

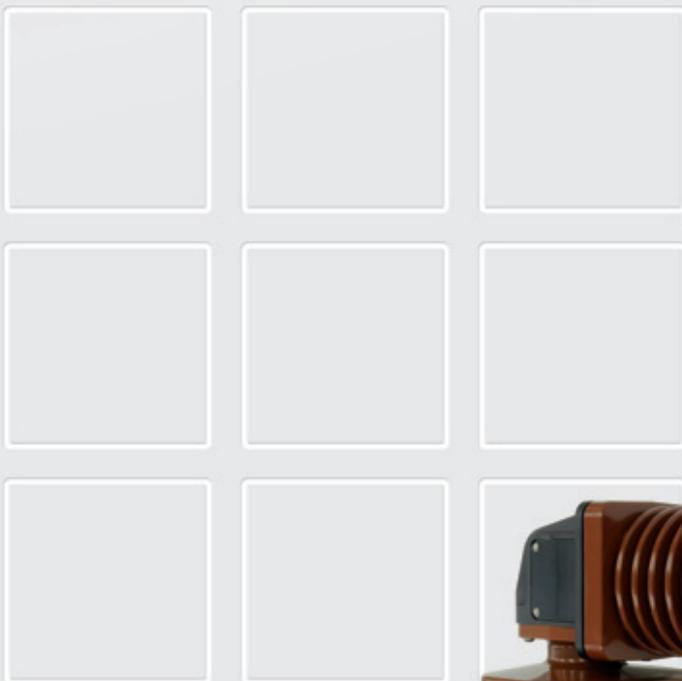
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Electrics for Rolling Stock

CVB15, CVB25 Series

Switchgear for
Traction
AC Vacuum Circuit Breaker

Catalogue C30.en



AC vacuum circuit breaker, CVB15, CVB25 Series

CVB Series vacuum circuit breaker: State-of-the-art main switch for electric locomotives and multiple units

Mode of operation: The energy required to switch on the CVB is stored by a spring. As soon as the switch-on signal is applied, the main spring release latch is unlocked and the switching operation is triggered. After that the spring gets recharged in less than 10 s. The signal "Hold" will keep the CVB

in its switched-on position. The vacuum circuit breaker is switched off when the signal "Hold" is cancelled or the control voltage supply is lost – the spring remains charged and ready for the next switching operation.

Features, applications

Features:

- Electrically operated AC vacuum circuit breaker
- Reduced life cycle costs: no pneumatics, no risk of icing up
- Versions for 15 kV and 25 kV to UIC 550 available
- Long service life
- Almost maintenance-free, visual inspections will suffice
- Reduced noise emission when switching on and off
- High reliability and availability: Spring actuator ensures reliable functioning of the vacuum circuit breaker even when battery is low
- Diagnosis and optional monitoring/recording of operating states
- Following the fail safe principle

Applications:

- Main switch for electric locomotives and multiple units (EMUs)
- Main switch to be designed into new or retrofitted railway vehicles

Standards

- **IEC 60077-4:** Railway applications - Electric equipment for rolling stock - Part 4: Electrotechnical components - Rules for AC circuit breakers
- **EN 50124-1:** Railway applications - Insulation coordination - Part 1: Basic requirements - Clearances and creepage distances for all electrical and electronic equipment
- **EN 50121-3-2:** Railway applications - Electromagnetic compatibility - Part 3-2: Rolling stock - Apparatus
- **IEC 61373:** Railway applications - Rolling stock equipment - Shock and vibration tests
- **EN 50155:** Railway applications - Electronic equipment used on rolling stock
- **IEC 60194:** Printed board design, manufacture and assembly - Terms and definitions

Ordering code

Example: **CVB 15/08 X 110E-00 xxx**

Series	CVB	AC vacuum circuit breaker
Nominal voltage/current	15/08 25/08	15 kV AC, 16% Hz / 800 A 25 kV AC, 50/60 Hz / 800 A
Terminal earthing switch	X R L	None Right Left
Control voltage	24 / 50 / 72 / 110 V DC	
Tolerance	E	-40 % ... +25 %
Aux. contacts, type and number of	00	8x NO / 2x NC: S826 (SPDT)
Special design	001	Retrofit: For mounting in roof with round cut-out



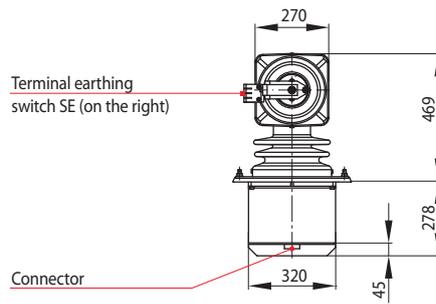
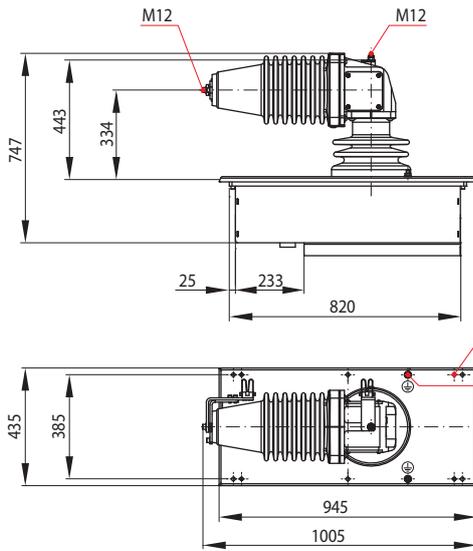
Note: This catalogue shows only stock items. For some variants minimum quantities apply. Please ask for the conditions.

Special variant: If you need a special variant, please do not hesitate to contact us. Maybe the type of AC vacuum circuit breaker you are looking for is available as a special design. If not, we can also supply a customized design.

Specifications

Series	CVB 15/08	CVB 25/08
Nominal voltage U_N / Frequency	15 kV AC / 16% Hz	25 kV AC / 50/60 Hz
Rated operating voltage U_e	19 kV AC	30 kV AC
Rated operating current I_e	750 A	450 A
Conventional thermal current I_{th}	750 A	750 A
Short-circuit breaking capacity	25 kA	20 kA
Rated holding current	40 kA / 100 ms	40 kA / 100 ms
Main contact	Vacuum interrupter	
Control contacts	Snap switch S826, SPDT*	
Pollution degree	High-voltage component PD4 Drive PD3	
Oversvoltage category	OV4	
Equipment category	C3	
Control voltage U_{st}	24 / 50 / 72 / 110 V DC	
Tolerance U_{st}	-40 % ... +25 %	
Shock, vibration	Category 1, class A	
Mechanical endurance	250,000 operating cycles min.	
Weight	≤ 134 kg	≤ 148 kg
Mounting position	Horizontal, roof mounting lengthwise or crosswise	
Operating temperature	-50°C ... +70°C	
Environmental conditions for equipment	AX / TX or 5K3 / 5B1 / 5C1 / 5S2 / 5F1	

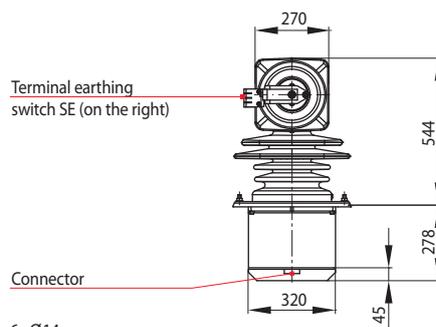
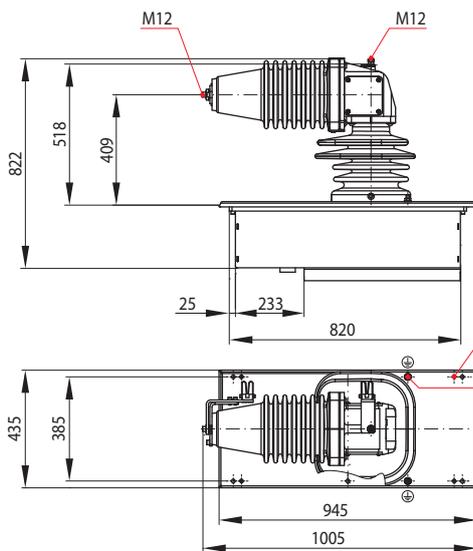
CVB 15/08 Dimension diagram, version 15 kV AC, 16½ Hz / 800 A



Version CVB 15/08 R 110E-00

CVB	Series
15/08	15 kV AC, 16½ Hz / 800 A
R	Terminal earthing switch on the right
110	Control voltage 110V
E	Tolerance -40 % ... +25 %
00	Aux. contacts 8x NO / 2x NC: S826 (SPDT)

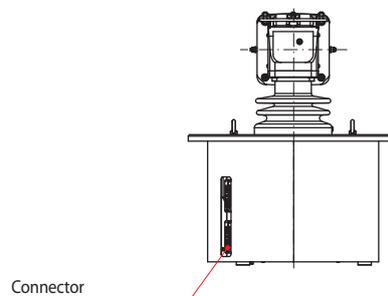
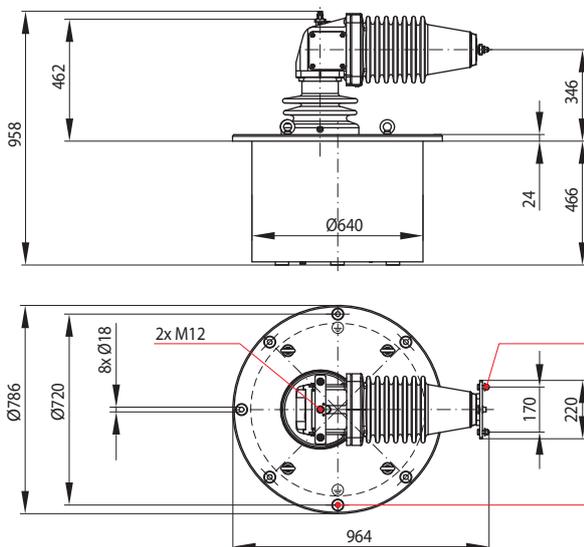
CVB 25/08 Dimension diagram, version 25 kV AC, 50/60 Hz / 800 A



Version CVB 25/08 R 110E-00

CVB	Series
25/08	25 kV AC, 50/60 Hz / 800 A
R	Terminal earthing switch on the right
110	Control voltage 110V
E	Tolerance -40 % ... +25 %
00	Aux. contacts 8x NO / 2x NC: S826 (SPDT)

CVB 15/08 Dimension diagram, special version for mounting in roof with round cut-out, 15 kV AC, 16½ Hz / 800 A



Version CVB 15/08 X 110E-00 001

CVB	Series
15/08	15 kV AC, 16½ Hz / 800 A
X	No earthing switch
110	Control voltage 110V
E	Tolerance -40 % ... +25 %
00	Aux. contacts 8x NO / 2x NC: S826 (SPDT)
001	Retrofit: Mounting in roof with round cut-out

Schaltbau GmbH

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- or give us a call!

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with compliments:



Schaltbau GmbH manufactures in compliance with RoHS.



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