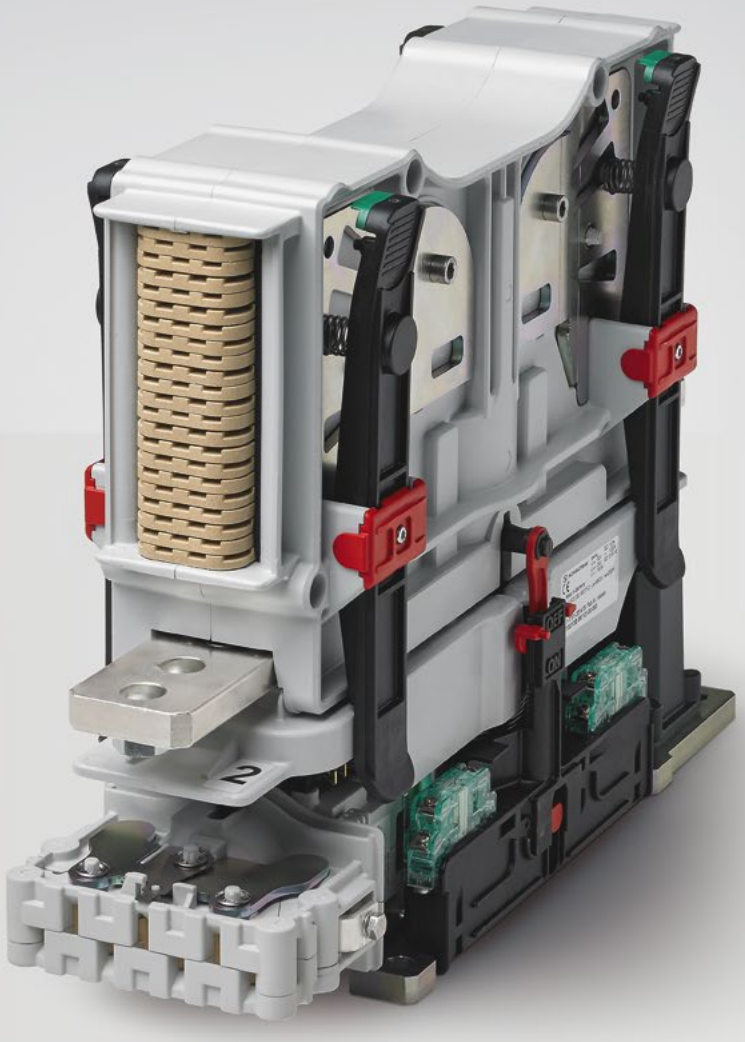
SCHALTBAU



CP

1 pole bi-directional DC and AC power contactors, disconnectors and changeover switches for power converters

CP – 1 pole power contactors, disconnectors and changeover switches for DC and AC

With the CP series, Schaltbau is offering an innovative concept to the switchgear market. The arc-handling is done exclusively by permanent-magnetic blowout. This patented technology ensures fully bi-directional breaking capability and a more compact design. By reducing dimensions and weight we save you valuable space. In addition, the universal devices can be configured as a NO/NC contactor, disconnector or changeover switch. This enables us to react flexibly to changing customer requirements. The high switching functionality and reliability ensure practical and cost effective operation. The combination of innovative technology, compact design and high versatility makes the CP power contactors particularly suitable for use in railway and industrial applications. Thanks to its unique modular design, the new product family includes a variety of possible configurations catering to a wide range of applications.

Features

Innovative design

- Universally configurable as NO or NC contact, disconnect switch or changeover switch
- DC bi-directional or AC up to 60 Hz max.
- Effective arc handling – no critical current range and only reduced wear on the main contact system thanks to permanent magnetic blowout
- High making capacity, also for disconnect switches and changeover switches
- Monostable and bistable drives available;
  Bistable drives only require energy for the switching process – this reduces heat dissipation.
- Modular, compact, low total cost of ownership (TCO)

Main contact system

- 1 pole NC contact, NO contact, disconnector or changeover switch
- Conventional thermal current: 600 A, 800 A, 1,000 A, 1,200 A, 1,500 A, or 2,000 A
- Nominal voltage: 1,5 kV or 3 kV
- Double-break contacts

Easy maintenance

- Toolless inspection of main contact tips
- Toolless replacement of the arc chamber

Applications

Main contactor, optional with pre-charging contactor and high-voltage discharging contact for:

- Traction converters
- Inverters for auxiliary equipment

Switchgear for various mobile and stationary applications:

- Rail: Locomotives and multiple-unit trains
- Industry: Photovoltaic systems, wind turbines, cranes, welding systems, mining

Contactor for:

- Activation of traction units
- Activation of brake choppers for DC drives
- Starter and compressor motors
- PV systems

Switchgear for the configuration of electrical system:

- Selection of one of several power supply sources
- Configuration of filters for multi-system operation
- Connecting/disconnecting DC links

Reliable, robust and economical

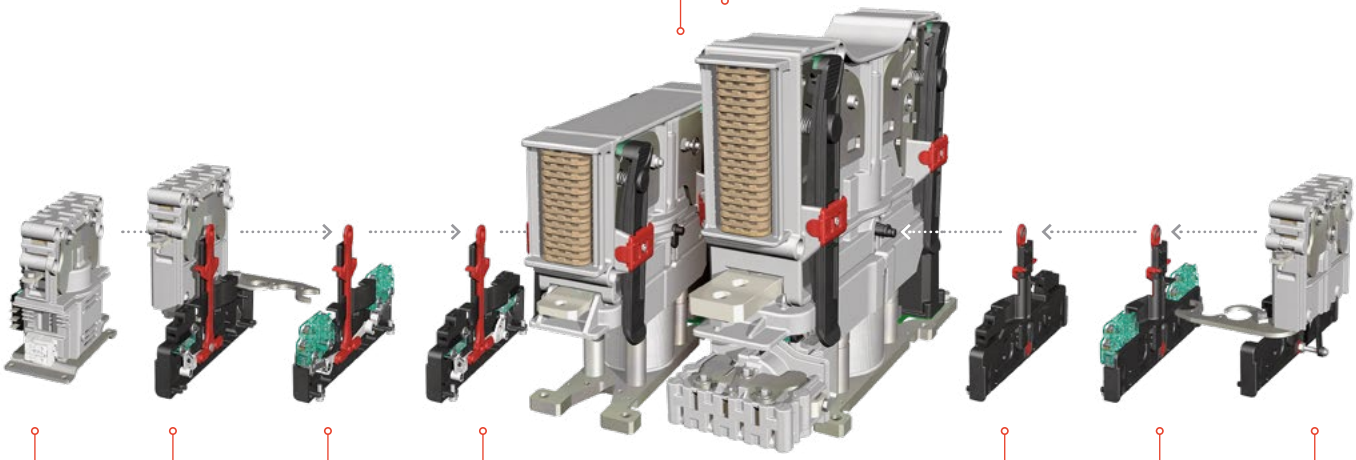
Contactors of the CP series are designed for continuous currents from 600 amps to 2,000 amps. Among other features, the robust switchgear has a high making and breaking capacity and a high short-time withstand current. This ensures long operational reliability. Depending on the application, there are different requirements for electromechanical components. The DC and AC contactors are very robust and by that able to withstand most shock and vibration requirements, IEC 60077-2 is met anyway.

Configuration – A product tailored to your needs

Maximum modularity – whether as a contactor, disconnect switch or changeover switch: The CP series offers countless variation options and is the perfect fit for your application. A scalable power interface in combination with different extinguishing chambers according to the switching requirements make the switchgear universally applicable. In addition to various auxiliary switch groups, a high-voltage discharge contact and/or a precharging contactor can also be integrated.

Configure your preferred device:

Rd. operating current I_e/I_r up to				600 A	800 A	1,000 A	1,200 A	1,500 A	2,000 A
Nominal voltage up to U_n 3,000 V / U_n 1,500 V									
Contactor									
1x NO	CP1115/...	•		06	08	10	12	15	20
1x NO	CP1130/...		•	06	08	10	12	15	20
1x NC	CP2115/...	•		06	08		12		20
1x NC	CP2130/...		•	06	08		12		20
Disconnect switch									
1x NO	CP1115/...	•		06	08	10	12	15	20
1x NO	CP1130/...		•	06	08	10	12	15	20
1x NC	CP2115/...	•		06	08		12		20
1x NC	CP2130/...		•	06	08		12		20
Changeover switch									
1x CO	CP3115/...	•		06			12		
1x CO	CP3130/...		•	06			12		



Pre-charging contactor 1x CPP1115/02, CP11xx-06 CP11xx-08 CP11xx-10 separately

High-voltage discharging contact 1x CPD1115/02

or

Auxiliary switches 2x S826

or

Auxiliary switches 2x S870 a1/b0

Pre-charging contactor 1x CPP1115/02, CP11xx-12, CP11xx-15, CP11xx-20 integrated

Auxiliary switches 2x S870 a1/b0

or

Auxiliary switches 2x S826

or

High-voltage discharging contact 1x CPD1115/02

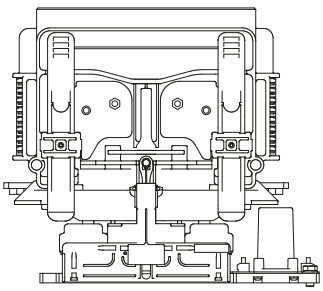
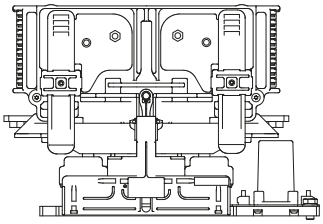
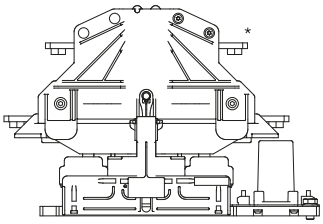
Find your ideal switching device and configure it as a NO or NC contactor, as a disconnect switch or changeover switch.

Configuration main contacts						Configuration arc chamber, breaking capacity	
Switch	NO NC	3,000 V 1,500 V	600 A, 800 A 1,000 A, 1,200 A 1,500 A, 2,000 A	monostable bistable	NO contactor NC contactor	Highly efficient ceramic arc chamber for U_n up to 3,000 V Highly efficient ceramic arc chamber for U_n up to 1,500 V	✓
Disconnect	NO NC	3,000 V 1,500 V	600 A, 800 A 1,000 A, 1,200 A 1,500 A, 2,000 A	monostable bistable	Disconnector	Cover cap main contact system, only for load-free switching	✓
Changeover	CO	3,000 V 1,500 V	600 A 1,200 A	monostable bistable	Changeover switch	Cover cap main contact system, only for load-free switching	✓

Breaking capacity, arc handling

Controlling switching arcs is a particular challenge, especially when switching high DC loads: At the switching moment, i.e. when the contacts of the main circuit open under load, the load current continues to flow. Arcs are generated at extremely high temperatures, making it necessary to extinguish them within a few milliseconds. CP contactors realise an innovative, patented, highly effective and maintenance-free concept. It guarantees maximum switching reliability, combined with optimum performance in terms of electrical life, switching behaviour and welding reliability of the contacts as well as the exclusion of so-called critical currents. The arc quenching of the CP high-power arc chambers are based exclusively on permanent magnetic arc extinguishing. The disadvantages of electromagnetic arc extinguishing, which is currently widely used in power contactors, are eliminated.

Series	Nominal voltage	Contact system	Thermal current Series Breaking capacity	600 A ...06	800 A ...08	1,000 A ...10	1,200 A ...12	1,500 A ...15	2,000 A ...20
CP1130-... CP1115-...	3,000 V 1,500 V	NO NO Disconnector	high, up to 3,000 V high, up to 1,500 V load-free	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●	● ● ●
CP2130-... CP2115-...	3,000 V 1,500 V	NC NC Disconnector	high, up to 3,000 V high, up to 1,500 V load-free	● ● ●			● ● ●		● ● ●
CP3130-... CP3115-...	3,000 V 1,500 V	Changeover switch, Disconnector	load-free	●			●		

Arc chamber			
Breaking capacity	**high, up to 3,000 V**	**high, up to 1,500 V**	**load-free**
Contact system	NO, NC	NO, NC	Changeover switch, disconnector
Description	High-efficiency ceramic arc chamber Frequent switching of high loads, for rated voltages up to 3,000 V	High-efficiency ceramic arc chamber Frequent switching of high loads, for rated voltages up to 1,500 V	Cover cap main contact system Only for load-free switching for rated voltages up to 3,000 V

* Illustration of changeover switch: disconnector without top contacts

Standards

IEC 60077-2
Railway applications – Electric equipment for rolling stock – Part 2: Electrotechnical components; General rules

IEC 62497-1
Railway applications – Insulation coordination – Part 1: Basic requirements – Clearances and creepage distances for all electrical and electronic equipment

IEC 62236-3-2
Railway applications – Electromagnetic compatibility – Part 3-2: Rolling stock – Apparatus

IEC 61373
Railway applications – Rolling stock equipment – Shock and vibration tests

Ordering key

CP1130-20-A-CM-020

Series, contact configuration
- **CP11** AC- and bi-directional DC NO contactor, 1 pole or disconnect switch, 1 pole
- **CP21** AC- and bi-directional DC NC contactor, 1 pole or disconnect switch, 1 pole
- **CP31** AC- and bi-directional DC CO contactor, 1 pole For load-free switching only

Nominal voltage
- **15** U_n = 1,500 V
- **30** Un = 3,000 V

Conv. thermal current *1
- **06** I_{th} = 600 A: CP11... / CP21... / CP31...
- **08** I_{th} = 800 A: CP11...
- **10** I_{th} = 1,000 A: CP11...
- **12** I_{th} = 1,200 A: CP11... / CP21... / CP31...
- **15** I_{th} = 1,500 A: CP11...
- **20** I_{th} = 2,000 A: CP11... / CP21..

Arc chamber
- **A** Highly efficient ceramic extinguishing chamber Frequent switching of high loads (CP11, CP21), for rated voltages up to 3,000 V
- **B** Highly efficient ceramic extinguishing chamber Frequent switching of high loads (CP11, CP21), for rated voltages up to 1,500 V
- **D** Cover cap main contact system (CP11, CP31) Only for load-free switching (disconnector, changeover switch) For rated voltages up to 3,000 V

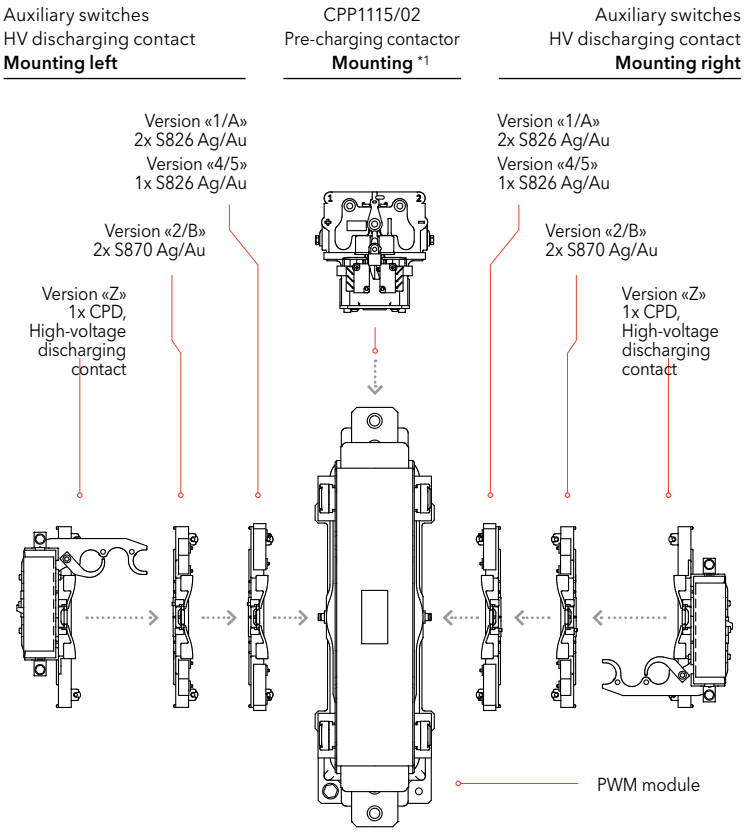
Magnetic drive, Coil voltage
- **A** U_s = 24 V DC
- **B** U_s = 36 ... 48 V DC
- **C** U_s = 72 ... 110 V DC

Coil design
- **M** Monostable (Standard)
- **N** Monostable with switching input for activation
- **B** Bistable with 2 switching inputs for activation *2

Pre-charging contactor *1
- **0** ---
- **1** CPP1115/02, 1 pole NO contactor, Coil voltage: U_s = 24 V DC
- **2** U_s = 36 V DC
- **3** U_s = 48 V DC
- **4** U_s = 60 V DC
- **5** U_s = 72 V DC
- **6** U_s = 84 V DC
- **7** U_s = 96 V DC
- **8** U_s = 110 V DC

Aux. switches, HV discharging contact: Mounting right
- **0** ---
- **1** 2x Snap-action switches S826, SPDT-DB, silver contacts, M3 screw-type terminals
- **A** 2x Snap-action switches S826, SPDT-DB, gold contacts, M3 screw-type terminals
- **2** 2x Snap-action switches S870, SPDT, silver contacts, M3 screw-type terminals
- **B** Snap-action switches S870, SPDT, gold contacts, M3 screw-type terminals
- **4** 1x Snap-action switch S826, position front, SPDT-DB, silver contacts, M3 screw-type terminals
- **5** 1x Snap-action switch S826, position rear, SPDT-DB, silver contacts, M3 screw-type terminals
- **Z** 1x CPD, High-voltage discharging contact

Aux. switches, HV discharging contact: Mounting left
- **0** ---
- **1** 2x Snap-action switches S826, SPDT-DB, silver contacts, M3 screw-type terminals
- **A** 2x Snap-action switches S826, SPDT-DB, gold contacts, M3 screw-type terminals
- **2** 2x Snap-action switches S870, SPDT, silver contacts, M3 screw-type terminals
- **B** Snap-action switches S870, SPDT, gold contacts, M3 screw-type terminals
- **4** 1x Snap-action switch S826, position front, SPDT-DB, silver contacts, M3 screw-type terminals
- **5** 1x Snap-action switch S826, position rear, SPDT-DB, silver contacts, M3 screw-type terminals
- **Z** 1x CPD, High-voltage discharging contact



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 variants: 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.

*1 Pre-charging contactor:
CP11xx-12 /-15 /-20: Integrated, factory mounting
CP11xx-06 /-08 /-10: Separate, mounting on customer side

*2 Only coil version bistable:
An auxiliary switch is required to monitor the switching status. Positions 1 or 5 are reserved for this, depending on whether the customer requires another auxiliary switch. The auxiliary switch on the left-hand side, rear position, is always permanently provided for monitoring the switching status and is not available to the customer.

Specifications – 1 pole power contactors for AC and DC, U_n up to 3,000 V and I_{th} up to 600 A

Series			CP1115/06 | CP1130/06	CP2115/06 | CP2130/06	CP3115/06 | CP3130/06
Type of voltage			DC (bi-directional), AC (f ≤ 60 Hz)	DC (bi-directional), AC (f ≤ 60 Hz)	DC (bi-directional), AC (f ≤ 60 Hz)
Number of poles, configuration			1x, SPST-NO 1 — 2	1x, SPST-NC 1 — 2	1x, SPDT-DB 1 — 2 3 — 4
Electrical data according to IEC 60077-2					
Nominal voltage		U_n	1,500 V | 3,000 V	1,500 V | 3,000 V	1,500 V | 3,000 V
Rated operating voltage		U_e/U_r	1,800 V | 3,600 V	1,800 V | 3,600 V	1,800 V | 3,600 V
Rated insulation voltage		U_{Nm}	3,000 V | 4,800 V	3,000 V | 4,800 V	3,000 V | 4,800 V
Rated impulse withstand voltage		U_{Ni}	15 kV | 25 kV	15 kV | 25 kV	15 kV | 25 kV
Pollution degree / Overvoltage category			PD3 / OV3	PD3 / OV3	PD3 / OV3
Switching overvoltages	@ U_e/U_r = 1,800 V / @ U_e/U_r = 3,600 V		< 3x U_{Nm}	< 3x U_{Nm}	0 V*2
Conventional thermal current		I_{th}	600 A*1	600 A*1	600 A*1
Component category			A2	A2	A4
Short-circuit making capacity		NO / NC	8 ... 10 kA / ---	--- / approx. 2 kA	8 ... 10 kA / approx. 2 kA
Rated operating current I_e/I_r		Arc chamber			
Operational frequency C1					
T2 = 15 ms, DC, U_e/U_r = 1,800 V		A / B / D	200 A / 200 A / 0 A*2	--- / --- / 0 A*2	--- / --- / 0 A*2
T2 = 15 ms, DC, U_e/U_r = 3,600 V		A / B / D	200 A / 200 A / 0 A*2	--- / --- / 0 A*2	--- / --- / 0 A*2
Rated short-circuit breaking capacity		Arc chamber			
T2 = 15 ms, DC, U_e/U_r = 1,800 V		A / B / D	900 A / 430 A / 0 A*2	tbd*3 / tbd*3 / 0 A*2	--- / --- / 0 A*2
T2 = 15 ms, DC, U_e/U_r = 3,600 V		A / B / D	350 A / tbd*3 / 0 A*2	tbd*3 / tbd*3 / 0 A*2	--- / --- / 0 A*2
T2 = 1 ms, DC, U_e/U_r = 1,800 V		A / B / D	4,600 A / 1,700 A / 0 A*2	tbd*3 / tbd*3 / 0 A*2	--- / --- / 0 A*2
T2 = 1 ms, DC, U_e/U_r = 3,600 V		A / B / D	2,000 A / 500 A / 0 A*2	tbd*3 / tbd*3 / 0 A*2	--- / --- / 0 A*2
cosφ = 0,8, AC, U_e/U_r = 1,800 V (f = 16.7 / f ≤ 60 Hz)		A / B / D	4,000 A / 3,000 A / 0 A*2	tbd*3 / tbd*3 / 0 A*2	--- / --- / 0 A*2
cosφ = 0,8, AC, U_e/U_r = 3,600 V (f = 16.7 / f ≤ 60 Hz)		A / B / D	1,200 A / 600 A / 0 A*2	tbd*3 / tbd*3 / 0 A*2	--- / --- / 0 A*2
cosφ = 1, AC, U_e/U_r = 1,800 V (f = 16.7 / f ≤ 60 Hz)		A / B / D	6,000 A / 4,500 A / 0 A*2	tbd*3 / tbd*3 / 0 A*2	--- / --- / 0 A*2
cosφ = 1, AC, U_e/U_r = 3,600 V (f = 16.7 / f ≤ 60 Hz)		A / B / D	1,800 A / 1,100 A / 0 A*2	tbd*3 / tbd*3 / 0 A*2	--- / --- / 0 A*2
Rated short-time withstand current I_{cw} @ T < 100 ms		NO / NC	10 ... 12 kA / ---	--- / approx. 2 kA	10 ... 12 kA / approx. 2 kA
Critical current range			none	none	--- *2
Design					
Contact material			$AgSnO_2$	$AgSnO_2$	$AgSnO_2$
Terminals / Torque			1x M10 / 16 ... 20 Nm	1x M10 / 16 ... 20 Nm	1x M10 / 16 ... 20 Nm
Auxiliary switches					
Number max. / configuration			4x max.*4 / 1x S870 (a1) + 1x S870 (b0) + 2x, S826*5 or 4x S826		
Contact material			Silver, gold		
Switching capacity	SPDT-DB S826, silver contacts		AC-15: 230 V / 1.0 A	DC-13: 110 V / 0.5 A	
	SPDT-DB S826, gold contacts		AC-15: 230 V / 0.1 A	DC-13: 110 V / 0.1 A	
	SPDT S870, silver contacts		AC-15: 230 V / 1.5 A	DC-13: 60 V / 0.5 A	
	SPDT S870, gold contacts		AC-15: 230 V / 1.0 A	DC-13: 60 V / 0.5 A	
Terminals			Screw M3		
Pre-charging contactor, high-voltage discharging contact					
Pre-charging contactor, CPP1115/02		U_n, I_{th}	1x, SPST-NO, U_{Nm} = 3,600 V @ PD2/OV2, I_{th} = 200 A, see catalogue C45.en		
High-voltage discharging contact, CPD		U_n, I_{th}	1x, SPST-NC, U_{Nm} = 3,600 V, I_{th} = 80 A (only for CP1xxx and switching inverse to the main contact)		
Making/breaking capacity			850 A / 250 A (T = 1 ms, DC)		
Magnetic drive					
Coil voltage/range (design)		U_S	24 / 36 ... 60 / 72 ... 110 V DC (mono or bistable with integrated PWM module)		
Control inputs (only coil version N, B)		U_{St} / I_{St}	8 ... 400 V / 1 mA (failsafe, version N only)		
Pollution degree / overvoltage category			PD3 / OV2		
Coil tolerance			-30 % ... +25 % U_{SN}		
Coil power dissipation	@ U_S and T_a = 20 °C		Pull-in: 225 W max. @ 250 ms max. / hold: < 10 W *6		
Pull-in voltage	typical @ T_a = 20 °C		U_S < 0.7 x U_{SN}		
Pull-in time	typical @ T_a = 20 °C		≤ 160 ms		
Drop-off voltage	typical @ T_a = 20 °C		U_S ≥ 0.1 x U_{SN}		
Drop-off time	typical @ T_a = 20 °C		≤ 40 ms		
Coil suppression			Integrated PWM module (electronic coil controller with suppressor diode)		
Coil terminal			Cage clamp		
Degree of protection			IP00		
Mechanical endurance	@ Coil design, Monostable		> 1 million operating cycles *7		
	Bistable		> 200,000 operating cycles		
Vibration / shock		IEC 61373	Category 1, class B		
Mounting position			horizontal / vertical		
Environmental conditions	Operating/Storage temperature		-40 °C ... +70 °C / -40 °C ... +85 °C		
	Altitude/Humidity (IEC 50125-1)		< 2,000 m above sea level / < 75 % yearly average		
Weight	depending on configuration		approx. 6 ... 10 kg	approx. 6 ... 10 kg	approx. 12 kg

*1 Ratings for IEC 60077-2; ratings for other standards on request.

*2 Cover for main contact system, version "D", breaking capacity: No load

*3 On request

*4 With high-voltage discharging contact, the number of auxiliary contacts is reduced to max. 2

*5 a1 and b0 according to IEC 60077-2 (auxiliary contact b0 "well open" or mirror contact for feedback circuits of safety-relevant control systems according to EN 13849-1)

*6 Values for bistable versions on request

*7 The optional CPD contact limits the mechanical endurance to 600,000 operating cycles

Specifications – 1 pole power contactors for AC and DC, U_n up to 3,000 V and I_{th} up to 800 A

Series		**CP1115/08 | CP1130/08**
Type of voltage		DC (bi-directional), AC (f ≤ 60 Hz)
Number of poles, configuration		1x, SPST-NO 1 — 2
Electrical data according to IEC 60077-2		
Nominal voltage	U_n	1,500 V | 3,000 V
Rated operating voltage	U_e/U_r	1,800 V | 3,600 V
Rated insulation voltage	U_{Nm}	3,000 V | 4,800 V
Rated impulse withstand voltage	U_{Ni}	15 kV | 25 kV
Pollution degree / Overvoltage category		PD3 / OV3
Switching overvoltages @ U_e/U_r = 1,800 V / @ U_e/U_r = 3,600 V		< 3x U_{Nm}
Conventional thermal current	I_{th}	800 A*1
Component category		A2
Short-circuit making capacity	NO	8 ... 10 kA
Rated operating current I_e/I_r	Arc chamber	
Operational frequency C1		
T2 = 15 ms, DC, U_e/U_r = 1,800 V	A / B / D	200 A / 200 A / 0 A*2
T2 = 15 ms, DC, U_e/U_r = 3,600 V	A / B / D	200 A / 200 A / 0 A*2
Rated short-circuit breaking capacity	Arc chamber	
T2 = 15 ms, DC, U_e/U_r = 1,800 V	A / B / D	900 A / 430 A / 0 A*2
T2 = 15 ms, DC, U_e/U_r = 3,600 V	A / B / D	350 A / tbd*3 / 0 A*2
T2 = 1 ms, DC, U_e/U_r = 1,800 V	A / B / D	4,600 A / 1,700 A / 0 A*2
T2 = 1 ms, DC, U_e/U_r = 3,600 V	A / B / D	2,000 A / 500 A / 0 A*2
cosφ 0,8, AC, U_e/U_r = 1,800 V (f = 16.7 / f ≤ 60 Hz)	A / B / D	4,000 A / 3,000 A / 0 A*2
cosφ = 0,8, AC, U_e/U_r = 3,600 V (f = 16.7 / f ≤ 60 Hz)	A / B / D	1,200 A / 600 A / 0 A*2
cosφ = 1, AC, U_e/U_r = 1,800 V (f = 16.7 / f ≤ 60 Hz)	A / B / D	6,000 A / 4,500 A / 0 A*2
cosφ = 1, AC, U_e/U_r = 3,600 V (f = 16.7 / f ≤ 60 Hz)	A / B / D	1,800 A / 1,100 A / 0 A*2
Rated short-time withstand current I_{cw} @ T < 100 ms	NO	10 ... 12 kA
Critical current range		none
Design		
Contact material		$AgSnO_2$
Terminals / Torque		1x M10 / 16 ... 20 Nm
Auxiliary switches		
Number max. / configuration		4x max.*4 / 1x S870 (a1) + 1x S870 (b0) + 2x, S826*5 or 4x S826
Contact material		Silver, gold
Switching capacity	SPDT-DB S826, silver contacts	AC-15: 230 V / 1.0 A DC-13: 110 V / 0.5 A
	SPDT-DB S826, gold contacts	AC-15: 230 V / 0.1 A DC-13: 110 V / 0.1 A
	SPDT S870, silver contacts	AC-15: 230 V / 1.5 A DC-13: 60 V / 0.5 A
	SPDT S870, gold contacts	AC-15: 230 V / 1.0 A DC-13: 60 V / 0.5 A
Terminals		Screw M3
Pre-charging contactor, high-voltage discharging contact		
Pre-charging contactor, CPP1115/02	U_n, I_{th}	1x, SPST-NO, U_{Nm} = 3,600 V @ PD2/OV2, I_{th} = 200 A, see catalogue C45.en
High-voltage discharging contact, CPD	U_n, I_{th}	1x, SPST-NC, U_{Nm} = 3,600 V, I_{th} = 80 A (only for CP1xxx and switching inverse to the main contact)
Making/breaking capacity		850 A / 250 A (T = 1 ms, DC)
Magnetic drive		
Coil voltage/range (design)	U_S	24 / 36 ... 60 / 72 ... 110 V DC (mono or bistable with integrated PWM module)
Control inputs (only coil version N, B)	U_{St} / I_{St}	8 ... 400 V / 1 mA (failsafe, version N only)
Pollution degree / overvoltage category		PD3 / OV2
Coil tolerance		-30 % ... +25 % U_{SN}
Coil power dissipation	@ U_S and T_a = 20 °C	Pull-in: 225 W max. @ 250 ms max. / hold: < 10 W *6
Pull-in voltage	typical @ T_a = 20 °C	U_S < 0.7 x U_{SN}
Pull-in time	typical @ T_a = 20 °C	≤ 160 ms
Drop-off voltage	typical @ T_a = 20 °C	U_S ≥ 0.1 x U_{SN}
Drop-off time	typical @ T_a = 20 °C	≤ 40 ms
Coil suppression		Integrated PWM module (electronic coil controller with suppressor diode)
Coil terminal		Cage clamp
Degree of protection		IP00
Mechanical endurance	@ Coil design, Monostable	> 1 million operating cycles *7
	Bistable	> 200,000 operating cycles
Vibration / shock	IEC 61373	Category 1, class B
Mounting position		horizontal / vertical
Environmental conditions	Operating/Storage temperature	-40 °C ... +70 °C / -40 °C ... +85 °C
	Altitude/Humidity (IEC 50125-1)	< 2,000 m above sea level / < 75 % yearly average
Weight	depending on configuration	approx. 6 ... 10 kg

*1 Ratings for IEC 60077-2; ratings for other standards on request.

*2 Cover for main contact system, version "D", breaking capacity: No load

*3 On request

*4 With high-voltage discharging contact, the number of auxiliary contacts is reduced to max. 2

*5 a1 and b0 according to IEC 60077-2 (auxiliary contact b0 "well open" or mirror contact for feedback circuits of safety-relevant control systems according to EN 13849-1)

*6 Values for bistable versions on request

*7 The optional CPD contact limits the mechanical endurance to 600,000 operating cycles

Specifications – 1 pole power contactors for AC and DC, U_n up to 3,000 V and I_{th} up to 1,000 A

Series		**CP1115/10 | CP1130/10**
Type of voltage		DC (bi-directional), AC (f ≤ 60 Hz)
Number of poles, configuration		1x, SPST-NO 1 — 2
Electrical data according to IEC 60077-2		
Nominal voltage	U_n	1,500 V | 3,000 V
Rated operating voltage	U_e/U_r	1,800 V | 3,600 V
Rated insulation voltage	U_{Nm}	3,000 V | 4,800 V
Rated impulse withstand voltage	U_{Ni}	15 kV | 25 kV
Pollution degree / Overvoltage category		PD3 / OV3
Switching overvoltages @ U_e/U_r = 1,800 V / @ U_e/U_r = 3,600 V		< 3x U_{Nm}
Conventional thermal current	I_{th}	1,000 A*1
Component category		A2
Short-circuit making capacity	NO	8 ... 10 kA
Rated operating current I_e/I_r	Arc chamber	
Operational frequency C1		
T2 = 15 ms, DC, U_e/U_r = 1,800 V	A / B / D	200 A / 200 A / 0 A*2
T2 = 15 ms, DC, U_e/U_r = 3,600 V	A / B / D	200 A / 200 A / 0 A*2
Rated short-circuit breaking capacity	Arc chamber	
T2 = 15 ms, DC, U_e/U_r = 1,800 V	A / B / D	900 A / 430 A / 0 A*2
T2 = 15 ms, DC, U_e/U_r = 3,600 V	A / B / D	350 A / tbd*3 / 0 A*2
T2 = 1 ms, DC, U_e/U_r = 1,800 V	A / B / D	4,600 A / 1,700 A / 0 A*2
T2 = 1 ms, DC, U_e/U_r = 3,600 V	A / B / D	2,000 A / 500 A / 0 A*2
cosφ = 0,8, AC, U_e/U_r = 1,800 V (f = 16.7 / f ≤ 60 Hz)	A / B / D	4,000 A / 3,000 A / 0 A*2
cosφ = 0,8, AC, U_e/U_r = 3,600 V (f = 16.7 / f ≤ 60 Hz)	A / B / D	1,200 A / 600 A / 0 A*2
cosφ = 1, AC, U_e/U_r = 1,800 V (f = 16.7 / f ≤ 60 Hz)	A / B / D	6,000 A / 4,500 A / 0 A*2
cosφ = 1, AC, U_e/U_r = 3,600 V (f = 16.7 / f ≤ 60 Hz)	A / B / D	1,800 A / 1,100 A / 0 A*2
Rated short-time withstand current I_{cw} @ T < 100 ms	NO	10 ... 12 kA
Critical current range		none
Design		
Contact material		$AgSnO_2$
Terminals / Torque		1x M10 / 16 ... 20 Nm
Auxiliary switches		
Number max. / configuration		4x max.*4 / 1x S870 (a1) + 1x S870 (b0) + 2x, S826*5 or 4x S826
Contact material		Silver, gold
Switching capacity	SPDT-DB S826, silver contacts	AC-15: 230 V / 1.0 A DC-13: 110 V / 0.5 A
	SPDT-DB S826, gold contacts	AC-15: 230 V / 0.1 A DC-13: 110 V / 0.1 A
	SPDT S870, silver contacts	AC-15: 230 V / 1.5 A DC-13: 60 V / 0.5 A
	SPDT S870, gold contacts	AC-15: 230 V / 1.0 A DC-13: 60 V / 0.5 A
Terminals		Screw M3
Pre-charging contactor, high-voltage discharging contact		
Pre-charging contactor, CPP1115/02	U_n, I_{th}	1x, SPST-NO, U_{Nm} = 3,600 V @ PD2/OV2, I_{th} = 200 A, see catalogue C45.en
High-voltage discharging contact, CPD	U_n, I_{th}	1x, SPST-NC, U_{Nm} = 3,600 V, I_{th} = 80 A (only for CP1xxx and switching inverse to the main contact)
Making/breaking capacity		850 A / 250 A (T = 1 ms, DC)
Magnetic drive		
Coil voltage/range (design)	U_S	24 / 36 ... 60 / 72 ... 110 V DC (mono or bistable with integrated PWM module)
Control inputs (only coil version N, B)	U_{St} / I_{St}	8 ... 400 V / 1 mA (failsafe, version N only)
Pollution degree / overvoltage category		PD3 / OV2
Coil tolerance		-30 % ... +25 % U_{SN}
Coil power dissipation	@ U_S and T_a = 20 °C	Pull-in: 225 W max. @ 250 ms max. / hold: < 10 W *6
Pull-in voltage	typical @ T_a = 20 °C	U_S < 0.7 x U_{SN}
Pull-in time	typical @ T_a = 20 °C	≤ 160 ms
Drop-off voltage	typical @ T_a = 20 °C	U_S ≥ 0.1 x U_{SN}
Drop-off time	typical @ T_a = 20 °C	≤ 40 ms
Coil suppression		Integrated PWM module (electronic coil controller with suppressor diode)
Coil terminal		Cage clamp
Degree of protection		IP00
Mechanical endurance	@ Coil design, Monostable	> 1 million operating cycles *7
	Bistable	> 200,000 operating cycles
Vibration / shock	IEC 61373	Category 1, class B
Mounting position		horizontal / vertical
Environmental conditions	Operating/Storage temperature	-40 °C ... +70 °C / -40 °C ... +85 °C
	Altitude/Humidity (IEC 50125-1)	< 2,000 m above sea level / < 75 % yearly average
Weight	depending on configuration	approx. 6 ... 10 kg

*1 Ratings for IEC 60077-2; ratings for other standards on request.

*2 Cover for main contact system, version "D", breaking capacity: No load

*3 On request

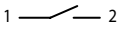
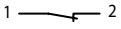
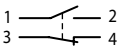
*4 With high-voltage discharging contact, the number of auxiliary contacts is reduced to max. 2

*5 a1 and b0 according to IEC 60077-2 (auxiliary contact b0 "well open" or mirror contact for feedback circuits of safety-relevant control systems according to EN 13849-1)

*6 Values for bistable versions on request

*7 The optional CPD contact limits the mechanical endurance to 600,000 operating cycles

Specifications – 1 pole power contactors for AC and DC, U_n up to 3,000 V and I_{th} up to 1,200 A

Series			CP1115/12 | CP1130/12	CP2115/12 | CP2130/12	CP3115/12 | CP3130/12
Type of voltage			DC (bi-directional), AC (f ≤ 60 Hz)	DC (bi-directional), AC (f ≤ 60 Hz)	DC (bi-directional), AC (f ≤ 60 Hz)
Number of poles, configuration			1x, SPST-NO 	1x, SPST-NC 	1x, SPDT-DB 
Electrical data according to IEC 60077-2					
Nominal voltage		U_n	1,500 V | 3,000 V	1,500 V | 3,000 V	1,500 V | 3,000 V
Rated operating voltage		U_e/U_r	1,800 V | 3,600 V	1,800 V | 3,600 V	1,800 V | 3,600 V
Rated insulation voltage		U_{Nm}	3,000 V | 4,800 V	3,000 V | 4,800 V	3,000 V | 4,800 V
Rated impulse withstand voltage		U_{Ni}	15 kV | 25 kV	15 kV | 25 kV	15 kV | 25 kV
Pollution degree / Overvoltage category			PD3 / OV3	PD3 / OV3	PD3 / OV3
Switching overvoltages	@ U_e/U_r = 1,800 V / @ U_e/U_r = 3,600 V		< 3x U_{Nm}	< 3x U_{Nm}	0 V*2
Conventional thermal current		I_{th}	1,200 A*1	1,200 A*1	1,200 A*1
Component category			A2	A2	A4
Short-circuit making capacity		NO / NC	12 kA / ---	--- / approx. 1.2 kA	approx. 12 kA / approx. 1.2 kA
Rated operating current I_e/I_r		Arc chamber			
Operational frequency C1					
T2 = 15 ms, DC, U_e/U_r = 1,800 V		A / B / D	450 A / 450 A / 0 A*2	--- / --- / 0 A*2	--- / --- / 0 A*2
T2 = 15 ms, DC, U_e/U_r = 3,600 V		A / B / D	400 A / 200 A / 0 A*2	--- / --- / 0 A*2	--- / --- / 0 A*2
Rated short-circuit breaking capacity		Arc chamber			
T2 = 15 ms, DC, U_e/U_r = 1,800 V		A / B / D	2,000 A / 1,000 A / 0 A*2	tbd*3 / 1,000 A / 0 A*2	--- / --- / 0 A*2
T2 = 15 ms, DC, U_e/U_r = 3,600 V		A / B / D	900 A / 200 A / 0 A*2	tbd*3 / tbd*3 / 0 A*2	--- / --- / 0 A*2
T2 = 1 ms, DC, U_e/U_r = 1,800 V		A / B / D	4,000 A / 2,500 A / 0 A*2	tbd*3 / 1,200 A / 0 A*2	--- / --- / 0 A*2
T2 = 1 ms, DC, U_e/U_r = 3,600 V		A / B / D	2,200 A / 1,000 A / 0 A*2	tbd*3 / tbd*3 / 0 A*2	--- / --- / 0 A*2
cosφ = 0,8, AC, U_e/U_r = 1,800 V (f = 16.7 / f ≤ 60 Hz)		A / B / D	tbd*3 / 1,800 A / 0 A*2	tbd*3 / tbd*3 / 0 A*2	--- / --- / 0 A*2
cosφ = 0,8, AC, U_e/U_r = 3,600 V (f = 16.7 / f ≤ 60 Hz)		A / B / D	tbd*3 / tbd*3 / 0 A*2	tbd*3 / tbd*3 / 0 A*2	--- / --- / 0 A*2
cosφ = 1, AC, U_e/U_r = 1,800 V (f = 16.7 / f ≤ 60 Hz)		A / B / D	5,000 A / 2,300 A / 0 A*2	tbd*3 / tbd*3 / 0 A*2	--- / --- / 0 A*2
cosφ = 1, AC, U_e/U_r = 3,600 V (f = 16.7 / f ≤ 60 Hz)		A / B / D	2,400 A / 1,400 A / 0 A*2	tbd*3 / tbd*3 / 0 A*2	--- / --- / 0 A*2
Rated short-time withstand current I_{cw} @ T < 100 ms		NO / NC	15 kA / ---	--- / 8 kA	15 kA / 8 kA
Critical current range			none	none	--- *2
Design					
Contact material			$AgSnO_2$	$AgSnO_2$	$AgSnO_2$
Terminals / Torque			2x M12 / 24 ... 30 Nm	2x M12 / 24 ... 30 Nm	2x M12 / 24 ... 30 Nm
Auxiliary switches					
Number max. / configuration			4x max.*4 / 1x S870 (a1) + 1x S870 (b0) + 2x, S826*5 or 4x S826		
Contact material			Silver, gold		
Switching capacity	SPDT-DB S826, silver contacts		AC-15: 230 V / 1.0 A	DC-13: 110 V / 0.5 A	
	SPDT-DB S826, gold contacts		AC-15: 230 V / 0.1 A	DC-13: 110 V / 0.1 A	
	SPDT S870, silver contacts		AC-15: 230 V / 1.5 A	DC-13: 60 V / 0.5 A	
	SPDT S870, gold contacts		AC-15: 230 V / 1.0 A	DC-13: 60 V / 0.5 A	
Terminals			Screw M3		
Pre-charging contactor, high-voltage discharging contact					
Pre-charging contactor, CPP1115/02		U_n, I_{th}	1x, SPST-NO, U_{Nm} = 3,600 V @ PD2/OV2, I_{th} = 200 A, see catalogue C45.en		
High-voltage discharging contact, CPD		U_n, I_{th}	1x, SPST-NC, U_{Nm} = 3,600 V, I_{th} = 80 A (only for CP1xxx and switching inverse to the main contact)		
Making/breaking capacity			850 A / 250 A (T = 1 ms, DC)		
Magnetic drive					
Coil voltage/range (design)		U_S	24 / 36 ... 60 / 72 ... 110 V DC (mono or bistable with integrated PWM module)		
Control inputs (only coil version N, B)		U_{St} / I_{St}	8 ... 400 V / 1 mA (failsafe, version N only)		
Pollution degree / overvoltage category			PD3 / OV2		
Coil tolerance			–30 % ... +25 % U_{SN}		
Coil power dissipation	@ U_S and T_a = 20 °C		Pull-in: 225 W max. @ 250 ms max. / hold: < 10 W *6		
Pull-in voltage	typical @ T_a = 20 °C		U_S < 0.7 x U_{SN}		
Pull-in time	typical @ T_a = 20 °C		≤ 160 ms		
Drop-off voltage	typical @ T_a = 20 °C		U_S ≥ 0.1 x U_{SN}		
Drop-off time	typical @ T_a = 20 °C		≤ 40 ms		
Coil suppression			Integrated PWM module (electronic coil controller with suppressor diode)		
Coil terminal			Cage clamp		
Degree of protection			IP00		
Mechanical endurance	@ Coil design, Monostable		> 1 million operating cycles *7		
	Bistable		> 200,000 operating cycles		
Vibration / shock		IEC 61373	Category 1, class B		
Mounting position			horizontal / vertical		
Environmental conditions	Operating/Storage temperature		–40 °C ... +70 °C / –40 °C ... +85 °C		
	Altitude/Humidity (IEC 50125-1)		< 2,000 m above sea level / < 75 % yearly average		
Weight	depending on configuration		approx. 11 ... 18 kg	approx. 11 ... 18 kg	approx. 12 ... 19 kg

*1 Ratings for IEC 60077-2; ratings for other standards on request.

*2 Cover for main contact system, version "D", breaking capacity: No load

*3 On request

*4 With high-voltage discharging contact, the number of auxiliary contacts is reduced to max. 2

*5 a1 and b0 according to IEC 60077-2 (auxiliary contact b0 "well open" or mirror contact for feedback circuits of safety-relevant control systems according to EN 13849-1)

*6 Values for bistable versions on request

*7 The optional CPD contact limits the mechanical endurance to 600,000 operating cycles

Specifications – 1 pole power contactors for AC and DC, U_n up to 3,000 V and I_{th} up to 1,500 A

Series			CP1115/15 | CP1130/15
Type of voltage			DC (bi-directional), AC (f ≤ 60 Hz)
Number of poles, configuration			1x, SPST-NO 1 — 2
Electrical data according to IEC 60077-2			
Nominal voltage		U_n	1,500 V | 3,000 V
Rated operating voltage		U_e/U_r	1,800 V | 3,600 V
Rated insulation voltage		U_{Nm}	3,000 V | 4,800 V
Rated impulse withstand voltage		U_{Ni}	15 kV | 25 kV
Pollution degree / Overvoltage category			PD3 / OV3
Switching overvoltages	@ U_e/U_r = 1,800 V / @ U_e/U_r = 3,600 V		< 3x U_{Nm}
Conventional thermal current		I_{th}	1,500 A*1
Component category			A2
Short-circuit making capacity		NO	12 kA
Rated operating current I_e/I_r		Arc chamber	
Operational frequency C1			
T2 = 15 ms, DC, U_e/U_r = 1,800 V		A / B / D	450 A / 450 A / 0 A*2
T2 = 15 ms, DC, U_e/U_r = 3,600 V		A / B / D	400 A / 200 A / 0 A*2
Rated short-circuit breaking capacity		Arc chamber	
T2 = 15 ms, DC, U_e/U_r = 1,800 V		A / B / D	2,000 A / 1,000 A / 0 A*2
T2 = 15 ms, DC, U_e/U_r = 3,600 V		A / B / D	900 A / 200 A / 0 A*2
T2 = 1 ms, DC, U_e/U_r = 1,800 V		A / B / D	4,000 A / 2,500 A / 0 A*2
T2 = 1 ms, DC, U_e/U_r = 3,600 V		A / B / D	2,200 A / 1,000 A / 0 A*2
cosφ = 0,8, AC, U_e/U_r = 1,800 V (f = 16.7 / f ≤ 60 Hz)		A / B / D	tbd*3 / 1,800 A / 0 A*2
cosφ = 0,8, AC, U_e/U_r = 3,600 V (f = 16.7 / f ≤ 60 Hz)		A / B / D	tbd*3 / tbd*3 / 0 A*2
cosφ = 1, AC, U_e/U_r = 1,800 V (f = 16.7 / f ≤ 60 Hz)		A / B / D	5,000 A / 2,300 A / 0 A*2
cosφ = 1, AC, U_e/U_r = 3,600 V (f = 16.7 / f ≤ 60 Hz)		A / B / D	2,400 A / 1,400 A / 0 A*2
Rated short-time withstand current I_{cw} @ T < 100 ms		NO	15 kA
Critical current range			none
Design			
Contact material			$AgSnO_2$
Terminals / Torque			2x M12 / 24 ... 30 Nm
Auxiliary switches			
Number max. / configuration			4x max.*4 / 1x S870 (a1) + 1x S870 (b0) + 2x, S826*5 or 4x S826
Contact material			Silver, gold
Switching capacity	SPDT-DB S826, silver contacts		AC-15: 230 V / 1.0 A DC-13: 110 V / 0.5 A
	SPDT-DB S826, gold contacts		AC-15: 230 V / 0.1 A DC-13: 110 V / 0.1 A
	SPDT S870, silver contacts		AC-15: 230 V / 1.5 A DC-13: 60 V / 0.5 A
	SPDT S870, gold contacts		AC-15: 230 V / 1.0 A DC-13: 60 V / 0.5 A
Terminals			Screw M3
Pre-charging contactor, high-voltage discharging contact			
Pre-charging contactor, CPP1115/02		U_n, I_{th}	1x, SPST-NO, U_{Nm} = 3,600 V @ PD2/OV2, I_{th} = 200 A, see catalogue C45.en
High-voltage discharging contact, CPD		U_n, I_{th}	1x, SPST-NC, U_{Nm} = 3,600 V, I_{th} = 80 A (only for CP1xxx and switching inverse to the main contact)
Making/breaking capacity			850 A / 250 A (T = 1 ms, DC)
Magnetic drive			
Coil voltage/range (design)		U_S	24 / 36 ... 60 / 72 ... 110 V DC (mono or bistable with integrated PWM module)
Control inputs (only coil version N, B)		U_{St} / I_{St}	8 ... 400 V / 1 mA (failsafe, version N only)
Pollution degree / overvoltage category			PD3 / OV2
Coil tolerance			–30 % ... +25 % U_{SN}
Coil power dissipation	@ U_S and T_a = 20 °C		Pull-in: 225 W max. @ 250 ms max. / hold: < 10 W *6
Pull-in voltage	typical @ T_a = 20 °C		U_S < 0.7 x U_{SN}
Pull-in time	typical @ T_a = 20 °C		≤ 160 ms
Drop-off voltage	typical @ T_a = 20 °C		U_S ≥ 0.1 x U_{SN}
Drop-off time	typical @ T_a = 20 °C		≤ 40 ms
Coil suppression			Integrated PWM module (electronic coil controller with suppressor diode)
Coil terminal			Cage clamp
Degree of protection			IP00
Mechanical endurance	@ Coil design, Monostable		> 1 million operating cycles *7
	Bistable		> 200,000 operating cycles
Vibration / shock		IEC 61373	Category 1, class B
Mounting position			horizontal / vertical
Environmental conditions	Operating/Storage temperature		–40 °C ... +70 °C / –40 °C ... +85 °C
	Altitude/Humidity (IEC 50125-1)		< 2,000 m above sea level / < 75 % yearly average
Weight	depending on configuration		approx. 11 ... 18 kg

*1 Ratings for IEC 60077-2; ratings for other standards on request.

*2 Cover for main contact system, version "D", breaking capacity: No load

*3 On request

*4 With high-voltage discharging contact, the number of auxiliary contacts is reduced to max. 2

*5 a1 and b0 according to IEC 60077-2 (auxiliary contact b0 "well open" or mirror contact for feedback circuits of safety-relevant control systems according to EN 13849-1)

*6 Values for bistable versions on request

*7 The optional CPD contact limits the mechanical endurance to 600,000 operating cycles

Specifications – 1 pole power contactors for AC and DC, U_n up to 3,000 V and I_{th} up to 2,000 A

Series			CP1115/20 | CP1130/20	CP2115/20 | CP2130/20
Type of voltage			DC (bi-directional), AC (f ≤ 60 Hz)	DC (bi-directional), AC (f ≤ 60 Hz)
Number of poles, configuration			1x, SPST-NO 1 — 2	1x, SPST-NC 1 — 2
Electrical data according to IEC 60077-2				
Nominal voltage		U_n	1,500 V | 3,000 V	1,500 V | 3,000 V
Rated operating voltage		U_e/U_r	1,800 V | 3,600 V	1,800 V | 3,600 V
Rated insulation voltage		U_{Nm}	3,000 V | 4,800 V	3,000 V | 4,800 V
Rated impulse withstand voltage		U_{Ni}	15 kV | 25 kV	15 kV | 25 kV
Pollution degree / Overvoltage category			PD3 / OV3	PD3 / OV3
Switching overvoltages	@ U_e/U_r = 1,800 V / @ U_e/U_r = 3,600 V		< 3x U_{Nm}	< 3x U_{Nm}
Conventional thermal current		I_{th}	2,000 A*1	2,000 A*1
Component category			A2	A2
Short-circuit making capacity		NO / NC	approx. 12 kA / ---	--- / approx. 1.2 kA
Rated operating current I_e/I_r		Arc chamber		
Operational frequency C1				
T2 = 15 ms, DC, U_e/U_r = 1,800 V		A / B / D	450 A / 450 A / 0 A*2	--- / --- / 0 A*2
T2 = 15 ms, DC, U_e/U_r = 3,600 V		A / B / D	400 A / 200 A / 0 A*2	--- / --- / 0 A*2
Rated short-circuit breaking capacity		Arc chamber		
T2 = 15 ms, DC, U_e/U_r = 1,800 V		A / B / D	2,000 A / 1,000 A / 0 A*2	tbd*3 / 1,000 A / 0 A*2
T2 = 15 ms, DC, U_e/U_r = 3,600 V		A / B / D	900 A / 200 A / 0 A*2	tbd*3 / tbd*3 / 0 A*2
T2 = 1 ms, DC, U_e/U_r = 1,800 V		A / B / D	4,000 A / 2,500 A / 0 A*2	tbd*3 / 1,600 A / 0 A*2
T2 = 1 ms, DC, U_e/U_r = 3,600 V		A / B / D	2,200 A / 1,000 A / 0 A*2	tbd*3 / tbd*3 / 0 A*2
cosφ = 0,8, AC, U_e/U_r = 1,800 V (f = 16.7 / f ≤ 60 Hz)		A / B / D	tbd*3 / 1,800 A / 0 A*2	tbd*3 / tbd*3 / 0 A*2
cosφ = 0,8, AC, U_e/U_r = 3,600 V (f = 16.7 / f ≤ 60 Hz)		A / B / D	tbd*3 / tbd*3 / 0 A*2	tbd*3 / tbd*3 / 0 A*2
cosφ = 1, AC, U_e/U_r = 1,800 V (f = 16.7 / f ≤ 60 Hz)		A / B / D	tbd*3 / 2,300 A / 0 A*2	tbd*3 / tbd*3 / 0 A*2
cosφ = 1, AC, U_e/U_r = 3,600 V (f = 16.7 / f ≤ 60 Hz)		A / B / D	2,400 A / 1,400 A / 0 A*2	tbd*3 / tbd*3 / 0 A*2
Rated short-time withstand current I_{cw} @ T < 100 ms		NO / NC	15 kA / ---	--- / 8 kA
Critical current range			none	none
Design				
Contact material			$AgSnO_2$	$AgSnO_2$
Terminals / Torque			2x M12 / 24 ... 30 Nm	2x M12 / 24 ... 30 Nm
Auxiliary switches				
Number max. / configuration			4x max.*4 / 1x S870 (a1) + 1x S870 (b0) + 2x, S826*5	or 4x S826
Contact material			Silver, gold	
Switching capacity	SPDT-DB S826, silver contacts		AC-15: 230 V / 1.0 A	DC-13: 110 V / 0.5 A
	SPDT-DB S826, gold contacts		AC-15: 230 V / 0.1 A	DC-13: 110 V / 0.1 A
	SPDT S870, silver contacts		AC-15: 230 V / 1.5 A	DC-13: 60 V / 0.5 A
	SPDT S870, gold contacts		AC-15: 230 V / 1.0 A	DC-13: 60 V / 0.5 A
Terminals			Screw M3	
Pre-charging contactor, high-voltage discharging contact				
Pre-charging contactor, CPP1115/02		U_n, I_{th}	1x, SPST-NO, U_{Nm} = 3,600 V @ PD2/OV2, I_{th} = 200 A, see catalogue C45.en	
High-voltage discharging contact, CPD		U_n, I_{th}	1x, SPST-NC, U_{Nm} = 3,600 V, I_{th} = 80 A (only for CP1xxx and switching inverse to the main contact)	
Making/breaking capacity			850 A / 250 A (T = 1 ms, DC)	
Magnetic drive				
Coil voltage/range (design)		U_S	24 / 36 ... 60 / 72 ... 110 V DC (mono or bistable with integrated PWM module)	
Control inputs (only coil version N, B)		U_{St} / I_{St}	8 ... 400 V / 1 mA (failsafe, version N only)	
Pollution degree / overvoltage category			PD3 / OV2	
Coil tolerance			-30 % ... +25 % U_{SN}	
Coil power dissipation	@ U_S and T_a = 20 °C		Pull-in: 225 W max. @ 250 ms max. / hold: < 10 W *6	
Pull-in voltage	typical @ T_a = 20 °C		U_S < 0.7 x U_{SN}	
Pull-in time	typical @ T_a = 20 °C		≤ 160 ms	
Drop-off voltage	typical @ T_a = 20 °C		U_S ≥ 0.1 x U_{SN}	
Drop-off time	typical @ T_a = 20 °C		≤ 40 ms	
Coil suppression			Integrated PWM module (electronic coil controller with suppressor diode)	
Coil terminal			Cage clamp	
Degree of protection			IP00	
Mechanical endurance	@ Coil design, Monostable		> 1 million operating cycles *7	
	Bistable		> 200,000 operating cycles	
Vibration / shock		IEC 61373	Category 1, class B	
Mounting position			horizontal / vertical	
Environmental conditions	Operating/Storage temperature		-40 °C ... +70 °C / -40 °C ... +85 °C	
	Altitude/Humidity (IEC 50125-1)		< 2,000 m above sea level / < 75 % yearly average	
Weight	depending on configuration		approx. 12 ... 19 kg	approx. 12 ... 19 kg

*1 Ratings for IEC 60077-2; ratings for other standards on request.

*2 Cover for main contact system, version "D", breaking capacity: No load

*3 On request

*4 With high-voltage discharging contact, the number of auxiliary contacts is reduced to max. 2

*5 a1 and b0 according to IEC 60077-2 (auxiliary contact b0 "well open" or mirror contact for feedback circuits of safety-relevant control systems according to EN 13849-1)

*6 Values for bistable versions on request

*7 The optional CPD contact limits the mechanical endurance to 600,000 operating cycles

Dimension diagram – CP1130-06-A: 1 pole SPST-NO, U_n = 3,000 V, I_{th} = 600 A
CP2130-06-A: 1 pole SPST-NC, U_n = 3,000 V, I_{th} = 600 A

High-efficiency ceramic arc chamber
Arc chamber with permanent-magnetic blowout for frequent switching of high loads, «A» version

Arc chamber interlock

Main contact system
SPST-NO: NO contact, 1 pole
SPST-NC: NC contact, 1 pole

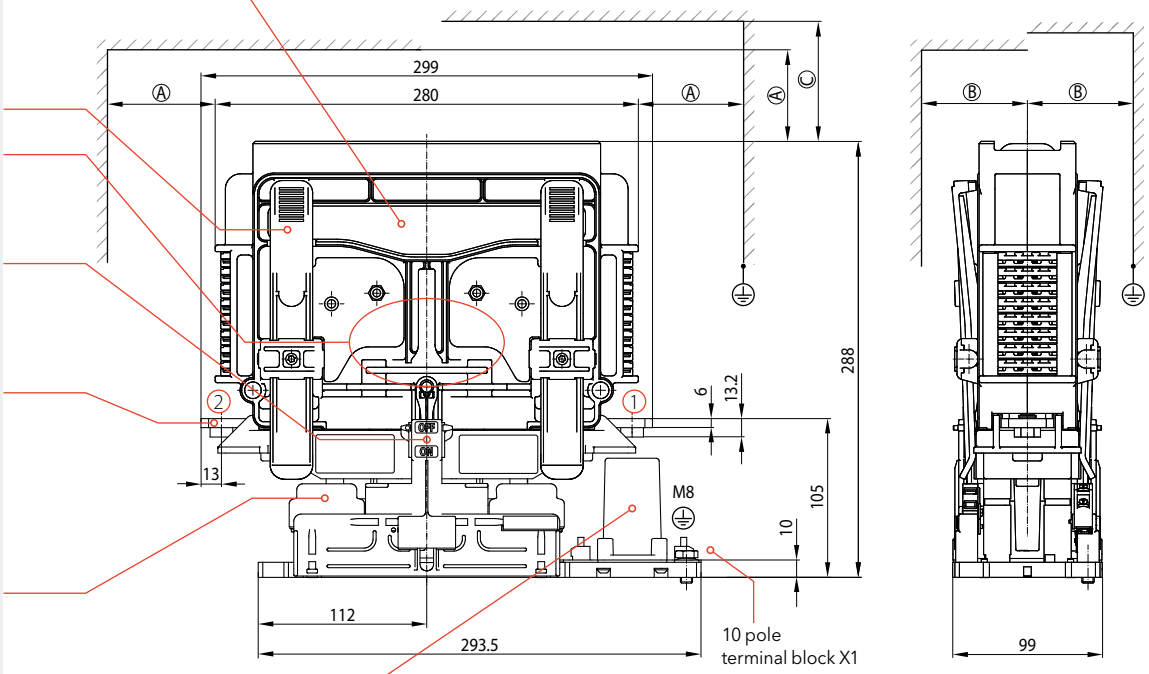
Switching state indicator
OFF: Main contact system switched off
ON: Main contact system switched on

Main contact terminals
1x M10 screw each, tightening torque 16 ... 20 Nm

Pre-charging contactor CPP
Integrated 1 pole NO contactor for pre-charging

Auxiliary switches
2x Snap-action switches, silver- or gold-contacts, M3 screws

Integrated PWM module
Electronic coil control with 10 pole terminal block



Minimum distances in [mm]

Ⓐ	Ⓑ	Ⓐ	Ⓑ	Ⓒ
50	60	30	60	110
1	1	2	2	3

1 To earth potential / 2 To insulate parts / 3 For disassembly arc chamber

Dimension diagram – CP1115-06-B: 1 pole SPST-NO, U_n = 1,500 V, I_{th} = 600 A
CP2115-06-B: 1 pole SPST-NC, U_n = 1,500 V, I_{th} = 600 A

High-efficiency ceramic arc chamber
Arc chamber with permanent-magnetic blowout for frequent switching of high loads, «B» version

Arc chamber interlock

Main contact system
SPST-NO: NO contact, 1 pole
SPST-NC: NC contact, 1 pole

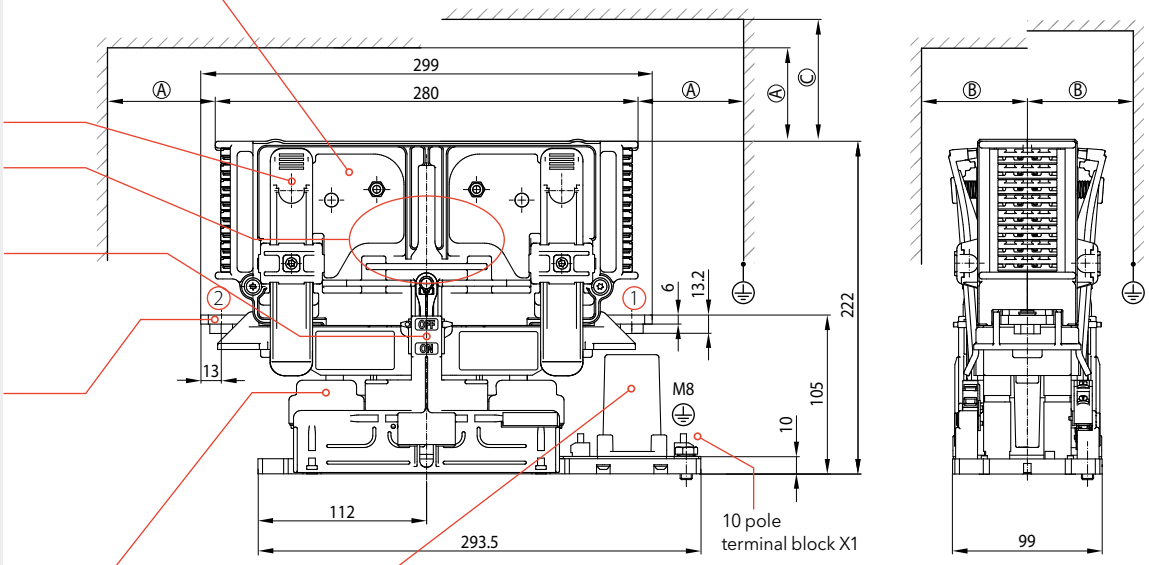
Switching state indicator
OFF: Main contact system switched off
ON: Main contact system switched on

Main contact terminals
1 M10 screw each, tightening torque 16 ... 20 Nm

Pre-charging contactor CPP
Integrated 1 pole NO contactor for pre-charging

Auxiliary switches
2x Snap-action switches, silver- or gold-contacts, M3 screws

Integrated PWM module
Electronic coil control with 10 pole terminal block



Minimum distances in [mm]

Ⓐ	Ⓑ	Ⓐ	Ⓑ	Ⓒ
50	60	30	60	110
1	1	2	2	3

1 To earth potential / 2 To insulate parts / 3 For disassembly arc chamber

Dimension diagram – CP1115-06-D/CP1130-06-D: 1 pole SPST-NO, U_n = 1,500 V/3,000 V, I_{th} = 600 A
CP2115-06-D/CP2130-06-D: 1 pole SPST-NC, U_n = 1,500 V/3,000 V, I_{th} = 600 A

Cover cap
main contact system
Configuration as diconnect switch for loadless switching, Version «D»

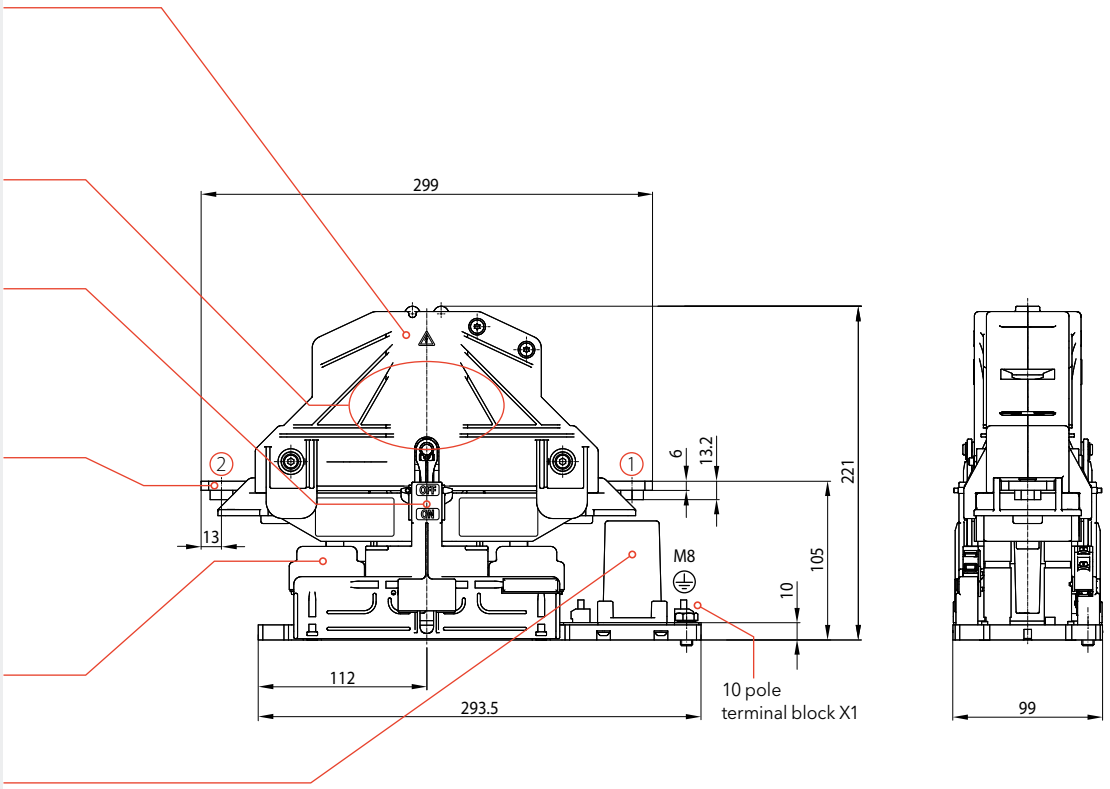
Main contact system
SPST-NO: NO contact, 1 pole
SPST-NC: NC contact, 1 pole

Switching state indicator
OFF: Main contact system switched off
ON: Main contact system switched on

Main contact terminals
1x M10 screw each, tightening torque 16 ... 20 Nm

Auxiliary switches
2x Snap-action switches, silver- or gold-contacts, M3 screws

Integrated PWM module
Electronic coil control with 10 pole terminal block



Dimension diagram – CP3115-06-D/CP3130-06-D: 1 pole SPST-DB, U_n = 1,500 V/3,000 V, I_{th} = 600 A

Cover cap
main contact system
Configuration as CO for loadless switching, Version «D»

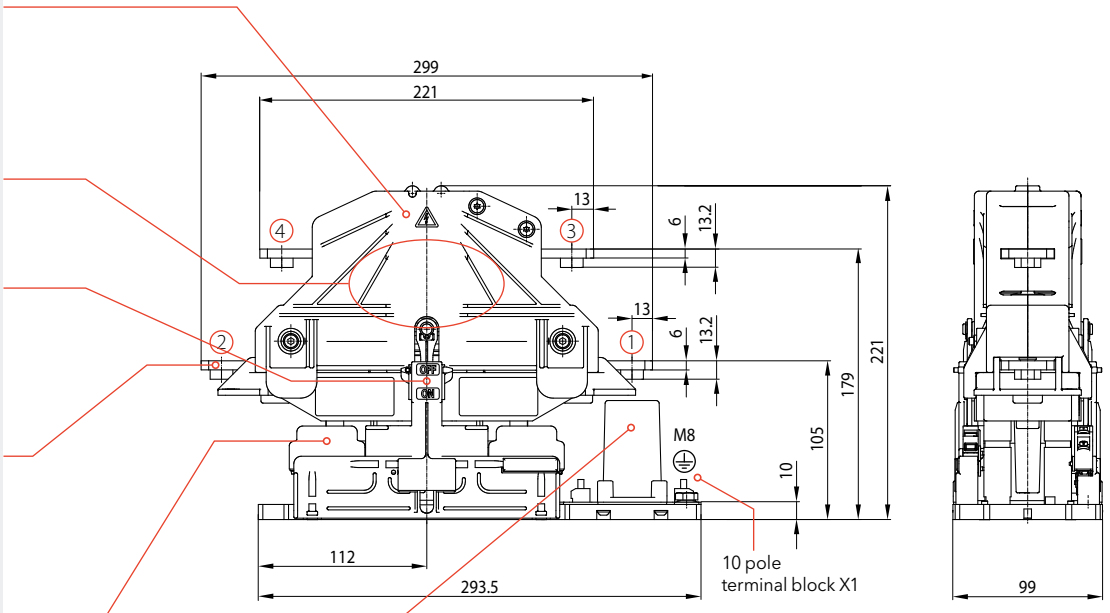
Main contact system
SPDT-DB: 1 pole CO
NC contacts ③ - ④
NO contacts ① - ②

Switching state indicator
OFF: NO contact switched off
ON: NO contact switched on

Main contact terminals
1x M10 screw each, tightening torque 16 ... 20 Nm

Auxiliary switches
2x Snap-action switches, silver- or gold-contacts, M3 screws

Integrated PWM module
Electronic coil control with 10 pole terminal block



Dimension diagram – CP1130-08-A: 1 pole SPST-NO, U_n = 3,000 V, I_{th} = 800 A

High-efficiency ceramic arc chamber
Arc chamber with permanent-magnetic blowout for frequent switching of high loads, «A» version

Arc chamber interlock

Main contact system
SPST-NO: NO contact, 1 pole

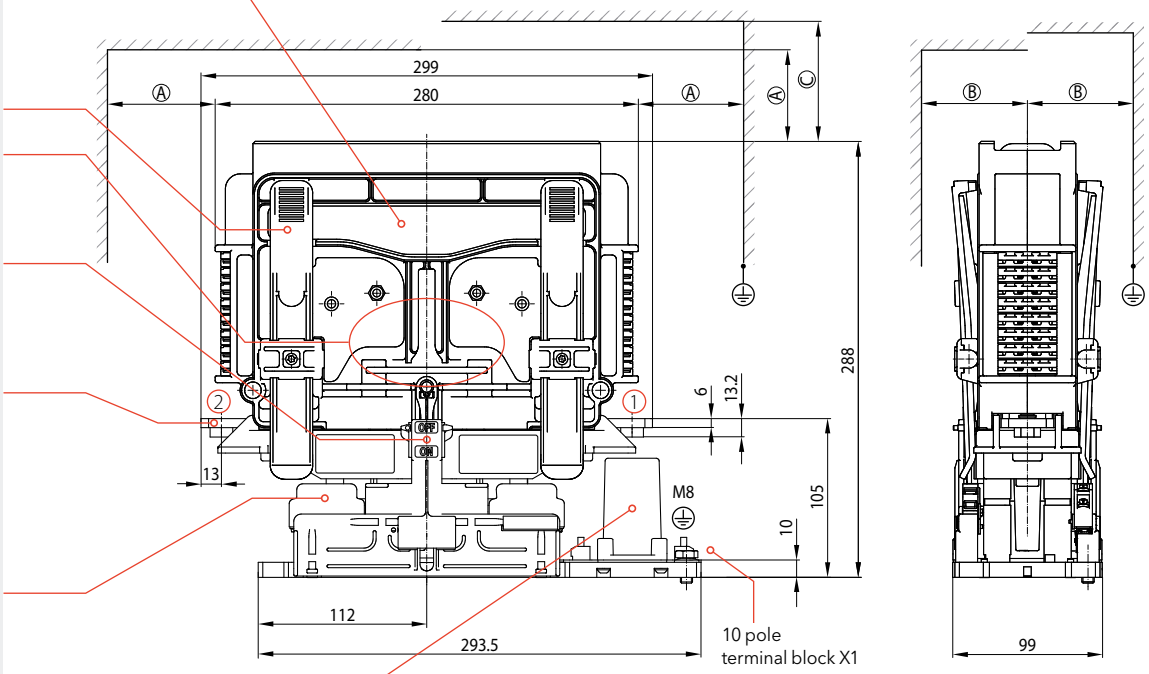
Switching state indicator
OFF: Main contact system switched off
ON: Main contact system switched on

Main contact terminals
1x M10 screw each, tightening torque 16 ... 20 Nm

Pre-charging contactor CPP
Integrated 1 pole NO contactor for pre-charging

Auxiliary switches
2x Snap-action switches, silver- or gold-contacts, M3 screws

Integrated PWM module
Electronic coil control with 10 pole terminal block



Minimum distances in [mm]

Ⓐ	Ⓑ	Ⓐ	Ⓑ	Ⓒ
50	60	30	60	110
1	1	2	2	3

1 To earth potential / 2 To insulate parts / 3 For disassembly arc chamber

Dimension diagram – CP1115-08-B: 1 pole SPST-NO, U_n = 1,500 V, I_{th} = 800 A

High-efficiency ceramic arc chamber
Arc chamber with permanent-magnetic blowout for frequent switching of high loads, «B» version

Arc chamber interlock

Main contact system
SPST-NO: NO contact, 1 pole

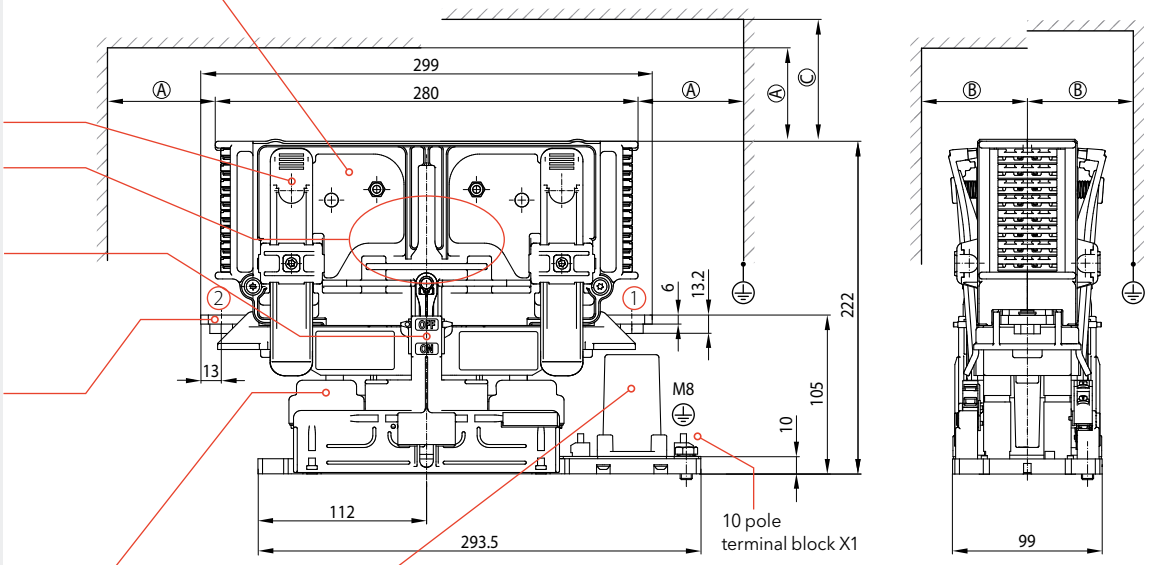
Switching state indicator
OFF: Main contact system switched off
ON: Main contact system switched on

Main contact terminals
1x M10 screw each, tightening torque 16 ... 20 Nm

Pre-charging contactor CPP
Integrated 1 pole NO contactor for pre-charging

Auxiliary switches
2x Snap-action switches, silver- or gold-contacts, M3 screws

Integrated PWM module
Electronic coil control with 10 pole terminal block



Minimum distances in [mm]

Ⓐ	Ⓑ	Ⓐ	Ⓑ	Ⓒ
50	60	30	60	110
1	1	2	2	3

1 To earth potential / 2 To insulate parts / 3 For disassembly arc chamber

Dimension diagram – CP1115-08-D/CP1130-08-D: 1 pole SPST-NO, U_n = 1,500 V/3,000 V, I_{th} = 800 A

Cover cap
main contact system
Configuration as diconnect switch for loadless switching, Version «D»

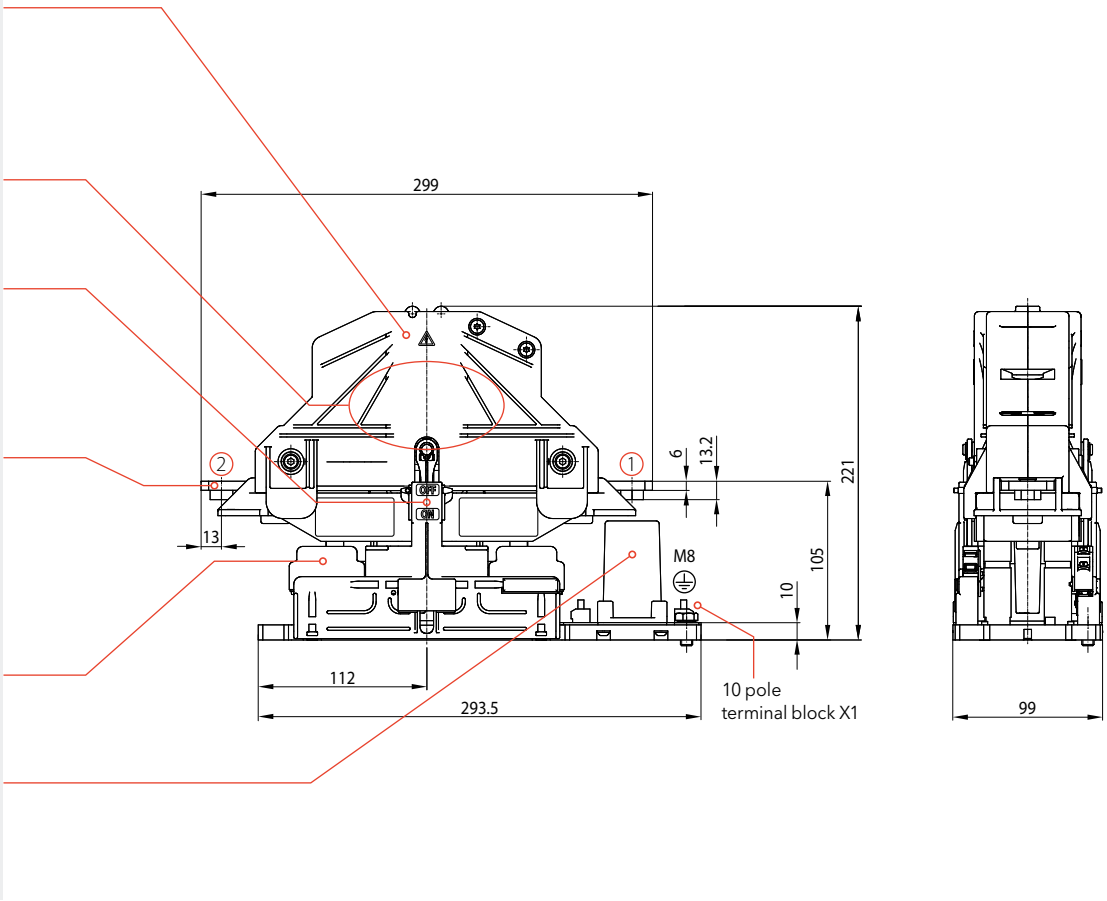
Main contact system
SPST-NO: NO contact, 1 pole

Switching state indicator
OFF: Main contact system switched off
ON: Main contact system switched on

Main contact terminals
1x M10 screw each, tightening torque 16 ... 20 Nm

Auxiliary switches
2x Snap-action switches, silver- or gold-contacts, M3 screws

Integrated PWM module
Electronic coil control with 10 pole terminal block



Dimension diagram – CP1130-10-A: 1 pole SPST-NO, U_n = 3,000 V, I_{th} = 1,000 A

High-efficiency ceramic arc chamber
Arc chamber with permanent-magnetic blowout for frequent switching of high loads, «A» version

Arc chamber interlock

Main contact system
SPST-NO: NO contact, 1 pole

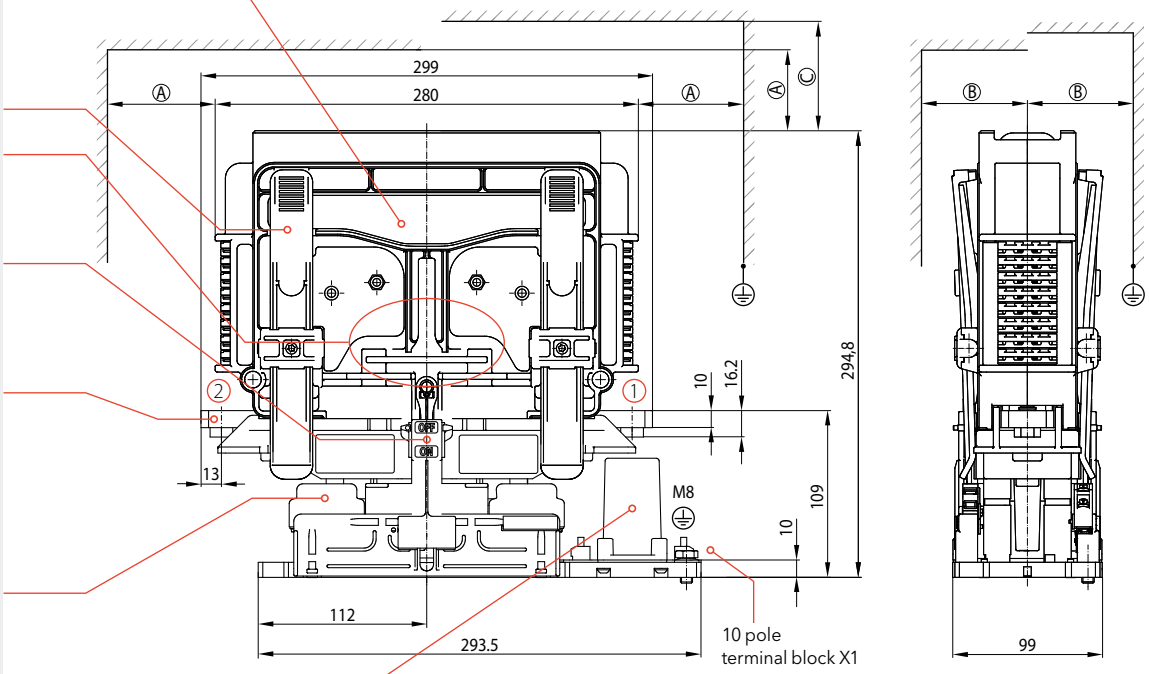
Switching state indicator
OFF: Main contact system switched off
ON: Main contact system switched on

Main contact terminals
1x M10 screw each, tightening torque 16 ... 20 Nm

Pre-charging contactor CPP
Integrated 1 pole NO contactor for pre-charging

Auxiliary switches
2x Snap-action switches, silver- or gold-contacts, M3 screws

Integrated PWM module
Electronic coil control with 10 pole terminal block



Minimum distances in [mm]

Ⓐ	Ⓑ	Ⓐ	Ⓑ	Ⓒ
50	60	30	60	110
1	1	2	2	3

1 To earth potential / 2 To insulate parts / 3 For disassembly arc chamber

Dimension diagram – CP1115-10-B: 1 pole SPST-NO, U_n = 1,500 V, I_{th} = 1,000 A

High-efficiency ceramic arc chamber
Arc chamber with permanent-magnetic blowout for frequent switching of high loads, «B» version

Arc chamber interlock

Main contact system
SPST-NO: NO contact, 1 pole

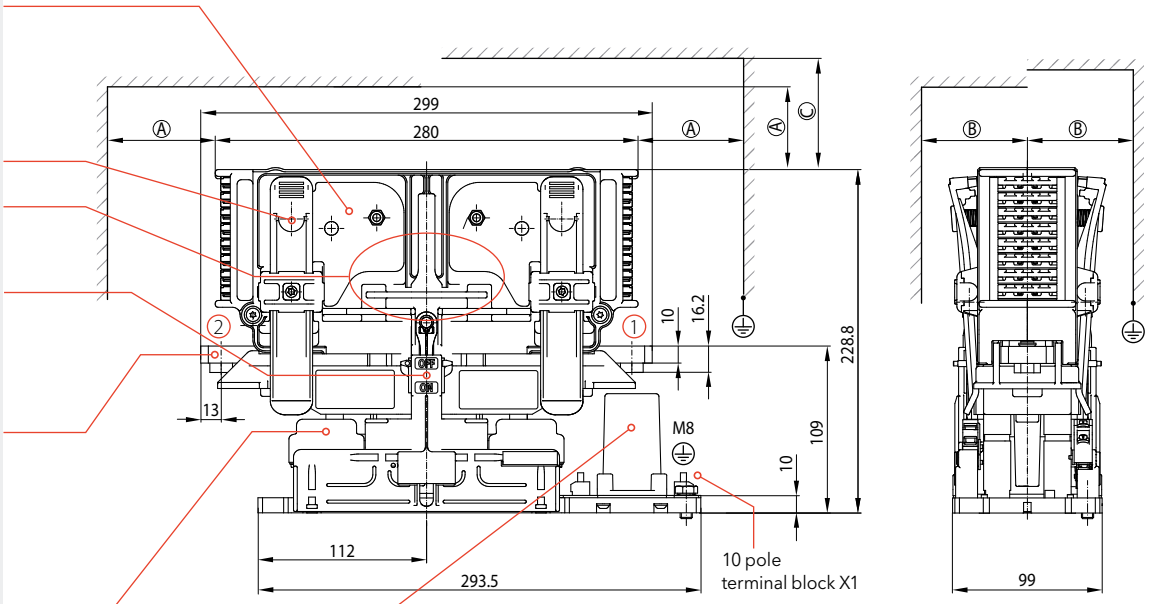
Switching state indicator
OFF: Main contact system switched off
ON: Main contact system switched on

Main contact terminals
1 M10 screw each, tightening torque 16 ... 20 Nm

Pre-charging contactor CPP
Integrated 1 pole NO contactor for pre-charging

Auxiliary switches
2x Snap-action switches, silver- or gold-contacts, M3 screws

Integrated PWM module
Electronic coil control with 10 pole terminal block



Minimum distances in [mm]

Ⓐ	Ⓑ	Ⓐ	Ⓑ	Ⓒ
50	60	30	60	110
1	1	2	2	3

1 To earth potential / 2 To insulate parts / 3 For disassembly arc chamber

Dimension diagram – CP1115-10-D/CP1130-10-D: 1 pole SPST-NO, U_n = 1,500 V/3,000 V, I_{th} = 1,000 A

Cover cap
main contact system
Configuration as diconnect switch for loadless switching, Version «D»

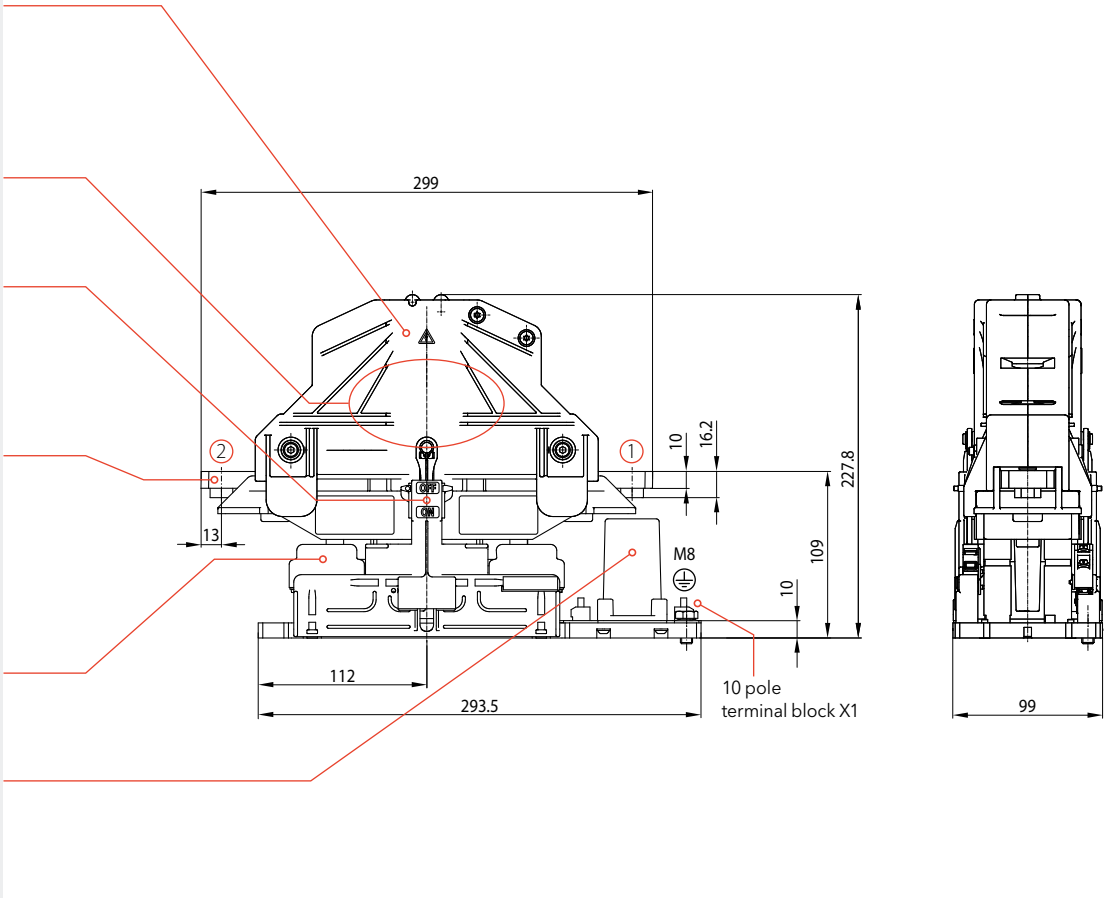
Main contact system
SPST-NO: NO contact, 1 pole

Switching state indicator
OFF: Main contact system switched off
ON: Main contact system switched on

Main contact terminals
1x M10 screw each, tightening torque 16 ... 20 Nm

Auxiliary switches
2x Snap-action switches, silver- or gold-contacts, M3 screws

Integrated PWM module
Electronic coil control with 10 pole terminal block



Dimension diagram – CP1130-12-A: 1 pole SPST-NO, U_n = 3,000 V, I_{th} = 1,200 A
CP2130-12-A: 1 pole SPST-NC, U_n = 3,000 V, I_{th} = 1,200 A

High-efficiency ceramic arc chamber
Arc chamber with permanent-magnetic blowout for frequent switching of high loads, «A» version

Arc chamber interlock

Main contact system
SPST-NO: NO contact, 1 pole
SPST-NC: NC contact, 1 pole

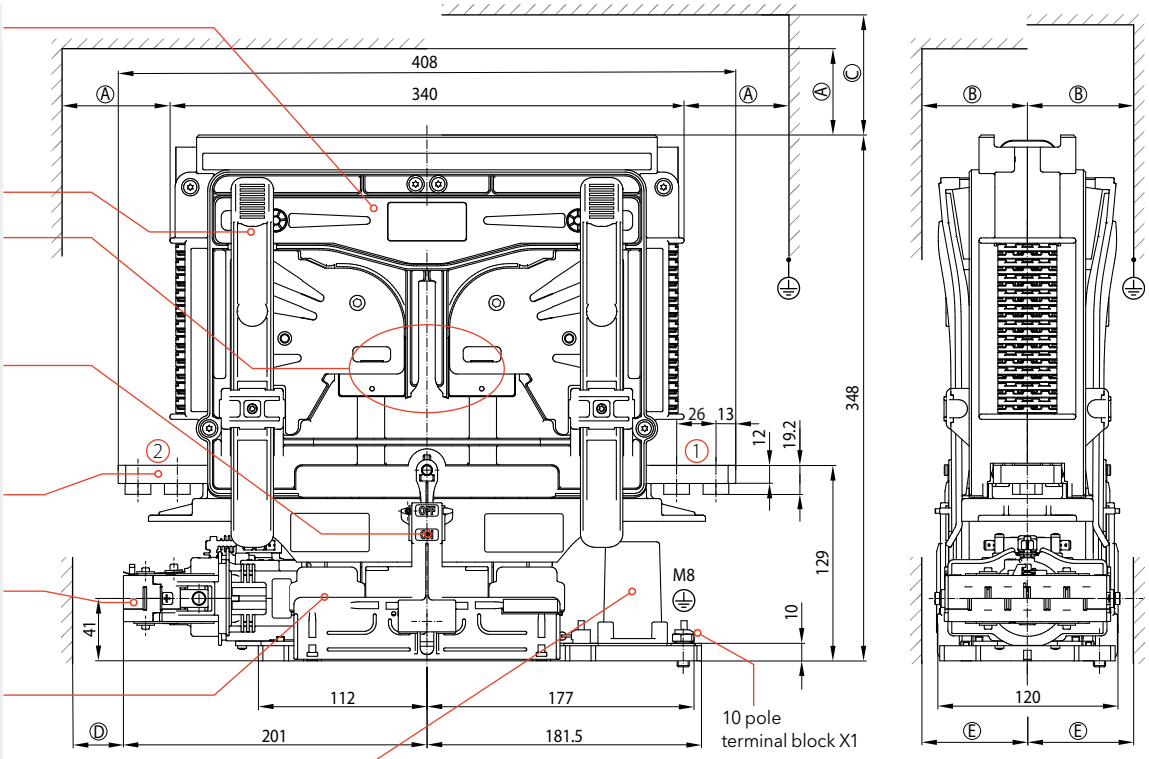
Switching state indicator
OFF: Main contact system switched off
ON: Main contact system switched on

Main contact terminals
2x M12 screw each, tightening torque 24 ... 30 Nm

Pre-charging contactor CPP
Integrated 1 pole NO contactor for pre-charging

Auxiliary switches
2x Snap-action switches, silver- or gold-contacts, M3 screws

Integrated PWM module
Electronic coil control with 10 pole terminal block



Minimum distances in [mm]

Ⓐ	Ⓑ	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	Ⓓ	Ⓔ
60	70	30	70	110	30	70	20	70
[1]	[1]	[2]	[2]	[3]	[1]	[1]	[2]	[2]

[1] To earth potential / [2] To insulate parts / [3] For disassembly arc chamber

Dimension diagram – CP1115-12-B: 1 pole SPST-NO, U_n = 1,500 V, I_{th} = 1,200 A
CP2115-12-B: 1 pole SPST-NC, U_n = 1,500 V, I_{th} = 1,200 A

High-efficiency ceramic arc chamber
Arc chamber with permanent-magnetic blowout for frequent switching of high loads, «B» version

Arc chamber interlock

Main contact system
SPST-NO: NO contact, 1 pole
SPST-NC: NC contact, 1 pole

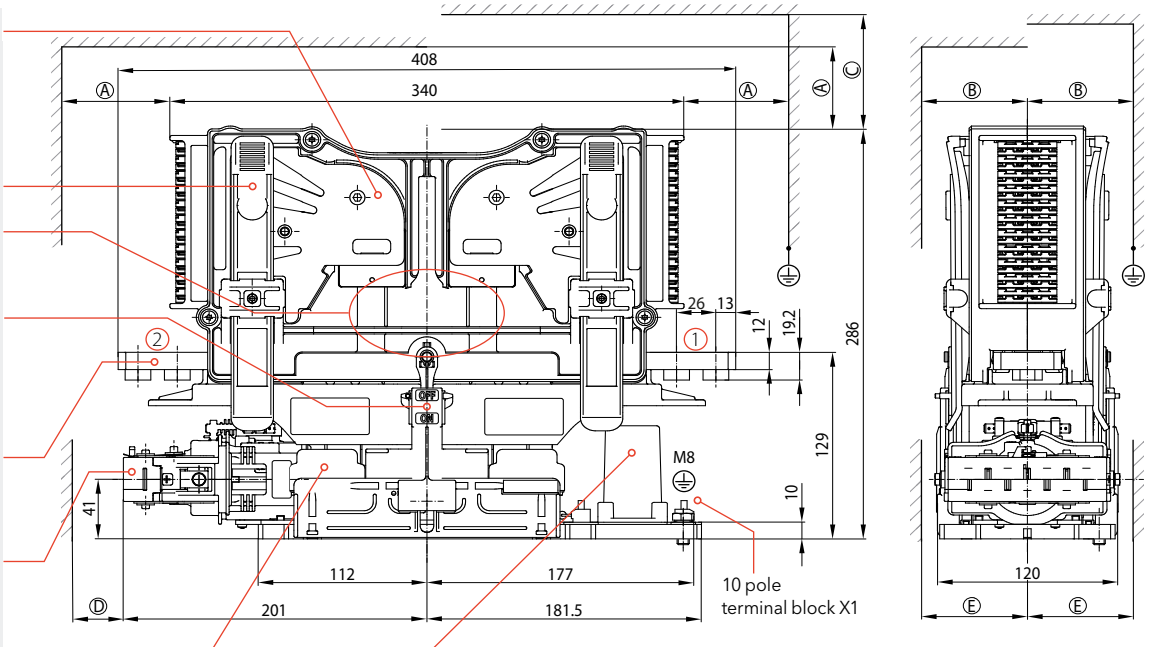
Switching state indicator
OFF: Main contact system switched off
ON: Main contact system switched on

Main contact terminals
2x M12 screw each, tightening torque 24 ... 30 Nm

Pre-charging contactor CPP
Integrated 1 pole NO contactor for pre-charging

Auxiliary switches
2x Snap-action switches, silver- or gold-contacts, M3 screws

Integrated PWM module
Electronic coil control with 10 pole terminal block



Minimum distances in [mm]

Ⓐ	Ⓑ	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	Ⓓ	Ⓔ
60	70	30	70	110	30	70	20	70
[1]	[1]	[2]	[2]	[3]	[1]	[1]	[2]	[2]

[1] To earth potential / [2] To insulate parts / [3] For disassembly arc chamber

Dimension diagram – CP1115-12-D/CP1130-12-D: 1 pole SPST-NO, U_n = 1,500 V/3,000 V, I_{th} = 1,200 A
CP2115-12-D/CP2130-12-D: 1 pole SPST-NC, U_n = 1,500 V/3,000 V, I_{th} = 1,200 A

Cover cap
main contact system
Configuration as diconnect switch for loadless switching, Version «D»

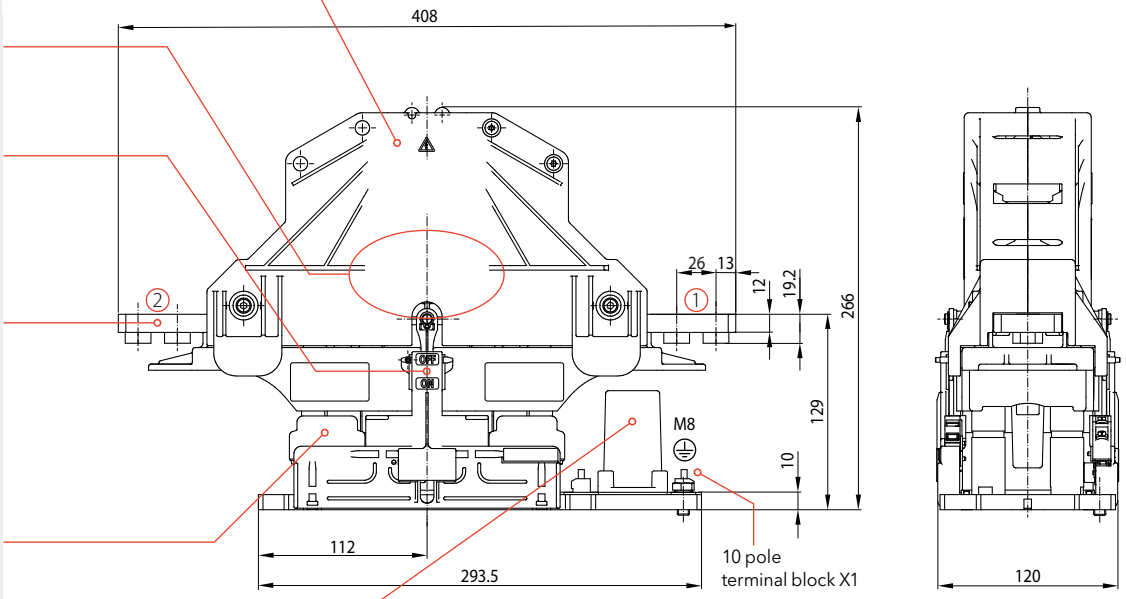
Main contact system
SPST-NO: NO contact, 1 pole
SPST-NC: NC contact, 1 pole

Switching state indicator
OFF: Main contact system switched off
ON: Main contact system switched on

Main contact terminals
2x M12 screw each, tightening torque 24 ... 30 Nm

Auxiliary switches
2x Snap-action switches, silver- or gold-contacts, M3 screws

Integrated PWM module
Electronic coil control with 10 pole terminal block



Dimension diagram – CP3115-12-D/CP3130-12-D: 1 pole SPST-DB, U_n = 1,500 V/3,000 V, I_{th} = 1,200 A

Cover cap
main contact system
Configuration as CO for loadless switching, Version «D»

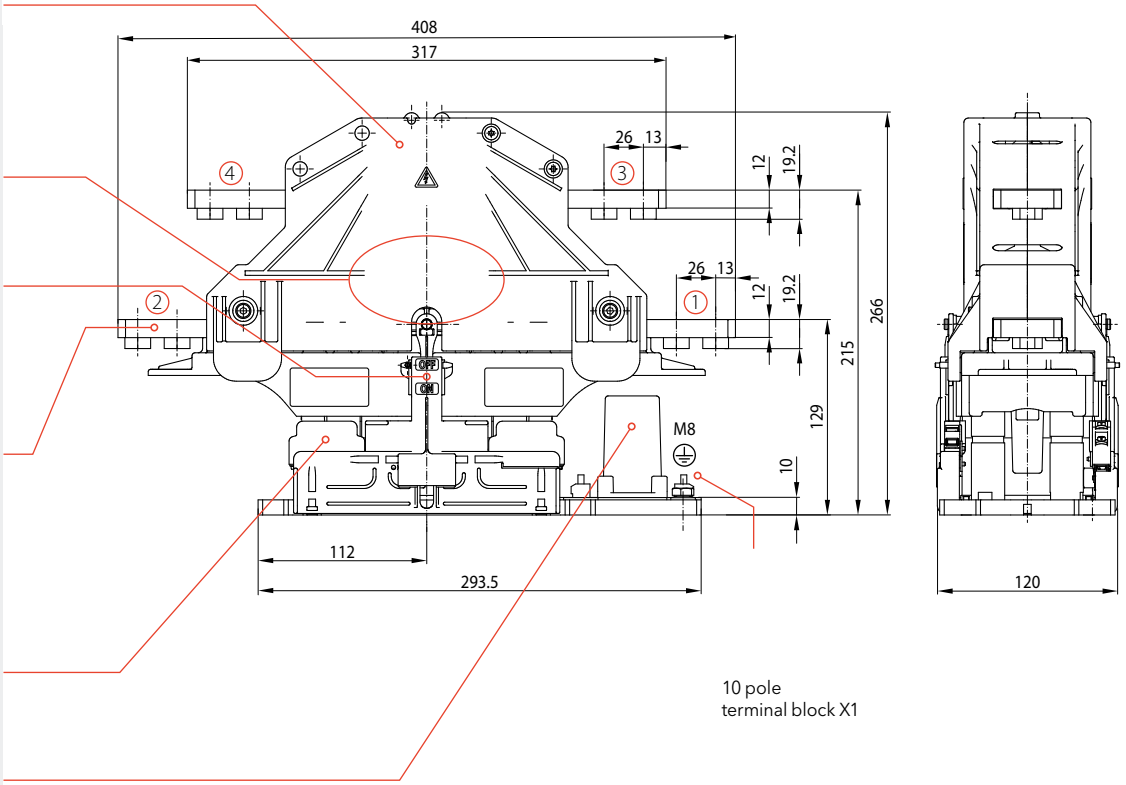
Main contact system
SPDT-DB: 1 pole CO
NC contacts ③ - ④
NO contacts ① - ②

Switching state indicator
OFF: NO contact switched off
ON: NO contact switched on

Main contact terminals
2x M12 screw each, tightening torque 24 ... 30 Nm

Auxiliary switches
2x Snap-action switches, silver- or gold-contacts, M3 screws

Integrated PWM module
Electronic coil control with 10 pole terminal block



Dimension diagram – CP1130-15-A: 1 pole SPST-NO, U_n = 3,000 V, I_{th} = 1,500 A

High-efficiency ceramic arc chamber
Arc chamber with permanent-magnetic blowout for frequent switching of high loads, «A» version

Arc chamber interlock

Main contact system
SPST-NO: NO contact, 1 pole

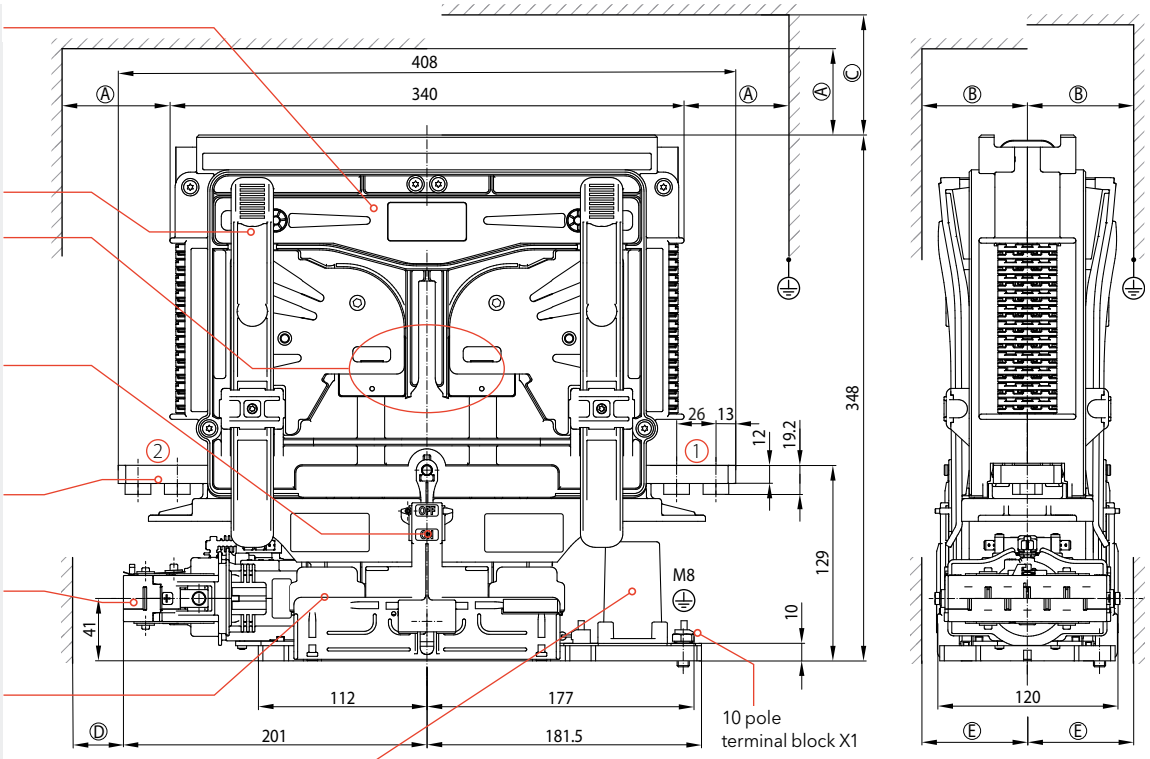
Switching state indicator
OFF: Main contact system switched off
ON: Main contact system switched on

Main contact terminals
2x M12 screw each, tightening torque 24 ... 30 Nm

Pre-charging contactor CPP
Integrated 1 pole NO contactor for pre-charging

Auxiliary switches
2x Snap-action switches, silver- or gold-contacts, M3 screws

Integrated PWM module
Electronic coil control with 10 pole terminal block



Minimum distances in [mm]

Ⓐ	Ⓑ	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	Ⓓ	Ⓔ
60	70	30	70	110	30	70	20	70
1	1	2	2	3	1	1	2	2

1 To earth potential / 2 To insulate parts / 3 For disassembly arc chamber

Dimension diagram – CP1115-15-B: 1 pole SPST-NO, U_n = 1,500 V, I_{th} = 1,500 A

High-efficiency ceramic arc chamber
Arc chamber with permanent-magnetic blowout for frequent switching of high loads, «B» version

Arc chamber interlock

Main contact system
SPST-NO: NO contact, 1 pole

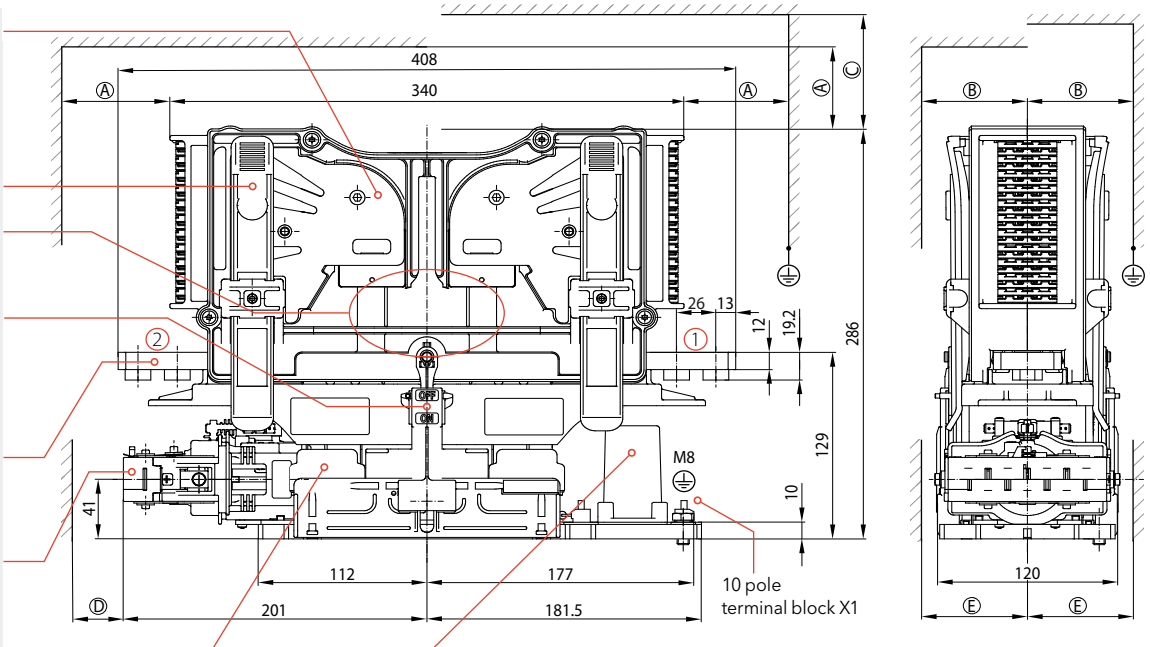
Switching state indicator
OFF: Main contact system switched off
ON: Main contact system switched on

Main contact terminals
2x M12 screw each, tightening torque 24 ... 30 Nm

Pre-charging contactor CPP
Integrated 1 pole NO contactor for pre-charging

Auxiliary switches
2x Snap-action switches, silver- or gold-contacts, M3 screws

Integrated PWM module
Electronic coil control with 10 pole terminal block



Minimum distances in [mm]

Ⓐ	Ⓑ	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	Ⓓ	Ⓔ
60	70	30	70	110	30	70	20	70
1	1	2	2	3	1	1	2	2

1 To earth potential / 2 To insulate parts / 3 For disassembly arc chamber

Dimension diagram – CP1115-15-D/CP1130-15-D: 1 pole SPST-NO, U_n = 1,500 V/3,000 V, I_{th} = 1,500 A

Cover cap
main contact system
Configuration as diconnect switch for loadless switching, Version «D»

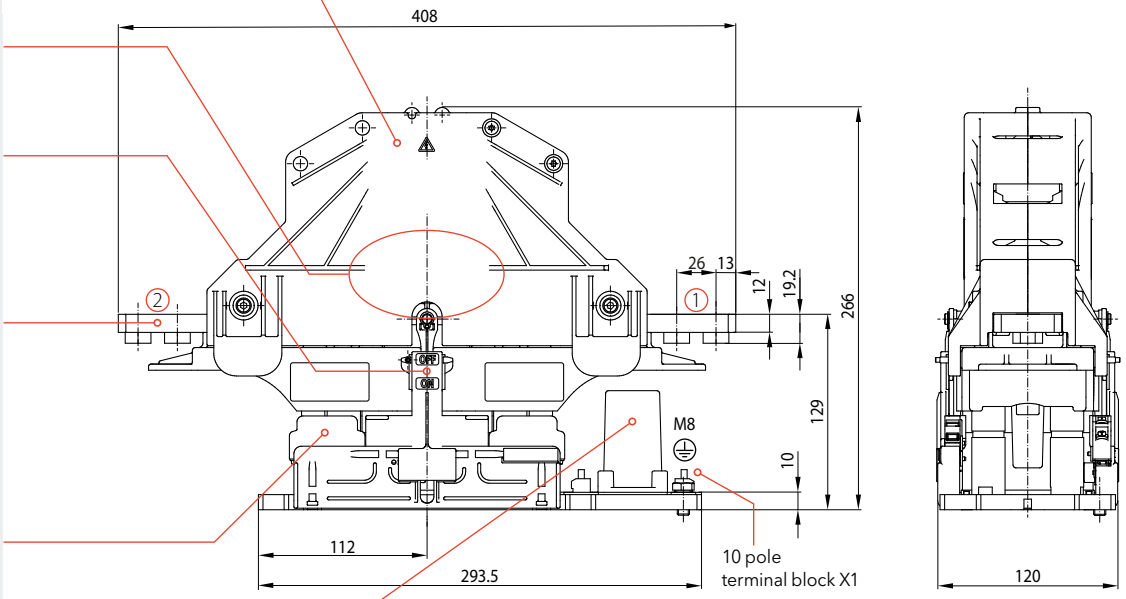
Main contact system
SPST-NO: NO contact, 1 pole

Switching state indicator
OFF: Main contact system switched off
ON: Main contact system switched on

Main contact terminals
2x M12 screw each, tightening torque 24 ... 30 Nm

Auxiliary switches
2x Snap-action switches, silver- or gold-contacts, M3 screws

Integrated PWM module
Electronic coil control with 10 pole terminal block



Dimension diagram – CP1130-20-A: 1 pole SPST-NO, U_n = 3,000 V, I_{th} = 2,000 A
CP2130-20-A: 1 pole SPST-NC, U_n = 3,000 V, I_{th} = 2,000 A

High-efficiency ceramic arc chamber
Arc chamber with permanent-magnetic blowout for frequent switching of high loads, «A» version

Arc chamber interlock

Main contact system
SPST-NO: NO contact, 1 pole
SPST-NC: NC contact, 1 pole

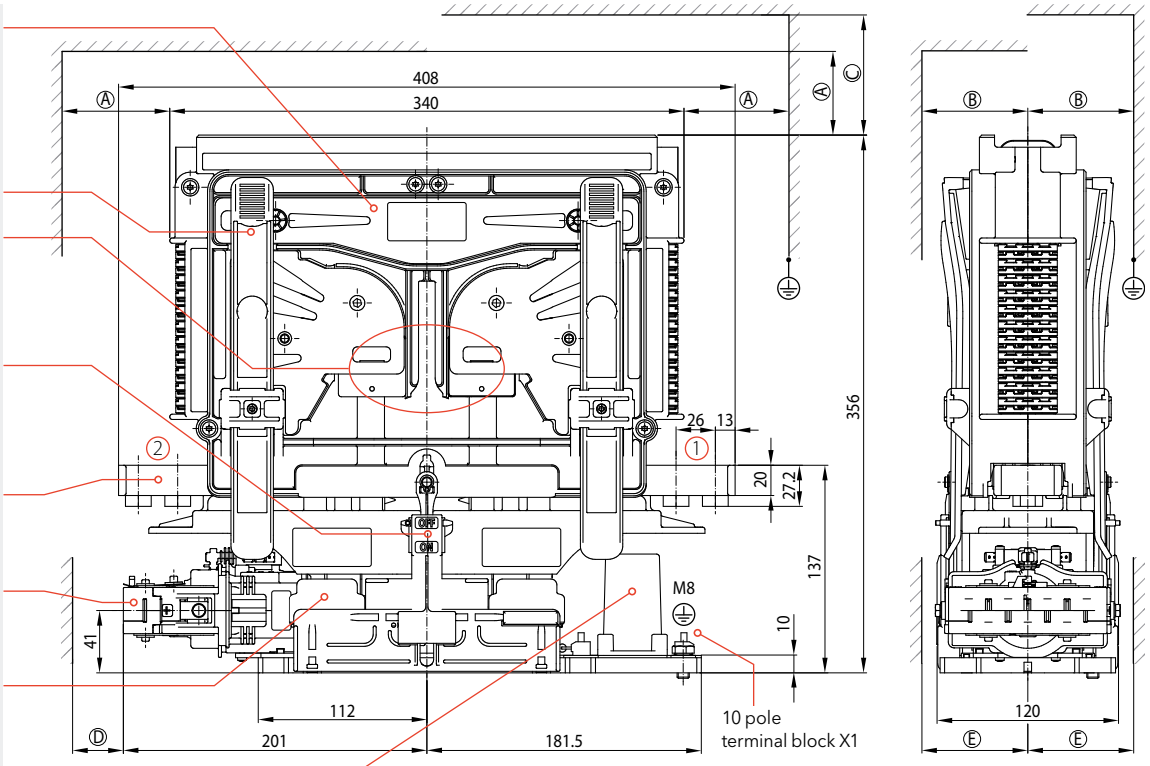
Switching state indicator
OFF: Main contact system switched off
ON: Main contact system switched on

Main contact terminals
2x M12 screw each, tightening torque 24 ... 30 Nm

Pre-charging contactor CPP
Integrated 1 pole NO contactor for pre-charging

Auxiliary switches
2x Snap-action switches, silver- or gold-contacts, M3 screws

Integrated PWM module
Electronic coil control with 10 pole terminal block



Minimum distances in [mm]

Ⓐ	Ⓑ	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	Ⓓ	Ⓔ
80	70	40	70	120	30	70	20	70
1	1	2	2	3	1	1	2	2

1 To earth potential / 2 To insulate parts / 3 For disassembly arc chamber

Dimension diagram – CP1115-20-B: 1 pole SPST-NO, U_n = 1,500 V, I_{th} = 2,000 A
CP2115-20-B: 1 pole SPST-NC, U_n = 1,500 V, I_{th} = 2,000 A

High-efficiency ceramic arc chamber
Arc chamber with permanent-magnetic blowout for frequent switching of high loads, «B» version

Arc chamber interlock

Main contact system
SPST-NO: NO contact, 1 pole
SPST-NC: NC contact, 1 pole

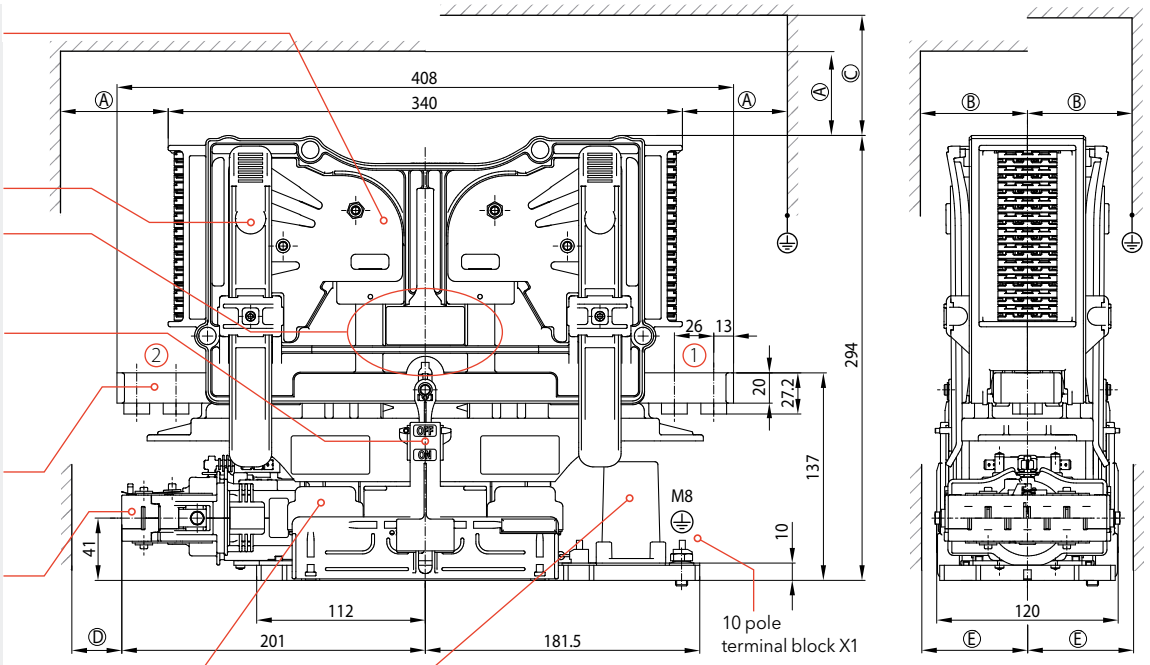
Switching state indicator
OFF: Main contact system switched off
ON: Main contact system switched on

Main contact terminals
2x M12 screw each, tightening torque 24 ... 30 Nm

Pre-charging contactor CPP
Integrated 1 pole NO contactor for pre-charging

Auxiliary switches
2x Snap-action switches, silver- or gold-contacts, M3 screws

Integrated PWM module
Electronic coil control with 10 pole terminal block



Minimum distances in [mm]

Ⓐ	Ⓑ	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	Ⓓ	Ⓔ
80	70	40	70	120	30	70	20	70
1	1	2	2	3	1	1	2	2

1 To earth potential / 2 To insulate parts / 3 For disassembly arc chamber

Dimension diagram – CP1115-20-D/CP1130-20-D: 1 pole SPST-NO, U_n = 1,500 V/3,000 V, I_{th} = 2,000 A
CP2115-20-D/CP2130-20-D: 1 pole SPST-NC, U_n = 1,500 V/3,000 V, I_{th} = 2,000 A

Cover cap
main contact system
Configuration as diconnect switch for loadless switching, Version «D»

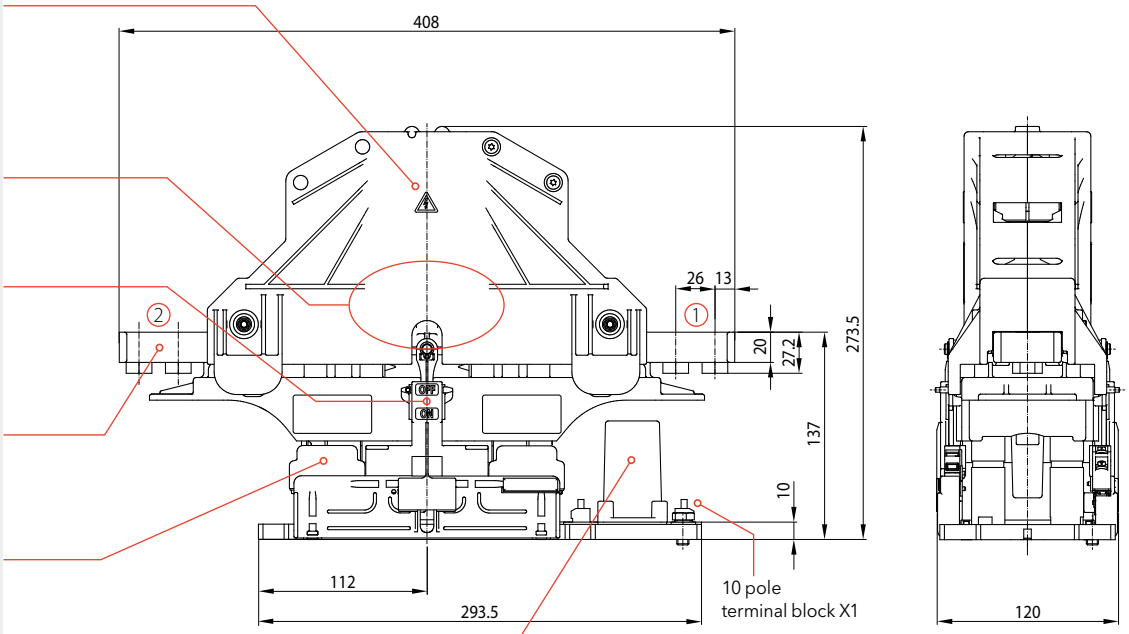
Main contact system
SPST-NO: NO contact, 1 pole
SPST-NC: NC contact, 1 pole

Switching state indicator
OFF: Main contact system switched off
ON: Main contact system switched on

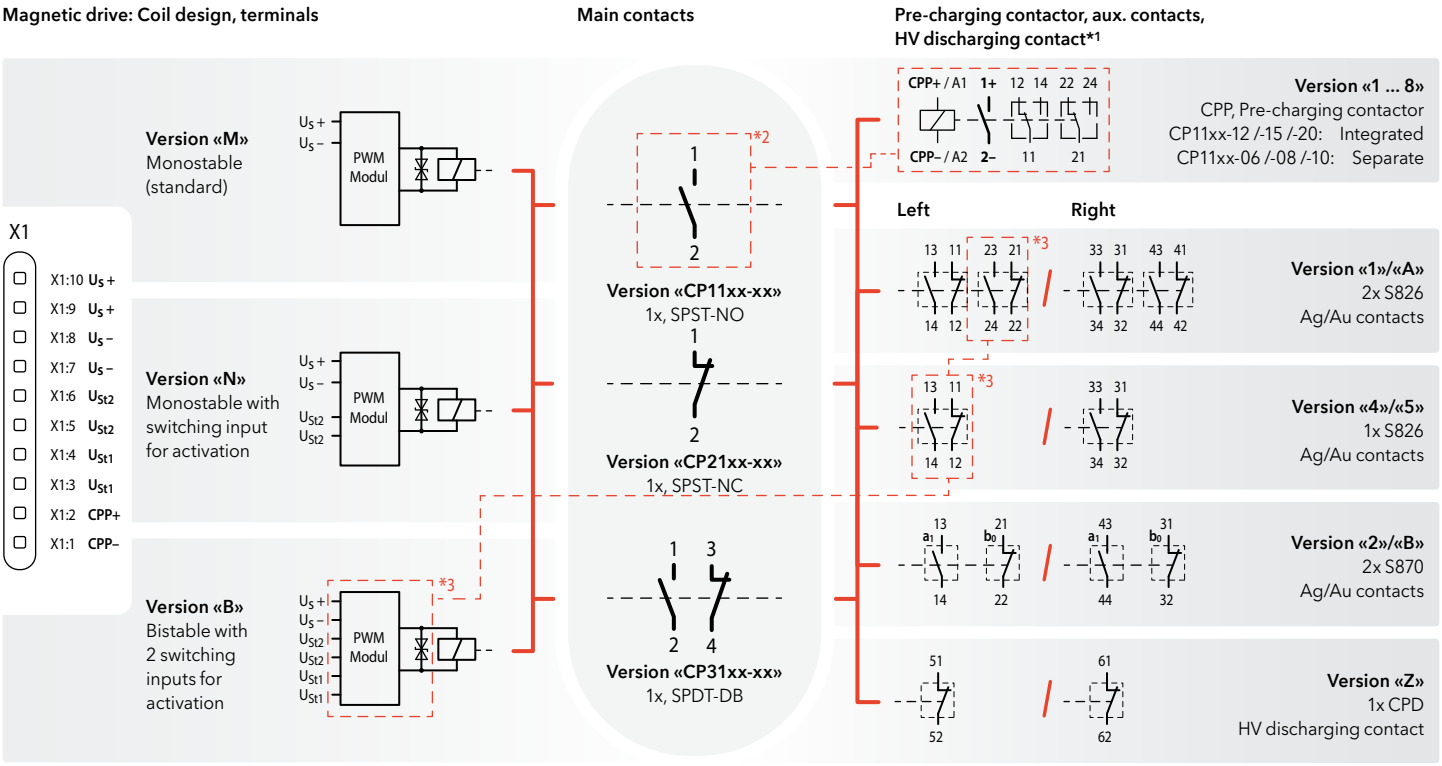
Main contact terminals
2x M12 screw each, tightening torque 24 ... 30 Nm

Auxiliary switches
2x Snap-action switches, silver- or gold-contacts, M3 screws

Integriertes PWM-Modul
Elektronische Spulenansteuerung mit 10-poliger Anschlussleiste



Circuit diagram



Terminal block «X1»
10x cage clamp terminal, pin assignment depends on configuration on the configuration.

X1:10	Coil terminal U_s+
X1:9	Coil terminal U_s+
X1:8	Coil terminal Us–
X1:7	Coil terminal Us–
X1:6	Version «N»: Control input enable U_{St2}+ Version «B»: Control input close U_{St2}+
X1:5	Version «N»: Control input enable U_{St2}– Version «B»: Control input close U_{St2}–
X1:4	Version «B»: Control input open U_{St1}+
X1:3	Version «B»: Control input open U_{St1}–
X1:2	Pre-charging contactor coil terminal U_s+ *4
X1:1	Pre-charging contactor coil terminal U_s– *4

*1 All auxiliary contacts and the high-voltage discharging contact are shown for the variants normally open and changeover contactor variants. For the NC contactor, the designations have been adapted accordingly due to the inverse control (not shown here).

*2 Wiring of coil connections X1:1 and X1:2 only if precharging contactor integrated. The option applies to make contactors CP11xx-12, CP11xx-15 and CP11xx-20 and saves mounting effort.
The precharging contactor is included with the CP11xx-06, CP11xx-08 and CP11xx-10 NO contactors and must be mounted separately by the customer.

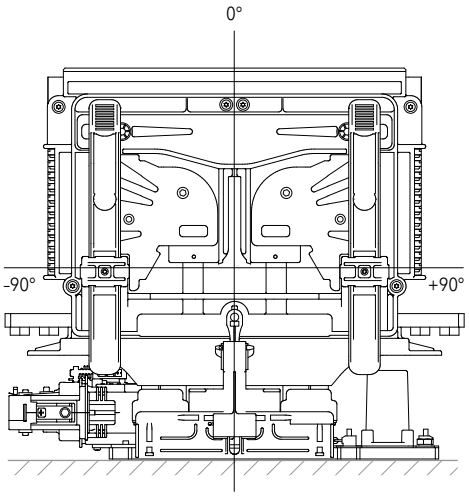
*3 Wiring of switching inputs X1:5 and X1:6 only for bistable coil versions «B».
An auxiliary contact S826 is additionally required for monitoring the switching state (version «1» or «5»). This auxiliary contact is not available on the customer side.

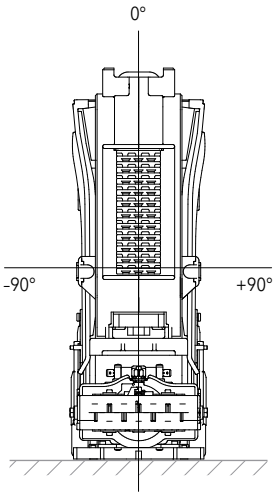
*4 Wiring only if precharging contactor CPP integrated

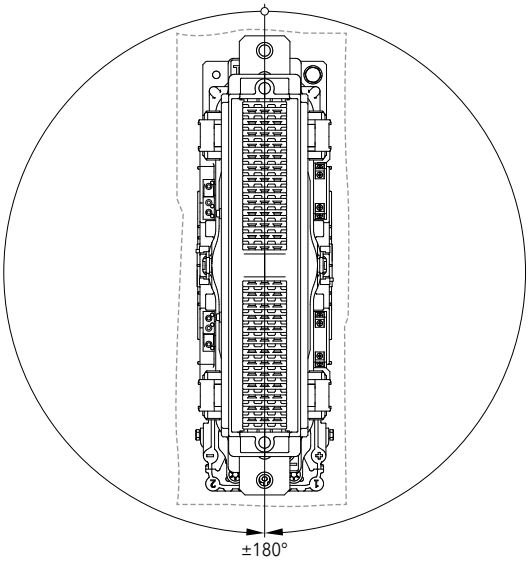
ⓘ Coil control and auxiliary contacts can optionally be led out via a separate connector. We will also be pleased to supply customer-specific versions if the corresponding number of units is available. Please contact us!

Permissible mounting orientations

CPxxxx-xx-A, CPxxxx-xx-B

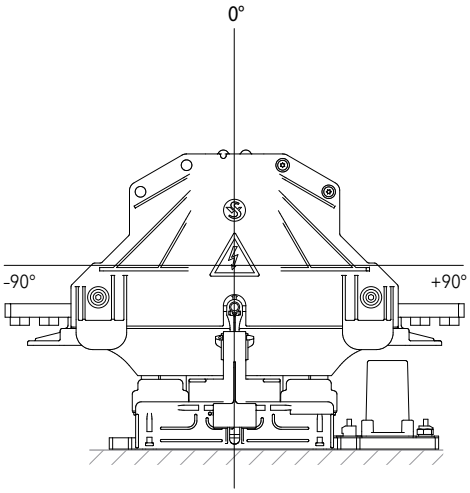


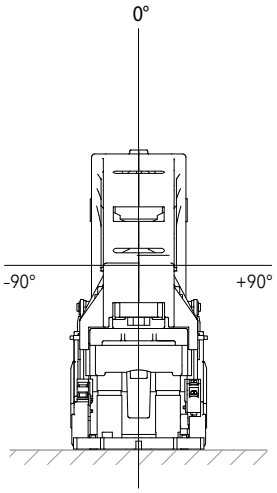


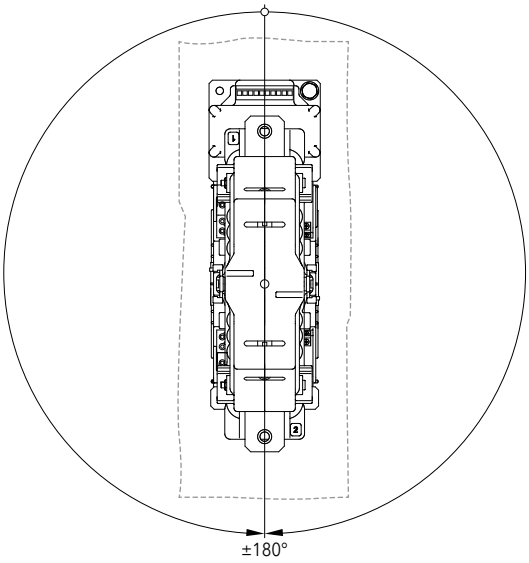


The contactors can be mounted horizontally or vertically on a prepared mounting plate. Further mounting positions upon request.

CPxxxx-xx-D





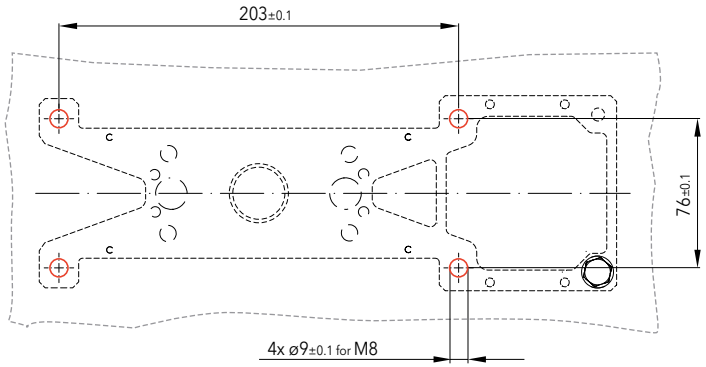


The contactors can be mounted horizontally or vertically on a prepared mounting plate. Further mounting positions upon request.

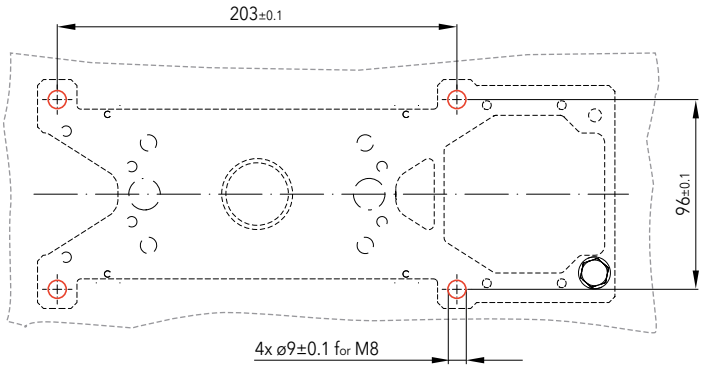
Mounting holes

The mounting holes for mounting frames or mounting plates can be either tapped holes for threaded screws or through holes for threaded screws and nuts.

**CP11xx-06, CP21xx-06, CP31xx-06 series,
CP11xx-08, CP21xx-08, CP31xx-08 series,
CP11xx-10, CP21xx-10, CP31xx-10 series:**



**CP11xx-12, CP21xx-12, CP31xx-12 series,
CP11xx-15, CP21xx-15, CP31xx-15 series,
CP11xx-20, CP21xx-20, CP31xx-20 series:**



Minimum clearances: The minimum distances to earth potential or to insulating parts specified in the dimension diagrams must be observed!

Maintenance and safety instructions

Maintenance:

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

For detailed maintenance, safety and mounting instructions please refer to our operating manuals > C40-M.en!

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.
- 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!

Notes

Safety and efficiency in rail, energy, and e-mobility

Schaltbau is a global industry leader specializing in DC power and providing products and solutions that that enable electrification. With a broad portfolio of contactors, connectors, switches, and safety components, Schaltbau helps partners and customers solve today's challenges in rail.

Building on this experience, with our brand Eddicy we also create future-oriented products and solutions with the highest standards of safety and reliability to switch and protect DC applications in energy and e-mobility.

Schaltbau is headquartered in Munich, Germany and represented globally, with over 1,000 employees worldwide.

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Schaltbau GmbH
www.schaltbau.com

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