

Safeguarding Test Benches

AC and DC contactors overview

AC



DC

Our test bench contactor portfolio at a glance



Contactors up to 200 amps



Contactors up to 500 amps



Contactors up to 1,500 amps



Contactors up to 3,000 amps



Relays up to 25 amps



Contactors up to 200 amps

	C294	C193	C295	CPP
				
Contact configuration	2x SPST-NO	1x SPST-NO	2x SPST-NO	1x SPST-NO or SPST-NC
Type of Voltage	DC, uni-directional	DC, uni-directional AC, f ≤ 60 Hz	DC, uni-directional AC, f ≤ 60 Hz	DC, uni-directional AC, f ≤ 60 Hz
Nominal voltage Un / Rated op. voltage Ue	Un = 1,000 V	Un = 1,000 V	Un = 1,200 V	Un = 1,500 V
Conv. thermal current	40 A	50 A	120 A	NO: 200 A / NC: 120 A
PD Rating	PD3 / OV3	PD3 / OV3	PD3 / OV3	PD3 / OV3
Coil Voltage	24 / 36 / 72 / 110 V DC	24 / 36 / 72 / 110 V DC	24 / 36 / 48 / 60 / 72 / 84 / 96 / 110 V DC	24 / 36 / 48 / 60 / 72 / 84 / 96 / 110 V DC
Coil suppression	Varistor	Varistor	Varistor	Supressor diode
Coil Power (Holding)	13 W	9 W	13.5 W	23.5 W
Aux Contact(s)	1x / SPDT S870	1x / SPDT S870	2x / SPDT S870	2x max. / SPDT S870
Mechanical	> 3,000,000 operating cycles	> 5,000,000 operating cycles	> 3,000,000 operating cycles	> 2,000,000 operating cycles
Temp Range	-40° C ... +70° C	-40° C ... +70° C	-40° C ... +70° C	-40° C ... +70° C
Standards	IEC 60947-1, IEC 60077-2	IEC 60947-1, IEC 60077-2	IEC 60947-1, IEC 60077-2	IEC J60077-2

Contactors up to 500 amps

	C195	CF	C300	C303	C310
					
Contact configuration	1x SPST-NO	1 ... 6x / SPST-NO or SPST-NC	1x SPST-NO	1x SPST-NO	1x SPST-NO
Type of Voltage	DC, uni-/bi-directional AC, f ≤ 60 Hz	DC, uni-/bi-directional AC, f ≤ 400 Hz	DC, bi-directional AC, f ≤ 60 Hz	DC, bi-directional AC, f ≤ 60 Hz	DC, bi-directional AC, f ≤ 60 Hz
Nominal voltage Un / Rated op. voltage Ue	Un = 1,500 V	Un = 1,500 / 3,000 V	Ue = 1,000 V (1,500 V max. for occasional switching)	U = 1,000 V	Ue = 1,000 V
Conv. thermal current	NO: 320 A / NC: 160 A	200 / 300 / 400 A	500 A	500 A	500 A
PD Rating	PD3 / OV3	PD3 / OV3	PD3 / OV3	PD3 / OV3	PD3 / OV3
Coil Voltage	24 / 36 / 48 / 60 / 72 / 84 / 96 / 110 V DC	24 / 36 / 72 / 110 V DC	12 ... 24 V DC	12 / 12 ... 24 / 24 V DC	12 ... 24 / 48 V DC
Coil suppression	Varistor / Diode	PWM module	PWM module	PWM module	PWM module
Coil Power (Holding)	13.5 W	10 W	3.5 W	2 W	2.6 W
Aux Contact(s)	1x / SPDT S870	4x max. / SPDT S870	1x / NO	1x / SPDT S880	2x / SPDT S880
Mechanical	> 3,000,000 operating cycles	> 1,000,000 operating cycles	> 200,000 operating cycles	> 200,000 operating cycles	> 2.000,000 operating cycles
Temp Range	-40° C ... +70° C	-40° C ... +70° C	-40° C ... +70° C	-40° C ... +85° C	-40° C ... +85° C
Standards	IEC 60947-1, IEC 60077-2	IEC 60077-2	IEC 60947-1	IEC 60947-1	IEC 60947-1

Contactors up to 1,500 amps

	CT	C320	C305
			
Contact configuration	1 ... 2x SPST-NO	1x SPST-NO	1x SPST-NO
Type of Voltage	DC, bi-directional AC, f ≤ 60 Hz	DC, bi-directional AC, f ≤ 60 Hz	DC, bi-directional AC, f ≤ 60 Hz
Nominal voltage Un / Rated op. voltage Ue	U _n = 1,500 / 3,000 V	U _e = 1,500 V	U _e = 1,500 V
Conv. thermal current	400 / 800 / 1,100 A	1,500 A	1,500 A
PD Rating	PD3 / OV2	PD3 / OV3	PD2 / OV2
Coil Voltage	24 / 36 / 48 / 72 / 110 V DC	24 V DC	12 / 24 V DC
Coil suppression	Double coil controller	PWM module	PWM module
Coil Power (Holding)	27 W	11 W	15 W
Aux Contact(s)	4x max. / SPDT 2x S870 + 2x S826 or 4x S826	4x max. / SPDT S870	1x / NO or NC
Mechanical	> 2,000,000 operating cycles	> 1,000,000 operating cycles	> 200,000 operating cycles
Temp Range	-40° C ... +70° C	-40° C ... +60° C	-40° C ... +85° C
Standards	IEC 60077-2	IEC 60947-1	IEC 60947-1

Contactors up to 3,000 amps

	CP	C330	R300
			
Contact configuration	1x SPST-NO, SPST-NC or SPDT-DB	1x SPST-NO	1x or 2x SPST-NO 1x or 2x DPST (NC+NO)
Type of Voltage	DC, bi-directional AC, f ≤ 60 Hz	DC, bi-directional AC, f ≤ 60 Hz	DC, bi-directional AC, f ≤ 60 Hz
Nominal voltage Un / Rated op. voltage Ue	U _n = 1,500 / 3,000 V	U _e = 1,000 V	5,000 V
Conv. thermal current	600 / 800 / 1,000 / 1,200 / 1,500 / 2,000 A	2,000 A (3,000 A @ 95° C)	25 A
PD Rating	PD3 / OV3	PD2 / OV2	PD3 / OV2
Coil Voltage	24 / 36 ... 60 / 72 ... 110 V DC	24 V DC	24 V DC
Coil suppression	PWM module	PWM module	PWM module
Coil Power (Holding)	10 W	14 W	< 50 mA
Aux Contact(s)	4x max. / SPDT 2x S870 + 2x S826 or 4x S826	1x / SPDT S880	---
Mechanical	> 1,000,000 operating cycles	> 200,000 operating cycles	> 5,000,000 operating cycles
Temp Range	-40° C ... +70° C	-40° C ... +85° C	-5° C ... +40° C
Standards	IEC 60077-2	IEC 60947-1	IEC 60947-1

Test benches require powerful contactors and relays to connect the different measurement instruments, power supplies and loads as well as to safely shut down the entire system in case of an emergency. For e-mobility, battery and many other energy applications, the challenge lies in safe extinguishing of the arc, insulation breakdown, and reliably withstanding thermal currents and short circuit currents during high-power testing.

Our high-voltage AC and DC contactors make, carry and break high currents safely and efficiently. Key features include a very low contact resistance, leading to low heat dissipation and high thermal currents, excellent isolation voltage up to 4,800 V as well as auxiliary contacts with normally-open and normally-closed functionality or mirror contacts functionality for a safe feedback loop according to IEC 60947-4-1, Annex F.

