

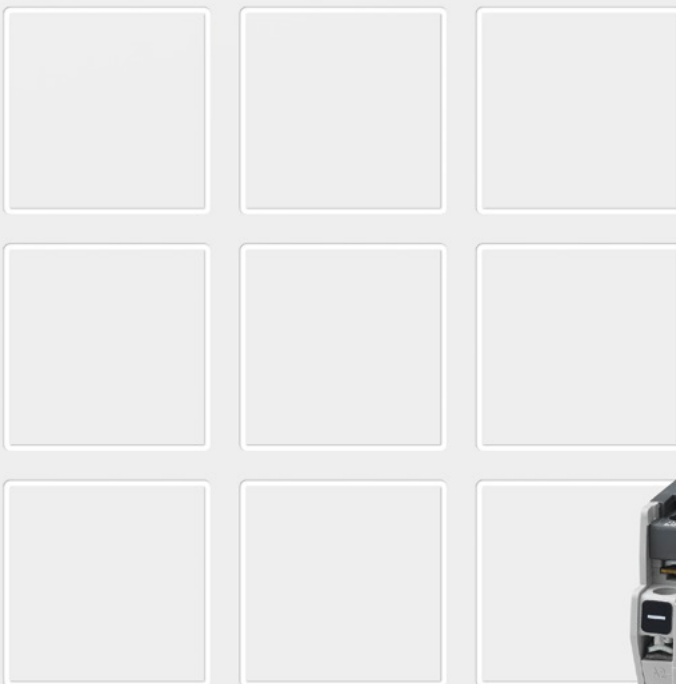
# 3

## Contactors

Series CS115/10

4 pole DC and AC contactors  
for voltages up to 800 V

Catalogue C50.en



More information  
[schaltbau.com](http://schaltbau.com)

## CS115/10 – 4 pole DC and AC contactors

Multi-pole unidirectional DC or AC contactor up to 800 V and 30 A of continuous current.

With the 4 pole CS115/10 Series Schaltbau has expanded its product line of contactors. Designed for the low and medium power range, the switching devices are universally applicable and available in many

versions. The 30 A control contactor for voltages up to 800 V is available with various contact arrangements. Optionally up to 4 snap-on auxiliary switches can be mounted to it.

### Application

The contactor is specifically designed for small and medium loads in DC and AC applications, such as:

- Locking
- Signalling
- Controlling power contactors.

### Features

CS series

- Compact, rugged Design
- Nominal voltage  $U_n$  800 V DC or AC
- Conv. thermal current  $I_{th}$  30 A
- DIN rail mounting acc. to IEC 60715
- Double-break contacts
- Various coil voltages
- Possible contact configurations:
  - 4 NO
  - 3 NO / 1 NC
  - 2 NO / 2 NC
- 4 optional aux. contacts NO or NC max. that can be configured individually

### Ordering code

CS series

#### • CS115/10 series 4 pole contactor

Example: **CS115/10-31-72ET**

Series	CS115/10	4 pole contactor
Main contacts, Configuration	40	4x NO
	31	3x NO, 1x NC
	22	2x NO, 2x NC
Coil voltage	24 / 36 / 48 / 72 / 96 / 110 V DC	
Coil tolerance	E	-30 % ... +25 % $U_{sn}$
Coil suppression	T	Suppressor diode, standard

#### • AS115 series auxiliary switch

Example: **AS115/10**

Series	AS115/	Single pole snap-on auxiliary switch for CS115/10 series contactor
Configuration	10	1x NO, red release button
	01	1x NC, yellow release button



**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.

### Applicable standards

CS series

- IEC 60947-4-1 Low-voltage switchgear and controlgear – Part 4-1: Contactors and motor-starters – Electromechanical contactors and motor-starters
- IEC 60077-2 Railway applications – Electric equipment for rolling stock – Part 2: Electrotechnical components; General rules
- IEC 61373 Railway applications – Rolling stock equipment – Shock and vibration tests

## Specifications

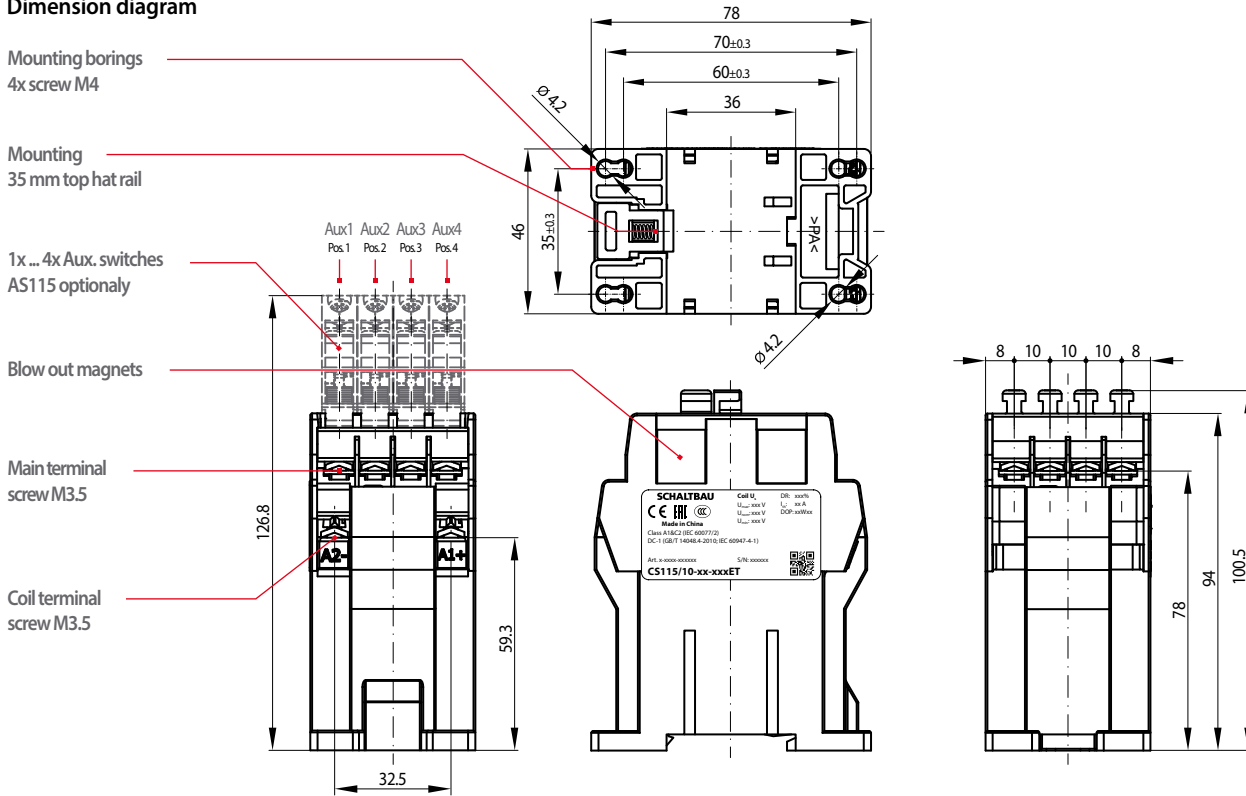
CS series

Series	CS115/10-40-xxET	CS115/10-31-xxET	CS115/10-22-xxET			
<b>Main contacts</b>						
Type of voltage	DC (unidirectional), AC ( $f \leq 60\text{Hz}$ )					
Configuration	4x NO (NO-NO-NO-NO)	3x NO, 1x NC (NO-NO-NO-NC)	2x NO, 2x NC (NO-NC-NC-NO)			
Nominal voltage $U_n$ (IEC 60077)	750 V (max. 800 V @ PD3, 1,500 V @ PD2)					
Rated operating voltage $U_e$	800 V @ PD3, 1,500 V @ PD2					
Rated insulation voltage $U_{Nm} / U_i$	800 V @ PD3, 1,500 V @ PD2					
Rated impulse withstand voltage $U_{Ni} / U_{imp}$	6 kV @ PD3, 8 kV @ PD2					
Pollution degree / Overvoltage category	PD2 / PD3, see main contacts above / OV 2					
Conventional thermal current $I_{th}$	20 A @ 2.5 mm <sup>2</sup> cross section 30 A @ 4 mm <sup>2</sup> cross section with forked cable lug*1					
Rated operational current $I_e$	Rated operational current $I_e$					
IEC 60077-2 (L/R = 15ms): Component category: A1 Operational frequency: C2	Main contacts in series	1x	2x	3x	4x	
IEC 60947-4-1: Utilization category: AC-1 ( $\cos\phi = 0.8$ ), DC-1 (L/R = 1ms)	DC / resistive circuits (L/R = 1 ms; DC-1)	125 V	250 V	375 V	500 V	15 A
		200 V	400 V	600 V	800 V	10 A
		260 V	520 V	780 V	1,040 V*2	8 A
		400 V	800 V	1,200 V*2	1,500 V*2	5 A
	DC / inductive circuits (L/R = 15 ms; A1/C2)	125 V	250 V	375 V	500 V	6 A
		200 V	400 V	600 V	800 V	3 A
		260 V	520 V	780 V	1,040 V*2	1.8 A
		400 V	800 V	1,200 V*2	1,500 V*2	0.5 A
	AC / resistive circuits ( $\cos\phi = 0.8$ ; AC-1)	400 V	800 V	1,200 V*2	1,500 V*2	15 A
<b>Breaking capacity</b>						
	Main contacts in series	1x	2x	3x	4x	Breaking capacity
	DC / resistive circuits (L/R = 1 ms; DC-1)	125 V	250 V	375 V	500 V	160 A
		200 V	400 V	600 V	800 V	40 A
		260 V	520 V	780 V	1,040 V*2	15 A
		400 V	800 V	1,200 V*2	1,500 V*2	10 A
	DC / inductive circuits (L/R = 15 ms; A1/C2)	125 V	250 V	375 V	500 V	40 A
		200 V	400 V	600 V	800 V	18 A
		260 V	520 V	780 V	1,040 V*2	10 A
		400 V	800 V	1,200 V*2	1,500 V*2	3 A
	AC / resistive circuits ( $\cos\phi = 0.8$ ; AC-1)	400 V	800 V	1,200 V*2	1,500 V*2	150 A
<b>Short-circuit making capacity</b>						
	160 A					
<b>Design</b>						
Terminal screw / torque	M3.5 / 0.8 Nm					
Wire gauge	max. 2x wires with sleeve*3 0.75 ... 2.5 mm <sup>2</sup> or 18 ... 12 AWG, 1x 4 mm <sup>2</sup> with forked cable lug, stripping length 8 mm					
Contact material	AgNi90/10					
<b>Auxiliary contacts</b>						
Configuration	optional 1x ... 4x NO (AS115/10) or NC (AS115/01) snap on type					
Nominal voltage $U_n$ (IEC 60077)	110 V @ PD3					
Rated operating voltage $U_e$	127 V @ PD3					
Rated insulation voltage $U_{Nm}$	150 V @ PD3					
Rated impulse withstand voltage $U_{Ni}$	1.5 kV @ PD3					
Pollution degree / Overvoltage category	PD3, see aux. contacts above / OV2					
Conventional thermal current $I_{th}$	5 A @ 1 mm <sup>2</sup> cross section					
Rated operating current $I_e$	0.5 A					
Component category (IEC 60077-2)	A1					
Operational frequencies (IEC 60077-2)	C2					
Short-circuit making capacity	50 A					
Breaking capacity, $U_e = 127\text{V}$	T = 1 ms: 7.5 A / T = 15 ms: 5 A					
<b>Design</b>						
Terminal screw / torque	M3.5 / 0.8 Nm					
Wire gauge	max. 2x wires with sleeve*3 0.75 ... 2.5 mm <sup>2</sup> or 18 ... 12 AWG, stripping length 8 mm					
Contact material	AgNi90/10					
<b>Magnetic drive</b>						
Coil voltage $U_{sn}$	24 / 36 / 48 / 72 / 96 / 110 V DC					
Coil tolerance	-30 % ... +25 % $U_{sn}$					
Coil suppression	Suppressor diode (integrated)					
Pollution degree / Overvoltage category	PD3 / OV2					
Coil dissipation at $U_s$ and $T_a = 20\text{ }^\circ\text{C}$	approx. 6.5 W cold coil / 5.5 W warm coil					
Pull-in time, typ. at $T_a = 20\text{ }^\circ\text{C}$	50 ms					
Drop-out time, typ. at $T_a = 20\text{ }^\circ\text{C}$	25 ms					
<b>Design</b>						
Terminal screw / torque	M3.5 / 0.8 Nm					
Wire gauge	max. 2x wires with sleeve*3 0.75 ... 2.5 mm <sup>2</sup> or 18 ... 12 AWG, stripping length 8 mm					
Contact material	AgNi90/10					
<b>General data</b>						
IP rating (IEC 60529)	IP00					
Mechanical endurance	> 5 million cycles					
Vibration / Shock (IEC 61373)	Category 1, Class B					
Mounting orientation	vertical / horizontal					
Mounting style	Top-hat rail 35 mm or 4x screws M4 / torque 2.5 Nm					
<b>Temperatures</b>						
Working temperature / Storage temperature	-40 °C ... +70 °C / -40 °C ... +85 °C					
Altitude	< 2,000 m above sea level					
Humidity (EN 50125-1)	< 75 % on annual average					
Weight	Contactor CS115/10: 515 g / Aux. contact AS115/xx: 15 g					

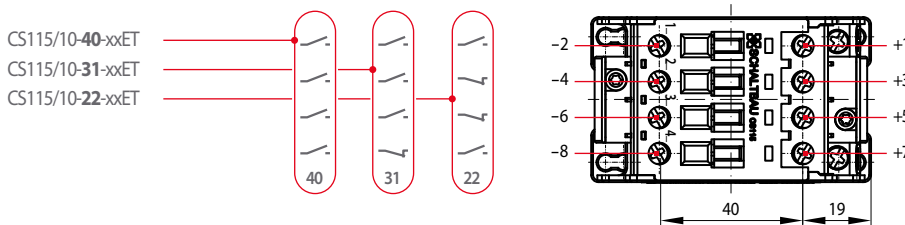
**CS115/10-40-xxET, CS115/10-31-xxET, CS115/10-22-xxET** Dimensions, Configuration, Mounting

CS series

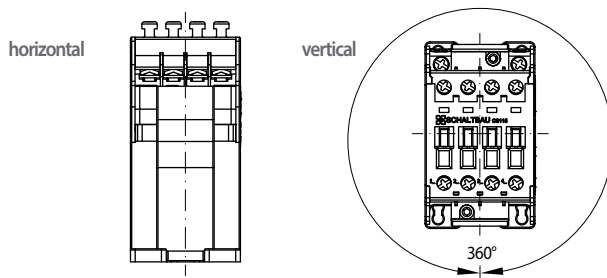
• Dimension diagram



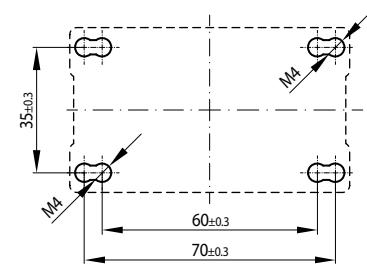
• Main contacts, Configuration



• Possible mounting orientations



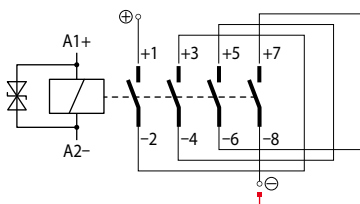
• Mounting holes



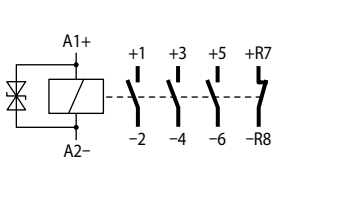
**CS115/10-40-xxET, CS115/10-31-xxET, CS115/10-22-xxET** Circuit diagrams

CS series

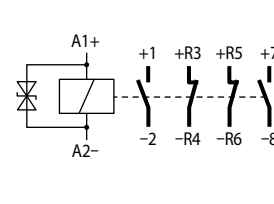
• CS115/10-40-xxET (NO-NO-NO-NO)



• CS115/10-31-xxET (NO-NO-NO-NC)



• CS115/10-22-xxET (NO-NC-NC-NO)

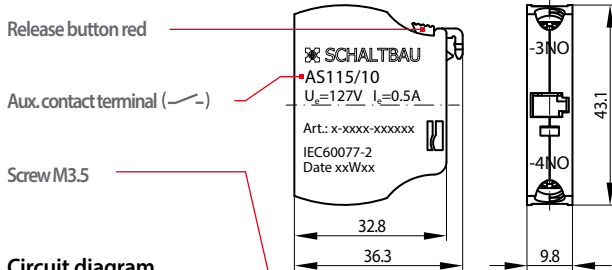


Example: Polarity-correct series connection of all main contacts to increase the rated operating voltage  $U_o$ , s. a. table «Specifications».

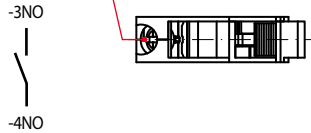
**AS115/10, AS115/01 Series** auxiliary switches, dimension and circuit diagrams

CS series

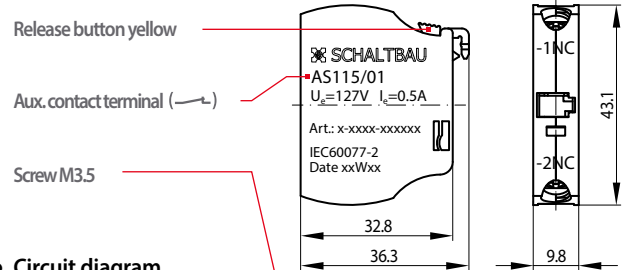
● **AS115/10** Auxiliary switch 1x NO



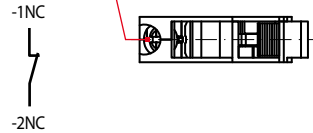
● **Circuit diagram**



● **AS115/01** Auxiliary switch 1x NC



● **Circuit diagram**



● **Use of auxiliary switches**

Possible configurations				Circuit diagram						
Mounting orientation horizontal		Mounting orientation vertical		Sample configuration	Aux. switches	Pos. 1 2 3 4				
AS115/10	AS115/01	AS115/10	AS115/01							
4x max. NO	2x max. NC	4x max. NO	3x max. NC	CS115/10-40-xxET + 2x AS115/10 + 2x AS115/01	4x NO 2x NO 2x NC					
4x max. NO	2x max. NC	4x max.* NO	3x max. NC	CS115/10-31-xxET + 1x AS115/10 + 3x AS115/01	3x NO / 1x NC 1x NO 3x NC					
4x max. NO	2x max. NC	4x max.* NO	3x max. NC	CS115/10-22-xxET + 3x AS115/10 + 1x AS115/01	2x NO / 2x NC 3x NO 1x NC					

\* The rated minimum pull-in voltage can rise to 0.8 x U<sub>m</sub> at temperatures < 70 °C and working contactor (warm coil)

**Maintenance and safety instructions**

CS series

**Maintenance:**

- CS115/10 Series contactors are maintenance free.
- Make regular in-depth visual inspections once or twice a year.

**Safety instructions:**

- The device must be used according to the intended purpose as specified in the technical documentation. You are obliged to observe all specifications depending on operating temperature, degree of pollution etc. that are relevant to your application.
- Without further safety measures the CS Series 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 contactor's 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 CS 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.
- Strong electromagnetic induction caused when switching off can influence other components installed near the contactor.
- Improper handling of the contactor, e.g. when hitting the floor with some impact, can result in breakage, visible cracks and deformation.



**Defective parts must be replaced immediately!**

# Schaltbau GmbH

For detailed information on our products and services visit our website – or give us a call!

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with compliments:



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



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



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

## 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