SCHALTBAU

Connect · Contact · Control

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Contactors

Series CS115/10

4 pole DC contactors
for battery voltages
up to 110 V

Catalogue C50.en

Mehr Informationen hier:
schaltbau-gmbh.de

CS115/10 4 pole DC contactors

CS Series – 4 pole DC contactors for battery voltages up to 110 V

With the 4 pole CS115/10 Series Schaltbau has expanded its product line of battery contactors. Designed for the low and medium power range, the switching devices are universally applicable and available in many versions. The 10 A control contactor for battery voltages up to 110 V is available with various contact arrangements. Optionally up to 4 snap-on auxiliary switches can be mounted to it.

Application

CS Series contactors are especially designed for controlling low and medium loads in battery networks, such as switching ON and OFF, locking, signalling and controlling power contactors.

Features

Series CS

- Compact, rugged Design
- Nominal voltage U_n 110 V DC
- Conv. thermal current I_{th} 10 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

Series CS

- **CS115/10 Series 4 pole battery contactor**

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

Series

CS115/10	4 pole DC contactor, U_n = 110 V, I_{th} = 10 A

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, U_n = 110 V, I_{th} = 5 A

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.

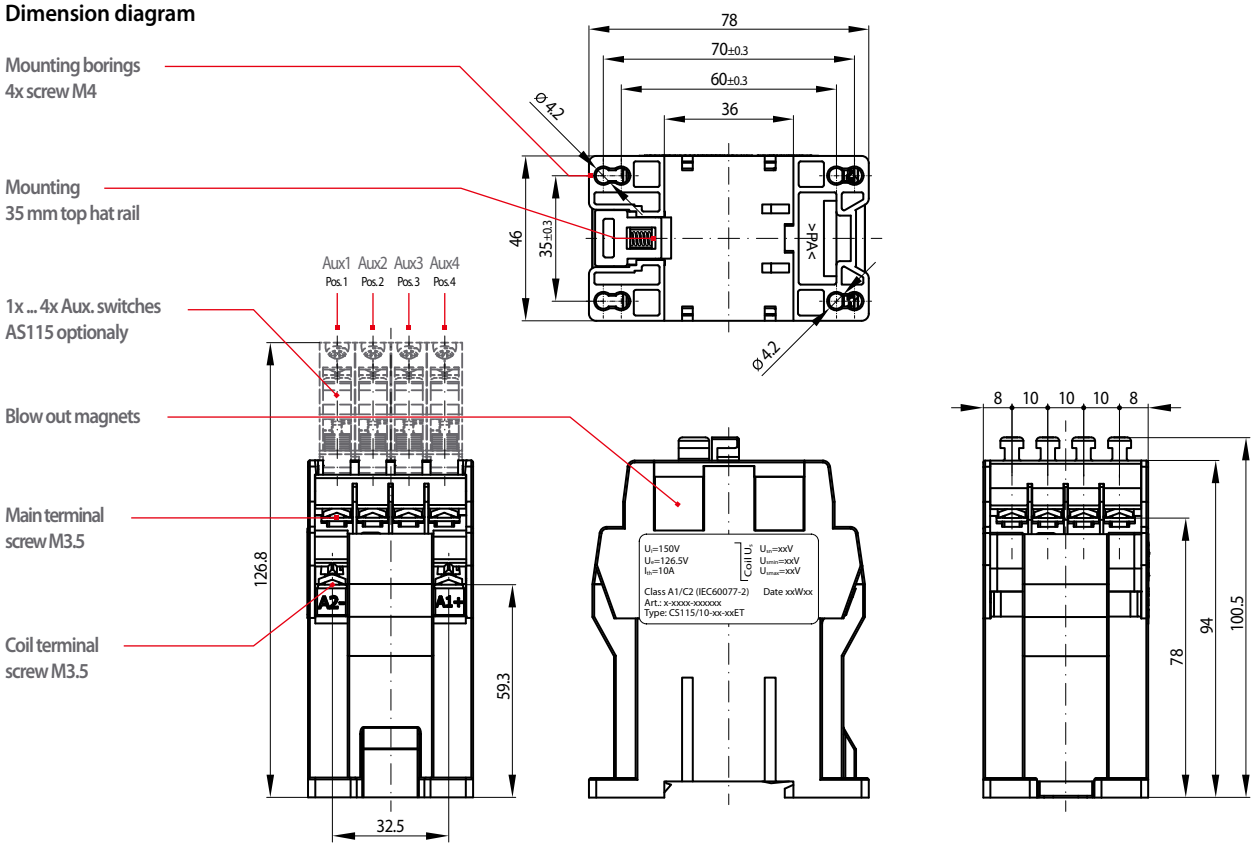
Applicable standards

Series CS

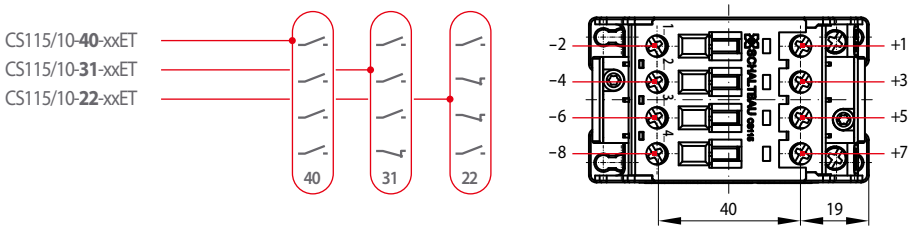
- **IEC 60077-1:2002** Railway applications – Electric equipment for rolling stock – Part 1: General service conditions and general rules.
- **IEC 60077-2:2002** Railway applications – Electric equipment for rolling stock – Part 2: Electrotechnical components; General rules
- **EN 61373:2010** Railway applications – Rolling stock equipment – Shock and vibration tests
- **IEC 60715:1981 + A1:1995** Dimensions of low-voltage switchgear and controlgear. Standardized mounting on rails for mechanical support of electrical devices in switchgear and controlgear installations

CS115/10-40-xxET, CS115/10-31-xxET, CS115/10-22-xxET Dimensions, Configuration, Mounting — Series CS

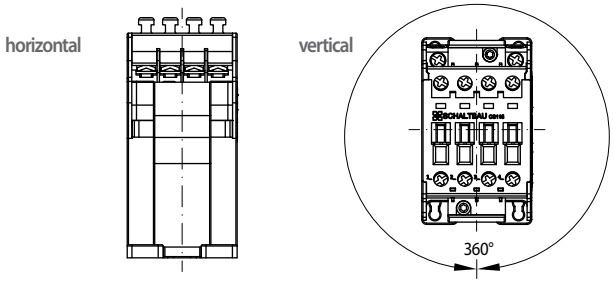
- **Dimension diagram**



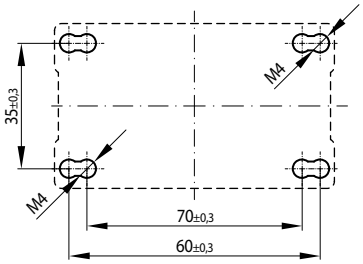
- **Main contacts, Configuration**



- **Possible mounting orientations**

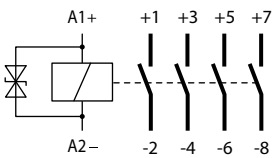


- **Mounting holes**

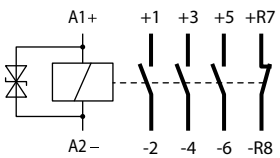


CS115/10-40-xxET, CS115/10-31-xxET, CS115/10-22-xxET Circuit diagrams — Series CS

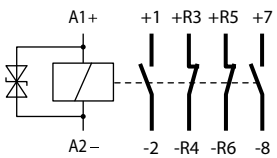
- **CS115/10-40-xxET (NO-NO-NO-NO)**



- **CS115/10-31-xxET (NO-NO-NO-NC)**



- **CS115/10-22-xxET (NO-NC-NC-NO)**

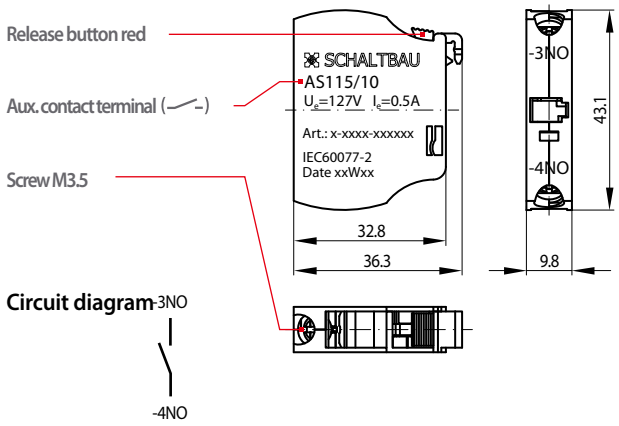


Subject to change / Dimensions in mm

AS115/10, AS115/01 Series auxilary switches, dimension and circuit diagrams

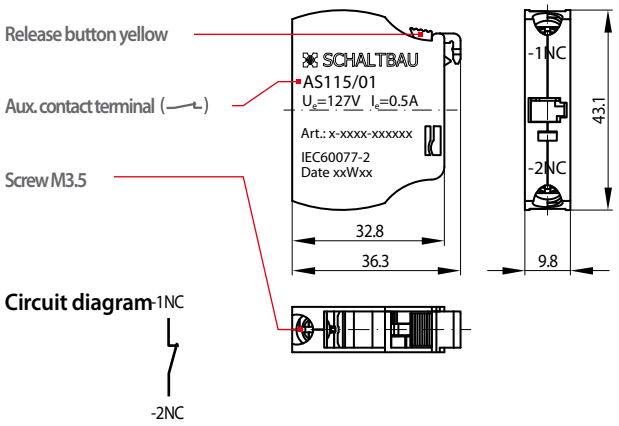
Series CS

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



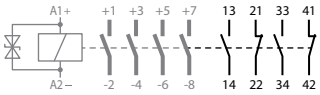
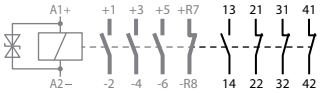
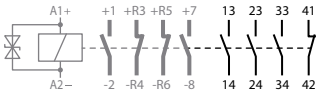
- **Circuit diagram** -3NO / -4NO

- **AS115/01 Auxiliary switch 1x NC**



- **Circuit diagram** -1NC / -2NC

- **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	4x max. NC	CS115/10-40-xxET + 2x AS115/10 + 2x AS115/01	4x NO 2x NO 2x NC	
4x max. NO	4x max. NC	4x max.* NO	4x max. NC	CS115/10-31-xxET + 1x AS115/10 + 3x AS115/01	3x NO / 1x NC 1x NO 3x 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_{sn} at temperatures < 70 °C and working contactor (warm coil)*

Maintenance and safety instructions

Series CS

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!

Specifications

Series CS

Series	CS115/10-40-xxET	CS115/10-31-xxET	CS115/10-22-xxET
Main contacts			
Type of voltage		DC, unidirectional	
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		110 V	
Rated operating voltage U_e		126.5 V	
Rated insulation voltage U_{Nm}		150 V	
Rated impulse withstand voltage U_{Ni}		1.5 kV	
Pollution degree / Overvoltage category		PD3 / OV2	
Conventional thermal current I_{th}		10 A (at 1 mm² or 16 AWG)	
Rated operating current I_e		6 A	
Component category (IEC 60077-2)		A1 (auxiliary or low-voltage circuits)	
Operational frequencies		C2 (medium operational frequency)	
Short-circuit making capacity		100 A	
Breaking capacity, U_e = 126.5 V		T = 1 ms: 100 A / T = 15 ms: 40 A	
Design			
Terminal screw / Torque		M3.5 / 0.8 Nm	
Wire gauge		2 terminal leads max. with ferrule*: 0.75 ... 2.5 mm² / 18 ... 12 AWG	
Contact material		AgNi90/10	
Auxiliary contacts			
Configuration		optional 1x ... 4x NO (AS115/10) or NC (AS115/01) snap on type	
Nominal voltage U_n		110 V	
Rated operating voltage U_e		126.5 V	
Rated insulation voltage U_{Nm}		150 V	
Rated impulse withstand voltage U_{Ni}		1.5 kV	
Pollution degree / Overvoltage category		PD3 / OV2	
Conventional thermal current I_{th}		5 A (at 1 mm² or 16 AWG)	
Rated operating current I_e		0.5 A	
Component category (IEC 60077-2)		A1 (auxiliary or low-voltage circuits)	
Operational frequencies		C2 (medium operational frequency)	
Short-circuit making capacity		50 A	
Breaking capacity, U_e = 126.5 V		T = 1 ms: 7.5 A / T = 15 ms: 5 A	
Design			
Terminal screw / torque		M3.5 / 0.8 Nm	
Wire gauge		2 terminal leads max. with ferrule*: 0.75 ... 2.5 mm² / 18 ... 12 AWG	
Contact material		AgNi90/10	
Magnetic drive			
Coil voltage U_{sn}		24 / 36 / 48 / 72 / 96 / 110 V DC	
Coil tolerance		-30 % ... +25 % U_{sn}	
Coil suppression		Suppressor diode	
Pollution degree / Overvoltage category		PD3 / OV2	
Coil dissipation at U_s and T_a = 20 °C		approx. 6.5 W cold coil / 5.5 W warm coil	
Pull-in time, typ. at T_a = 20 °C		50 ms	
Drop-out time, typ. at T_a = 20 °C		25 ms	
Design			
Terminal screw / torque		M3.5 / 0.8 Nm	
Wire gauge		2 terminal leads max. with ferrule*: 0.75 ... 2.5 mm² / 18 ... 12 AWG	
Contact material		AgNi90/10	
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	
Temperatures			
Working temperature / Storage temperature		-40 °C … +70 °C / -40 °C … +85 °C	
Altitude		< 2,000 m above sea level	
Humidity (IEC 50125-1)		< 75 % on an annual average	
Weight		515 g (CS115/10) / 15 g (AS115/10)	

* *Ferrule according to DIN 46228-1*

Subject to change

Schaltbau GmbH

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

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with compliments:

RoHS 2011/65/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 certified since 2002

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

Schaltbau GmbH ISO 9001 certified since 1994

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

Issued 05-2016

B2021/1504/0.0 Printed in Germany