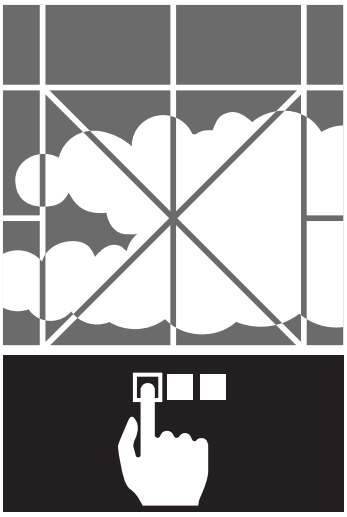


Doc.-No. 10000446166_02_EN

Aluminium systems

Smoke control systems

Schüco Compact SHEVS control unit CSC1

en Operating manual
Schüco Compact SHEVS control unit CSC1

Contents

Abbreviations

Index of abbreviations	
These abbreviations are used consistently throughout these assembly & operating instructions. Unless stated differently, all dimensions indicated in this document are in mm. General tolerances in accordance with DIN ISO 2768-m.	
aP	Surface mounting
WxHxD	Width x Height x Depth
CAN	CAN-BUS
CM	Control Module
COM	Common connection
DIN	German Institute for Standardisation
DM	Drive Module
EN	European Standard
IN	Input
OUT	Output
PG	Price group
PM	Power Module
PS	Power supply
RAL	Central European Colour Standard
RM6	Relay Module
RWA	SHEV – smoke and heat exhaust ventilation
SM	Sensor Module
uP	Flash mounting
WM	Weather Module
WRG	Wind direction sensor

Scale units	
°C	Grad Celsius
A	Amps
Ah	Amp-hours
kg	Kilogram
m	Metres
min	Minutes
mm	Millimeters
N	Newtons
s	Seconds
Pcs.	Pieces
V	Volts
PU	Packaging Units
Vpp	Residual ripple (Voltage Peak-Peak)
W	Watts
Ω / k Ω	Ohm / kilo-Ohm

Figures	
AC	Alternating current (50Hz / 60Hz)
DC	Direct current
I	Electric current
L	Length
ME	Module space unit (1 ME = 23 mm)
NC	Contact „open“ (normally close)
NO	Contact „close“ (normally open)
P	Electric power
R	Electrical resistance
U	Electric voltage
Um	Change over switch

Warning and Safety Symbols in these instruction:

Symbols			
The symbols used in the instructions shall be strictly observed and have the following meaning:			
 **Danger**	Failure to comply with the warning notes results in irreversible injuries or death.		**Caution / Warning** Danger due to electric current.
 **Warning**	Failure to comply with the warning notes can result in irreversible injuries or death.		**Caution / Warning** Risk of crushing and entrapment during device operation.
 **Caution**	Failure to comply with the warning notes can result in minor or moderate (reversible) injuries.		**Attention / Warning** Risk of damage to / destruction of drives and / or windows.
 **Note**	Failure to comply with the warning notes can lead to damage to property.		**INFORMATION** for an optimum installation.
			**INFORMATION** Note regarding the system configuration using the free software of the Control Unit manufacturer (USB connection).

Target group

These instructions are intended for personnel trained in electrical engineering and skilled operators of systems for natural smoke ventilation (NRA / SHEV) (natural smoke exhaust system / smoke and heat exhaust system) and natural ventilation via windows, who are knowledgeable of operating modes and remaining risks of the system.

 **WARNING**

This device is not intended for use by persons (including children) with physical, sensory or mental limitations or lacking experience and / or knowledge, unless they are supervised by a person who is responsible for the safety or were instructed by him on the usage of this equipment.
Children should be supervised to ensure that they are not playing with this device.
Cleaning and operator's maintenance may not be performed by children without supervision.

Intended Use

Area of application / Scope of application
This control device is intended for power-feeding and controlling electromotive operated windows in facade and roof areas. The prime task of this product, in combination with the electromotive window, is to evacuate hot smoke and combustion gases in case of fire to save human lives and protect material assets. Furthermore, the electromotive operated window ensures fresh air supply for the natural ventilation of the building.

NOTE
By installing the drive to a movable element of the window a so-called “power-operated window” is created which, according to the Machinery Directive 2006/42/EG, represents a machine.

The control device is designated for driving such a window. Where it seems reasonable, these installation instructions point out sensibly predictable hazards and risks resulting from a power operated window.

Intended use according to the Declaration of Conformity
The control device is intended for stationary installation and electrical connection as part of a building.
In accordance with the attached Declaration of Conformity the control device, in combination with electromotive drives from Schüco, is released for its intended use in a power-operated window without an additional on-site risk assessment for the following use:

- Natural ventilation
  - with an installation height of the drive of at least 2,5 m above the floor, or
  - with an opening width at the HSK of the operated element of < 200 mm by a simultaneous speed of < 15 mm/s at the HSK in closing direction.
- Application as NSHEV (natural smoke and heat exhaust ventilators) for ventilation without dual purpose for ventilation in accordance with EN12101-2.

WARNING
Attention must be paid to possible hazards when used with tilting or rotating windows, whose secondary closing edges are located at less than 2,5 m installation height above the floor, under consideration of the Control Unit and usage!

We as manufacturers are well aware of our duties and responsibilities regarding the development, manufacturing and placing of safe window drives on the market and consistently implement them. Ultimately, however, we have no direct influence on the usage of our drives. Therefore, as a precaution, we point out the following:

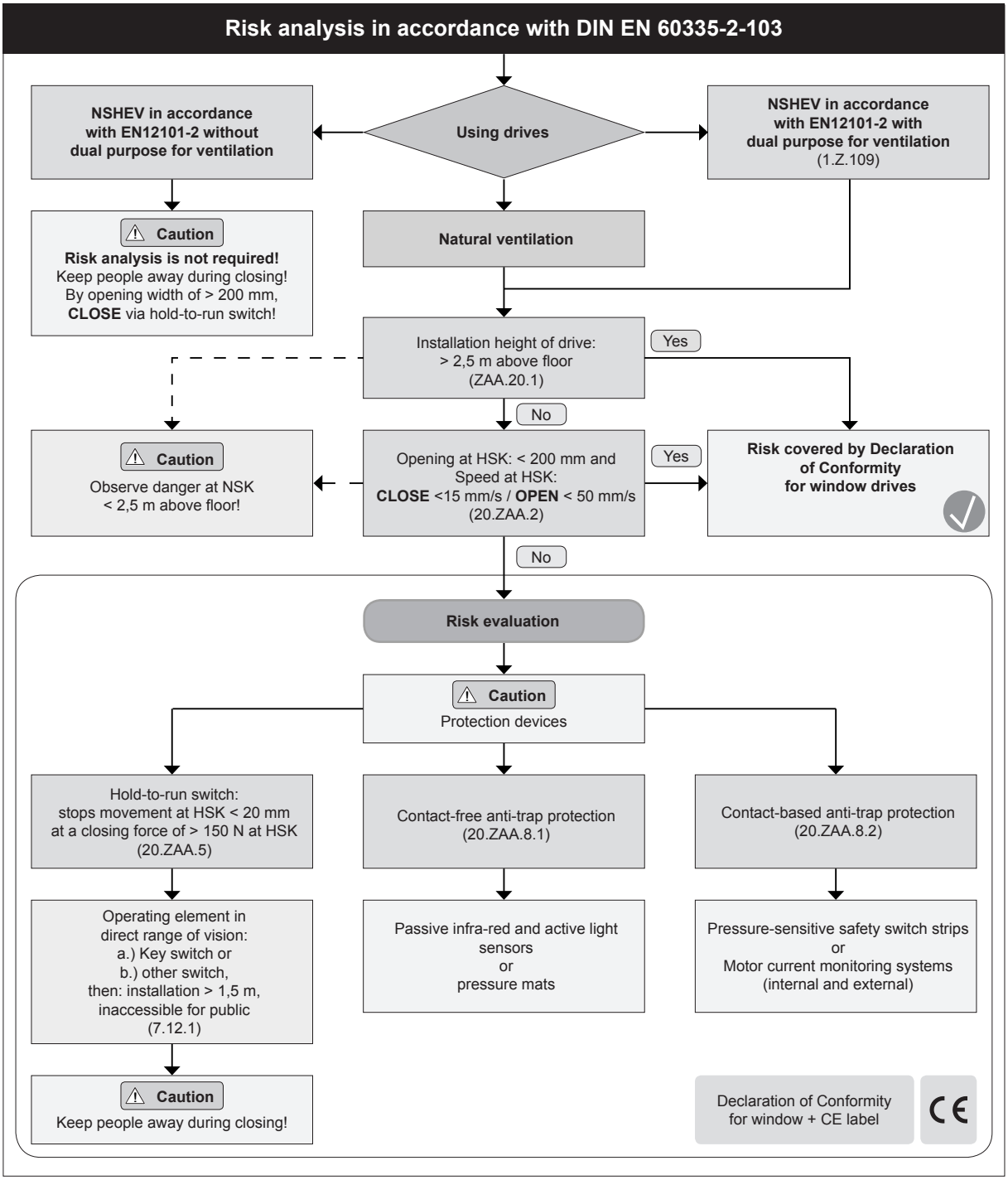
- The constructor or his agent (architect, specialist planner) are obligated by law to evaluate the hazards to persons originating from the usage, installation position, opening parameters as well as the planned type of installation of the power operated window and the external Control Unit, already in the planning phase and to establish necessary protective measures.
- The constructor / manufacturer of the machine “power-operated window” must implement the planned protective measures, at the installation site or, if not yet established, determine them by theire own responsibility and detect or minimize possible remaining risks.

NOTE
By connecting the window drives with a control device and their operation the constructor of the complete system becomes the manufacturer of the power-operated window! If necessary, he is obligated to perform a risk assessment of the complete system in accordance with the Machinery Directive 2006/42/EG when the utilization or operation of the control device or the connected window drives deviate from their intended use!

The need for a risk assessment at the installation site due to the reasonably foreseeable misuse.
A risk assessment in accordance with the Machinery Directive 2006/42/EG by activation of the poweroperated window for natural ventilation is absolutely necessary under the following conditions:

- the installation height of the drive is < 2,5 m above the floor and
- the opening width at the HSK > 200 mm, or
- the closing speed at the HSK is > 15 mm/s, or
- the opening speed at the HSK is > 50 mm/s, or
- the closing force at the HSK is > 150 N

The following flow chart can be applied, which also includes the protective measures in accordance with EN 60335-2-103/2016-05.



NOTE

We recommend using exclusively system components by Schüco, because their compatibility is carefully checked in the factory. Schüco shall not assume liability for the system-compatible functioning of third party components. Applications and connections other than explicitly described in these instructions require the express written consent of Schüco. Utilization of applications and components not expressly authorized by Schüco are considered as unintended use even if their perfect functioning is proven at commissioning (e.g. approval under building law).

Basic functions of SHEV (smoke and heat exhaust system) control devices:

- Control of electromotive window drives for smoke and heat exhaust in case of fire and for “natural ventilation”.
- Evaluation of trigger signals of manual and automatic smoke detectors as well as of fire alarm systems.
- Emergency power supply provided by batteries for maintaining safety functions if power supply is interrupted in case of fire.
- Monitoring the power supply of all important connections for malfunctions.
- Diverse automatic and manual control options for controlling natural ventilation (e.g. via wind and rain sensors).
- Transmission of signals of all essential operating states for external evaluation (may require additional components).
- Comfortable configuration and parameterization of control via PC software.
- Optional integration into external data bus systems via dd-on modules.

Safety instructions

WARNING

It is important to follow these instructions for the safety of persons. These instructions shall be kept in a safe place for the entire service life of the products.

CAUTION / WARNING

Electromotive operated windows can close automatically!
The compressive force is absolutely sufficient to crush fingers in case of carelessness.

Area of application

The control device shall only be used according to its intended use. For additional applications consult the manufacturer or his authorized dealer.

Installation

These instructions address expert and safety-conscious electricians and / or qualified personnel knowledgeable of the electrical and mechanical installation of drives and control systems.

Mounting material

The required mounting material must be modified to fit the occurring load.

Crush and shear points

To avoid injuries, crushing and shear points between casement and frame must be secured against entrapment up to an installation height of 2,5 meters above the floor with appropriate measures. This can be achieved e.g. by using contact-based or contactless protective devices against entrapment, which stop the motion through contact or through interruption by a person. A warning symbol at the opening element must indicate this clearly.

Routing cables and electrical connection
Routing or installing electrical lines and connections may be performed only by approved specialist companies. Never operate drives, Control Units, operating elements and sensors at operating voltages and connections contrary to the specifications of the manufacturer.

NOTE
The planning and calculation of the wiring system is the responsibility of the builder or his agent or the authorized onstructor and must be performed according to the statutory provisions.

All relevant instructions shall be observed for the installation, specifically:
- VDE 0100 Setting up high-voltage systems up to 1000 V
- VDE 0815 Wiring cables
- Specimen Guideline on Conduits German designation (MLAR).

CAUTION / WARNING
The power line on-site must be secured separately and provided all poles separators.
After opening of the system housing voltage carrying parts are exposed. The system must be separated from the power supply and battery voltage before each intervention in the Control Unit of the system.

The types of cable, cable lengths and cross-sections shall be selected in accordance with the manufacturer's technical data. If necessary, the cable types shall be coordinated with the competent local authorities and energy supply companies. Low-voltage lines (24 V DC) shall be routed separate from the high-voltage lines. Flexible cables may not be flush-mounted. Freely suspended cables shall be equipped with strain reliefs.

CAUTION / WARNING
Cables must be laid such way that they cannot be sheared off, twisted or bent during operation. It is recommended to perform an insulation measurement of the system's line network and to document this.

Clamping points shall be checked for tightness of threaded connections and cable ends. Access to junction boxes, clamping points and external drive control systems shall be ensured for maintenance work.

Commissioning, operation and maintenance
After the installation and after each modification in the set up all functions shall be checked with a trial run. After the installation of the system is completed the end-user shall be introduced to all important operating steps. If necessary, he must be advised of all remaining risks / dangers.

NOTE
Post warning signs!

During the proper assembly of drives with mounting elements at a window, and the connection to an external Control Unit, the interfaces resulting from mechanical and electrical performance characteristics of single elements shall be observed.

WARNING
It is imperative that the information provided in the installation instructions of the controlled window drives are observed and adhered to!

CAUTION
Other persons must be kept away from the casement when a hold-to-run switch (pushbutton) is operated or when a window, which has been opened by a smoke and heat exhaust system, is closing!

CAUTION
The operating element of hold-to-run switches must be installed within direct view from the window, but apart from moving elements. If the switch is not a key-operated switch it must be installed at a minimum height of 1,5 m and inaccessible to the public!

CAUTION
Do not allow children to play with permanently mounted control devices and keep remote controls out of reach for children!

CAUTION / WARNING
Before working on the system it must be completely disconnected from the power supply and emergency power supply (e.g. batteries) and secured against unintentional reactivation. While working in the Control Unit the workplace must be secured to prevent unauthorized access. It must be ensured that unauthorized personnel are unable to open the Control Unit.

The installation instructions of system components (smoke detector, natural smoke and heat exhaust ventilators, drives, etc.) are part of the documentation for the complete system and must be kept accessible for authorized qualified personnel, together with the installation and operating instructions, for the entire service life of the sstem.

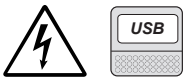
WARNING
Check all functions of the system before releasing it for operation.

Software terms and conditions
The Control Unit is configured by the factory for the intended use (standard configuration). The software, especially developed for this Control Unit, allows a quick and easy adjustment of the factory setting to the respective requirements. Furthermore, the system status can be saved, retrieved and printed.

INFORMATION
Modifiable standard configurations are particularly emphasized in these instructions. The software is part of the shipment of the Control Unit. The functional range of this unlicensed version can be expanded by activation against payment (license).

The prerequisites of the system (see chapter „Systems configuration of software“) must be checked prior to the installation. The “Software clause for handing over the standard software as part of shipments” of the ZVEI (German Electrical and Electronic Manufacturer’s Association) is accepted as legally binding upon installation. See our homepage:

Schüco International KG
www.schueco.de



CAUTION / WARNING
INFORMATION
The configuration software of the control device largely excludes damages caused by incorrect settings. As a matter of precaution we point out that Schüco, as manufacturer, cannot assume liability for damages caused by using Schüco software, because Schüco has no influence on a perfect systems environment or object-specific systems configuration.

We, therefore, recommend to protect the operating system and software of the systems sufficiently against unauthorized interference (e.g. by using a password) and to attend the training provided by the manufacturer.

Replacement parts
System components shall only be replaced with spare parts of the same manufacturer. There is no liability, warranty or customer service if third-party parts are used. Exclusively original spare parts of the manufacturer shall be used for expansions.

Ambient conditions
The product may not be subjected to impacts or falls, or to vibrations, moisture, aggressive vapors or other harmful environments, unless the manufacturer released it for one or more of these environmental conditions.

- **Operation:**
  Ambient temperature: -5 °C … +40°C
  Relative humidity: < 90% bis 20°C;
  < 50% bis 40°C;
  no formation of condensation
- **Transport / Storage:**
  Storage temperature: -20°C … +50°C
  (not for batteries)
  Relative humidity: < 60%

Accident prevention regulations and workmen's compensation insurance guidelines
For work on or in a building or building part the provisions and instructions of the respective accident prevention regulations (UVV and workmen's compensation insurance guidelines (BGR /ASR) shall be observed and adhered to.

Declaration of Conformity
The control device is manufactured and inspected for its intended use in accordance with the European guidelines. The respective Declaration of Conformity is on hand. In case the use or operation of the control device or the connected window drives deviate from this a risk assessment must be performed for the complete system of poweroperated windows and a Declaration of Conformity according to Machinery Directive 2006/42/EG issued as well as a CE labeling obtained.

Guidelines and Standards

The most recent state of country-specific laws, regulations, provisions and standards must absolutely be observed during the installation and for electrical connections.

These are for instance:
State building code with special construction regulations such as:
- Industrial construction guideline
- Venue regulations, etc.

MLAR - Sample Guideline on Conduits
German designation
Provisions of the fire protection authorities
TAB (technical connection conditions) of Utility companies
German Regulations for Occupational Insurance Schemes, such as:
- ASR A1.6 and 1.7 (substitute for BGR 232)

Additional standards and guidelines, such as:

EN 60335-2-103	Safety of household and similar electrical appliances
EN 60730-1	Automatic electrical controls
EN 12101-10 / prEN 12101-9	(ISO 21927-9/10) Smoke and heat control systems
DIN 4102-12	Functional integrity of electric cable systems
VDE 0100	Installation of high-voltage systems up to 1000 V
VDE 0298	Use of cables
VDE 0815	Wiring cables (for telecommunication and data processing systems)
VDE 0833	Alarm systems
VdS-Guidelines:	2593, 2581, 2580, 2592

Accident prevention regulations, in particular:
- VBG 1 „General rules" and
- VBG 4 „Electrical systems and equipment".

For placing on the market, the installation and the operation outside Germany the relevant national laws, regulations, standards and safety provisions apply.
The constructor is responsible for the proper installation or operation and the issuing of a Declaration of Conformity according to European guidelines.

The electric Control panel compliant **CSC1** - has a **VdS certification** - for use in SHEVS (smoke and heat control systems), based on the following of certifikation:
- VdS 2344:2005-12
- VdS 2581:2002-09
- VdS 2593:2002-09
- EN 12101-10:2005 + Corr. 1:2007

The **VdS approval** - with the certification no. **G516003** - includes the following components of control units:

- **CSC1_2,5A** without SHEV-Push button
- **CSC1_2,5A** with orange SHEV-Push button
- **CSC1_5A** without SHEV-Push button
- **CSC1_5A** with orange SHEV-Push button
- **CSC1_10A**
- **CSC1_20A**

- **CSC1 TT_2,5A** without SHEV-Push button
- **CSC1 TT_2,5A** with orange SHEV-Push button
- **CSC1 TT_5A** without SHEV-Push button
- **CSC1 TT_5A** with orange SHEV-Push button
- **CSC1 TT_10A**
- **CSC1 TT_20A**

Data sheet
Schüco compact SHEVS control unit **CSC1_2,5 A**

2,5 A

Feature / Equipment
- Software „Schüco CSC1 Configuration“ for the configuration of the basic functions
- Further settings (e.g. maintenance period) only available with extra cost software license
- Cable entry from above / below / behind
- Optional housing for flash mounting
- With integrated SHEV-Push button in the front door
- Inclusive **2** maintanance-free back-up batteries **2x 12 V / 2,3 Ah**

Application: Compact Control Unit for smoke and heat exhaust ventilation systems operating with 24V DC voltage, suitable for staircases.

Part.-No.:	**263 320**
Technical data	**(Rated values)**
Operating voltage:	230V AC (195 – 253 V AC, 50/60 Hz)
Max. power consumption:	115 W
Output voltage:	24V DC (20 – 28 V DC / 2 Vpp)
Output current:	**2,5 A**
Ambient temperature range:	-5°C … + 40°C
Protection rating:	IP30
Housing:	Surface mounting, steel sheet, RAL 7035 (light grey)
Dimensions (WxHxD):	225 x 285 x 122 mm
Connection terminals:	1,5 mm² / drives: 4 mm² (rigid wire)
Motherboard:	**1 SHEV group / 1 Vent group**

Data sheet
Schüco compact SHEVS control unit **CSC1_5 A**

5 A

Feature / Equipment
- Software „Schüco CSC1 Configuration“ for the configuration of the basic functions
- Further settings (e.g. maintenance period) only available with extra cost software license
- Cable entry from above / below / behind
- Optional housing for flash mounting
- Inclusive **2** maintanance-free back-up batteries **2x 12 V / 2,3 Ah**

Application: Compact Control Unit for smoke and heat exhaust ventilation systems operating with 24V DC voltage, suitable for staircases.

Part.-No.:	**263 321**
Technical data	**(Rated values)**
Operating voltage:	230V AC (195 – 253 V AC, 50/60 Hz)
Max. power consumption:	460 W
Output voltage:	24V DC (20 – 28 V DC / 0,5 Vpp)
Output current:	**5,0 A**
Ambient temperature range:	-5°C … + 40°C
Protection rating:	IP30
Housing:	Surface mounting, steel sheet, RAL 7035 (light grey)
Dimensions (WxHxD):	225 x 285 x 122 mm
Connection terminals:	1,5 mm² / drives: 6 mm² (rigid wire)
Motherboard:	**1 SHEV group / 1 Vent group**

Application: Compact Control Unit for smoke and heat exhaust ventilation systems operating with 24V DC voltage, suitable for staircases.

Part.-No.:	**263 322**
Technical data	**(Rated values)**
Operating voltage:	230V AC (195 – 253 V AC, 50/60 Hz)
Max. power consumption:	460 W
Output voltage:	24V DC (20 – 28 V DC / 0,5 Vpp)
Output current:	**5,0 A**
Ambient temperature range:	-5°C … + 40°C
Protection rating:	IP30
Housing:	Surface mounting, steel sheet, RAL 7035 (light grey)
Dimensions (WxHxD):	225 x 285 x 122 mm
Connection terminals:	1,5 mm² / drives: 6 mm² (rigid wire)
Motherboard:	**1 SHEV group / 2 Vent groups**

Data sheet
Schüco compact SHEVS control unit **CSC1_10 A**

10 A

Feature / Equipment
- Software „Schüco CSC1 Configuration“ for the configuration of the basic functions
- Further settings (e.g. maintenance period) only available with extra cost software license
- Cable entry from above / below / behind
- Inclusive **2** maintanance-free back-up batteries **2x 12 V / 7 Ah**

Application: Compact Control Unit for smoke and heat exhaust ventilation systems operating with 24V DC voltage, suitable for staircases.

Part.-No.:	**263 323**
Technical data	**(Rated values)**
Operating voltage:	230V AC (195 – 253 V AC, 50/60 Hz)
Max. power consumption:	506 W
Output voltage:	24V DC (20 – 28 V DC / 0,5 Vpp)
Output current:	**10 A**
Ambient temperature range:	-5°C … + 40°C
Protection rating:	IP40 IP54 with alternatively fixing brackets
Housing:	Surface mounting, steel sheet, RAL 7035 (light grey)
Dimensions (WxHxD):	400 x 300 x 150 mm
Connection terminals:	1,5 mm² / drives: 6 mm² (rigid wire)
Motherboard:	**1 SHEV group / 1 Vent group**

Application: Compact Control Unit for smoke and heat exhaust ventilation systems operating with 24V DC voltage, suitable for staircases.

Part.-No.:	**263 324**
Technical data	**(Rated values)**
Operating voltage:	230V AC (195 – 253 V AC, 50/60 Hz)
Max. power consumption:	506 W
Output voltage:	24V DC (20 – 28 V DC / 0,5 Vpp)
Output current:	**10 A**
Ambient temperature range:	-5°C … + 40°C
Protection rating:	IP40 IP54 with alternatively fixing brackets
Housing:	Surface mounting, steel sheet, RAL 7035 (light grey)
Dimensions (WxHxD):	400 x 300 x 150 mm
Connection terminals:	1,5 mm² / drives: 6 mm² (rigid wire)
Motherboard:	**1 SHEV group / 2 Vent groups**

Data sheet
Schüco compact SHEVS control unit **CSC1_20 A**

20 A

Feature / Equipment
- Software „Schüco CSC1 Configuration“ for the configuration of the basic functions
- Further settings (e.g. maintenance period) only available with extra cost software license
- Cable entry from above / below / behind
- Inclusive **2** maintanance-free back-up batteries **2x 12 V / 7 Ah**

Application: Compact Control Unit for smoke and heat exhaust ventilation systems operating with 24V DC voltage, suitable for staircases.

Part.-No.:	**263 325**
Technical data	**(Rated values)**
Operating voltage:	230V AC (195 – 253 V AC, 50/60 Hz)
Max. power consumption:	805 W
Output voltage:	24V DC (20 – 28 V DC / 0,5 Vpp)
Output current:	**20 A**
Ambient temperature range:	-5°C … + 40°C
Protection rating:	IP40 IP54 with alternatively fixing brackets
Housing:	Surface mounting, steel sheet, RAL 7035 (light grey)
Dimensions (WxHxD):	400 x 400 x 200 mm
Connection terminals:	1,5 mm² / drives: 6 mm² (rigid wire)
Motherboard:	**1 SHEV group / 2 Vent groups**

TT

Data sheet
Schüco compact SHEVS control unit **CSC1 TT_2,5 A**

2,5 A

Feature / Equipment
- Software „Schüco CSC1 Configuration“ for the configuration of the basic functions
- Further settings (e.g. maintenance period) only available with extra cost software license
- Cable entry from above / below / behind
- Optional housing for flash mounting
- With integrated SHEV-Push button in the front door
- Inclusive **2** maintanance-free back-up batteries **2x 12 V / 2,3 Ah**

Application: Compact Control Unit for smoke and heat exhaust ventilation systems operating with 24V DC voltage, suitable for staircases.

Part.-No.:	**263 330**
Technical data	**(Rated values)**
Operating voltage:	230V AC (195 – 253 V AC, 50/60 Hz)
Max. power consumption:	115 W
Output voltage:	24V DC (20 – 28 V DC / 2 Vpp)
Output current:	**2,5 A**
Ambient temperature range:	-5°C … + 40°C
Protection rating:	IP30
Housing:	Surface mounting, steel sheet, RAL 7035 (light grey)
Dimensions (WxHxD):	225 x 285 x 122 mm
Connection terminals:	1,5 mm² / drives: 4 mm² (rigid wire)
Motherboard:	**1 SHEV group / 1 Vent group**

Data sheet
Schüco compact SHEVS control unit **CSC1 TT_5 A**

5 A

Feature / Equipment
- Software „Schüco CSC1 Configuration“ for the configuration of the basic functions
- Further settings (e.g. maintenance period) only available with extra cost software license
- Cable entry from above / below / behind
- Optional housing for flash mounting
- Inclusive **2** maintanance-free back-up batteries **2x 12 V / 2,3 Ah**

Application: Compact Control Unit for smoke and heat exhaust ventilation systems operating with 24V DC voltage, suitable for staircases.

Part.-No.:	**263 331**
Technical data	**(Rated values)**
Operating voltage:	230V AC (195 – 253 V AC, 50/60 Hz)
Max. power consumption:	460 W
Output voltage:	24V DC (20 – 28 V DC / 0,5 Vpp)
Output current:	**5,0 A**
Ambient temperature range:	-5°C … + 40°C
Protection rating:	IP30
Housing:	Surface mounting, steel sheet, RAL 7035 (light grey)
Dimensions (WxHxD):	225 x 285 x 122 mm
Connection terminals:	1,5 mm² / drives: 6 mm² (rigid wire)
Motherboard:	**1 SHEV group / 1 Vent group**

Application: Compact Control Unit for smoke and heat exhaust ventilation systems operating with 24V DC voltage, suitable for staircases.

Part.-No.:	**263 332**
Technical data	**(Rated values)**
Operating voltage:	230V AC (195 – 253 V AC, 50/60 Hz)
Max. power consumption:	460 W
Output voltage:	24V DC (20 – 28 V DC / 0,5 Vpp)
Output current:	**5,0 A**
Ambient temperature range:	-5°C … + 40°C
Protection rating:	IP30
Housing:	Surface mounting, steel sheet, RAL 7035 (light grey)
Dimensions (WxHxD):	225 x 285 x 122 mm
Connection terminals:	1,5 mm² / drives: 6 mm² (rigid wire)
Motherboard:	**1 SHEV group / 2 Vent groups**

TT

Data sheet
Schüco compact SHEVS control unit **CSC1 TT_10 A**

10 A

Feature / Equipment
- Software „Schüco CSC1 Configuration“ for the configuration of the basic functions
- Further settings (e.g. maintenance period) only available with extra cost software license
- Cable entry from above / below / behind
- Inclusive **2** maintanance-free back-up batteries **2x 12 V / 7 Ah**

Application: Compact Control Unit for smoke and heat exhaust ventilation systems operating with 24V DC voltage, suitable for staircases.

Part.-No.:	**263 333**
Technical data	**(Rated values)**
Operating voltage:	230V AC (195 – 253 V AC, 50/60 Hz)
Max. power consumption:	506 W
Output voltage:	24V DC (20 – 28 V DC / 0,5 Vpp)
Output current:	**10 A**
Ambient temperature range:	-5°C … + 40°C
Protection rating:	IP40 IP54 with alternatively fixing brackets
Housing:	Surface mounting, steel sheet, RAL 7035 (light grey)
Dimensions (WxHxD):	400 x 300 x 150 mm
Connection terminals:	1,5 mm² / drives: 6 mm² (rigid wire)
Motherboard:	**1 SHEV group / 1 Vent group**

Application: Compact Control Unit for smoke and heat exhaust ventilation systems operating with 24V DC voltage, suitable for staircases.

Part.-No.:	**263 334**
Technical data	**(Rated values)**
Operating voltage:	230V AC (195 – 253 V AC, 50/60 Hz)
Max. power consumption:	506 W
Output voltage:	24V DC (20 – 28 V DC / 0,5 Vpp)
Output current:	**10 A**
Ambient temperature range:	-5°C … + 40°C
Protection rating:	IP40 IP54 with alternatively fixing brackets
Housing:	Surface mounting, steel sheet, RAL 7035 (light grey)
Dimensions (WxHxD):	400 x 300 x 150 mm
Connection terminals:	1,5 mm² / drives: 6 mm² (rigid wire)
Motherboard:	**1 SHEV group / 2 Vent groups**

Data sheet
Schüco compact SHEVS control unit **CSC1 TT_20 A**

20 A

Feature / Equipment
- Software „Schüco CSC1 Configuration“ for the configuration of the basic functions
- Further settings (e.g. maintenance period) only available with extra cost software license
- Cable entry from above / below / behind
- Inclusive **2** maintanance-free back-up batteries **2x 12 V / 7 Ah**

Application: Compact Control Unit for smoke and heat exhaust ventilation systems operating with 24V DC voltage, suitable for staircases.

Part.-No.:	**263 335**
Technical data	**(Rated values)**
Operating voltage:	230V AC (195 – 253 V AC, 50/60 Hz)
Max. power consumption:	805 W
Output voltage:	24V DC (20 – 28 V DC / 0,5 Vpp)
Output current:	**20 A**
Ambient temperature range:	-5°C … + 40°C
Protection rating:	IP40 IP54 with alternatively fixing brackets
Housing:	Surface mounting, steel sheet, RAL 7035 (light grey)
Dimensions (WxHxD):	400 x 400 x 200 mm
Connection terminals:	1,5 mm² / drives: 6 mm² (rigid wire)
Motherboard:	**1 SHEV group / 2 Vent groups**

2,5 A **5 A** **10 A** **20 A**

Technical data

Electrical data and connected loads	
Operating voltage, primär:	195…..253 V AC
Frequency:	50….60 Hz
Nominal current (secundär) / Current consumption (primär):	version 2,5 A / 0,4 A version 5A / 0,8 A version 10 A / 1,3 A version 20 A / 2,6 A
Current output (short-time duty):	Nominal current 30 % max. duty ratio
Constant current consumption:	30 % max. of nominal current (depending on version)
Output voltage, drives:	24V DC nominal (20….28 V DC)
Residual ripple:	max. 2,0 Vpp (version 2,5 A) max. 0,5 Vpp (version 5 A, 10 A, 20 A)
Number of detectors (manual / automatic):	10 units per detector line
Line output:	18….26 V (detector voltage)
Battery voltage:	2 x 12 V
Battery nominal capactiy:	2,3 or 7,0 Ah (depending on version)

ATTENTION / WARNING

The available internal emergency power supply (back-up batteries), if correctly rated and serviced at regular intervals, ensures that the controller of the Control Unit moves the connected drives open at least twice and close at least once after 72 hours of mains power supply loss.

Environmental Conditions (operation)	
Ambient temperature range:	-5…+40 °C (according to EN 12101 Class 1)
Maximum relative air humidity:	75 % (mean value over lifetime) 90 % (for max. 96 hours)
Mechanical Data	
Surface mounted housing:	steel plate painted RAL 7035
Protection class:	IP 30 (version 2,5 A and 5 A) IP 54 (version 10 A and 20 A), with wall mounting brackets and seal (not tested).
Housing dimensions (W x H x D): all dimensions given without lock	225 x 285 x 122 mm (version 2,5 A and 5 A) 400 x 300 x 150 mm (version 10 A) 400 x 400 x 200 mm (version 20 A)

Preparing assembly

WARNING

Important instructions for safe assembly:
Fully observe all instructions, incorrect assembly may lead to serious injuries.

Before starting the installation please check with the delivery note that the delivery is complete and correct, any complaints received later cannot be considered. It is required to keep a logbook for the CSC1 which must be accessible to authorized staff at all times.

Scope of delivery:
Schüco compact SHEVS control unit CSC1
<u>without</u> SHEVS-Push button in the cover

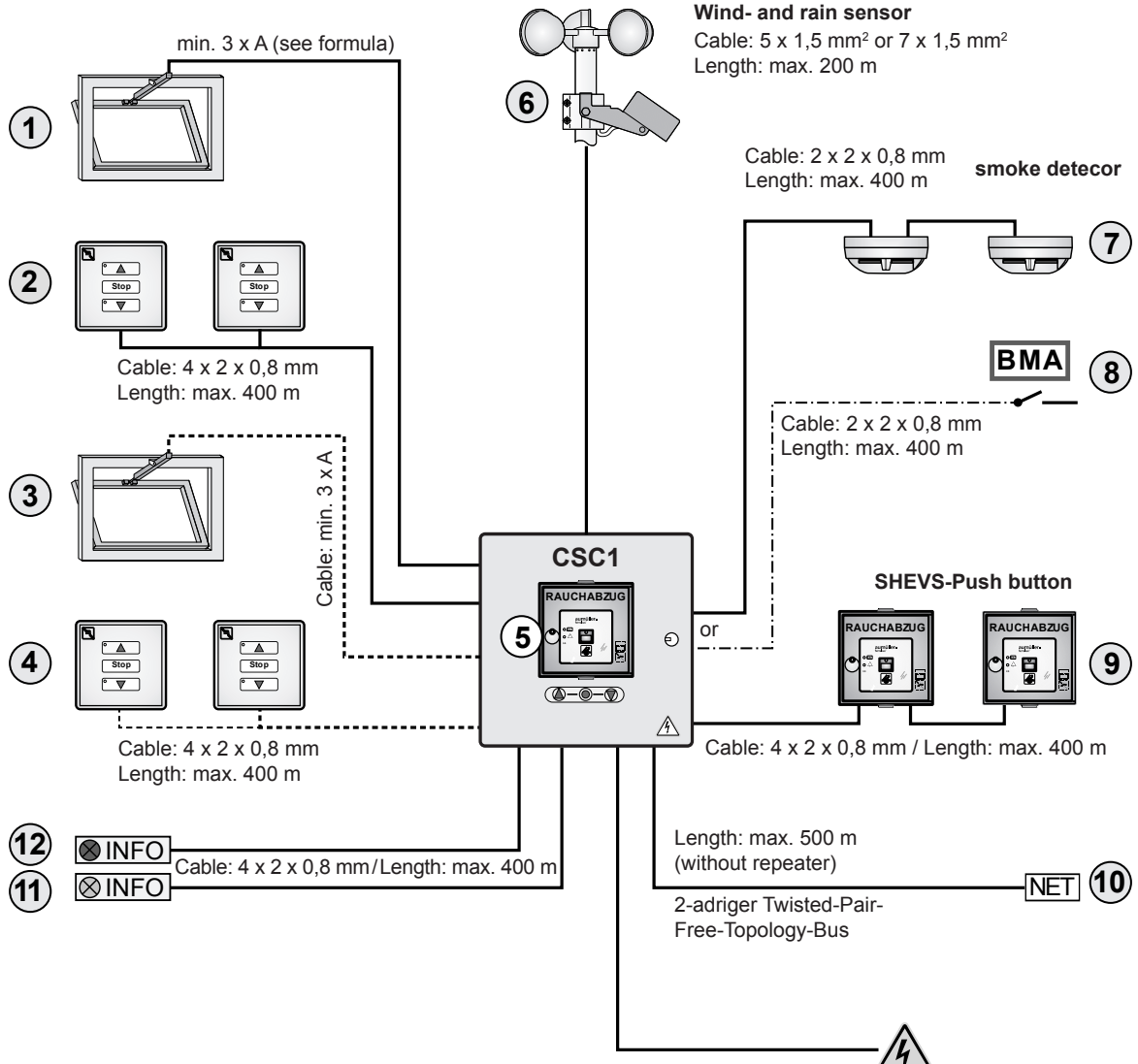
- Installation and Commissioning Instructions (german and english)
- Test report according to VDE 0113
- Label „Smoke Vent“
- Stickers „maintenance instructions“
- Drive line end module
- Resistors
- Key

Scope of delivery:
Schüco compact SHEVS control unit CSC1
<u>with</u> SHEVS-Push button in the cover

- Installation and Commissioning Instructions (german and english)
- Test report according to VDE 0113
- Label „Smoke Vent“
- Stickers „maintenance instructions“
- Drive line end module
- Resistors
- Key (2 unit)

2,5 A **5 A** **10 A** **20 A**

Connection facilities / cabling



Capiton
① Output for drive line 1, 24V DC for smoke + heat exhausting + natural ventilation
② Input for ventilation line 1 (max. 10 vent buttons)
③ Output for drive line 2 (only for CSC1_5A – 0102 / CSC1_10A – 0102 / CSC1_20A – 0102)
④ Input for ventilation line 2 (max. 10 vent buttons) (only for CSC1_5A – 0102 / CSC1_10A – 0102 / CSC1_20A – 0102)
⑤ Housing of Control Unit with or without integrated break-glass unit and ventilation button
⑥ Connections for wind and rain sensor (disabled in case of alarm and power loss)
⑦ Input for smoke detectors (max. 10)
⑧ Input for signal from external „ re alarm system (alternative connection)
⑨ Input for break-glass units (SHEV-Push button) (max. 10)
⑩ Port for network integration (requires additional module)
⑪ Output for signal transduction 1 (Relay Plug-in card required) alarm release
⑫ Output for signal transduction 2 (Relay Plug-in card required) collective fault
----- only available for CSC1_5A – 0102 / CSC1_10A – 0102 / CSC1_20A – 0102

These instructions include an overview as support (see chapter „**Overview on all external connections to be completed**“) for all connection options in which the constructor can record all his connections.

Formula to calculate
the required wire cross-section of a infeed line

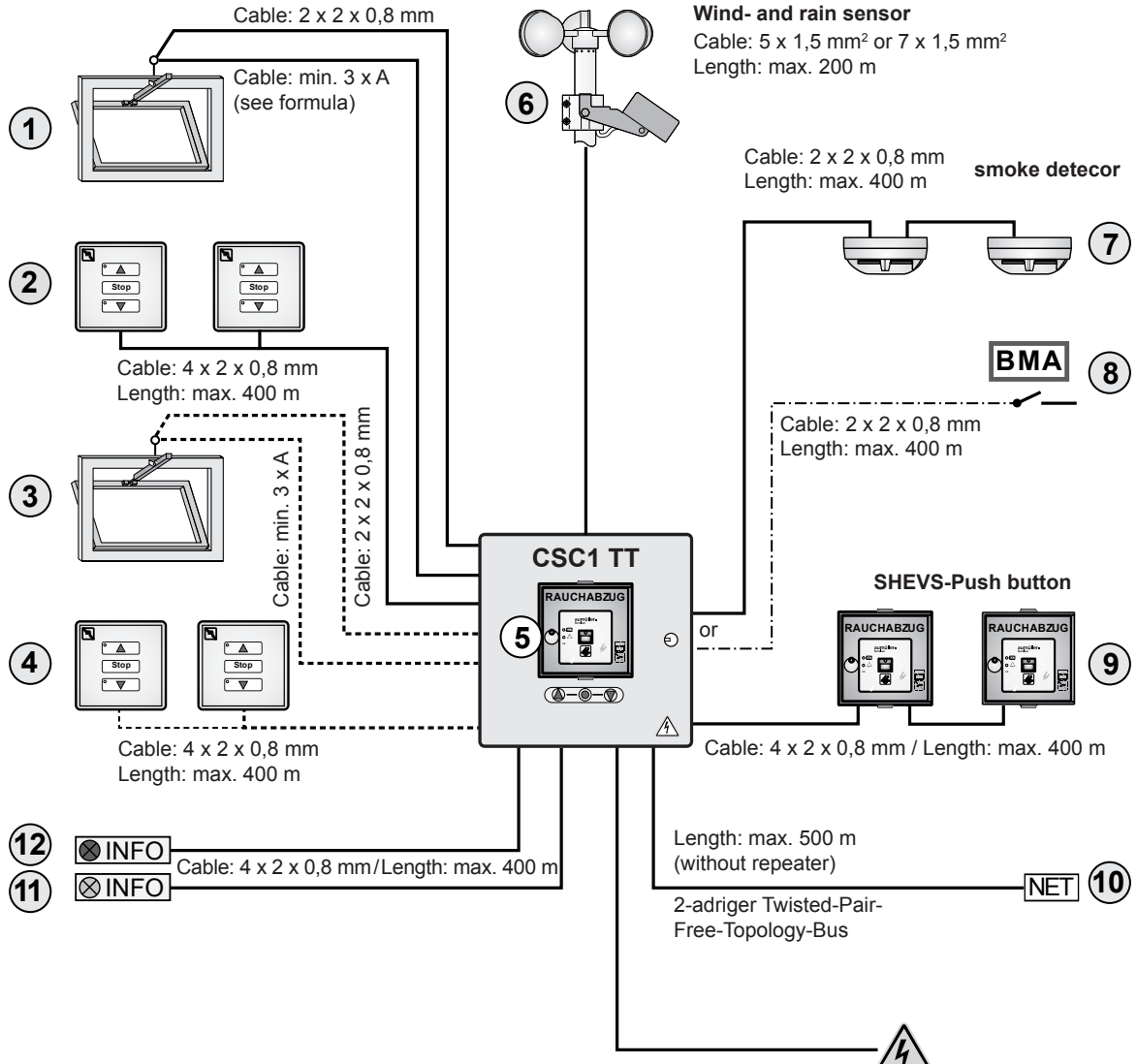
$$A_{mm^2} = \frac{I_{A\,(total)} \times L_{m\,(Length\ infeed\ line)} \times 2}{\Delta U_{V\,(voltage\ drop)} \times 56\ m / (\Omega * mm^2)}$$

A = cross-section of line in mm²
L = line length in m
I = current of connected drives in A
ΔU = line voltage drop = 2 V DC

TT

2,5 A | 5 A | 10 A | 20 A

Connection facilities / cabling



Capiton
① Output for drive line 1, 24V DC for smoke + heat exhausting + natural ventilation
② Input for ventilation line 1 (max. 10 vent buttons)
③ Output for drive line 2 (only for CSC1 TT_5A – 0102 / CSC1 TT_10A – 0102 / CSC1 TT_20A – 0102)
④ Input for ventilation line 2 (max. 10 vent buttons) (only for CSC1 TT_5A – 0102 / CSC1 TT_10A – 0102 / CSC1 TT_20A – 0102)
⑤ Housing of Control Unit with or without integrated break-glass unit and ventilation button
⑥ Connections for wind and rain sensor (disabled in case of alarm and power loss)
⑦ Input for smoke detectors (max. 10)
⑧ Input for signal from external „ re alarm system (alternative connection)
⑨ Input for break-glass units (SHEV-Push button) (max. 10)
⑩ Port for network integration (requires additional module)
⑪ Output for signal transduction 1 (Relay Plug-in card required) alarm release
⑫ Output for signal transduction 2 (Relay Plug-in card required) collective fault
----- only available for CSC1 TT_5A – 0102 / CSC1 TT_10A – 0102 / CSC1 TT_20A – 0102

These instructions include an overview as support (see chapter „**Overview on all external connections to be completed**“) for all connection options in which the constructor can record all his connections.

Formula to calculate
the required wire cross-section of a infeed line

$$A_{mm^2} = \frac{I_{A\,(total)} \times L_{m\,(Length\ infeed\ line)} \times 2}{\Delta U_{V\,(voltage\ drop)} \times 56\ m / (\Omega * mm^2)}$$

A = cross-section of line in mm²
L = line length in m
I = current of connected drives in A
ΔU = line voltage drop = 2 V DC

2,5 A **5 A** **10 A** **20 A**

Installations step 1:
Connecting drives and ventilation

USB

INFORMATION

The system software can:
- of „dead-man mode“ (default) to „self be switched attitude“
- monitoring the drive line will be switched off (standard = on)
- a „automatic closing“ can be set.

WARNING

Before changing the operating mode check and pay attention to danger zones at the window!

Cable installation must be in compliance with applicable legal requirements. The terminal cross-section for the drive connection is:

CSC1_2,5A -0101 max. 2,5 mm² (fexible)
CSC1_2,5A -0101-T max. 4,0 mm² (rigid wire)

CSC1_5A -0101 max. 4,0 mm² (fexible)
CSC1_5A -0101-T or
CSC1_5A -0102 max. 6,0 mm² (rigid wire)
CSC1_10A -0101
CSC1_10A -0102
CSC1_20A -0102

Line length and cross-section A (drives) depend on the type of drive and on the number of drives. Line length and cross-section can be determined according to the following formula:

Formula to calculate
the required wire cross-section of a infeed line

$$A_{mm^2} = \frac{I_{A\,(total)} \times L_{m\,(length\ infeed\ line)} \times 2}{\Delta U_{V\,(voltage\ drop)} \times 56\ m/(\Omega * mm^2)}$$

A = cross-section of line in mm²
L = line length in m
I = current of connected drives in A
ΔU = line voltage drop = 2 V DC

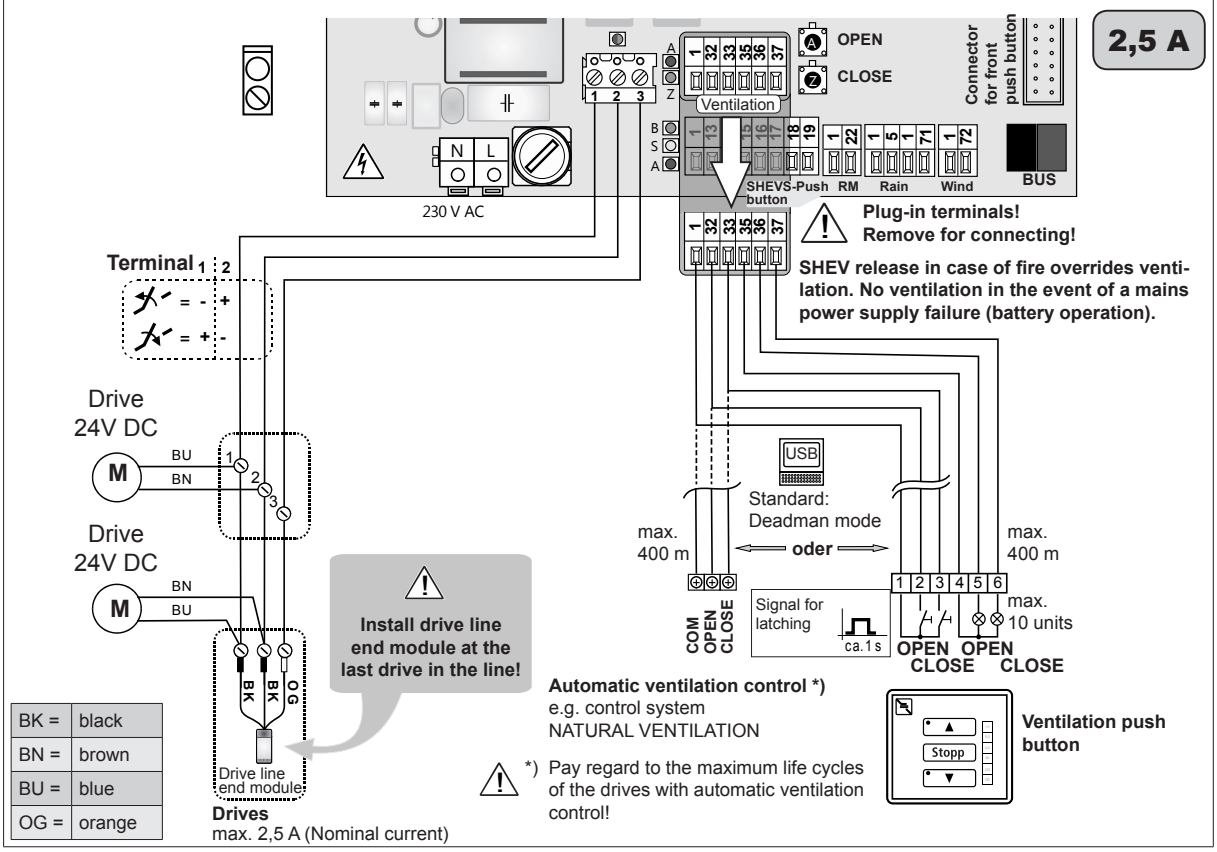
INFORMATION

The drive line is monitored by drive line end module for line break and short circuit.

CAUTION / WARNING

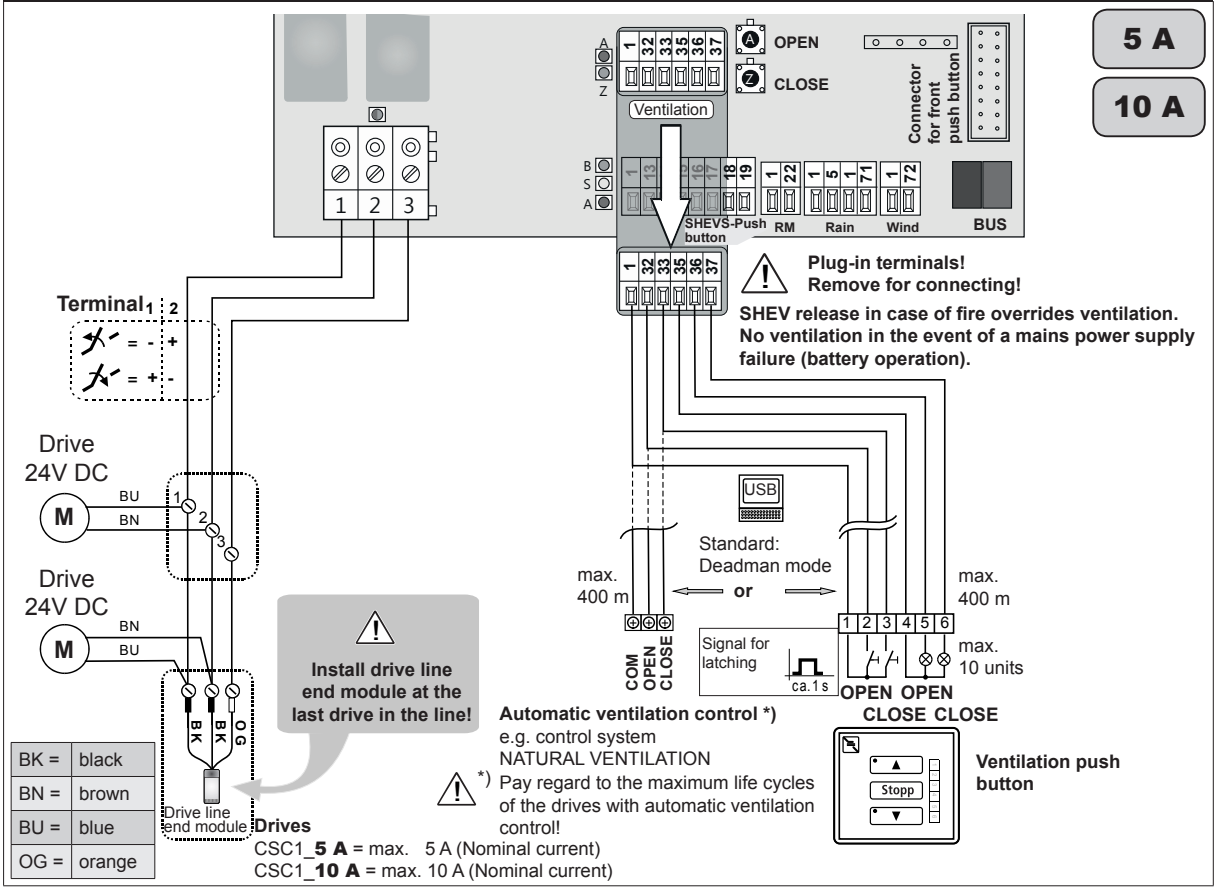
Only connect when disconnected from the mains power supply! Switch off power supply and secure against reconnection!

Connecting drives and ventilation:
Version CSC1_2,5A-0101, CSC1_2,5A-0101-T

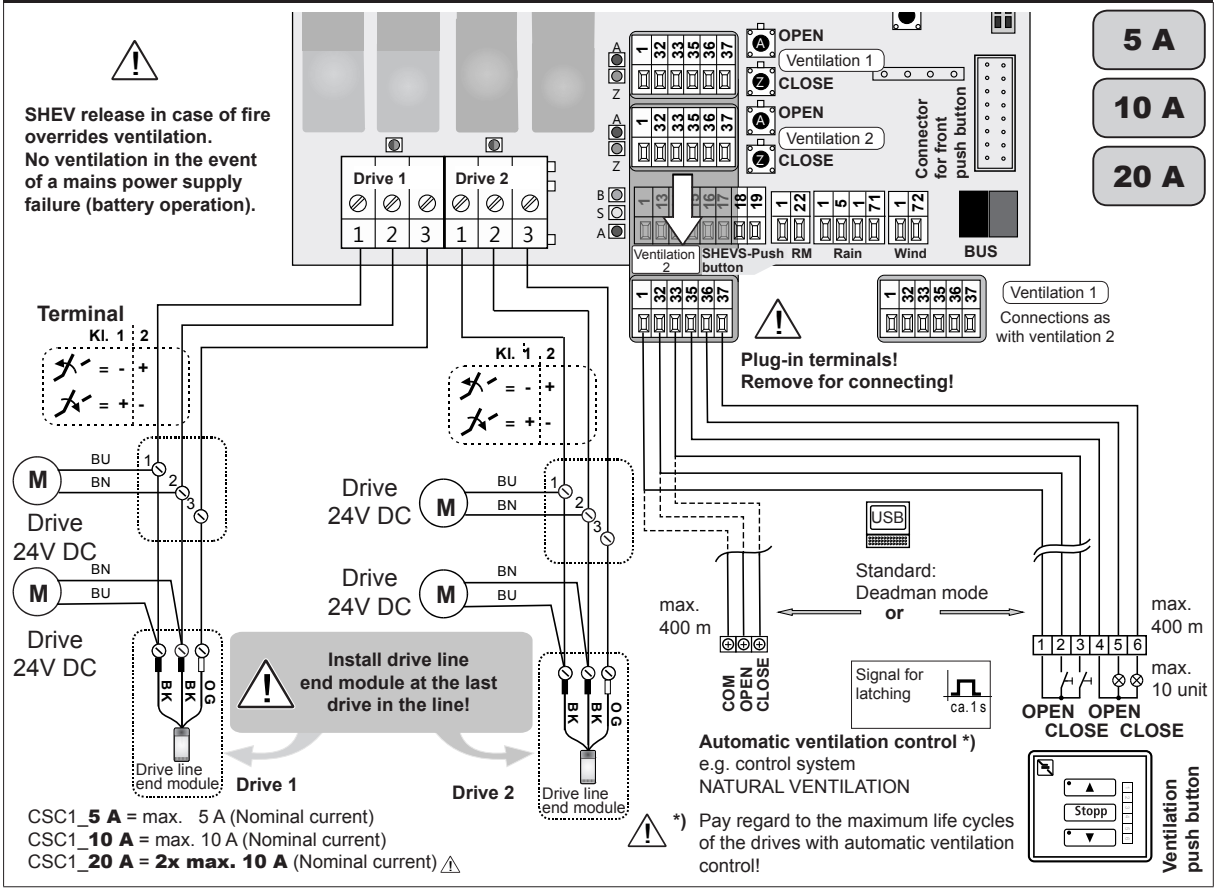


2,5 A **5 A** **10 A** **20 A**

Connecting drives and ventilation: Version CSC1_**5A**-0101, CSC1_**5A**-0101-T, CSC1_**10A**-0101



Connecting drives and ventilation: Version CSC1_**5A**-0102, CSC1_**10A**-0101-T, CSC1_**20A**-0102



2,5 A **5 A** **10 A** **20 A**

Installations step 2:
Connecting Thermo-Maximal detector in drive line

INFORMATION

If the drive line is not correctly terminated with an end line module for line monitoring or if the fixed temperature heat detector is incorrectly connected, the yellow fault indicator „**S**“ will signal a fault after a short while, unless line monitoring was disabled via the licensed software.

If the line monitoring via the licensed software disabled, no fault displayed.

WARNING

Cable installation must be in compliance with applicable legal requirements. The terminal cross-section for the drive connection is:

CSC1_2,5A -0101 max. 2,5 mm² (fexible)
CSC1_2,5A -0101-T max. 4,0 mm² (rigid wire)

CSC1_5A -0101 max. 4,0 mm² (fexible)
CSC1_5A -0101-T or
CSC1_5A -0102 max. 6,0 mm² (rigid wire)
CSC1_10A -0101
CSC1_10A -0102
CSC1_20A -0102

Line length and cross-section A (drives) depend on the type of drive and on the number of drives. Line length and cross-section can be determined according to the following formula:

Formula to calculate
the required wire cross-section of a infeed line

$$\mathbf{A}_{mm^2} = \frac{\mathbf{I}\,A_{(total)} \times \mathbf{L}\,m_{(length\ infeed\ line)} \times \mathbf{2}}{\Delta\mathbf{U}\,V_{(voltage\ drop)} \times \mathbf{56}\ m / (\Omega * mm^2)}$$

A = cross-section of line in mm²
L = line length in m
I = current of connected drives in A
ΔU = line voltage drop = 2 V DC

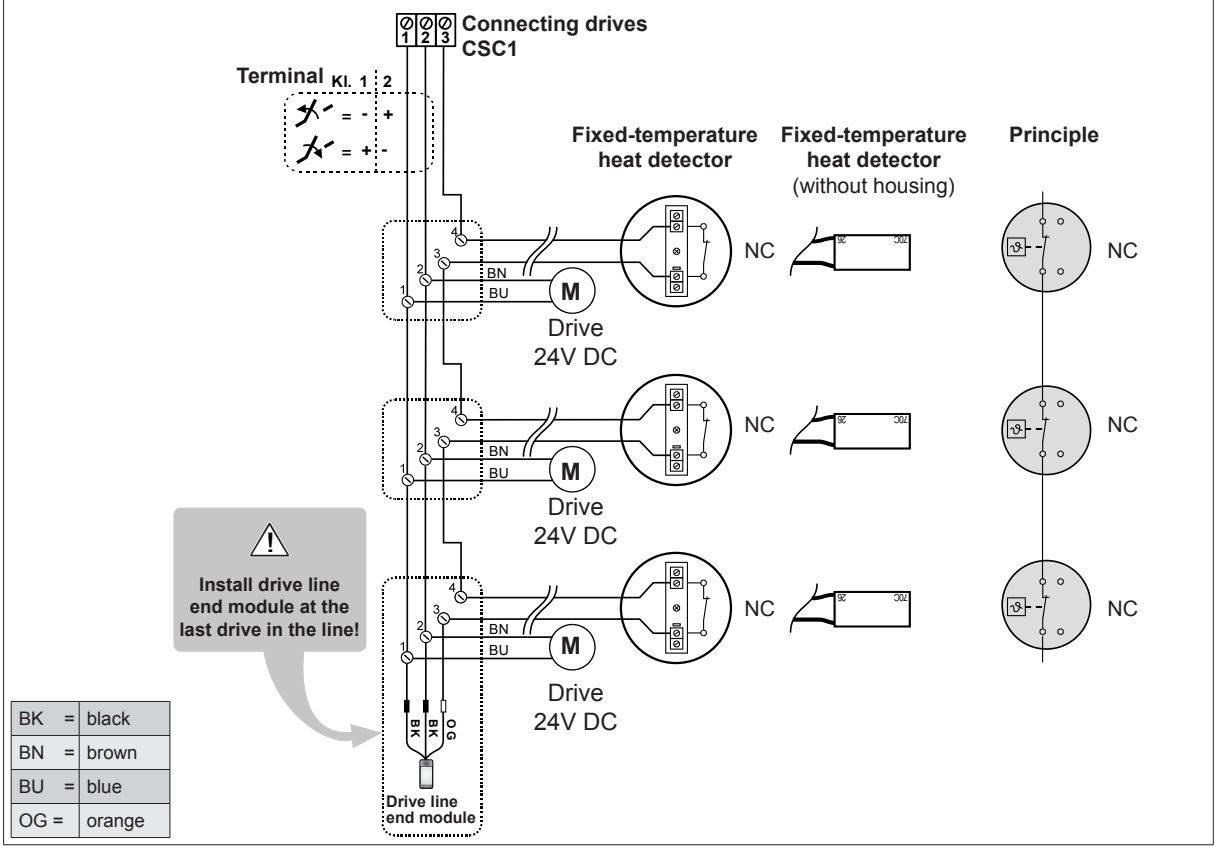
INFORMATION

For this trigger method is a software programming required.

CAUTION / WARNING

Only connect when disconnected from the mains power supply! Switch off power supply and secure against reconnection!

Connecting Thermo-Maximal detectors in drive line



2,5 A | 5 A | 10 A | 20 A

Installations step 3:
Connecting of automatic and manual smoke detectors

INFORMATION

Instead of smoke detectors a connection module (external closer contact) for EMERGENCY-OPEN from an external fire alarm system (FAS) may be connected to terminal 1 / 22.

WARNING

Cable installation must be in compliance with applicable legal requirements. The terminal cross section for connecting the detectors is maximum 1,5 mm², minimum 0,5 mm².

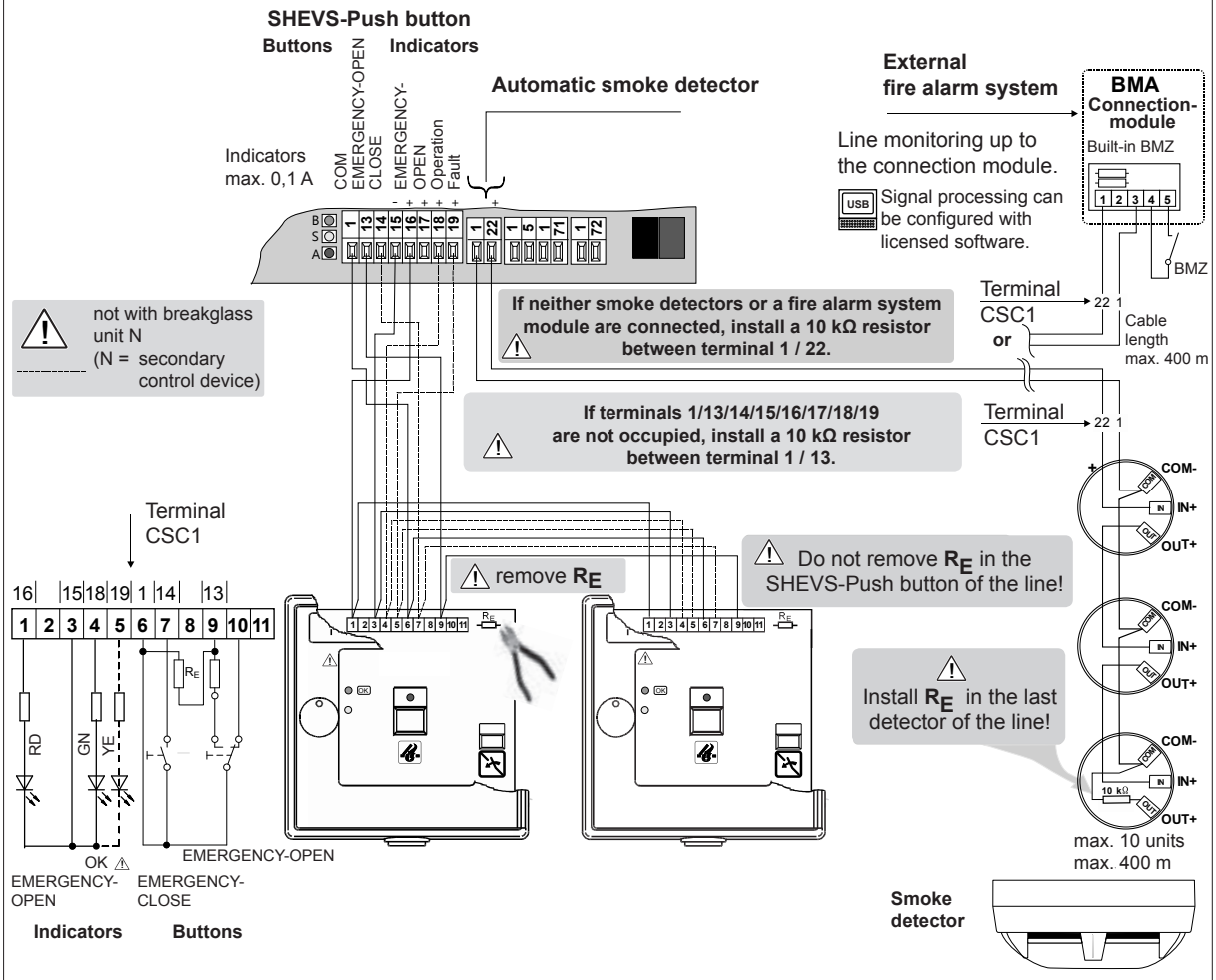
NOTE

The fire detector connection is closed-circuit monitored for line failures. Therefore, both the last smoke detector and the last breakglass unit (SHEVS-Push button) in the line must be provided with a 10 kΩ resistor (RE) (see schematic diagram). If the fire alarm line is not used, mount the 10 kΩ resistor on terminal 1 / 22. Otherwise, the yellow indicator „**S**“ signals a fault.

CAUTION / WARNING

Only connect when disconnected from the mains power supply! Switch off power supply and secure against reconnection!

Connection of automatic and manual smoke detectors / SHEVS-Push button / BMZ



2,5 A | 5 A | 10 A | 20 A

Installations step 4:
Connecting wind and rain sensors

USB

INFORMATION

The system software offers the option to adapt the response threshold of the wind sensor to the local conditions. The factory default setting is 5 m/s. Further modifications of the standard configuration require a paid licence for the software.

WARNING

Cable installation must be in compliance with applicable legal requirements. The terminal cross section for the rain sensor must be minimum 1,5 mm², for the wind sensor minimum 0,5 mm².

In case of fire (EMERGENCY-OPEN) or failure of power supply (battery operation) the ventilation control via wind and rain sensors is deactivated.

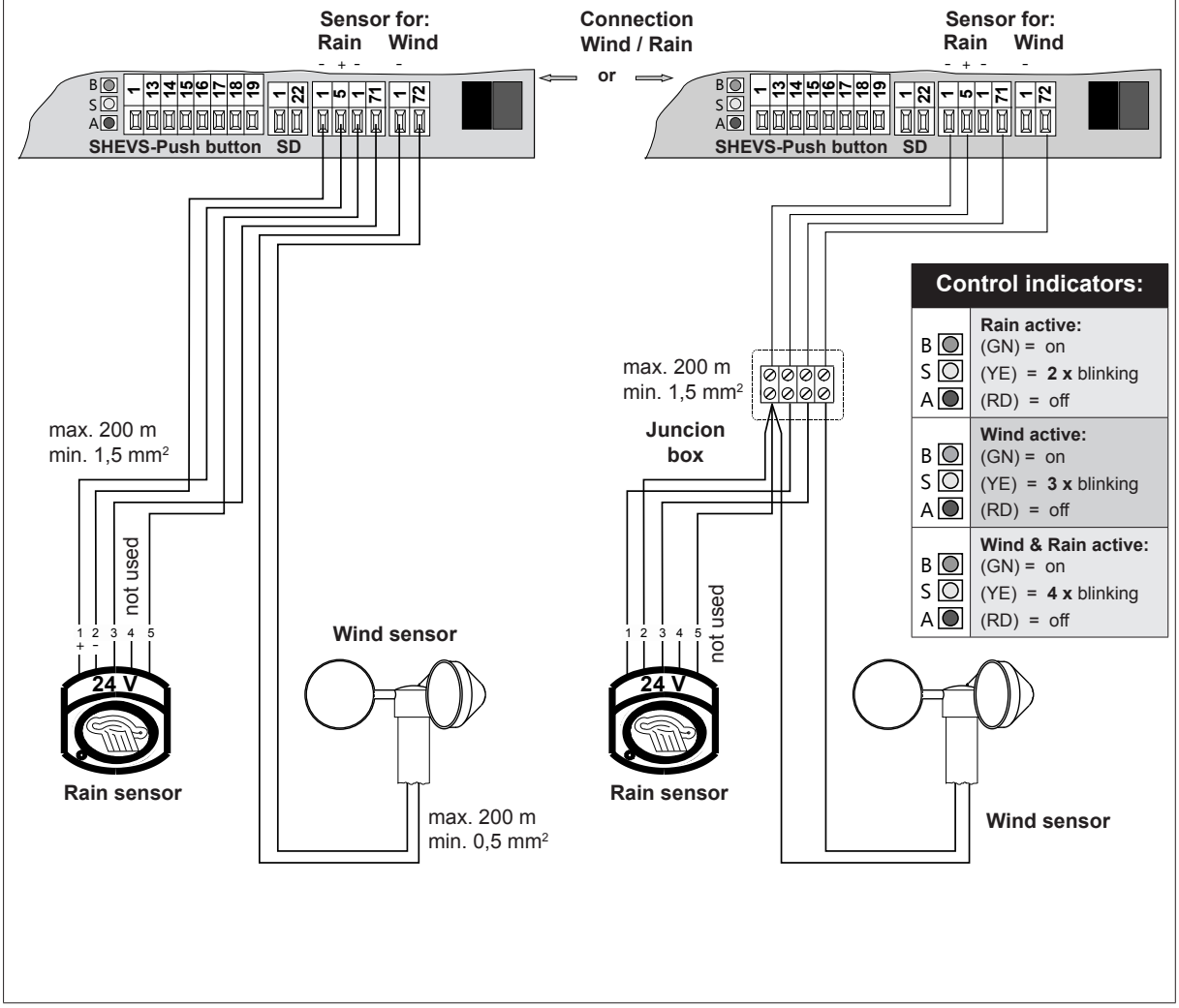
DANGER

Before mounting and positioning the wind/rain sensors carefully read the safety and assembly instructions provided with the products. They are part of the system documentation and must be adhered to and kept accordingly (e.g. for servicing purposes).

CAUTION / WARNING

Only connect when disconnected from the mains power supply! Switch off power supply and secure against reconnection!

Connecting wind and rain sensors



2,5 A | 5 A | 10 A | 20 A

Installations step 5:
Installing Relay Plug-in card and BUS connection

CAUTION / WARNING

Only installation an connect when disconnected from the mains power supply! Switch off power supply and secure against reconnection!

NOTE

The motherboard has **two** slots for using one **Relay Plug-in card** each (part-no. 263 314), so that external processing of messages via „ oating relay contact (1 x change-over switch, 42 V max., 0.5 A) is possible.

Cable installation must be in compliance with applicable legal requirements. The terminal cross section must be min. 0,5 mm² (max. 1,5 mm²). The line length is max. 400 m.

INFORMATION

The function of the relay plug-in cards is factory-set:

1. Relay Plug-in card = alarm activation / NOT-OPEN
2. Relay Plug-in card = common alarm

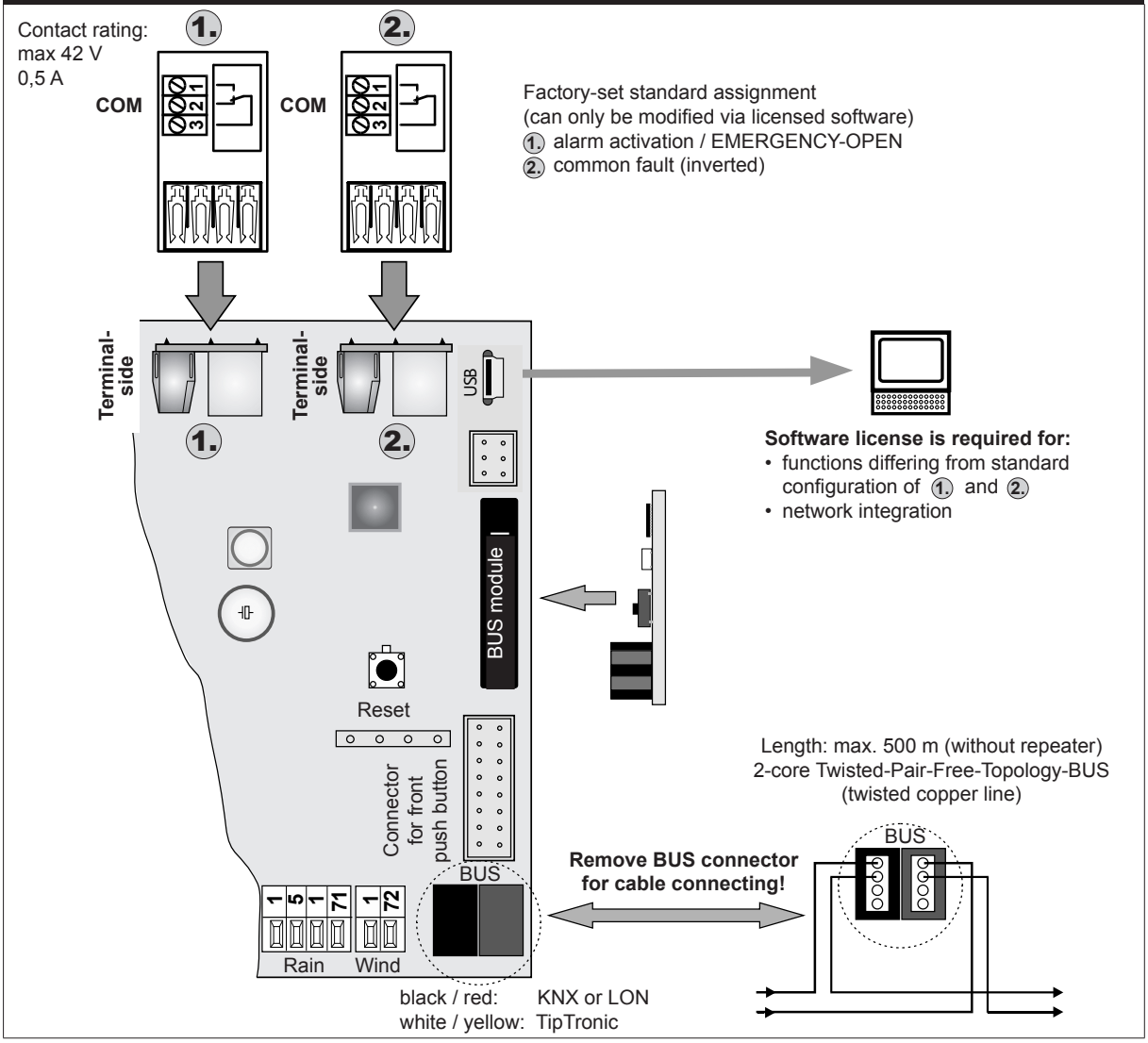
Any modification of these standard settings requires a paid licence for the software.

Installation and exchange of relay plug-in card:

Please proceed as follows:

1. First disconnect Control Unit from mains and battery voltage.
2. Carefully insert plug-in card in correct direction.
3. Once correctly inserted, reconnect supply voltage and check for functionality.

Installing Relay Plug-in card and BUS connection



2,5 A | 5 A | 10 A | 20 A

Installations step 6: Connecting power supply

CAUTION / WARNING

Route line voltage supply via external fuse and switching component. Only connect supply voltage and battery set when disconnected from the mains power supply! Switch off power supply and secure against reconnection!

INFORMATION

The system software includes the option to activate the automatic closing feature in the event of a power failure (standard = „no“).

NOTE

It is essential to ensure correct polarity when connecting the battery set! Incorrectly connected batteries will cause damage to the controller!

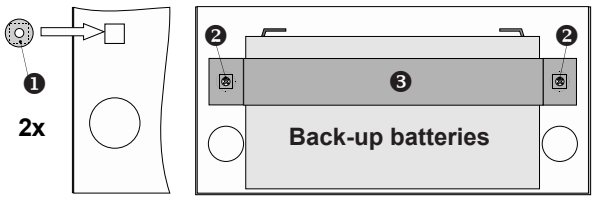
Attachment of the batteries with the optional battery holder set

only for compact housing 2,5 A | 5 A

The battery set may also be fastened to the housing with the optional battery holder set.

Mounting the battery holder set:

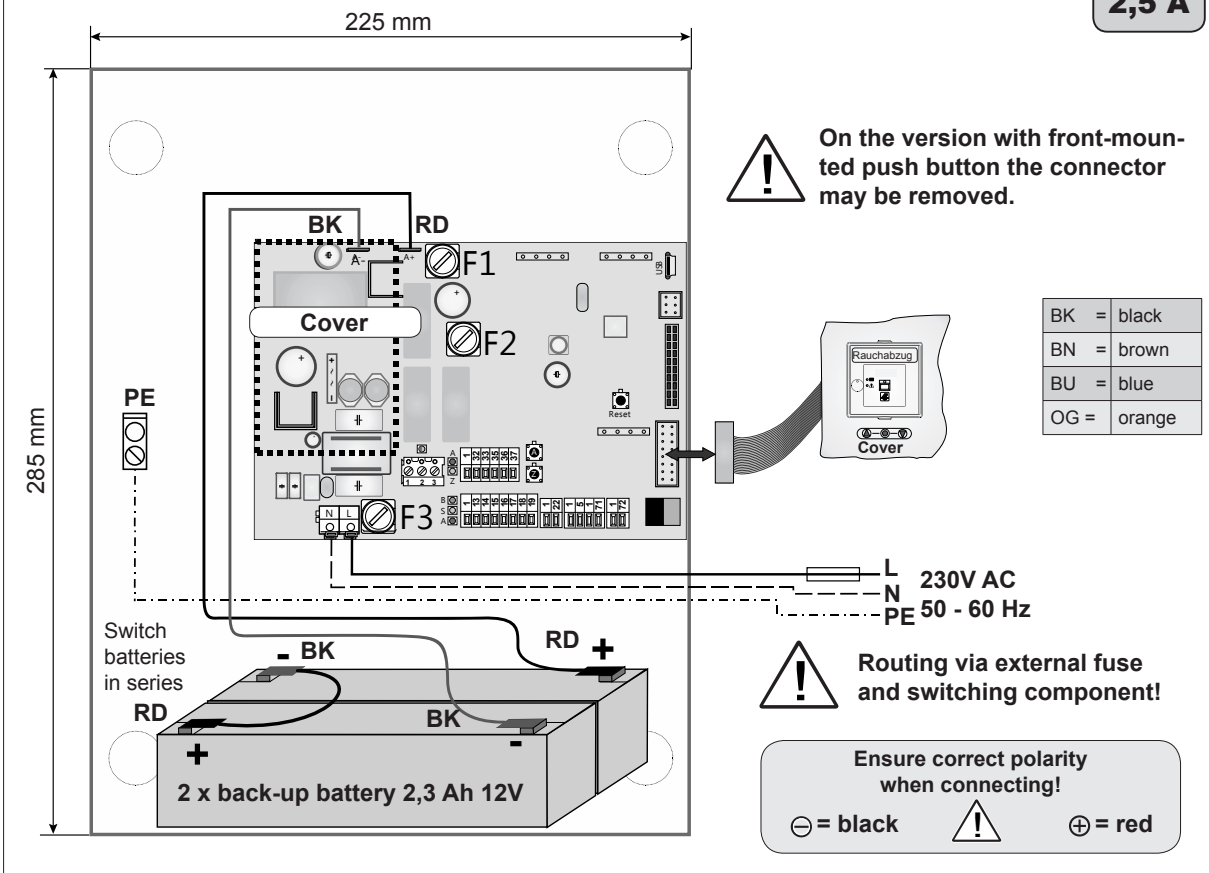
- Press 2 x (right and left) plastic screw-plug ❶ into the squares on the rear side of the housing.
- Fasten bracket ❸ with screw ❷ in screw-plug ❶ on the right and on the left.



Battery holder set		
	Material: Colour:	Steel RAL 9016 (white)
	Suitable for:	CSC1 2,5 A CSC1 5 A

Connecting power supply: version CSC1_2,5A-0101, CSC1_2,5A-0101-T

2,5 A



On the version with front-mounted push button the connector may be removed.

BK	=	black
BN	=	brown
BU	=	blue
OG	=	orange

Routing via external fuse and switching component!

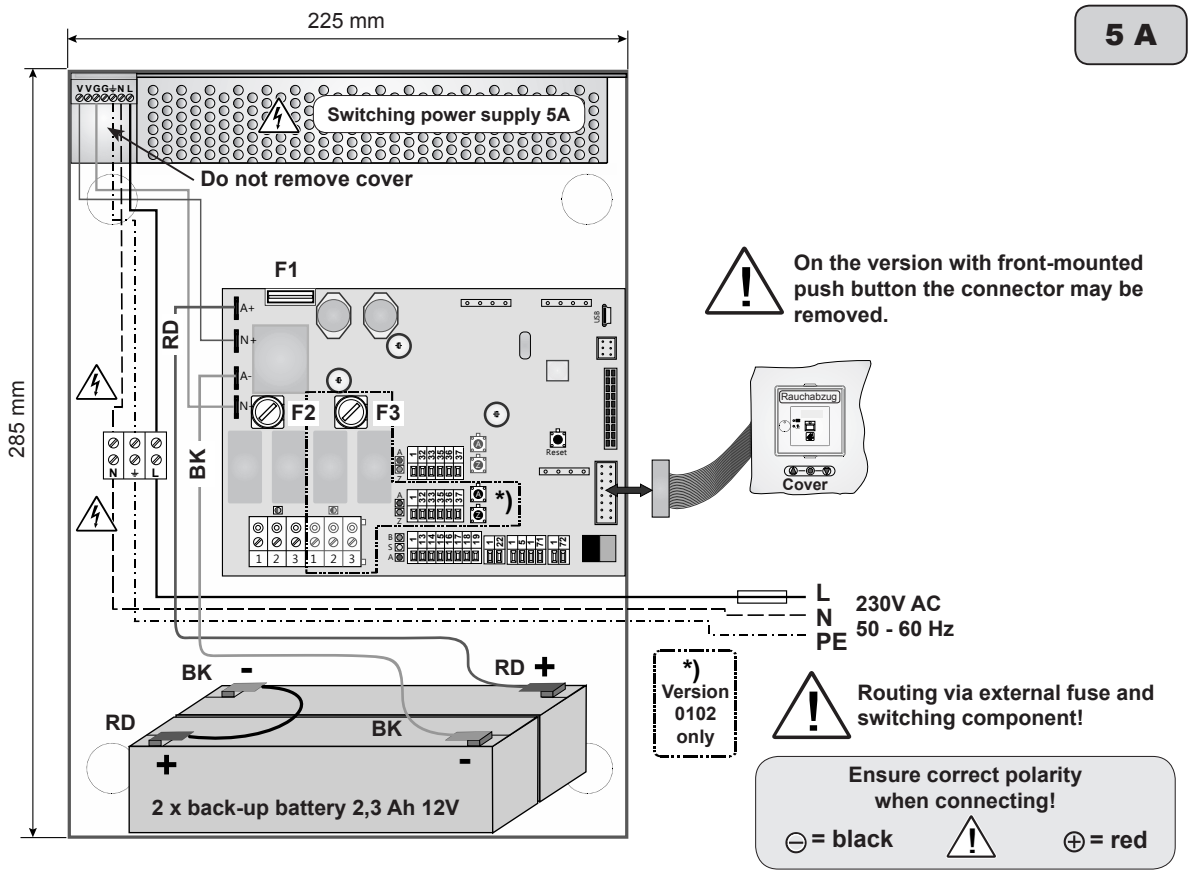
Ensure correct polarity when connecting!

⊖ = black ⊕ = red

2,5 A **5 A** **10 A** **20 A**

Connecting drives and ventilation: Version CSC1_**5A**-0101, CSC1_**5A**-0101-T, CSC1_**10A**-0101

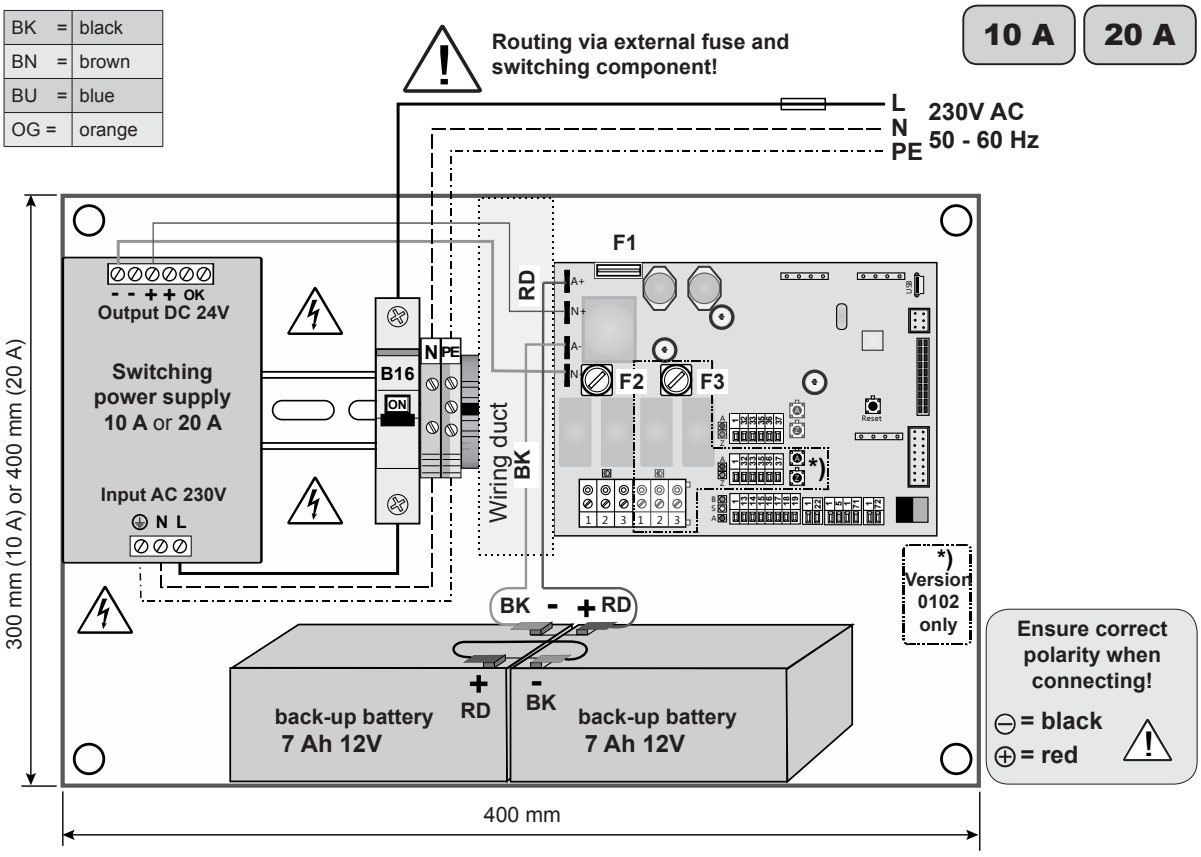
5 A



Connecting drives and ventilation: Version CSC1_**5A**-0102, CSC1_**10A**-0101-T, CSC1_**20A**-0102

10 A **20 A**

BK	=	black
BN	=	brown
BU	=	blue
OG	=	orange



2,5 A | 5 A | 10 A | 20 A

Installations step 7: System configuration using software „Schüco CSC1 Configuration“

Installation

A free version of the system software (**Schüco CSC1 Configuration version VIEW**) downloaded from the homepage

www.schueco.de.

The software can be installed on a computer (notebook or netbook). Please pay regard to the hardware and system requirements (see below). Follow the instructionsdisplayed on the screen to install the program.

USB

INFORMATION

The software offers many features to adapt the system to your requirements. However, you should be aware that not all possible functions can be used without activating the software by purchasing a license.

If you wish to unlock the software, please contact us for a license code. After this code has been entered, you can use the paid functions as well.

INFORMATION

With the installation the „Software clause in respect of the licensing of standard software as part of deliveries“ set out by the ZVEI (Zentralverband Elektrotechnik- und Elektronikindustrie e.V. - Central Association of the German Electrical and Electronics Industry) is deemed to be legally binding.

USB

INFORMATION

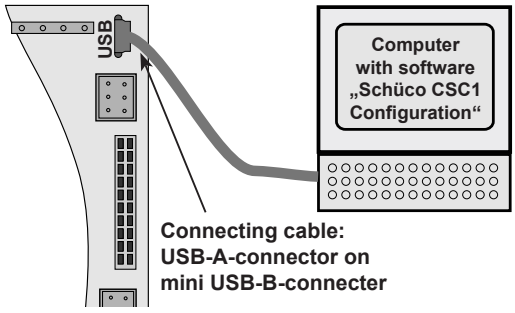
Our software requires NET 2.0 Runtime™ and the Visual C 2008™ Redistribution-Package for operation. These packages will be automatically installed by the set-up program without express installation note if they are not available in the system.

Connecting the computer with the Control Unit

- Switch on the computer and
- connect via USB to the Control Unit (see illustration).
- Then start the computer with the software already installed.

INFORMATION

To avoid data losses the USB cable should not be longer than 5 meters. We advise against using a USB hub. Different to the usual USB connections it does not show up on the Windows toolbar.



System Requirements

The software can be installed on a portable computer that has to meet the following system requirements:

CPU:	1 GHz or faster.
Operating systems:	Microsoft® Windows XP™ with Service Pack 2 or higher Microsoft® Windows Server 2003™ Standard Edition, Enterprise Edition or Datacenter Edition with Service Pack 1 or higher Microsoft® Windows Small Business Server 2003™ with Service Pack 1 or higher Microsoft® Windows Vista™ Microsoft® Windows Server 2008™ Microsoft® Windows 7™
Memory:	512 MB RAM or more, at least 100 MB of free RAM required.
Hard disk:	at least 100 MB free memory space required.
Graphics board:	Super VGA (1,024x768) or higher.
Accessories:	USB connection for connecting computer<>Control Unit, Internet connection for system installation and updates.

Program Handling

The user interface of the program allows fast and intuitive working. A HELP-function provides all necessary information.

USB

INFORMATION

The Compact control unit CSC1 was tested in the default setting (factory setting) by VdS. Changes to the central configuration can only be performed by the approved installer (only with VdS systems).

WARNING

Check for proper operation after each configuration of the Control Unit. We cannot assume liability for faults as a result of an incorrect system configuration and must exclude all warranty claims.

2,5 A | 5 A | 10 A | 20 A

Functions of the license-free software version

The following overview lists the functions that are available for free on **Schüco CSC1 Configuration version VIEW**.
We expressly reserve the right to make additions and alterations.

- Setting ventilation from dead-man mode to latching (OPEN / CLOSE / OPEN and CLOSE)
- Disabling monitoring of the drive line (factory default setting = active)
- Disabling EMERGENCY-OPEN in case of a failure (factory default setting = active)
- Selecting switching threshold of a wind sensor (factory default setting = 5 m/s)
- Setting time-controlled automatic closing (factory default setting = not active)
- Enabling closing in case of power failure (factory default setting = not active)
- Setting acoustic or optical warning signal (requires additional hardware)
- Indicating, saving and printing system status
- Update of firmware

Functions of the software version subject to license

The following overview lists the functions that are only available after paid activation of the software. We expressly reserve the right to make additions and alterations.

- Setting service/maintenance date (setting protected by password)
- Setting switch-on delay WIND (factory default setting 20 s)
- Setting switch-off delay WIND (factory default setting 20 min)
- Restoring the switching state before wind/rain control
- Disabling drive retriggering function at SHEV EMERGENCY-OPEN
- Deactivating the line for breakglass units (SHEVS-Push button)
- Deactivating the line for smoke detectors (or triggering of the external fire alarm system)
- Fire alarm system function for smoke detector line
- Smoke detector release overrides EMERGENCY-CLOSE
- Drive line(s) cut-off time (factory default setting 300 s)
- Drive run direction in case of alarm / EMERGENCY-OPEN (factory default setting = open)
- EMERGENCY-OPEN button in deadman mode
- Line-related EMERGENCY-OPEN in case of drive line failure (only reasonable with version 0102)
- Setting / selecting functions of Relay Plug-in card
- Integration into digital networks (LON, CAN or ZWAVE) including network options

Installations step 8:
Enabling operation / completing installation

Before the installer is allowed to enable the operation of the Control Unit, the complete performance range of the system must be checked with utmost care. The chapter „**Troublshooting and repair**“ provides support for the localisation of possible faults and malfunctions.
On the last page you find an overview of all external connections where the current assignments can be entered.
Modifications of the system using the system software should take place after the complete installation of the Control Unit and all components being connected. When required, the system configuration and status can be saved or printed using the system software. In the case of faults or malfunctions of system components it might also be necessary to thoroughly check the system configuration (computer to be connected using system software).

INFORMATION
For safety reasons the Control Unit is supplied with „deadman“ pre-setting for ventilation. You require the software for switching over to „latching“.

WARNING
Before changing the operating mode check and pay attention to danger zones at the window!

It is absolutely necessary to ensure that all safety-relevant requirements for the „latching“ mode are guaranteed according to the information provided by the manufacturers of the connected opening components.
SHEV systems require a logbook, in which all important master data have to be entered prior to operation enable and all operational events during the period in operation. The logbook is part of the system documents and must be stored and available to authorized staff at all times.

WARNING
Follow the instructions in the chapter „**Safety instructions**“.

We advise to perform an insulation measurement of the cable network before enabling operation of the plant and to keep a written record of this test.

CAUTION

Depending on the storage period the back-up batteries require some time to be fully charged. Therefore, bridging time (see chapter „**Data sheet**“) for the power failure might not be ensured after connecting the back-up batteries and the back-up batteries first need some charging time in mains operation to reach the maximum charge status (min. 8 hours).

WARNING

The Control Unit must not be enabled for operation unless **all** system components work properly. This also applies to system components that do not come under our producer responsibility or whose installation had not been commissioned but are still components of the SHEV system. Upon completion of the installation, all functions of the Control Unit must be checked for correct functionality with utmost care. Even if there is no fault indication this does not mean that all components function faultlessly.

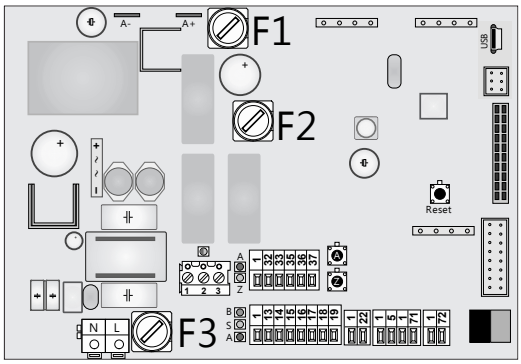
Provided that the factory default configuration has been changed using the system software, all alterations have to be taken into account in the operating manual. It might be required to prepare an operating manual for non-specialist users that is easy to follow and well understandable.

WARNING

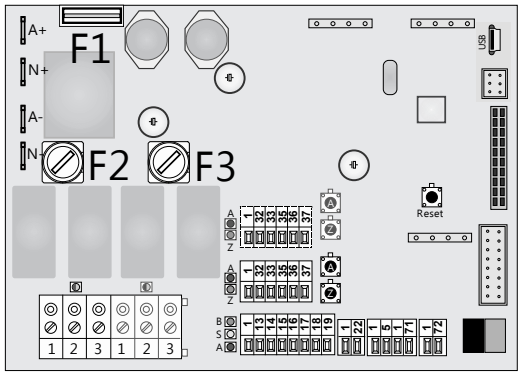
In case of fire the system saves lives. Therefore immediately remedy or have any fault or malfunction remedied by specialists!

Fuses

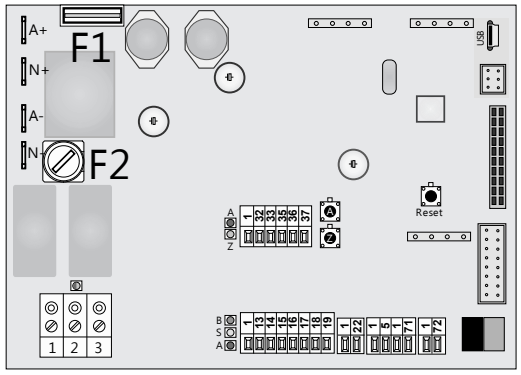
Control Unit version			
CSC1_ 2,5A-0101	F1 3,15 AT (batteries)	F2 3,15 AT (drives)	F3 3,15 AT (primär)



Control Unit version			
CSC1_ 5A-0102	F1 5 AT (batteries)	F2 6,3 AT (drive 1)	F3 6,3 AT (drive 2)
CSC1_ 10A-0102	F1 10 AT (batteries)	F2 10 AT (drive 1)	F3 10 AT (drive 2)
CSC1_ 20A-0102	F1 25 AT (batteries)	F2 10 AT (drive 1)	F3 10 AT (drive 2)



Control Unit version			
CSC1_ 5A-0101	F1 5 AT (batteries)	F2 6,3 AT (drives)	
CSC1_ 10A-0101	F1 10 AT (batteries)	F2 10 AT (drives)	



Troublshooting and repair

All functions and system components that are important for the SHEVS operation are constantly monitored for faults. A fault indication signals the type of fault and, respectively, possible errors when connecting system components (such as back-up batteries, detectors, drives) during commissioning of the Control Unit.

CAUTION

The configuration of the Control Unit using the software has a significant impact on the functionality of the individual system components. Therefore, it might be necessary to connect a computer provided with the system software for precise testing.

The overview following details some of the possible faults and problem cases and their causes. „Indicator **B**“ means the green operating indicator which does not light up in case of a fault.
The yellow “Indicator **S**“ signals the type of fault. You find a list of all indicators in chapter „**Indicator and control elements**“.

Fault / Malfunction	Possible cause and their solution
No indicator lights up	• no power supply available or fuse F1 / F2 defective
Indicator „S“ flashes	• check power supply connection
Indicator „S“ blinks quickly	• back-up batteries are not correctly connected or are not charged
Indicator „S“ has steady light	• open circuit or short circuit in manual fire alarm (SHEVS-Push button) • faulty power monitoring
Indicator „S“ blinks slowly	• open circuit or short circuit in smoke detector line • faulty power monitoring
Indicator „S“ blinks 2 times	• service required (indicator „B“ (green) lights up!)
Indicator „S“ blinks 4 times	• open circuit or short circuit in drive line 1 • faulty power monitoring
Anzeige „S“ blinks 5 times	• only drive line 2, cause of fault analogue to drive line 1
Indicator „S“ blinks 6 times	• Die EMERGENCY-CLOSE button (SHEVS-Push button) does not work properly and / or is not recognized
Drives do not respond	• Check fuse F2 / F3 • check drive connections based on assembly instructions • or, if the indicators (red / green) do not respond: check ventilation control
Drives run incorrectly	• The indicators for the drive run direction (red / green) must comply with the actual running direction. Otherwise swap connections on terminal 1 and 2 • check drive connections based on their installation instructions
Signal Relay Plug-in card is not recognized	• check Relay Plug-in card for correct installationd and connection

INFORMATION

The system software offers the possibility to check the system behaviour in detail. Even when contacting our support team on the phone it is helpful to have available a computer with the system software installed.

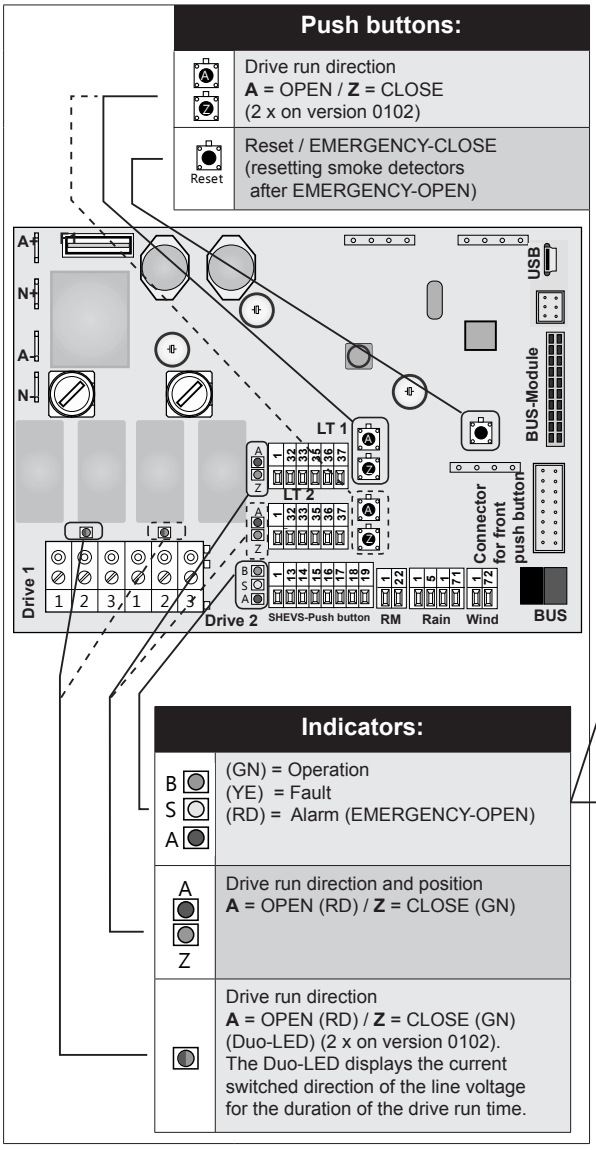
Indicators and control elements
Position in the Control Unit

INFORMATION

The indicators and control elements (switches) are in the same position on all CSC1 versions. Only the number of ventilation lines varies.
The versions CSC1_5A-0102, CSC1_10A-0102, CSC1_20A-0102 have two sets of indicators and control elements for the drive control (LT 1 and LT 2).

Meaning of the Displays (overview)

Basically, the green indicator „**B**“ signals that the Control Unit works properly. A yellow indicator „**S**“ lighting up signals a fault to be eliminated immediately.
Since the type of fault signal into the breakglass units may differ from the fault indicator „**S**“ in the Control Unit, always pay regard to the indicators in the Control Unit for exact troubleshooting.



Drive run direction

Drives	Drives
OPEN ● RD *)	CLOSE ● GN *)
1 2 3 — A ● on (RD) ○ off — Z	1 2 3 — A ○ off ● on (GN) — Z

*) The Duo-LED only lights up for the duration of the drive run time.

Alarm activation / EMERGENCY-OPEN

Mains operation	Battery operation (power failure)
EMERGENCY-OPEN	EMERGENCY-OPEN
B ● on (GN)	B ● off
S ○ off (YE)	S ○ flashes (YE)
A ● on (RD)	A ● on (RD)

Faults

Indicator	Meaning	Note
B ● off S ○ flashes	Power failure / battery operation	
B ● off S ○ fast blinking	Battery fault	
B ● off S ○ on	Breakglass unit fault (SHEVS-Push button)	
B ● off S ○ slow blinking	Smoke detector fault	
B ● off S ○ 2 x blinking	Service required	Licence software required for setting
B ● off S ○ 4 x blinking	Fault drive line 1	
B ● off S ○ 5 x blinking	Fault drive line 2	only on Control Unit version 0102
B ● off S ○ 6 x blinking	Fault EMERGEN-CY-CLOSE button	Persistent contact
B ● on S ○ A ● slow blinking	System was closed via breakglass unit, smoke detectors are still activated.	

Notes

B ● S ○ A ●	GN = green YE = yellow RD = red
- - - - - - - -	only available on Control Unit version CSC1_5A-0102 CSC1_10A-0102 CSC1_20A-0102

LED display for breakglass unit (SHEVS-Push button)	
Display	**State**
B **on** S **off** A **off**	Normal operation
B **on** S **off** A **on**	EMERGENCY-OPEN / alarm (mains operation)
B **off** S **flashes** A **on**	EMERGENCY-OPEN / alarm (back-up batteries mode)
B **off** S **flashes** A **off**	power failure (highest priority)
B **off** S **on** A **off ***	Fault to breakglass unit lines (SHEVS-Push button) * depending on the configuration „EMERGENCY-OPEN Troubleshooting“ OPEN or CLOSE
B **off** S **on** A **off ***	Fault to smoke detector lines * depending on the configuration „EMERGENCY-OPEN Troubleshooting“ OPEN or CLOSE
B **off** S **blinks slowly** A **off ***	Fault in motor-line 1 * depending on the configuration „EMERGENCY-OPEN Troubleshooting“ OPEN or CLOSE
B **off** S **blinks slowly** A **off ***	Fault in motor-line 2 * depending on the configuration „EMERGENCY-OPEN Troubleshooting“ OPEN or CLOSE
B **off** S **blinks slowly** A **off**	Fault at EMERGENCY-CLOSE button
B **off** S **blinks quickly** A **off**	Back-up batteries fault (lowest priority)
B **on** S **2x blinking** A **off**	Maintenance expired
B **on** S **off** A **off**	Rain active
B **on** S **off** A **out**	Wind active
B **on** S **off** A **off**	Wind and rain active

B **Operation** S **Fault** A **EMERGENCY-OPEN** LED display	The functionalities of the external LED outputs are configurable.

Maintenance and Modification

To ensure continuous function and safety of the complete system periodic maintenance by a specialist company is required at least once a year (as mandated by law for smoke and heat exhaust systems). Operational readiness must be checked regularly, at least once a month.

ATTENTION / WARNING

After opening of the system housing voltage carrying parts are exposed! Each time, before performing maintenance work or making a modification of the structure (e.g. replacement of the window drive), the mains voltage and – as far as available – the batteries must be completely discunnected and secured against unintentional reactivation (lock in separation mode).

The information provided in these instructions for the maintenance must be observed. Malfunctions must be remedied immediately. Only spare parts made by the manufacturer may be used. Between maintenance intervals the operator shall carry out or order a visual inspection at least once and document it in writing in the log book. We recommend a maintenance contract with a specialist company authorized by the manufacturer.

What has to be serviced?

- Check all **connections** (also the ones in the Control Unit) for tightness and for possible damage.
- Check all **fuse links**.
- Check charge level and installation date of back-up **batteries** and exchange the batteries, if necessary (batteries must be exchanged 4 years after installation).
  Note down the exchange date on the battery.
  Dispose of removed batteries in conformity with legal requirements.
- Check **drive control** for proper function. Also check drive run directions. If the actuation is correct but the drive is still not working properly, pay regard to the assembly and maintenance instructions of the drive manufacturer.
- Check all **breakglass units** (SHEVS-Push button) and ventilation buttons for functionality (do the drives move in the direction indicated on the buttons?)
- Check all **smoke detectors** according to manufacturer's instructions using test gas.
- Remove dirty or faulty **detectors** and send them to the manufacturer for repair or cleaning.
- When connecting **wind and rain sensors** check for proper functionality of the sensors, readjust the wind response threshold, if necessary.
- Check the **configuration** with our system software and test if the system works with the stored configuration.

The service instructions for the connected components are decisive for their maintenance.

Important maintenance information

- While working in the Control Unit the workplace must be secured against unauthorized access.
- The specialists performing the maintenance work are solely responsible for the maintenance.
- For smoke and heat exhaust systems a log book must be kept in which the maintenance work must be documented. Special attention must be paid to operating events (e.g. repeatedly occurring malfunctions) which may be recorded.
- These installation and operating instructions are part of the maintenance documents. The control device may be maintained only by considering the information provided therein. This affects also system supplements and the exchange of components. A separate maintenance protocol should be prepared and filed with the maintenance documents.
- Only original parts may be used. Otherwise the warranty obligation and product liability of the manufacturer shall no longer apply.
- For the maintenance of individual system components the installation and maintenance instructions of the manufacturer of these components shall be binding. If they are not available, they must be requested from the manufacturer. In case special maintenance instructions are prescribed (e.g. for natural smoke and heat exhaust ventilators pursuant to EN 12101-2), they must also be on hand.

INFORMATION

The system configuration must be inspected and recorded each time maintenance work is performed. The next maintenance date can only be scheduled with the fee-based licensed software and protected against unauthorized access by using a password. The maintenance date is then signaled by the fault indicator "**S**" by flashing twice.

Storage and Disposal

The Control Unit shall be stored only in locations protected from moisture, severe contamination and temperature fluctuations.
The packaging shall not be removed until the control system is to be installed. Disconnect the batteries and store them separately after the control device has already been in operation.

ATTENTION / WARNING

It is imperative that the following is observed for the storage of the batteries:
Keep the storage time of lead-acid batteries short, because the batteries discharge as time passes. At the latest after seven months in storage batteries must be recharged. Use either a suitable battery charger or connect the batteries to an CSC Control Unit and supply same with mains voltage. In both cases the charging time requires a minimum of 8 hours (depending on the discharge).

In case the Control Unit is permanently decommissioned the statutory provisions for the destruction, recycling and disposal shall be observed. The control device contains plastic, metal, electrical components and batteries.
Replaced batteries contain highly toxic pollutants and may therefore only be disposed of at collection points prescribed by the legislator.

CAUTION / WARNING

Before dismantling the Control Unit separate same completely from the mains!

Service und Support

High customer satisfaction is very important to Schüco. Should you require further information or have particular problems which he can not be treated in detail in documentation that, you can request the necessary information from the Technical Support Building automation.

Your contacts will have the following service number:
Hotline - MB systems

Please contact your local branch each.

Technical Support Building automation
Mo - Th: 8:00 - 16:30 Uhr
Fr: 8:00 - 15:00 Uhr

Tel.: +49 (0) 521 - 783 665

E-Mail: Support_Automation@schueco.com

Liability

We reserve the right to change or discontinue products at any time without prior notice. Illustrations are subject to change. Although we take every care to ensure accuracy, we cannot accept liability for the content of this document.

Certificate

Zertifikat Certificate

Anerkennung
von Bauteilen und Systemen

Approval
of Components and Systems

VdS

Inhaber der Anerkennung
Holder of the Approval
SCHÜCO International KG
Karolinenstraße 1 - 15
33609 Bielefeld

Anerkennungs-Nr. Approval No.	Anzahl der Seiten No. of pages	gültig vom (TT.MM.JJJJ) valid from (dd.mm.yyyy)	gültig bis (TT.MM.JJJJ) valid until (dd.mm.yyyy)
G 516003	4	08.12.2016	17.03.2018

Gegenstand der Anerkennung
Subject of the Approval
Elektrische Steuereinrichtung / Control Panel
CSC1

Verwendung
Use
in Entrauchungsanlagen in Treppenräumen
in Rauch- und Wärmeabzugsanlagen

in exhaust ventilation systems in stairways
in smoke and heat exhaust ventilation systems

Anerkennungsgrundlagen
Basis of the Approval
VdS 2344:2014-07
VdS 2581:2002-09
VdS 2593:2002-09

Köln, den 08.12.2016

Dr. Reinermann
Geschäftsführer
Managing Director

i. V. Hesels
Leiter der Zertifizierungsstelle
Head of Certification Body

DAkkS
Deutsche Akkreditierungsstelle
D-ZE-11149-01-01

Die Anerkennung
umfasst nur das angegebene Bauteil/System in der zur Prüfung eingereichten Ausführung
- mit den Bestandteilen nach Anlage 1,
- dokumentiert in den technischen Unterlagen nach Anlage 2,
- zur Verwendung in den angegebenen Einrichtungen der Brandschutz- und Sicherungstechnik.

Bei der Anwendung des Gegenstandes der Anerkennung sind die Hinweise nach Anlage 3 zu beachten.

Das Zertifikat darf nur unverändert und mit sämtlichen Anlagen vervielfältigt werden. Alle Änderungen der Voraussetzungen für die Anerkennung sind der VdS-Zertifizierungsstelle – mitsamt den erforderlichen Unterlagen - unverzüglich zu übermitteln.

This Approval
is valid only for the specified component/system as submitted for testing
- together with the parts listed in enclosure 1
- documented in the technical documents according to enclosure 2
- for the use in the specified fire protection and security installations.

When using the subject of the approval the notes of enclosure 3 shall be observed.
This certificate may only be reproduced in its present form without any modifications including all enclosures. All changes of the underlying conditions of this approval shall be reported at once to the VdS certification body including the required documentation.

VdS Schadenverhütung GmbH
Zertifizierungsstelle
Amsterdamer Str. 174
D-50735 Köln

Ein Unternehmen des Gesamtverbandes der Deutschen Versicherungswirtschaft e.V. (GDV), durch die DAkkS akkreditiert als Zertifizierungsstelle für Produkte in den Bereichen Brandschutz und Sicherungstechnik

A company of the German Insurance Association (GDV) accredited by DAkkS as certification body for fire protection and security products

Overview on all external connections to be completed

Pay regard to the individual connection diagrams in this manual for the position of the respective terminals as detailed for the different Control Unit versions.

			Terminals	Remark
Drive 1		**CLOSE +** / **OPEN –**	1	
		– / **+**	2	
		Line monitoring	3	
Drive 2 only version 0102		**CLOSE +** / **OPEN –**	1	
		– / **+**	2	
		Line monitoring	3	
Ventilation 1	**Buttons**	**COM**	1	
		OPEN	32	
		CLOSE	33	
	Indicators	**COM**	35	
		OPEN	36	
		CLOSE	37	
Ventilation 2 only version 0102	**Buttons**	**COM**	1	
		OPEN	32	
		CLOSE	33	
	Indicators	**COM**	35	
		OPEN	36	
		CLOSE	37	
Breakglass unit (SHEVS-Push button)	**Buttons**	**COM**	1	
		EMERGENCY-OPEN	13	
		CLOSE	14	
	Indicators	**COM –**	15	
		EMERGENCY-OPEN +	16	
		+	17	
		Operation +	18	
		Fault +	19	
Smoke detectors or external fire alarm system			1	
		+	22	
Rain sensor		**–**	1	
		+	5	
		–	1	
			71	
Wind sensor		**–**	1	
			72	
1. Relay Plug-in card (optional)			1	
			2	
		COM	3	
2. Relay Plug-in card (optional)			1	
			2	
		COM	3	

en Übersetzung der Originalbetriebsanleitung

Schüco International KG
Karolinenstraße 1-15
33609 Bielefeld
Tel. +49 521 783-0
Fax +49 521 783-451
www.schueco.de

Doc.-No. 10000446166/01.2017/Printed in Germany

Doc.-No. 10000446166_02_EN