power dissipation, max. (Ta = 20 °C / U _s) Frequency of operation (operations per hour, no locate power dissipation, max. (Ta = 20 °C / U _s) Frequency of operation (operations per hour, no locate power dissipation, max. (Ta = 20 °C / U _s) Frequency of operation (operations per hour, no locate power dissipation, max. (Ta = 20 °C / U _s) Frequency of operation (operations per hour, no locate power dissipation, max. (Ta = 20 °C / U _s)	bad) T _a = 20 °C / 70 °C 0 °C / U _s) typ. bad) T _a = 20 °C / 70 °C 0 °C / U _s) typ. IEC 60529 acts monostable / bistable auxiliary contacts IEC 61373 / ISO 16750-3	AgSnO ₂ M8 4.8 6 Nm 2x S880 W1R6 k max. / AC-15: 230 V AC / 1.0 A 5 V / 5 mA Flat quick connect 2.8 x 12 24 V DC (9.5 36 N PD3 / OV2 50 W (24 V) / 2.6 W 3,600 h-1 / 1,800 h-1 33 ms / 25 ms Suppressor diode / Fla 24 / 48 V DC @ ON time PD3 / OV2 -30 % +25 % U _s 35 W 1,800 h-1 / 1,800 h-1 20 ms / 13 ms Suppressor diode / Fla vertical / horizontal (mo IP00 2,000,000 operations / 1,000,000 operations Category 1, Class B / C -40 °C +85 °C / -40 °C -40 °C +85 °C / -40 °C	AgSnO ₂ M10 8 10 Nm Silver A DC-13: 60 V DC / 0.5 A 0.5 mm VDC) / 48 V DC (33.6 60 V DC) t tabs 6.3 x 0.8 mm 0.1 0.5 s max. t tabs 6.3 x 0.8 mm unting see page 11) 100,000 operations lass C C +85 °C	AgSnO ₂ M10 8 10 Nm	

C310 - Version «A» - Circuit diagram, dimension diagram



C310A/ - 1 pole NO contactor AC or bi-directional DC

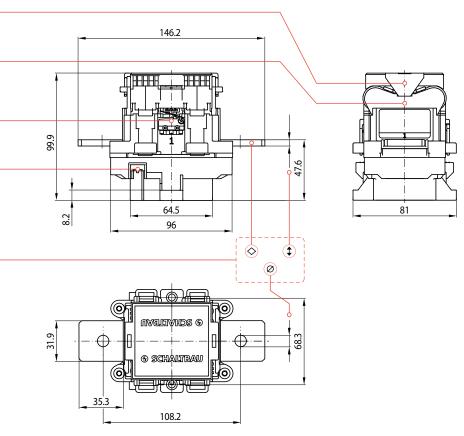
- Rated insulation voltage U_i up to 1,500 V, version with small arc chamber
- Rated short-circuit making capacity I_{cm} up to 2,500 A
- Conventional free air thermal current _{Ith} up to 500 A
- Rated short-time withstand current I_{cw} up to 3,000 A

Circuit diagram

	Monostable *	Bistable **
C310A/ Main contacts 1x NO Number of auxiliary switches none	$\begin{array}{c} A1 + & 1 \\ & \downarrow \\ A2 - & 2 \end{array}$	$ \begin{array}{c c} A1 +/- & 1 \\ \hline & \downarrow \\ & \downarrow \\ & A2 +/- & 2 \end{array} $
C310A/ Main contacts 1x NO Number of auxiliary switches*** 1x SPDT S880 W1R6 k	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	A1 +/- 1 12 14 A2 +/- 2 11
C310A/ Main contacts 1x NO Number of auxiliary switches*** 2x SPDT S880 W1R6 k	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	A1 +/- 1 12 14 22 24 1 15 15 15 15 15 15 15 15 15 15 15 15 15

- ${\color{blue}\star} \quad \text{Coil suppression integrated, additional circuit is not allowed!}$
- ** Switching by reversing the polarity, voltage pulse 0.5 sec max.
- *** Auxiliary switches with mirror contact function according to EN 60947-4-1, annex F

Dimension diagram C310A/...



Arc chamber cover

Reduces the distance to live, metallic or grounded parts

Arc chamber main contact system

Highly efficient plastic arc chamber with permanent magnetic blowing

Aux. switch

S880, SPDT, flat tabs 2.8×0.5 mm

Coil terminal

Flat tabs $6.3 \times 0.8 \text{ mm}$

Main contact terminals

Series	Material 🛇
C310A/150	Copper
C310A/300	Copper
C310A/500	Copper, silver plated
Series	Thickness (‡)
C310A/150	3 mm
C310A/300	5 mm
C310A/500	5 mm
Series	Diameter @
C310A/150	ø9mm
C310A/300	Ø 11 mm
C310A/500	Ø 11 mm

Specifications - Version «A» for $U_e = 1,000 \text{ V DC}$

Series			C310A/150	C310A/300	C310A/500
Type of voltage Main contacts, configuration	2		DC, bi-directional / AC	C, f ≤ 60 Hz	
Electrical data according to		/T 14048.4	IXIVO		
Rated operational voltage U			1.000 V		
Rated insulation voltage U _i	e		1,000 V @ PD3 / 1,500	V @ PD2	
Rated impulse withstand voltage U _{imp}		10 kV	V G I D Z		
Pollution degree / Overvoltage category		PD2, PD3: see U _e and U _i / OV3			
Conventional free air therma	0 0 ,	T _a = 40° C (cross section)	FD2, FD3: See U _e and U	0; 7 OV3	500 A (2x 150 mm²)
		$T_a = 70^{\circ} \text{ C (cross section)}$	150 A (50 mm²)	300 A (185 mm²)	400 A (240 mm²)
Power dissipation per pole I	th @ 40 °C	typ.	3.5 W	11 W	30 W
Pole impedance	7501/	typ.	150 μΩ	120 μΩ	120 μΩ
Utilization category AC-1* U Rated operational current l _e		IEC 60947-4-1	60 A	60 A	60 A
Utilization category DC-1* U		C 40047 A 1 CD/T 14049 A	40 A	40.4	40.4
Rated operational current l _e Utilization category DC-1*/		C 60947-4-1, GB/T 14048.4	60 A	60 A	60 A
Rated operational current l _e		UL 60947-4-1	50 A	50 A	50 A
Frequency of operation (ope		AC-1 & DC-1	360 h-1	360 h-1	360 h-1
Rated short-time withstand	•	t = 1 s	3,000 A		
Short circuit protection devi	***		0,00071		
$U_e = 900 \text{ V DC}, I_{prosp} = 10 \text{ kA}$	A, coord. type "2", fuse:		200 A	315 A	2x 250 A (parallel)
Additional electrical ratings		T _a = 85 °C (cross section)	200 4 (50 2)	2E0 A (120 - 2)	EOO A /10F2\
Conventional free air therma	al current I _{th}	Terminal heating	200 A (50 mm²) 45 K	350 A (120 mm²) 45 K	500 A (185 mm²) 65 K
Power dissipation per pole		I _{th} @ 40 °C, typ.	5 W	15 W	30 W
Pole impedance		typ.	125 μΩ	120 μΩ	120 μΩ
Rated short-circuit making c				tal: 2,500 A, vertical: 2,000 A	
For mono- or bistable drive			bistable: horizontal: 7	750 A, vertical: 750 A	
Breaking capacity Single contact	$L_{max} = 0.25 \text{ n}$	nH, other values on request $U_e = 1,500 \text{ V} / I_e = 50 \text{ A}$ $U_e = 900 \text{ V} / I_e = 400 \text{ A}$	60 operations 60 operations		
5 11		$U_e = 750 \text{ V} / I_e = 500 \text{ A}$ $U_e = 500 \text{ V} / I_e = 800 \text{ A}$	60 operations 60 operations		
Double contact circuit		$U_e = 1,500 \text{ V} / I_e = 500 \text{ A}$ $U_e = 1,000 \text{ V} / I_e = 800 \text{ A}$	60 operations 60 operations		
Electrical endurance			6,000 operations @ DC	$C(L/R = 1 \text{ ms}), AC(\cos \varphi = 0.8): 750$)V/60A
Main contacts					
Contact material			AgSnO ₂	AgSnO ₂	AgSnO ₂
Terminals			M8	M10	M10
Torque			4.8 6 Nm	8 10 Nm	8 10 Nm
Auxiliary contacts					
Number, configuration / Co	ontact material		2x S880 W1R6 k max. /	' Silver	
Making / Breaking capacity	/ S880		AC-15: 230 V AC / 1.0	A DC-13: 60 V DC / 0.5 A	
Minimum voltage / Current	t		5 V / 5 mA		
Terminals			Flat quick connect 2.8 >	x 0.5 mm	
	<u></u>		·		
Magnetic drive (monostable Rated control supply voltage	e U _s (Operating range)		12 24 V DC (9.5 36 PD3 / OV2	VDC) / 48 VDC (33.6 60 VDC	C)
Magnetic drive (monostable Rated control supply voltage Pollution degree / Overvolta Coil power dissipation, max.	e U _s (Operating range) age category . (T _a = 20 °C / U _s)	ver (0.2 s) / Holding power		VDC) / 48 VDC (33.6 60 VDC	C)
Magnetic drive (monostable Rated control supply voltage Pollution degree / Overvolta Coil power dissipation, max	e U_s (Operating range) age category . ($T_a = 20 ^{\circ}\text{C} / U_s$) Pull-In pov	ver (0.2 s) / Holding power	PD3 / OV2	VDC) / 48 VDC (33.6 60 VDC	C)
Magnetic drive (monostable Rated control supply voltage Pollution degree / Overvolta Coil power dissipation, max. Frequency of operation (ope Pull-in time (T _a = 20 °C / U _s)	e U_s (Operating range) age category . ($T_a = 20^{\circ}\text{C}/U_s$) Pull-In pov erations per hour, no lo / Drop-off time ($T_a = 20^{\circ}$	ver (0.2 s) / Holding power ad)	PD3 / OV2 50 W (24 V) / 2.6 W 3,600 h ⁻¹ / 1,800 h ⁻¹ 33 ms / 25 ms		5)
Magnetic drive (monostable Rated control supply voltage Pollution degree / Overvolta Coil power dissipation, max. Frequency of operation (oper Pull-in time (Ta = 20 °C / Us) Coil suppression (integrated	e U_s (Operating range) age category . ($T_a = 20^{\circ}\text{C}/U_s$) Pull-In pov erations per hour, no lo / Drop-off time ($T_a = 20^{\circ}$	ver (0.2 s) / Holding power ad) $T_a = 20 ^{\circ}\text{C}$ / $70 ^{\circ}\text{C}$	PD3 / OV2 50 W (24 V) / 2.6 W 3,600 h ⁻¹ / 1,800 h ⁻¹		5)
Magnetic drive (monostable Rated control supply voltage Pollution degree / Overvolta Coil power dissipation, max. Frequency of operation (oper Pull-in time (Ta = 20 °C / Us) Coil suppression (integrated Magnetic drive (bistable) Rated control supply voltage	e U_s (Operating range) age category . $(T_a = 20 ^{\circ}\text{C} / U_s)$ Pull-In powerations per hour, no lo / Drop-off time $(T_a = 20 ^{\circ}\text{C})$ d) / Coil terminal e U_s (Min. operating vo	ver (0.2 s) / Holding power ad) $T_a = 20 ^{\circ}\text{C}$ / $70 ^{\circ}\text{C}$ $0 ^{\circ}\text{C}$ / U_s) typ.	PD3 / OV2 50 W (24 V) / 2.6 W 3,600 h ⁻¹ / 1,800 h ⁻¹ 33 ms / 25 ms Suppressor diode / Flace 24 V DC (16.8 V DC) @ C	at tabs 6.3 x 0.8 mm	
Magnetic drive (monostable Rated control supply voltage Pollution degree / Overvoltage Coil power dissipation, max. Frequency of operation (operation time $(T_a = 20 ^{\circ}\text{C} /\text{U}_s)$) Coil suppression (integrated Magnetic drive (bistable) Rated control supply voltage Pollution degree / Overvoltage	e U _s (Operating range) age category . (T _a = 20 °C / U _s) Pull-In poverations per hour, no lo / Drop-off time (T _a = 20) / Coil terminal e U _s (Min. operating volume category	ver (0.2 s) / Holding power ad) $T_a = 20 ^{\circ}\text{C}$ / $70 ^{\circ}\text{C}$ $0 ^{\circ}\text{C}$ / U_s) typ.	PD3 / OV2 50 W (24 V) / 2.6 W 3,600 h ⁻¹ / 1,800 h ⁻¹ 33 ms / 25 ms Suppressor diode / Fla 24 V DC (16.8 V DC) @ C PD3 / OV2	at tabs 6.3 x 0.8 mm	
Magnetic drive (monostable Rated control supply voltage Pollution degree / Overvoltage Pollution degree / Overvoltage Pollution degree / Overvoltage Poll-in time ($T_a = 20 ^{\circ}\text{C} / \text{U}_s$) / Coil suppression (integrated Magnetic drive (bistable) Rated control supply voltage Pollution degree / Overvoltage Coil power dissipation, max.	e U_s (Operating range) age category . ($T_a = 20 ^{\circ}\text{C} / U_s$) Pull-In powerations per hour, no lo / Drop-off time ($T_a = 20 ^{\circ}\text{C}$) / Coil terminal e U_s (Min. operating volume category . ($T_a = 20 ^{\circ}\text{C} / U_s$)	ver (0.2 s) / Holding power ad) $T_a = 20 ^{\circ}\text{C}$ / $70 ^{\circ}\text{C}$ $0 ^{\circ}\text{C}$ / U_s) typ.	PD3 / OV2 50 W (24 V) / 2.6 W 3,600 h ⁻¹ / 1,800 h ⁻¹ 33 ms / 25 ms Suppressor diode / Fla 24 V DC (16.8 V DC) @ C PD3 / OV2 35 W	at tabs 6.3 x 0.8 mm	
Magnetic drive (monostable Rated control supply voltage Pollution degree / Overvoltage Pollution degree / Overvoltage Pollution degree / Overvoltage Poll-in time (Ta = 20 °C / Us) Coil suppression (integrated Magnetic drive (bistable) Rated control supply voltage Pollution degree / Overvoltage / Overvoltage / Overvoltage / Overvoltage / Ov	e U_s (Operating range) age category . ($T_a = 20 ^{\circ}\text{C} / U_s$) Pull-In powerations per hour, no lody of the properties of the pr	ver (0.2 s) / Holding power ad) $T_a = 20 ^{\circ}\text{C}$ / $70 ^{\circ}\text{C}$ 0 °C / U _s) typ. Itage)	PD3 / OV2 50 W (24 V) / 2.6 W 3,600 h ⁻¹ / 1,800 h ⁻¹ 33 ms / 25 ms Suppressor diode / Fla 24 V DC (16.8 V DC) @ C PD3 / OV2	at tabs 6.3 x 0.8 mm	
Magnetic drive (monostable Rated control supply voltage Pollution degree / Overvoltage Pollution degree / Overvoltage Pollution degree / Overvoltage Poll-in time (Ta = 20 °C / Us) Coil suppression (integrated Magnetic drive (bistable) Rated control supply voltage Pollution degree / Overvoltage Pollution degree / Overvoltage Pollution degree / Overvoltage Pollution degree / Overvoltage Poll-in time (Ta = 20 °C / Us) Coil suppression (integrated	e U_s (Operating range) age category . ($T_a = 20 ^{\circ}\text{C} / U_s$) Pull-In powerations per hour, no lody of the end	ver (0.2 s) / Holding power ad) $T_a = 20 ^{\circ}\text{C}$ / $70 ^{\circ}\text{C}$ 0 °C / U _s) typ. Itage)	PD3 / OV2 50 W (24 V) / 2.6 W 3,600 h ⁻¹ / 1,800 h ⁻¹ 33 ms / 25 ms Suppressor diode / Flance 24 V DC (16.8 V DC) @ C PD3 / OV2 35 W 1,800 h ⁻¹ / 1,800 h ⁻¹ 20 ms / 13 ms Suppressor diode / Flance	at tabs 6.3 x 0.8 mm DN time 0.1 0.5 s max. / 48 V DC	
Magnetic drive (monostable Rated control supply voltage Pollution degree / Overvoltage Pollution degree / Overvoltage Pollution degree / Overvoltage Poll-in time ($T_a = 20 ^{\circ}\text{C} / \text{U}_s$) and Suppression (integrated Magnetic drive (bistable) Rated control supply voltage Pollution degree / Overvoltage	e U_s (Operating range) age category . ($T_a = 20 ^{\circ}\text{C} / U_s$) Pull-In powerations per hour, no lody of the end	ver (0.2 s) / Holding power ad) $T_a = 20 ^{\circ}\text{C} / 70 ^{\circ}\text{C}$ $0 ^{\circ}\text{C} / \text{U}_s)$ typ. ltage) $T_a = 20 ^{\circ}\text{C} / 70 ^{\circ}\text{C}$ or $T_a = 20 ^{\circ}\text{C} / 70 ^{\circ}\text{C}$ $0 ^{\circ}\text{C} / \text{U}_s)$ typ.	PD3 / OV2 50 W (24 V) / 2.6 W 3,600 h ⁻¹ / 1,800 h ⁻¹ 33 ms / 25 ms Suppressor diode / Flance 24 V DC (16.8 V DC) @ C PD3 / OV2 35 W 1,800 h ⁻¹ / 1,800 h ⁻¹ 20 ms / 13 ms Suppressor diode / Flance Vertical / horizontal (mo	at tabs 6.3 x 0.8 mm DN time 0.1 0.5 s max. / 48 V DC	
Magnetic drive (monostable Rated control supply voltage Pollution degree / Overvoltage Pollution degree / Overvoltage Pollution degree / Overvoltage Pollution degree / Overvoltage Poll-in time (Ta = 20 °C / Us) / Coil suppression (integrated Magnetic drive (bistable) Rated control supply voltage Pollution degree / Overvoltage Pollution degree / Overvoltage Pollution degree / Overvoltage Pollution degree / Overvoltage Poll-in time (Ta = 20 °C / Us) / Coil suppression (integrated Mounting Position Degree of protection	e U _s (Operating range) age category . (T _a = 20 °C / U _s) Pull-In poverations per hour, no lo / Drop-off time (T _a = 2d) / Coil terminal e U _s (Min. operating volume category . (Ta = 20 °C / U _s) erations per hour, no lo / Drop-off time (T _a = 2d) / Drop-off time (T _a = 2d) / Coil terminal	$\begin{array}{c} \text{ver}(0.2\text{s}) \ / \ \text{Holding power} \\ \text{ad}) \qquad & T_a = 20^{\circ}\text{C} \ / \ 70^{\circ}\text{C} \\ \text{O}^{\circ}\text{C} \ / \ U_s) \qquad & \text{typ.} \\ \\ \text{Iltage}) \\ \\ \text{ad}) \qquad & T_a = 20^{\circ}\text{C} \ / \ 70^{\circ}\text{C} \\ \text{O}^{\circ}\text{C} \ / \ U_s) \qquad & \text{typ.} \\ \\ \text{IEC}60529 \\ \end{array}$	PD3 / OV2 50 W (24 V) / 2.6 W 3,600 h ⁻¹ / 1,800 h ⁻¹ 33 ms / 25 ms Suppressor diode / Flace 24 V DC (16.8 V DC) @ C PD3 / OV2 35 W 1,800 h ⁻¹ / 1,800 h ⁻¹ 20 ms / 13 ms Suppressor diode / Flace vertical / horizontal (model)	at tabs 6.3 x 0.8 mm ON time 0.1 0.5 s max. / 48 V DC at tabs 6.3 x 0.8 mm bunting see page 11)	
Magnetic drive (monostable Rated control supply voltage Pollution degree / Overvolta	e U _s (Operating range) age category . (T _a = 20 °C / U _s) Pull-In poverations per hour, no lo / Drop-off time (T _a = 2d) / Coil terminal e U _s (Min. operating volume category . (Ta = 20 °C / U _s) erations per hour, no lo / Drop-off time (T _a = 2d) / Drop-off time (T _a = 2d) / Coil terminal	ver (0.2 s) / Holding power ad) $T_a = 20 ^{\circ}\text{C} / 70 ^{\circ}\text{C}$ $0 ^{\circ}\text{C} / \text{U}_s)$ typ. ltage) $T_a = 20 ^{\circ}\text{C} / 70 ^{\circ}\text{C}$ or $T_a = 20 ^{\circ}\text{C} / 70 ^{\circ}\text{C}$ $0 ^{\circ}\text{C} / \text{U}_s)$ typ.	PD3 / OV2 50 W (24 V) / 2.6 W 3,600 h ⁻¹ / 1,800 h ⁻¹ 33 ms / 25 ms Suppressor diode / Flance 24 V DC (16.8 V DC) @ C PD3 / OV2 35 W 1,800 h ⁻¹ / 1,800 h ⁻¹ 20 ms / 13 ms Suppressor diode / Flance Vertical / horizontal (mo	at tabs 6.3 x 0.8 mm ON time 0.1 0.5 s max. / 48 V DC at tabs 6.3 x 0.8 mm bunting see page 11)	
Magnetic drive (monostable Rated control supply voltage Pollution degree / Overvoltage Pollution degree / Overvoltage Pollution degree / Overvoltage Pollution (operation) (op	e U _s (Operating range) age category . (T _a = 20 °C / U _s) Pull-In poverations per hour, no lo / Drop-off time (T _a = 2d) / Coil terminal e U _s (Min. operating volume category . (Ta = 20 °C / U _s) erations per hour, no lo / Drop-off time (T _a = 2d) / Drop-off time (T _a = 2d) / Coil terminal	$\begin{array}{c} \text{ver}(0.2\text{s}) \ / \ \text{Holding power} \\ \text{ad}) \qquad & T_a = 20^{\circ}\text{C} \ / \ 70^{\circ}\text{C} \\ \text{O}^{\circ}\text{C} \ / \ U_s) \qquad & \text{typ.} \\ \\ \text{Itage}) \\ \text{ad}) \qquad & T_a = 20^{\circ}\text{C} \ / \ 70^{\circ}\text{C} \\ \text{O}^{\circ}\text{C} \ / \ U_s) \qquad & \text{typ.} \\ \\ \text{IEC}60529 \\ \text{octs monostable} \ / \ \text{bistable} \\ \end{array}$	PD3 / OV2 50 W (24 V) / 2.6 W 3,600 h ⁻¹ / 1,800 h ⁻¹ 33 ms / 25 ms Suppressor diode / Flat 24 V DC (16.8 V DC) @ C PD3 / OV2 35 W 1,800 h ⁻¹ / 1,800 h ⁻¹ 20 ms / 13 ms Suppressor diode / Flat vertical / horizontal (modified in the complete of the	at tabs 6.3 x 0.8 mm DN time 0.1 0.5 s max. / 48 V DC at tabs 6.3 x 0.8 mm bunting see page 11) / 100,000 operations Class C	5; (33.6 V DC) @ ON time 0.1 0.5 s ma
Magnetic drive (monostable Rated control supply voltage Pollution degree / Overvoltage Pollution degree / Overvoltage Pollution degree / Overvoltage Pollution (operation (operation) (ope	e U _s (Operating range) age category . (T _a = 20 °C / U _s) Pull-In poverations per hour, no lot / Drop-off time (T _a = 2d) / Coil terminal e U _s (Min. operating volume category . (Ta = 20 °C / U _s) erations per hour, no lot / Drop-off time (T _a = 2d) / Coil terminal main conta	$\begin{array}{c} \text{ver}(0.2\text{s}) \ / \ \text{Holding power} \\ \text{ad}) \qquad & T_a = 20^{\circ}\text{C} \ / \ 70^{\circ}\text{C} \\ \text{O}^{\circ}\text{C} \ / \ U_s) \qquad & \text{typ.} \\ \\ \text{Itage}) \\ \text{ad}) \qquad & T_a = 20^{\circ}\text{C} \ / \ 70^{\circ}\text{C} \\ \text{O}^{\circ}\text{C} \ / \ U_s) \qquad & \text{typ.} \\ \\ \text{IEC} \ 60529 \\ \text{octs monostable} \ / \ \text{bistable} \\ \text{auxiliary contacts} \\ \end{array}$	PD3 / OV2 50 W (24 V) / 2.6 W 3,600 h ⁻¹ / 1,800 h ⁻¹ 33 ms / 25 ms Suppressor diode / Flat 24 V DC (16.8 V DC) @ C PD3 / OV2 35 W 1,800 h ⁻¹ / 1,800 h ⁻¹ 20 ms / 13 ms Suppressor diode / Flat vertical / horizontal (mod IP00 2,000,000 operations 1,000,000 operations Category 1, Class B / C -40 °C +85 °C / -40	at tabs 6.3 x 0.8 mm ON time 0.1 0.5 s max. / 48 V DC at tabs 6.3 x 0.8 mm ounting see page 11) / 100,000 operations Class C °C +85 °C	

^{*} Corresponds to 50 switching operations 1.5 x I_{e} and 6,000 switching operations 1.0 x I_{e}

C310 - Version «S» - Circuit diagram, dimension diagram



C310S/ - 1 pole NO contactor AC or bi-directional DC

- Rated insulation voltage U_i up to 1,500 V, version without arc chamber
- Rated short-circuit making capacity I_{cm} up to 2,500 A
- Conventional free air thermal current I_{th} up to 500 A
- Rated short-time withstand current I_{cw} up to 3,000 A

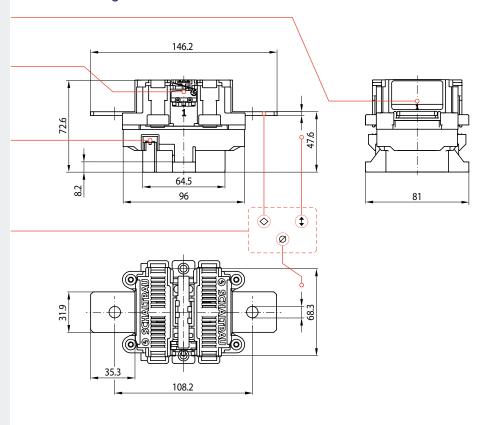
Circuit diagram

2x SPDT S880 W1R6 k

	Monostable *	Bistable **
C310S/ Main contacts 1x NO Number of auxiliary switches none	$ \begin{array}{c} A1 + & 1 \\ \downarrow & - & 1 \\ A2 - & 2 \end{array} $	$ \begin{array}{c c} A1 + /- & 1 \\ \hline $
C310S/ Main contacts 1x NO Number of auxiliary switches*** 1x SPDT S880 W1R6 k	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
C310S/ Main contacts 1x NO Number of auxiliary switches***	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	A1 +/- 1 12 14 22 24 1 1 15 1 A2 +/- 2 11 21

- * Coil suppression integrated, additional circuit is not allowed!
- ** Switching by reversing the polarity, voltage pulse 0.5 sec max.
- *** Auxiliary switches with mirror contact function according to EN 60947-4-1, annex F

Dimension diagram C310S/...



Switching chamber

Main contact system w/o arc chamber

Aux. switch

S880, SPDT, flat tabs $2.8 \times 0.5 \, \text{mm}$

Coil terminal

Flat tabs 6.3 x 0.8 mm

Main contact terminals

Series	Material 🛇
C310S/150	Copper
C310S/300	Copper
C310S/500	Copper, silver plated
Series	Thickness (‡)
C310S/150	3 mm
C310S/300	5 mm
C310S/500	5 mm
Series	Diameter
C310S/150	ø9 mm
C310S/300	Ø 11 mm
C310S/500	Ø 11 mm

Specifications - Version «S» for $U_e = 60 \text{ V DC}$

Series		C310S/150	C310S/300	C310S/500	
Type of voltage Main contacts, configuration		DC, bi-directional / AC, f ≤ 60 1x NO	0 Hz		
Electrical data according to IEC/UL 60	947-4-1 GB/T 14048 4	IXINO			
Rated operational voltage U _e	,	60 V @ PD3			
Rated insulation voltage U _i		1,000 V @ PD3 / 1,500 V @ PD2			
Rated impulse withstand voltage U _{imp}		1,000 V @ PD3 7 1,500 V @ PD2			
Pollution degree / Overvoltage category		PD2, PD3: see U _n and U _i / OV3			
Conventional free air thermal current I _{tt}	•	1 D2, 1 D3. see O _e and O ₁ 7 OV	<u> </u>	500 A (2x 150 mm²)	
Conventional nee all thermal current in	$T_a = 70^{\circ} \text{ C (cross section)}$	150 A (50 mm²)	300 A (185 mm²)	400 A (240 mm²)	
Power dissipation per pole I _{th} @ 40 °C	typ.	3.5 W	11 W	30 W	
Pole impedance	typ.	150 μΩ	120 μΩ	120 μΩ	
Utilization category AC-1* / AC general Rated operational current I _e	l use $U_e = 48 \text{ V}$ IEC 60947-4-1	150 A	300 A	500 A	
Utilization category DC-1* / DC genera		10071	00071	00071	
Rated operational current I _e	IEC 60947-4-1, GB/T 14048.4	150 A	300 A	500 A	
Frequency of operation I _e	AC-1 & DC-1	360 h ⁻¹	360 h ⁻¹	360 h ⁻¹	
Rated short-time withstand current I_{cw}	t = 1 s	3,000 A			
Short circuit protection device for conta	actors	on request	on request	on request	
Additional electrical ratings of main ci	rcuit				
Conventional free air thermal current I _{th}	$T_a = 85$ °C (cross section) Terminal heating	200 A (50 mm²) 45 K	350 A (120 mm²) 45 K	500 A (185 mm²) 65 K	
Power dissipation per pole	I _{th} @ 40 °C, typ.	5 W	15 W	30 W	
Pole impedance	typ.	125 μΩ	120 μΩ	120 μΩ	
Rated short-circuit making capacity I_{cm}		monostable: horizontal: 2,50			
For mono- or bistable drive (depending Breaking capacity (L/R = 0.1 ms)	$U_e = 60 \text{ V} / I_e = 2,000 \text{ A}$	bistable: horizontal: 750 A, v	vertical: /50 A		
Electrical endurance	U _e = 96 V / I _e = 1,300 A	60 operations 10,000 operations DC (L/R = 1 ms)	10,000 operations DC (L/R = 1 ms)	10,000 operations DC (L/R = 1 ms)	
		$AC (\cos \varphi = 0.8): 48 \text{ V} / 150 \text{ A}$	AC ($\cos \varphi = 0.8$): 48 V / 300 A	$AC (\cos \varphi = 0.8)$: 48 V / 500 A	
Main contacts					
Contact material		AgSnO ₂	AgSnO ₂	AgSnO ₂	
Terminals		M8	M10	M10	
Torque		4.8 6 Nm	8 10 Nm	8 10 Nm	
Auxiliary contacts					
Number, configuration / Contact mate	erial	2x S880 W1R6 k max. / Silver			
Making / Breaking capacity S880		AC-15: 230 V AC / 1.0 A DC-13: 60 V DC / 0.5 A			
Minimum voltage / Current		5 V / 5 mA			
Terminals		Flat quick connect 2.8 x 0.5 m	m		
Magnetic drive (monostable)					
Rated control supply voltage U _s (Opera Pollution degree / Overvoltage catego		12 24 V DC (9.5 36 V DC) PD3 / OV2	/ 48 V DC (33.6 60 V DC)		
Coil power dissipation, max. (Ta = 20 °C	C / Us)	E0.W(24.V) / 2 / W			
Pull-In power (0.2 s) / Holding power	r hour no load\ T = 20.00 / 70.00	50 W (24 V) / 2.6 W 3,600 h ⁻¹ / 1,800 h ⁻¹			
Frequency of operation (operations per hour, no load) $ T_a = 20 ^{\circ}\text{C} / 70 ^{\circ}\text{C} $ $ Pull-in time (T_a = 20 ^{\circ}\text{C} / U_s) / Drop\text{-off time } (T_a = 20 ^{\circ}\text{C} / U_s) $ $ typ. $		33 ms / 25 ms Suppressor diode / Flat tabs 6.3 x 0.8 mm			
Coil suppression (integrated) / Coil ter Magnetic drive (bistable)	IIIIIal	suppressor aloae / Flat tabs	U.O X U.O IIIII		
Rated control supply voltage U _s (Min. c Pollution degree / Overvoltage catego			0.1 0.5 s max. / 48 V DC (33.6	V DC) @ ON time 0.1 0.5 s max.	
Coil power dissipation, max. (Ta = 20 °C	•	PD3 / OV2 35 W			
1 , ,	**				
Frequency of operation (operations pe Pull-in time ($T_a = 20 ^{\circ}\text{C/U}_s$) / Drop-off Coil suppression (integrated) / Coil ter	time $(T_a = 20 ^{\circ}\text{C} / U_s)$ typ.	1,800 h ⁻¹ / 1,800 h ⁻¹ 20 ms / 13 ms Suppressor diode / Flattabs	6.3 x 0.8 mm		
Mounting position		vertical / horizontal (mounting			
Degree of protection	IEC 60529	IP00			
Mechanical endurance	main contacts monostable / bistable auxiliary contacts	2,000,000 operations / 100,00 1,000,000 operations	00 operations		
Weenamear endurance		Category 1, Class B / Class C			
Shock / Vibration	IEC 61373 / ISO 16750-3				
Shock / Vibration	IEC 61373 / ISO 16750-3 ng temperature / Storage temperature Altitude / Humidity (EN 50125-1)	-40 °C +85 °C / -40 °C +	85 °C 00 m @ U _i = 1,500 V above sea leve	el / < 75 % on an annual ave-	

^{*} Corresponds to 50 switching operations 1.5 x I_{e} and 6,000 switching operations 1.0 x I_{e}

Minimum distances, deflection shields, mounting holes

C310K/...

with large arc chamber

Minimum distance at max. load current

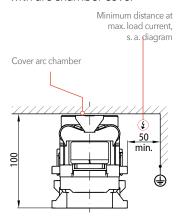
Top edge arc chamber 20

min.

For the C310K/150, C310K/300 and C310K/500 series there is a minimum distance of 20 mm to magnetically active, live or earthed parts.

C310A/...

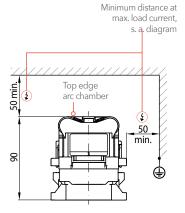
with arc chamber cover



The extinguishing chamber cover is part of the standard scope of delivery for the C310A/150, C310A/300 and C310A/500 series.

C310A/...

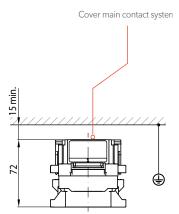
w/o arc chamber cover



It is permissible to use the C310A/150, C310A/300 and C310A/500 series without arc chamber cover, taking into account additional clearance dimensions.

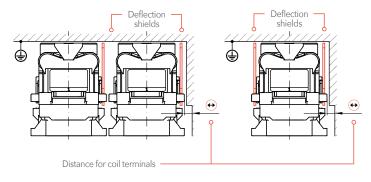
C310S/...

w/o arc chamber



For the C310S/150, C310S/300 and C310S/500 series there is a minimum distance of 15 mm to magnetically active, live or earthed parts.

Insertable deflection shields



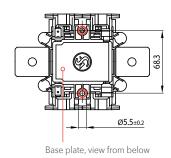
(<u>i</u>)

C310A/... series only:

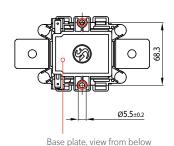
The use of insertable deflection shields reduces the minimum distance to 0 mm. Without deflection shields, the minimum distance of the contactors, depending on the arrangement, can increase to 100 mm.

Mounting holes

C310K/...

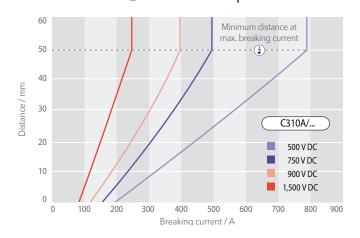


C310A/..., C310S/...

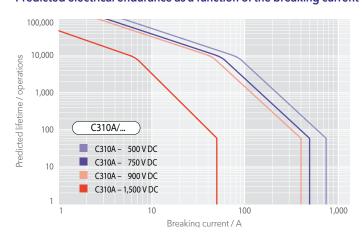


Electrical endurance

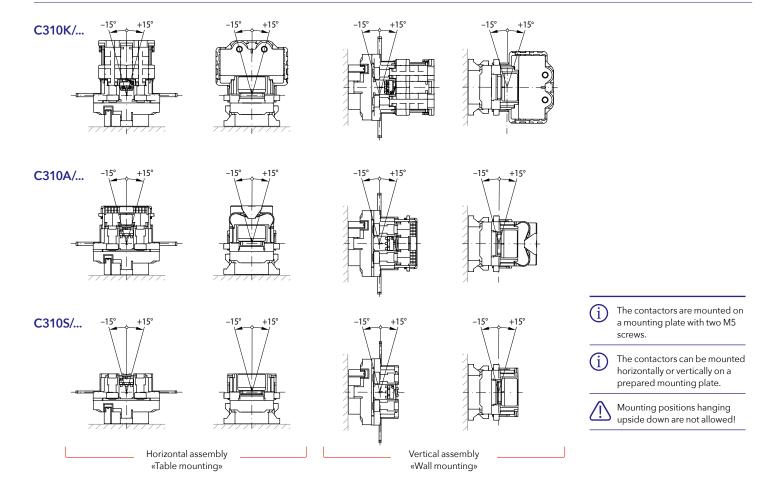
Minimum distances ② to live or earthed parts



Predicted electrical endurance as a function of the breaking current



Mounting instructions



Maintenance and safety instructions

Maintenance:

- C310 series contactors are basically maintenance free.
- Make regular in-depth visual inspections once or twice a year.

Safety instructions:

- The device must be used according to the intended purpose as specified in the technical documentation. You are obliged to observe all specifications depending on operating temperature, degree of pollution etc. that are relevant to your application.
- Without further safety measures the contactors are not suited for use in potentially explosive atmospheres.
- In case of malfunction of the device or uncertainties stop using it any longer and contact the manufacturer instantly.
- Tampering with the device can seriously affect the safety of people and equipment. This is not permitted and leads to an exclusion of liability and warranty.
- Coil suppression for reducing surges when the coil is switched off is optimally attuned to the contactors switching behaviour. The existing opening characteristic must not be negatively influenced by parallel connection with an external diode.
- Contactors running permanently may heat up. So make sure that the contactor has sufficiently cooled down before you start any inspection or maintenance work.



For detailed maintenance, safety and mounting instructions please refer to our operating manuals > C310-M.en!

- When installing contactors with magnetic blowout make sure to do it in such a way that no magnetizable parts can be attracted by the permanent magnets that are also capable of destroying all data of swipe cards.
- In general, strong electromagnetic fields can be generated in the area around the contactors. These can influence other components in the area of the contactors.
- Improper handling of the contactor, e.g. when hitting the floor with some impact, can result in breakage, visible cracks and deformation.



Defective contactors or parts (e.g. arc chambers, auxiliary switches) must be replaced immediately!



For a detailed list of all safety instructions see here: > schaltbau.info/safety3en!

We enable electrification for a sustainable future

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