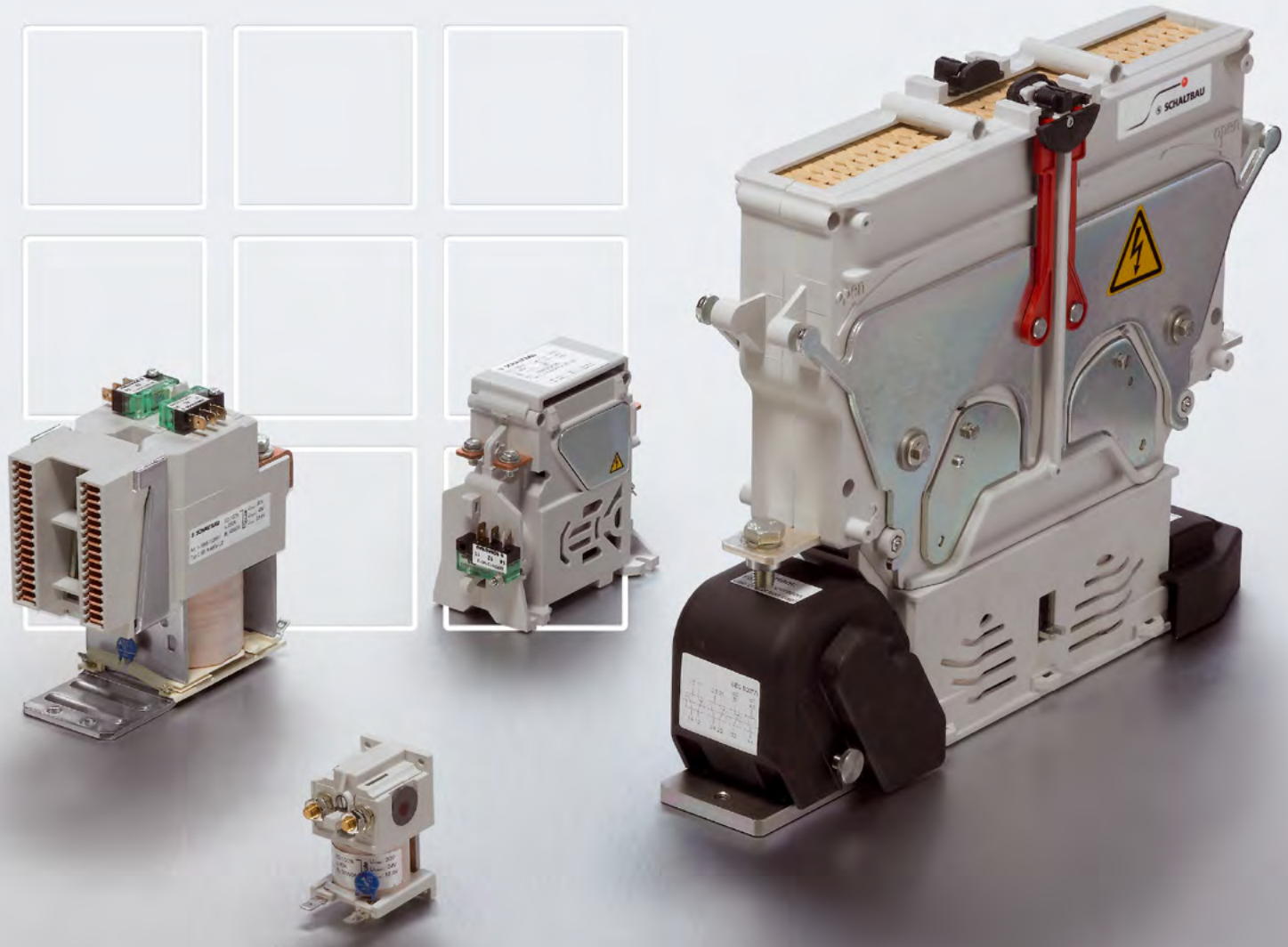
SCHALTBAU

Connect · Contact · Control

3

Brochure | Contactors



No chance for arcs

The quality of a switching device is not least revealed when switching off. Between the opening contacts arcs are generated - as in a thundercloud.

To extinguish these arcs, we have fitted our contactors with sophisticated solutions: Within a few milliseconds the arc is deflected by a magnetic field and reliably blown into the arc chute. There it is lengthened, cooled, and quenched.

With many years of experience in railway engineering, we develop reliable contactors for power supply systems, data processing centers, and electric vehicles.

For more information visit
www.schaltbau-gmbh.com/contactors

Glossary :: Switchgear

Switchgear General term for any switchgear and its combinations with pertaining control, measuring, protection and regulating equipment, as well as for subassemblies from such equipment and devices and the respective connections, accessories, housings and support frames mainly used for generating, transmitting, distribution and conversion of electrical energy. [IEV 441-11-02]

Contactor Mechanical switching device with one free position only, not actuated manually and capable of connecting, carrying and disconnecting currents in the circuit under operating conditions, overloads included. [IEV 441-14-33].

Actuating system The actuating system of a contactor operates electromagnetically.

Main contact Contact being located inside the main circuit of a mechanical switching device which is to carry the current of the main circuit when the contact is closed. [IEV 441-15-07]

Auxiliary contact Contact being located inside an auxiliary circuit and actuated mechanically by the switching device. [IEV 441-15-10]

Normally open contact (make contact) The contact closes when the switch is actuated.

Normally closed contact (break contact) The contact opens when the switch is actuated.

SPDT (changeover contact) In free position terminal COM is connected to terminal NC. When the switch is actuated the contact is interrupted between COM and NC and closed between COM and NO.

Pollution degree The pollution degree of the environment is a conventional characteristic depending on the quantity of conductive or humidity absorbing dust, ionized gas or salt, as well as on the relative humidity and the frequency of its occurrence, resulting in absorption or condensation of humidity leading to a decrease of withstand voltage and/or surface resistance. Note: Standard IEC 60947-1 states the pollution degree to be that of the micro-environment.

Overvoltage category The overvoltage category of a circuit or an electrical system is a conventional characteristic depending on the limitation (or control) of the amount of the prospective transient overvoltages occurring in a circuit or an electrical system of differing nominal voltages and on the equipment having an impact on these overvoltages. Note: In an electrical system the change to a lower overvoltage category is brought about by suitable devices meeting the requirements of the interface, such as overvoltage arresters or line filters blocking, absorbing or eliminating the overvoltage energy in order to lower the value of the transient overvoltages to the next lowest category.

Nominal voltage U_n Approximated voltage value suitable for identification of a device which in contrast to the rated operating voltage is not determined for a given operating condition.

Rated insulation voltage U_i The rated insulation voltage of a device is the very voltage which insulating tests and creepage distances refer to. The maximum rated operating voltage must by no means exceed the rated insulation voltage.

Rated impulse withstand voltage U_{imp} Peak value of an impulse withstand voltage of determined shape and polarity which the equipment can handle without failure under given test conditions and which clearance refers to. The rated impulse withstand voltage of a device must equal or exceed the transient overvoltages occurring in the system in which the device is used.

Coil voltage U_s The standard term is rated control supply voltage. It is distinguished between actuating voltage U_c for control circuit entry and the control supply voltage U_s, the voltage which is supplied to the power supply terminals of the control device and which can differ from U_c due to built-in transformers, rectifiers, resistors, electronic circuits, etc.

Conventional thermal current I_{th} The conventional free air thermal current (standard term) is the highest test current for temperature-rise tests of non-enclosed devices in open air. The conventional free air thermal current must equal at least the maximum rated operating current of the non-enclosed device at 8 hours duty. "Free air" means air of usual interior rooms almost free of draught and radiation. Note: A non-enclosed device is one supplied without enclosure by the manufacturer or a device with integrated housing which usually does not provide protection all alone.

Contactors for railway applications with extended coil tolerances according to railway standard EN 60077-1 requiring a voltage range of 0.7 up to 1.25 U_s for equipment which is supplied from a battery on and off float charge.

Breaking capacity The breaking capacity of a switching device or a fuse is the prospective current a switching device or a fuse can break at a certain voltage under given conditions. [IEV 441-17-08]. Note: The voltage and the given conditions are determined in the applicable detail specification. For AC current the current is determined by the r.m.s.-value of the symmetrical current component

Making capacity The making capacity of a switching device is the prospective making current a switching device can make under given conditions for use and operation [IEV 441-17-09]. Note: The voltage and the given conditions are determined in the applicable detail specification.

Specifications :: Contactors

Series ▶	C100	C130	C137 ... C165	C152 ... C159	C160, C162	C193	C195	C200, C210, C220
Battery voltages	✓	✓	✓	✓	✓	✓	C195 S, C195 W	✓
700 V ... 1,000 V	---	---	---	C155, C156, C157	C162	✓	C195 A, C195 B	---
1,000 V ... 1,500 V	---	---	---	---	---	---	---	---
1,500 V ... 5,000 V	---	---	---	---	---	---	---	---
Kind of voltage	DC	DC	DC / AC	DC / AC	DC / AC	DC / AC	DC / AC	DC
Main contacts Configuration	1	1	1 or *2	1*3, 2 ... 4 or *4	1	1	1 oder	1
Nominal voltage U_n	80 V	80 V	120 V	750 V	750 V	750 V	750 V	48 V
Conventional thermal current I_{th}	60 A ... 250 A	120 A ... 250 A	40 A ... 220 A	160 A ... 500 A	160 A ... 250 A	50 A	250 A	60 A ... 600 A
Aux. contacts, max. Configuration	1	1	1	1 ... 4	1 ... 6	1	2 max.	1
Latched contactor	---	---	C163	---	---	---	✓	✓
Description	Page 6	Page 6	Page 6	Page 7	Page 7	Page 7	Page 8	Page 8
Catalogue	B70.*en*	B130.*en*	B60.*en*	B90.*en*	B80.*en*	B193.*en*	B195.*en*	B470.*en*

*2 No switching of loads with the NC contact
*3 C158 only one main contact
*4 NC or NO contacts available
*5 CH500: no aux. contact; CH800: 1 aux. contact; CH801: 2 aux. contacts; CH1030: 1 aux. contact

RoHS 2002/95/EC

Schaltbau GmbH manufactures in compliance with RoHS.

IRIS Certification

The production facilities of Schaltbau GmbH have been IRIS certified since 2008.

Schaltbau GmbH ISO 14001 zertifiziert seit 2002

Certified to DIN EN ISO 14001 since 2002. For the most recent certificate visit our website.

Schaltbau GmbH ISO 9001 zertifiziert seit 1994

Certified to DIN EN ISO 9001 since 1994. For the most recent certificate visit our website.

Cam switch elements, Emergency disconnect switches, Terminal bolts, Fuse holders :: Specifications

S100/80	S132	S134	S135	S306, S307	S310	EKS127	SH-1P ... SH-3P	Series
✓	✓	✓	✓	---	---	---	---	Emergency disconnect switches
---	---	---	---	✓	✓	---	---	Cam switch elements
---	---	---	---	---	---	✓	---	Single terminal bolts
---	---	---	---	---	---	---	✓	Fuse holders
DC	DC	DC	DC	DC / AC *1	DC / AC *1	DC / AC	DC / AC	Kind of voltage
1	1	1	1 or 2	1	1	---	1-, 2- , 3-pole	Main contacts Configuration
24 / 36 / 48 V	100 V	100 V	300 V	750 V	300 V	750 V	80 V	Nominal voltage U_n
60 A	125 A	250 A	250 A	S306: 200 A S307: 300 A	500 A	---	Strip fuses 50 A ... 425 A	Conventional thermal current I_{th}
---	---	1	---	---	---	---	---	Aux. contacts, max. Configuration
Page 11	Page 11	Page 11	Page 12	Page 12	Page 12	Page 13	Page 13	Description
B128.en	B123.en	B124.en	B125.en	B40.en	B41.en	B100.en	B101.en	Catalogue

*1 AC: Only versions without magnetic blowout

Contactors :: Specifications

C294	C295	CL1015/02	C400, C600	CH715, CH815	CH500, CH800, CH801, CH1030	CT1000/04, CT1000/08	Series
---	C295 S, C295 T	---	✓	---	---	---	Battery voltages
✓	C295 A, C295 B	---	---	---	---	---	700 V ... 1,000 V
---	C295 K, C295 L	✓	---	---	---	---	1,000 V ... 1,500 V
---	---	---	---	✓	✓	✓	1,500 V ... 5,000 V
DC	DC / AC	DC	DC	DC / AC	DC / AC	DC / AC	Kind of voltage
2	2	1	1 ... 3	1	1	1 ... 3	Main contacts Configuration
1,000 V	1,200 V	1,500 V	96 V	3,000 V	3,000 V	1,500 V / 3,000 V	Nominal voltage U_n
40 A	120 A	250 A	400 A ... 600 A	50 A	CH500 ... CH801: 80 A; CH1030: 120 A	400 A / 800 A	Conventional thermal current I_{th}
1	max. 2	2	1	1	max. 2*5	max. 4 oder	Aux. contacts, max. Configuration
---	✓	---	---	---	---	---	Latched contactor
Page 8	Page 9	Page 9	Page 9	Page 10	Page 10	Page 10	Description
B294.en	B295.en	C25.en	B460.en	F170.en	F170.en	C20.en C21.en	Catalogue

Quality you can count on

Series C100/80, C100/120, C100/200, C100/320,

Battery contactors to meet the requirements of industrial trucks

C100 Series contactors are the easy and economical solution for switching DC currents of 60 A up to 320 A as well as battery voltages up to 80 V.

The contactors are equipped with DC coils featuring coil tolerances as required for traction batteries of industrial trucks and other battery-powered vehicles.

Series C130

Combination contactors for battery voltages

Schaltbau's competitively-priced all-in-one device is a combination of line contactor, main fuse and manual cut-off switch in which additional devices as well as an optional horn can be integrated.

Main field of application are battery powered warehouse machines, such as fork lift and reach trucks as well as walk behind trucks and stackers.

Series C137, C163, C164, C165

Contactors for battery voltages

C137 through C165 Series contactors are suitable for handling DC loads in the range of 40 A to 220 A for the most common coil voltages up to110 V.

Version »C« are single pole NO contactors with magnetic blowout whereas version »H« are single pole changeover contactors. The switching devices can be used as main or auxiliary contactors.

Features

- Compact, rugged design
- Type of 4 different sizes
- Double-break cadmium-free contacts
- Extra wide coil tolerance
- Standards: IEC 60947, EN 1175-1
- Optional auxiliary switch and mounting brackets

- Compact design
- Emergency disconnect switch with rugged, spring-loaded snap mechanism
- Battery contactor with main fuse
- Permanent magnetic blowout
- Double-break contacts, cadmium-free
- Optional horn and fuses

- Compact design
- Double-break contacts
- Easy to replace main contacts
- Blowout magnets
- 2 coil versions:
  - for industrial applications, coil tolerance -30 % ... +10 %
  - for railway applications, coil tolerance -30 % ... +25 %
- Standards: IEC 60947, EN 50124, IEC 60077

Catalogue **B70.*en***

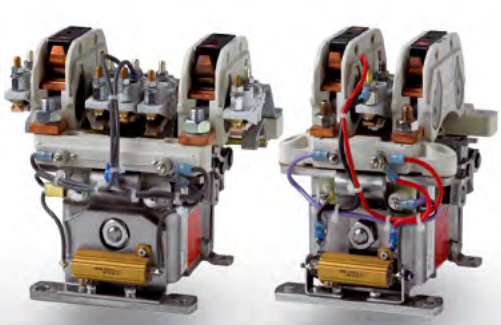
Catalogue **B130.*en***

Catalogue **B60.*en***

Specifications

Series ▶	C100/80 – C100/120 – C100/200 – C100/320	C130/180 – C130/250	C137 – C163 – C164 – C165
Kind of voltage	DC	DC	DC, AC
Main contacts: # of, configuration	1x SPST-NO	1x SPST-NC	1x SPST-NO or 1x SPDT
Nominal voltage U_n	80 V	80 V	110 V
Rated insulation voltage U_i	150 V	150 V	160 V
Rated impulse withstand voltage U_{imp}	2.5 kV	2.5 kV	2.5 kV
Pollution degree Overvoltage category	PD3 OV3	PD3 OV3	PD3 OV3
Conventional thermal current I_{th}	60 A – 100 A – 150 A – 250 A	120 A – 250 A	50/40 A* – 100/80 A* – 140 A – 220 A
Aux. contacts: # of, configuration	1x SPDT, optional	1x SPDT, optional	1x SPDT, optional
Coil voltage U_s	24 / 48 V DC	24 / 48 V DC	24 / 36 / 48 / 72 / 80 / 110 V DC
Mechanical endurance	> 3 million cycles	> 3 million cycles	> 3 million cycles

* Thermal current I_{th} at T_a = 40°C / T_a = 70°C



Series C152, C153, C154, C155, C156, C157, C158, C159

Multi-pole cam contactors for voltages up to 750 V or battery voltages

Contactors fitted with S306, S307 or S310 Series cam switch elements and with main contacts configured as NO, NC or SPDT contacts. Permanent-magnetic blowout and arc chamber for DC operation.

Versatile series. Well-proven as line contactor, changeover unit and reverser. Suitable for use in control circuits of electric equipment for rolling stock and industrial applications as well as for battery powered vehicles.

- Rugged design
- Various combinations of switching elements (4 main / 4 auxiliary max.)
- Easy to replace switching elements
- Double-break contacts
- Coil tolerance -30% ... +25%
- Coil economy circuit
- Parallel connection: 800 A max.

Catalogue **B90.*en***

Series C160, C162

Single pole cam contactors for voltages up to 750 V or battery voltages

Schaltbau C160 and C162 Series cam contactors are supplied as single pole NO contactors. Cam switch elements are used as main contacts for DC and AC operation together with magnetic blowout for DC applications and auxiliary contacts.

The contactors are of compact design, feature double-break main contacts, and are known for their reliabilty. Schaltbau cam contactors are used in large numbers in industrial and railway applications.

- Double-break contacts, cadmium-free
- Various combinations of 6 auxiliary switches max.
- Easy to replace switching elements
- Coil tolerance -30% ... +25%

Catalogue **B80.*en***

Series C193

Compact single pole NO contactors for voltages up to 1,000 V

Single pole high-voltage contactor of compact design: Notwithstanding its small size, the C193 Series contactor features an extraordinary switching capacity for DC applications up to 1,000 V.

Best suited for the harsh environment of public transport, the C193 has proven to be a transportation system component of high reliability which has an electrical life that is above average.

- Very compact design
- Suitable for years of continuous duty
- Intended for high ambient temperatures
- Double-break contacts
- Versions for AC and DC operation
- DC versions with blowout magnets
- DIN rail mount option

Catalogue **B193.*en***

Features

Specifications

C152 ... C159	C160 – C162	C193	Series
DC, AC	DC, AC	DC, AC	Kind of voltage
1x / 2x / 3x / 4x SPST-NO or NC	1x SPST-NO	1x SPST-NO	Main contacts: # of, configuration
450 V or 750 V	450 V or 750 V	750 V	Nominal voltage U_n
630 V or 1,000 V	630 V or 1,000 V	1,000 V	Rated insulation voltage U_i
No data	*No data*	4 kV	Rated impulse withstand voltage U_{imp}
PD3 OV3	PD3 OV 3	PD3 OV3	Pollution degree Overvoltage category
160 A – 200 A – 250 A – 300 A – 500 A	160 A – 200 A – 250 A	50 A	Conventional thermal current I_{th}
4 max., optional	6 max., optional	1x SPDT, optional	Aux. contacts: # of, configuration
12 / 24 / 48 / 60 / 80 / 96 / 110 / 220 V DC	12 / 24 / 48 / 60 / 80 / 96 / 110 V DC	24 / 36 / 48 / 72 / 80 / 110 V DC	Coil voltage U_s
> 2 million cycles	> 5 million cycles	> 5 million cycles	Mechanical endurance

Series C195

Compact single pole contactors for voltages up to 1,200 V

Being of compact size and featuring double-break contacts that are covered for the most part, the C195 Series contactors provide high-performance current breaking. Their high contact force improves electrical performance and reliability even under harsh ambient conditions.

There is also the option of a SPDT version of the C195 which has an added galvanically isolated NC contact.

Series C200/60 ... 250, C210/300, C220/400, C220/600

Contactors for UPS applications Single pole DC NO contactors

C200 Series contactors are the easy and economical solution for uninterruptible use in battery-powered backup systems of fixed parts of mobile networks and emergency power supply systems (UPS). They are characterized by a current carrying capacity of up to 600 A DC.

They are used as main contactors in UPS systems and as deep discharge protection for batteries in backup systems of emergency installations and other high-current industrial applications.

Series C294

Compact double pole NO contactors for voltages up to 1,000 V

Double pole high-voltage contactor of compact design: Notwithstanding its small size, the C294 Series contactor features an extraordinary switching capacity for DC applications up to 1,000 V.

Best suited for the harsh environment of public transport, the C294 has proven to be a transportation system component of high reliability which has an electrical life that is above average.

Features

- Suitable for years of continuous duty
- Intended for high ambient temperatures
- Double-break contacts
- Versions for AC and DC operation
- DC versions with magnetic blowout

- Compact, rugged design
- Types of 7 different sizes
- Double-break contacts, cadmium-free
- Extra wide coil tolerance
- Applicable standard: IEC 60947

- Very compact design
- Suitable for years of continuous duty
- Intended for high ambient temperatures
- Double-break contacts
- DC versions with magnetic blowout

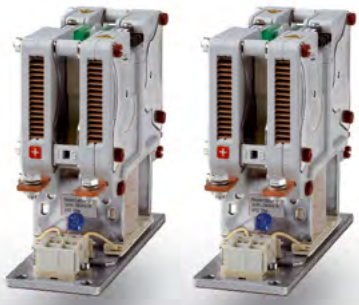
Catalogue **B195.*en***

Catalogue **B470.*en***

Catalogue **B294.*en***

Specifications

Series ▶	C195	C200/60...250 – C210/300 – C220/400...600	C294 A
Kind of voltage	DC, AC	DC	DC
Main contacts: # of, configuration	1x SPST-NO or 1x SPDT	1x SPST-NO	2x SPST-NO
Nominal voltage U_n	NO: 1,200 V / SPDT: 200 V	60 V	1,000 V
Rated insulation voltage U_i	NO: 1,600 V / SPDT: 630 V	150 V	1,200 V
Rated impulse withstand voltage U_{imp}	6 kV	2.5 kV	8 kV
Pollution degree Overvoltage category	PD3 OV3	PD3 OV3	PD3 OV3
Conventional thermal current I_{th}	250 A	60 A – 100 A – 150 A – 250 A – 300 A – 400 A – 600 A	40 A
Aux. contacts: # of, configuration	2x SPDT, optional	1x SPDT, optional	1x SPDT, optional
Coil voltage U_s	24 / 36 / 48 / 72 / 80 / 110 V DC	24 / 48 V DC	24 / 36 / 72 / 110 V DC
Mechanical endurance	> 3 million cycles	> 1 million cycles	> 3 million cycles



Series C295

Double pole NO contactors for voltages up to 1,500 V

With its compact size and efficient arc chute our C295 Series contactor allows the handling of voltages up to 1,500 V and currents of 120 A max. Switching high amperage even at significant inductance can be achieved by series connection of the main contacts.

Typical applications are to be found in traffic engineering equipment and conversion engineering of complex power supplies.

- Compact, rugged design
- Double-break contacts
- DC versions with magnetic blowout
- Higher switching capacity resulting from main contacts connected in series
- Parallel connection results in longer electrical life

Catalogue **B295.*en***

Series CL1015/02

Double pole NO contactors for voltages up to 1,500 V

CL Series contactors are the economical solution for switching DC and AC currents in the medium power range.

The compact contactors come with an arc chute that has proven itself many times over and are suitable for universal use in the harsh environmental conditions of industrial applications as well as in AC and DC railway networks. The switching devices guarantee reliable, low-wear switching of nominal voltages up to 1,500 V.

- 1, 2 and 3 pole versions
- Double-break NO contact
- DC versions with magnetic blowout
- Compact, rugged design
- Drives with coil tolerances according to railway standard
- Low maintenance and long life

Catalogue **C25.*en***

Series C400, C600

Single pole NO contactors for UPS applications

C400 and C600 Series DC contactors are high-quality single pole NO contactors for 400 A and 600 A respectively.

The compact contactors are especially suited for use as main contactors in wind and solar power plants and as deep discharge protection of batteries in UPS systems.

- Single pole DC NO contactors for 400 A and 600 A resp. used as main contactors in emergency installation (UPS) and as deep discharge protection for batteries
- Compact design
- Easy to mount
- Cadmium-free
- Nominal coil power < 15 W
- Standard make with 1 auxiliary contact available

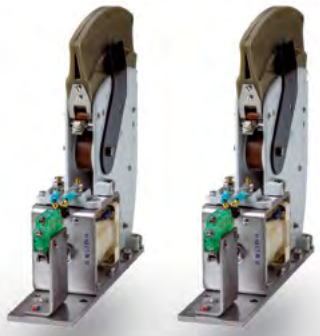
Catalogue **B460.*en***

Features

Specifications

C295 A / ...B - C295 K / ...L - C295 S / ...T	CL1115/02 - CL1215/02 - CL1315/02	C400 - C600	◀ Series
DC, AC	DC	DC	Kind of voltage
2x SPST-NO	1x, 2x, 3x SPST-NO	1x SPST-NO	Main contacts: # of, configuration
750 V – 1,200 V – 200 V	1,500 V	96 V	Nominal voltage U_n
1,000 V – 1,600 V – 1,000 V	2,200 V	125 V	Rated insulation voltage U_i
8 kV – 10 kV – 8 kV	12 kV	*No data*	Rated impulse withstand voltage U_{imp}
PD3 OV3	PD3 OV3	PD3 OV3	Pollution degree Overvoltage category
120 A	250 A / 200 A*	400 A - 600 A	Conventional thermal current I_{th}
2x SPDT, optional	2x SPDT, optional	1x SPDT	Aux. contacts: # of, configuration
24 / 36 / 48 / 60 / 72 / 96 / 110 V DC	24 / 36 / 72 / 110 V DC	24 / 48 V DC	Coil voltage U_s
> 3 million cycles	> 3 million cycles	10,000 cycles	Mechanical endurance

* Thermal current I_{th} at T_a = 40°C / T_a = 70°C



Series CH715, CH815

High-volatage contactors up to 3 kV DC / 1.5 kV AC

CH715 and CH815 Series contactors are designed for a nominal load of 16 kW (AC or DC). They are suitable for application as main contactors in power supplies and as control contactors for resistor banks in heating and air conditioning equipment. Double-break contacts ensure safe turn-off. Arc suppression is accomplished in the attached arc chute.

Series CH500, CH800, CH801, CH1030

High-voltage contactors up to 3 kV DC / AC

The single pole high-voltage contactors are designed for nominal loads of 50 kW (AC and DC). They are primarily used for load switching in power supply systems and as heater bank main and control contactors for air-conditioning and heating systems.

Double-break contacts ensure safe turn-off. Arc horns on the fixed contacts guide the arc into the attached arc chute.

Series CT1000/04, CT1000/08

Power contactors for AC and DC

Owing to a new blowout technology, CT1000 contactors can be used in almost any AC or DC railroad network. It also ensures a very low-wear and reliable switching behaviour wherever the contactor is used, even under very difficult switching conditions.

Different styles for 1.5 kV and 3 kV allow for the optimal adaptation of CT1000 contactors to global railway applications.

Features

- Compact design
- Double-break contacts
- Coil tolerance: -30% .... +25%
- Designed for nominal loads of 16 kW AC / DC
- Range of applications:
  - Load switching in power supply systems
  - Main and control contactor for air-conditioning and heating systems

- Compact design
- Double-break contacts
- Coil tolerance: -30% .... +25%
- Designed for nominal loads of 50 kW AC / DC
- Range of applications:
  - Load switching in power supply systems
  - Main and control contactor for air-conditioning and heating systems

- Combination of permanent-magnetic and electromagnetic blowout
- Compact, rugged design
- 2 different switching capacities
- Double-break contacts, cadmium-free
- 1, 2 and 3 pole versions
- Extended coil tolerance according to railway standard, no economy circuit necessary
- Standard: IEC 60077

Catalogue **F170.***en*

Catalogue **F170.***en*

Catalogue **C20.***en* **C21.***en*

Specifications

Series ▶	CH715 - CH815	CH500 – CH800 – CH801 – CH1030	CT1000/04 – CT1000/08
Kind of voltage	DC, AC	DC, AC	DC, AC
Main contacts: # of, configuration	1x SPST-NO	1x SPST-NO	1x, 2x, 3x SPST-NO
Nominal voltage U_n	3.0 kV DC / 1.5 kV AC	3.0 kV DC / 1.5 kV AC	1.5 kV / 3.0 kV
Rated insulation voltage U_i	3 kV	5 kV	3 kV / 4.8 kV
Rated impulse withstand voltage U_{imp}	15 kV	25 kV	15 kV / 25 kV
Pollution degree Overvoltage category	PD3 OV3	PD3 OV3	PD3 OV3
Conventional thermal current I_{th}	50 A	CH500 ... CH801: 80 A / CH1030: 120 A	400 A / 800 A
Aux. contacts: # of, configuration	1x SPDT, optional	2x SPDT, optional	1x NC, 1x NO, 2x SPDT
Coil voltage U_s	24 / 110 / 120 V DC	24 / 72 / 110 / 120 V DC	24 / 110 V DC
Mechanical endurance	1 million cycles	1 million cycles	> 2 million cycles

Series S100/80

Emergency disconnect switches for up to 48 V or battery voltages

Schaltbau S100 Series emergency disconnect switches guarantee instantaneous cut-out by manual operation.

Load circuits are closed by pulling the red knob and, in an emergency, forcibly ruptured by pushing it down. The positive opening operation guarantees that the contacts open in the event of an emergency.

Special feature: The knob can be used as key. When engaged to the OFF position it can be removed so as to prevent unauthorized use of the truck.

- Single pole emergency disconnect switch with snap mechanism
- Key function: Knob removable in OFF position
- Maintained position for ON and OFF
- High resistance to shock and vibration
- Optional auxiliary switch

Catalogue **B128.*en***

Series S132

Emergency disconnect switches for up to 100 V or battery voltages

Manually operated emergency disconnect switches are capable of interrupting a power circuit (meeting requirements of accident prevention). Single pole S132 Series switches are especially designed for DC applications.

Load circuits are closed by pulling the red mushroom knob and ruptered by pushing it down. The positive opening operation guarantees that the contacts open in the event of an emergency.

- Single pole emergency disconnect switch with snap mechanism
- Magnetic blowout
- Two definite maintained positions (ON/OFF)
- Optional lockable version

Catalogue **B123.*en***

Series S134

Emergency disconnect switches for up to 100 V or battery voltages

Installation of emergency disconnect switches enhances safety at the work place significantly (meeting requirements for accident prevention). Single pole S134 switches are especially designed for DC applications.

Thanks to its snap mechanism the switch once actuated will complete the switch-off procedure in any case, because the snap mechanism works independently of the actuator. For ON and OFF there are two maintained positions.

- Single pole emergency disconnect switch with snap mechanism
- Magnetic blowout
- Two definite maintained positions (ON/OFF)
- Optional lockable version
- Optional auxiliary contact

Catalogue **B124.*en***

Features

Specifications

S100/80	S132	S134	◀ Series
DC	DC	DC	Kind of voltage
1x NC	1x NC	1x NC	Main contacts: # of, configuration
24 / 36 / 48 V	100 V	100 V	Nominal voltage U_n
150 V	160 V	160 V	Rated insulation voltage U_i
2,5 kV	2.5 kV	4 kV	Rated impulse withstand voltage U_{imp}
PD3 OV3	PD3 OV 3	PD3 OV3	Pollution degree Overvoltage category
60 A	250 A	250 A	Conventional thermal current I_{th}
---	1x SPDT, optional	1 x SPDT, optional	Aux. contacts: # of, configuration
---	---	---	Coil voltage U_s
>100,000 cycles	30,000 cycles	30,000 cycles	Mechanical endurance

Series S135

Emergency disconnect switches for up to 440 V or battery voltages

Emergency stop switches are required for many industrial machines and vehicles (meeting requirements for accident prevention). There are single and double pole versions of S135 Series switches.

Optional is a lockable version complete with cylinder lock. The disconnect switch may be locked when engaged to the OFF position so as to prevent unauthorized use - with key removable only in OFF position.

Series S306, S307

Cam switch elements for 160 A up to 300 A

Cam-operated switching elements of Schaltbau are designed for DC and AC applications. Notwithstanding their compact design the series feature an extraordinary breaking capacity which is owed to the double-break contacts and long contact travel that make breaking the circuit a safe and reliable job.

Series S310

Cam switch elements for 500 A

Schaltbau S310 Series cam-operated switching elements are complementary to the well proven S306 and S307 ones. As with these series, versions are available with permanent magnetic blowout and without.

They are suitable for materials handling and rail vehicles, crane controls, bulk goods unloaders, and emergency power supplies.

Features

- Single and double pole emergency disconnect switch with snap mechanism
- Magnetic blowout
- Two definite maintained positions (ON/OFF)
- Optional lockable version
- Easy to replace cam switch elements

- Slim design
- Double-break contacts
- Magnetic blowout
- Optional arc chute

- Switching of high loads
- Double-break contacts
- Magnetic blowout
- Optional arc chute

Catalogue **B125.*en***

Catalogue **B40.*en***

Catalogue **B41.*en***

Specifications

Series ▶	S135	S306 – S307	S310
Kind of voltage	DC	DC, AC	DC, AC
Main contacts: # of, configuration	1x or 2x NC	1x SPST-NC	1x SPST-NC
Nominal voltage U_n	300 V	450 V	450 V
Rated insulation voltage U_i	600 V	630 V	630 V
Rated impulse withstand voltage U_{imp}	6 kV	*No data*	*No data*
Pollution degree Overvoltage category	PD3 OV3	PD3 OV3	PD3 OV3
Conventional thermal current I_{th}	160 A or 250 A	160 A – 300 A	500 A
Aux. contacts: # of, configuration	---	---	---
Coil voltage U_s	---	---	---
Mechanical endurance	30,000 cycles	5 million cycles	> 2 million cycles

Series EKS127

Low-voltage terminal bolts

Single terminal bolts of Schaltbau are easily incorporated in devices for the purpose of electrical termination. They are designed for currents and voltages applicable to materials handling and rail vehicle equipment.

The EKS127 Series terminal bolts can be used as individual terminals or mounted onto a rail to form a terminal block, where connections are made by cable lugs, terminal tags, or bus bar.

They are often used as insulated mounting support for switching elements or in other electrical components.

Series SH-1P, SH2-P, SH3-P

Fuse holders for strip fuses to DIN43560

Fuse holders for strip fuses to DIN 43560 are designed for use in battery powered vehicles covering voltages up to 80 V. Fuse ratings may range from 50 A to 425 A.

We offer fuse holders admitting 1, 2 or 3 strip fuses. Tie bars for 2 or 3 poles are available. Copper sheet tie bars are available for our 2 and 3 pole fuse holders.

Features

- Four different sizes available
- Mounted with 2 M4 screws
- Option for rail mounting, fixed with split ring
- Rugged design
- Base flame retardant to UL 94 V-0

- Fuse holders suitable for fuse links to DIN 43560
- 1-, 2- or 3-pole styles
- Bases from heat-proof duroplast
- Hex screws, nuts and washers from nickel-plated bars
- Optional tie bars

Catalogue **B100.*en***

Catalogue **B101.*en***

Specifications

EKS127	SH1-P – SH2-P – SH3-P	Series
DC, AC	DC, AC	Kind of voltage
---	---	Main contacts: # of, configuration
80 V	80 V	Nominal voltage U_n
800 V / 900 V	630 V	Rated insulation voltage U_i
No data	*No data*	Rated impulse withstand voltage U_{imp}
PD3 OV3	PD3 OV3	Pollution degree Overvoltage category
No data	for strip fuses 50 A ... 425 A	Conventional thermal current I_{th}
---	---	Aux. contacts: # of, configuration
---	---	Coil voltage U_s
---	---	Mechanical endurance

Schaltbau GmbH

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with compliments:

Electrical Components and Systems for Railway Engineering and Industrial Applications

Connectors

- Connectors manufactured to industry standards
- Connectors to suit the special requirements of communications engineering (MIL connectors)
- Charging connectors for battery-powered machines and systems
- Connectors for railway engineering, including UIC connectors
- Special connectors to suit customer requirements

Snap-action switches

- Snap-action switches with positive opening operation
- Snap-action switches with self-cleaning contacts
- Enabling switches
- Special switches to suit customer requirements

Contactors

- Single and multi-pole DC contactors
- High-voltage AC/DC contactors
- Contactors for battery powered vehicles and power supplies
- Contactors for railway applications
- Terminal bolts and fuse holders
- DC emergency disconnect switches
- Special contactors to suit customer requirements

Electrics for rolling stock

- Equipment for driver's cab
- Equipment for passenger use
- High-voltage switchgear
- High-voltage heaters
- High-voltage roof equipment
- Equipment for electric brakes
- Design and engineering of train electrics to customer requirements

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