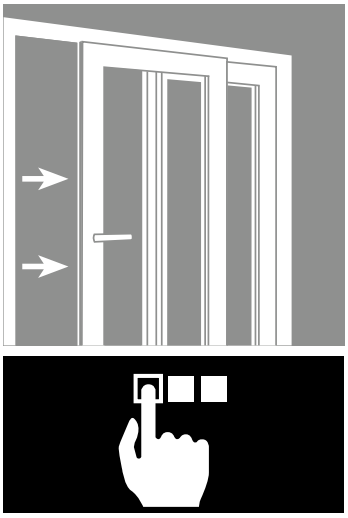


Doc. No. 10000483756_05_EN / 08.205

Aluminium systems

Schüco ASE 60/80 TipTronic lift-and-slide system

Further documentation:

Docu Center
ASE 60/80 TipTronic

or

http://dc.schueco.com/ASE6080_TipTronic

en

Commissioning instructions for qualified personnel

en Commissioning instructions for qualified personnel

Contents

1. Notes on this document

1.1 Target groups and qualifications

This document is intended for qualified personnel, such as trained fitters and electricians. Before installing and commissioning, read through this document thoroughly and adhere to the specified sequence of the instructions. Schüco International KG shall not be liable for any damage which arises from a failure to adhere to these instructions.

Target group definitions for the purpose of this document

Qualified personnel are people who know how to assemble, install, commission, test and operate the product and who have the relevant qualifications, e.g. who have been trained and instructed in accordance with safety regulations on the maintenance and use of appropriate safety equipment and who have received training in first aid.

Experts are people whose training and experience means that they have sufficient knowledge of power-operated windows, doors and gates and the corresponding electrical installations. They are familiar with the relevant accident prevention regulations, government health & safety regulations, guidelines and generally recognised technical regulations to the extent that they are able to judge the occupational safety of power-operated windows, doors and gates and the corresponding electrical installations.

1.2 Abbreviations used

AM	Automation Manager	HSG	Hauptsteuergerät
ASE	Aluminum Sliding Element	MFS	Mehr-Flügel-System
BSC	Building Skin Control	PP	Power pack
DC	Direct current	SELV	Safety Extra Low Voltage
ETA	Engineering Tool Automation	TS	Tasterschnittstelle
FSG	Flügelsteuergerät	V-Modul	Verschlüsselungsmodul

1.3 Symbols used

○	LED is off
●	LED lights up continuously
✸	LED flashes

Our instructions are continuously optimised and updated. Before use, check whether an updated version of the product documentation exists. You can find the latest version in Docu Center at: http://docucenter.schueco.com.

Schüco Docu Center

2. Safety

2.1 About the safety instructions

 KEY WORD

Type / source / consequence of the danger

Pictograms and key words advise of the type of danger and the level of danger:

 General personal injury  Personal injury from electrocution  Damage to property

DANGER		Imminent danger resulting in death or severe injuries.
WARNING		Potential imminent danger which may lead to death or severe injuries.
CAUTION		Potentially dangerous situation which may lead to minor injuries.
NOTE		Imminent danger of damage to property which may lead to damage to or destruction of the product or environment.
INFORMATION		Information Information, tips and advice

2.2 Laws, regulations and technical rules

During installation and operation, observe the international, national and local safety regulations, laws and guidelines.

Generally accepted technical regulations must be followed. These are usually formulated by recognised bodies in the form of standards, guidelines, specifications and regulations.

2.3 Proper use

- Schüco ASE 60/80 TipTronic sliding systems are electrically driven closing systems that are intended for private and commercial environments. They are designed for fixed and horizontal installation
- Schüco ASE 60/80 TipTronic sliding systems are only suitable for use in dry rooms. Relative humidity 5 – 93 %, condensing
- Operating temperature range: -20°C to +50°C

Only power packs which supply an approved protective extra low voltage in accordance with EN 60335-1 are approved for use in a domestic environment and for similar applications.

Ensure that a Schüco ASE 60/80 TipTronic risk analysis is undertaken during planning (see order manual 1-5C). This determines whether the installation of optional components for protection is required.

Proper use also includes adhering to the installation and operating instructions. Any alternative use or a use beyond this remit is not in accordance with its purpose.

Incorrect use or unauthorised modification of the product may result in death or serious injury, or damage to the product and other material assets. Only original replacement parts may be used. The manufacturer / supplier shall not be liable for any damage resulting from infringement. The user alone bears the risk.

2.4 General safety instructions

Follow the safety instructions in this document so as not to endanger your own life or that of others and to ensure error-free operation.

CAUTION

Danger of injury from electrocution and crushing.

- ► All work on the product must be carried out by qualified personnel.
- ► Before any work is carried out on the product, all power packs must be disconnected and protected against anyone inadvertently switching them back on.
- ► Following each installation or alteration to the electrical system, carry out a test run to test all functions.

NOTE

Damage to property

- ► Do not replace control units that are live.
- ► Do not unplug live cable connectors.

In order to estimate the potential danger that could arise from a power-operated unit, a risk analysis must be undertaken at the planning stage. As the manufacturer, you are obliged to retain the risk analysis for at least 10 years.

3. Contents of delivery, transportation and storage

3.1 Contents of delivery

Open all the packing units. Check that no items are missing and familiarise yourself with the components.

Art. No.	Description		☐
263 680	Main control unit		☐
263 681	Vent control unit 1		☐
263 682	Vent control unit 2		☐
263 683	Operating unit white / silver		☐
263 684	Operating unit black / silver		☐
263 685	4-core cable	2 Metre(s)	☐
263 686		4 Metre(s)	☐
263 687		6 Metre(s)	☐
263 392	2-point adapter		☐
263 689	V module adapter		☐
263 690	Feed-in adapter		☐
263 691	4-core input cable	6 Metre(s)	☐
263 692		12 Metre(s)	☐
263 126	6-core input cable	6 Metre(s)	
263 127		12 Metre(s)	
263 693	Operating unit cable	4 Metre(s)	☐
263 694		6 Metre(s)	☐
263 695		8 Metre(s)	☐
263 696	Installation switch		☐
263 699	Protective cap		☐
263 701	Sensor strip kit	Kit 1	☐
263 702		Kit 2	☐
263 703		Kit 3	☐
291 650	Sliding drive S24		☐
275 048	Current collector	S1	☐
275 049		S2	☐

275 050	End power feed ASE 60	☐
275 052	End power feed ASE 80. HI	☐
291 652	Lifting drive H1	☐
291 654	Lifting drive H2	☐
291 682	Lifting drive H3V	☐
291 684	Lifting drive H4V	☐
263 409	Resistor 270 ohm	☐
263 551	Safety sensor OI, TÜV-approved with 3 m connecting cable	
263 284	Ceiling installation kit OI	
263 679	Safety sensor for ceiling	
242 977	Remote control for safety sensor	
263 351	Sensor junction box	
262 717	Control cable J-Y(ST)Y 2 x 2 x 0.8 mm	
263 175	Service interface	☐
263 211	Service adapter kit	☐
263 200	Universal power pack	☐
262 487	Power pack AW4 (surface mounted)	☐
262 868	Top hat rail power pack AW2	☐
263 389	Automation Engineering Tool Download available at www.schueco.de/software/ETA	☐
263 507	Classification plate	

3.2 Transportation and storage

NOTE

Damage to property

- ► Do not throw or drop.
- ► Protect against impact.
- ► Wind up any hanging cables and fix so that the cables cannot become tangled or detached.
- ► Store only in dry interior rooms.
- ► Protect against dirt and moisture (e.g. with protective film).
- ► Maintain the transport and storage temperatures.

3.4 Prerequisites / preparation

Ensure that all components are connected in accordance with the K drawings from the fabrication manual.

No.	Description
K1017362	Building Skin Control - Overview diagrams - Sliding system platform
K1017363	Electrical components - Circuit and cabling diagram
K1017364	Electrical components - Wiring - Overview
K1017365	Electrical components - Electric cable installation - Basic version
K1020198	Electrical components - Electric cable installation
K1020199	Electrical components - Safety sensor - Installation / positioning
K1020231	Electrical components - Overview - Selecting power packs and adapter

4. Product description

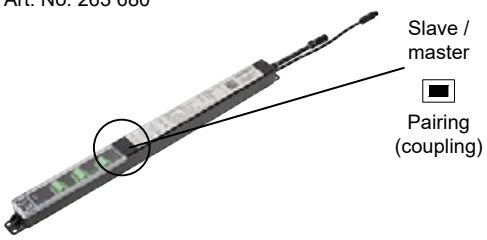
The Schüco ASE 60/80 TipTronic sliding/lift-and-slide system comprises a continuous outer frame integrated in the building in which a maximum of 6 movable vents are located. These moving vents are mounted on roller carriages and can be moved horizontally on up to 3 parallel tracks.

Each vent frame of a moving vent contains a sliding drive (for moving the vent), one or two lifting drives (for raising / lowering and locking the vent), an operating unit and components for protection.

The ASE 60/80 TipTronic control system comprises a superordinate main control unit (MCU) in the outer frame, a vent control unit (VCU) for each moving vent and a sequence control unit.

No MCU is required in the basic version with only one moving vent. Please note that no external components (BSC, safety sensor, wall button) can be connected when using this version.

Main control unit
Art. No. 263 680



X12		
-	+	L

Master / slave

X14			
+	-	S	T

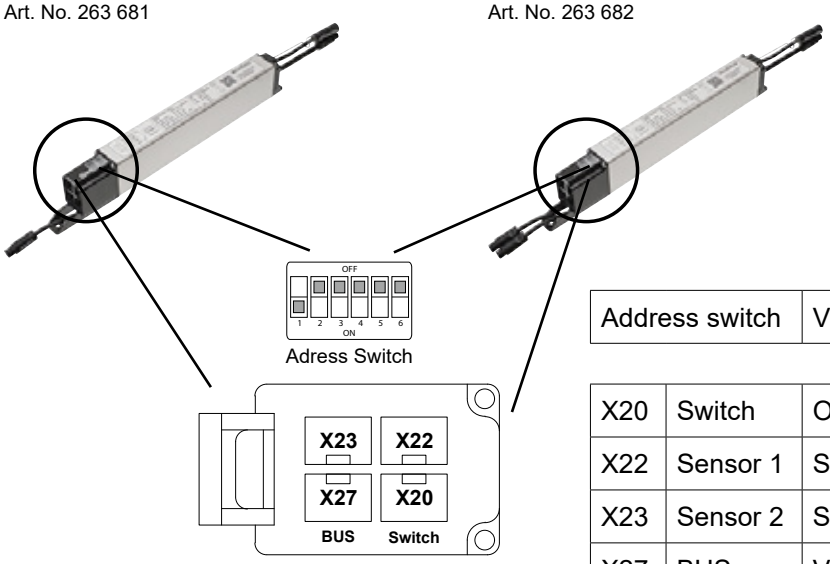
Sensor 2

X13			
+	-	S	T

Sensor 1

Vent control unit 1
Art. No. 263 681

Vent control unit 2
Art. No. 263 682



Address switch	VCU DIP switch

X20	Switch	Operating unit
X22	Sensor 1	Sensor strip 1
X23	Sensor 2	Sensor strip 2
X27	BUS	V module adapter

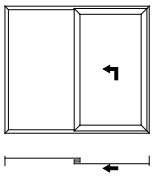
	LED	Meaning
Main control unit	Green LED lights up	Voltage is applied
	Green LED flashes, 2 Hz	Communication via the vent bus
	Red LED lights up	Main control unit event is pending
	Red LED flashes, 2 Hz	Enter VCU address twice
Vent control unit	Green LED lights up	Voltage is applied
	Green LED flashes, 2 Hz	Communication via the vent bus
	Red LED lights up	Vent control unit event is pending
	Red LED flashes, 2 Hz	Enter VCU address twice

4.1 Overview of types

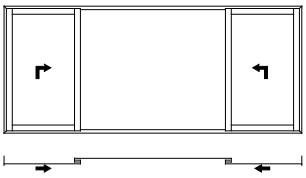
In addition to the catalogue types shown here, free vent combinations can be set via AET.

Unit type with single track

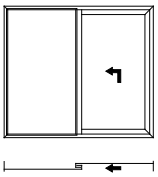
Type 1A.o



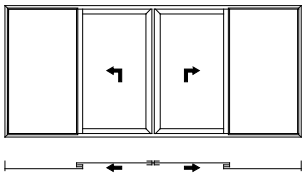
Type 1B.o



Type 1A.i

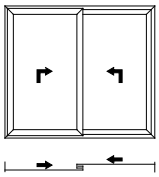


Type 1D.i

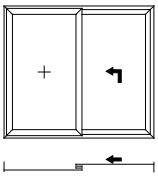


Unit type with double track

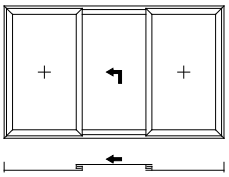
Type 2A



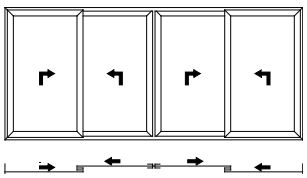
Type 2A/1.i



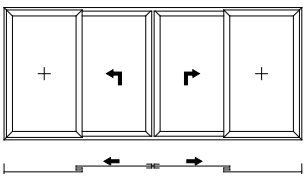
Type 2C.i



Type 2D.i

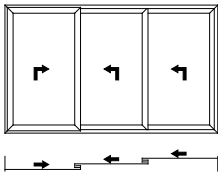


Type 2D/1.i

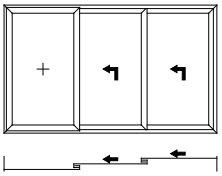


Unit type with triple track

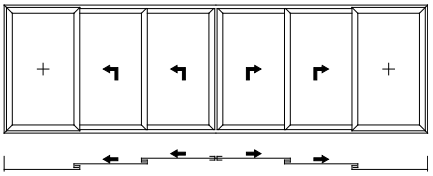
Type 3E



Type 3E/1



Type 3F



4.2 Technical data

System	ASE 60/80 TipTronic	
Control unit	VCU 1 / VCU 2	HSG
Rated voltage	DC 24 V (-10 % / +30 %) SELV	
Rated current	4 A / 8 A	10 A
Protection class	III (Protective Extra Low Voltage)	
Duty cycle	S3 ED 40 % 14 min	
Power consumption in standby mode	< 0,5 W	–
Power consuption in networked standby		
Power consuption in networked standby	< 1 minute	
Power supply	Schüco universal power pack or Schüco AW2 or AW4 power pack	
Operating temperature	-20°C to +50°C	
Transport / storage temperature	-40°C to +80°C	
Relative humidity	5% to 93% (non-condensing)	
Protection rating	IP 22 (for vertical installation)	
Resistance class	In accordance with DIN EN ISO 13849-1 Category 2, Performance Level C	
Connection to the building management system	-	BSC

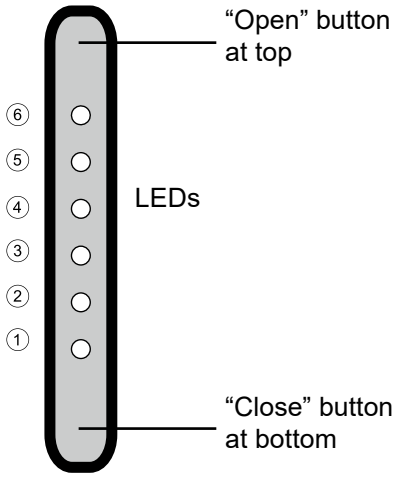
Each moving vent is to be considered as a „motor-operated building element“ in terms of the Ecodesign Regulation (EU) 2023/826 and is subject to the requirements of the regulation as a whole.

INFORMATION

More detailed information can be found in the following documents:
- Operating instructions for Schüco ASE 60/80 TipTronic sliding system
- Operating and care instructions for Schüco ASE 60/80 TipTronic sliding system
- Planning handbook for Schüco ASE 60/80 TipTronic sliding system

4.3 Operating unit

The operating unit is connected to terminal X20 of the vent control unit or to the lifting drive with the encryption module.



○	LED is off
●	LED lights up continuously
✸	LED flashes

5. Basic version

5.1 Operating modes

The Schüco ASE 60/80 TipTronic sliding system has the following operating modes:

1. Normal mode

- Automatic operation
- Operation without latching feature (deadman)

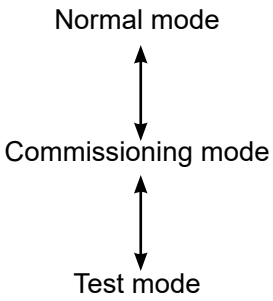
2. Commissioning mode

- Programming the system

3. Test mode

- Test mode serves to test the mechatronic components (lifting drive, sliding drive, operating unit) and their cabling and to move the units without carrying out commissioning (e.g. in the workshop, on a construction site). To switch to test mode, the system must be in commissioning mode (see section 5.3).

Change between operating modes



5.1.1 Test mode

NOTE

Damage to property

- ► Only move the system under supervision.
- ► Ensure that all components are connected.
- ► In test mode, the sensor strip / safety sensor is not active.
- ► Test mode is not for continuous operation.

Upon delivery, the control unit is in test mode. Follow the steps below to reset a commissioned system to test mode:

1. Switch the vent into commissioning mode (see 5.3-5.4).
» The LEDs flash and indicate commissioning mode.
2. Switch off the voltage.
3. Set all DIP switches to “ON”.
4. Switch on the voltage again.
» The system is now in test mode.
» All LEDs flash.

5.1.2 Test mode operation

NOTE

Damage to property

► Ensure that the vent is lifted before the sliding drive moves.

Movement command	Description
Briefly press button at top	The lifting drive moves upwards
Briefly press button at bottom	The lifting drive moves downwards
Press and hold button at top	The sliding drive turns in the “OPEN” direction
Press and hold button at bottom	The sliding drive turns in the “CLOSE” direction

5.2 DIP switch on vent control unit

NOTE

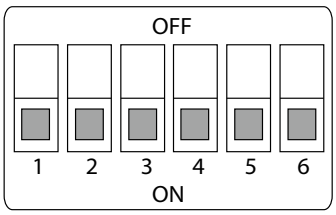
Damage to property

► Only move DIP switches when they are de-energised.

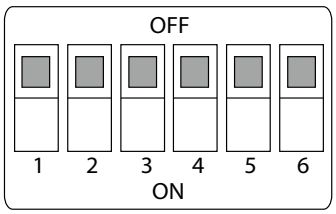
► Ensure that the DIP switches are fully up or down.

The DIP switches of the vent control unit are used to select an operating mode. In this section you will find an overview of the DIP switch settings for the basic version. Upon delivery, the system is in test mode.

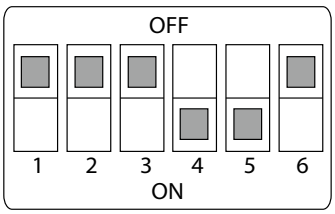
Test mode



Automatic operation



Operation without latching feature (deadman)



5.3 Carrying out initial commissioning

⚠ CAUTION

Personal injury and property damage

► Only move the system under supervision.
► Ensure that all components are connected.
► Before raising the sliding drive, check the vents for ease of operation (moving force <150 N).

The system is commissioned via the operating unit on the moving vent.

Carry out commissioning (dead man mode)

1. Move DIP switches on the vent control unit to automatic operation or operation without latching feature (deadman) and switch on the power.
2. Briefly press the bottom of the operating unit to start commissioning.

» The LEDs flash and indicate commissioning mode.
» The system moves to the lock position and stores this (if necessary, the lifting drive is started up beforehand).
» Following this, the system automatically moves to the open position. The vent moves against the end stop.
» Commissioning is complete:

● Automatic operation – the system closes and locks
● Operation without latching feature (deadman) – the system remains in the “open” position

5.4 Renewed commissioning / factory reset

If the system is switched again into commissioning mode, all system-specific configurations are reset to the delivery state (factory reset). After this, the system must be recommissioned. If commissioning is cancelled, the vent remains in commissioning mode and cannot be moved. Commissioning is not terminated.

To carry out commissioning again, proceed as follows:

1. Open the vent at least 200 mm.
2. Switch the voltage off and on again.

» The LEDs flash and indicate “Reference run required”.
3. Press the top of the operating unit and keep depressed for at least 10 seconds.
» Die LEDs erlischen, der Reset wurde durchgeführt.
4. Release the operating unit, the vent is now in commissioning mode.

» The LEDs flash and indicate commissioning mode.
» Now proceed as stated in section 5.3 “Carrying out initial commissioning”.

5.5 Automatic operation

Movement command	Description
Briefly press button at top	The vent unlocks and opens
Briefly press button at bottom	The vent closes and locks
Press button at top / bottom during movement	The vent stops

5.6 Operation without latching feature (deadman)

Movement command	Description
Press and hold button at top	The vent unlocks and opens
Press and hold button at bottom	The vent closes and locks
Briefly press button at top / bottom	The vent locks / unlocks when it is in the closed position

INFORMATION

The vent stops as soon as the operating unit is no longer continuously pressed, the vent meets an obstruction or the end position is reached.

5.7 Functioning after power failure (reference cycle)

If the system is closed and locked at the moment of voltage recovery, it takes approx. 10 seconds for the system to be ready for use again.

If the system is not closed and locked, the vents must be referenced by the user.

Proceed as follows:

» LEDs 1-3-5 flash alternately to LEDs 2-4-6, a reference cycle is required (see section 5.7 / section 6.5).
1. Press the bottom of the operating unit.
» The system closes at safety speed and locks.
» You can now operate the system normally again.

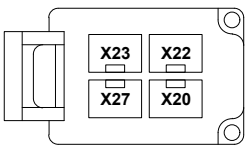
5.8 Safety devices

The Schüco ASE 60/80 TipTronic sliding system has a range of safety devices in accordance with DIN EN 16005:

- Finger-trap protection: triggers if the vent encounters an obstacle
- Overload protection: triggers if the vent jams (e.g. due to snow, dirt, foliage, etc.)
- Sensor strip (optional): triggers if the sensor strip is pressed in or activated when moving the vent

5.9 Connecting the sensor strip to the vent control unit

1. Connect sensor strip kit 1 or 3 to terminal X22 (active when opening the vent).
2. Connect sensor strip kit 2 to terminal X23 (active when closing the vent).



6. Multi-vent system

6.1 Operating modes

The Schüco ASE 60/80 TipTronic sliding system has the following operating modes:

1. Normal mode

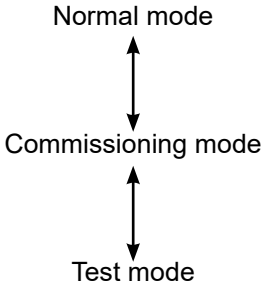
- Automatic operation
- Operation without latching feature (deadman)

2. Commissioning mode

- Programming the system

3. Test mode

Change between operating modes



- Test mode serves to test the mechatronic components (lifting drive, sliding drive, operating unit) and their cabling and to move the units without carrying out commissioning (e.g. in the workshop, on a construction site). To switch to test mode, the system must be in commissioning mode (see section 5.3).

6.1.1 DIP switch addressing at vent control unit

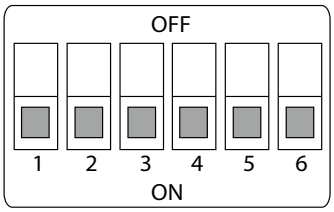
NOTE

Damage to property

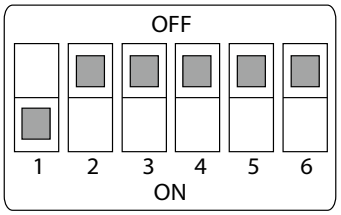
► Only move DIP switches when they are de-energised.

► Ensure that the DIP switches are fully up or down.

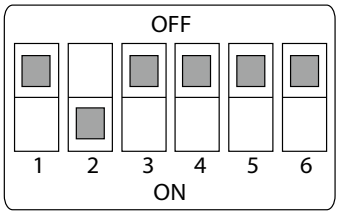
Test mode



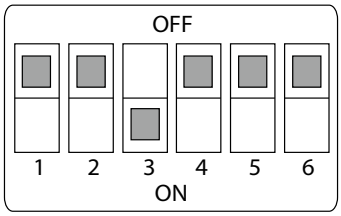
Address 1
Vent control unit 1



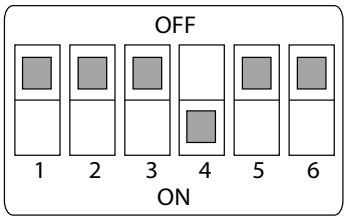
Address 2
Vent control unit 2



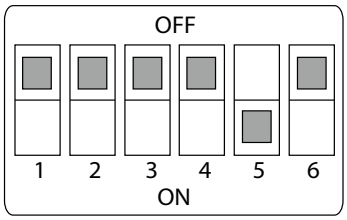
Address 3
Vent control unit 3



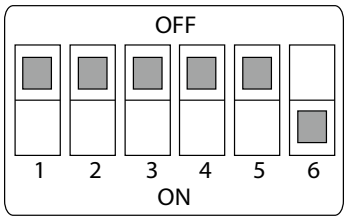
Address 4
Vent control unit 4



Address 5
Vent control unit 5



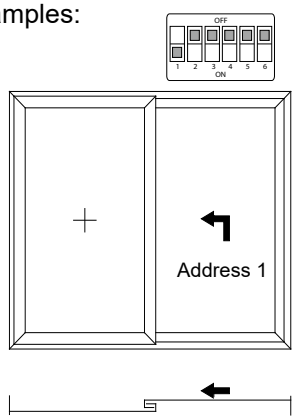
Address 6
Vent control unit 6



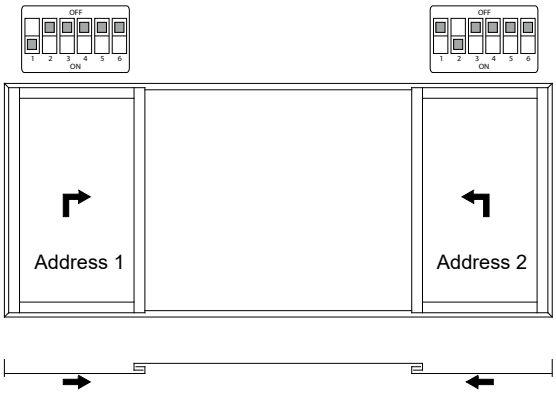
The moving vents are addressed with the DIP switches located on the vent control unit. Viewed from the inside, addressing takes place incrementally from left to right, without gaps, commencing with address 1.

Examples:

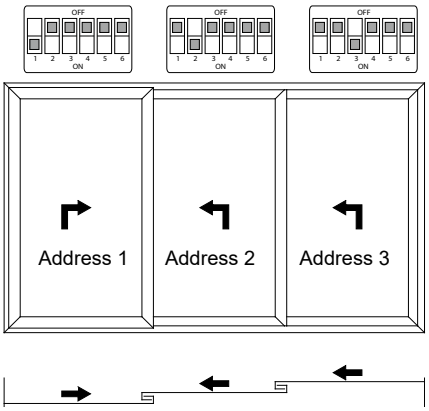
2A/1



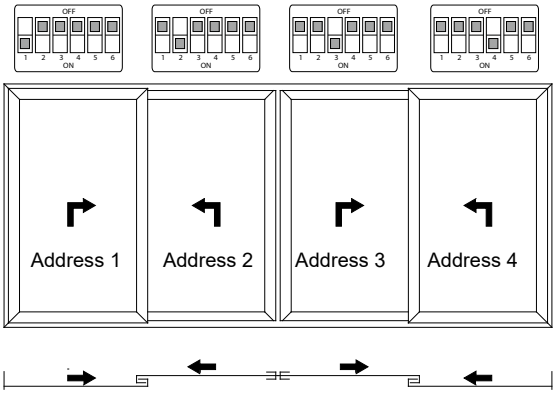
1B



3E



2D



6.1.2 Test mode

CAUTION

Personal injury and property damage

- ► Only move the system under supervision.
- ► Ensure that all components are connected.
- ► In test mode, the sensor strip / safety sensor is not active.
- ► Test mode is not for continuous operation.

Upon delivery, the control unit is in test mode. Follow the steps below to reset a commissioned system to test mode:

1. Switch the vent to commissioning mode (see 6.3).
» The LEDs flash and indicate commissioning mode.
2. Switch off the voltage.
3. Set all DIP switches to “ON”.
4. Switch on the voltage again.
» The system is now in test mode.

6.1.3 Test mode operation

NOTE

Damage to property

- ► Ensure that the vent is lifted before the sliding drive moves.
- ► Only move the system under supervision.
- ► Ensure that all components are connected.
- ► In test mode, the sensor strip / safety sensor is not active.
- ► Test mode is not for continuous operation.

Movement command	Description
Briefly press button at top	The lifting drive moves upwards
Briefly press button at bottom	The lifting drive moves downwards
Press and hold button at top	The sliding drive turns in the “OPEN” direction
Press and hold button at bottom	The sliding drive turns in the “CLOSE” direction

6.2 Commissioning, factory reset

CAUTION

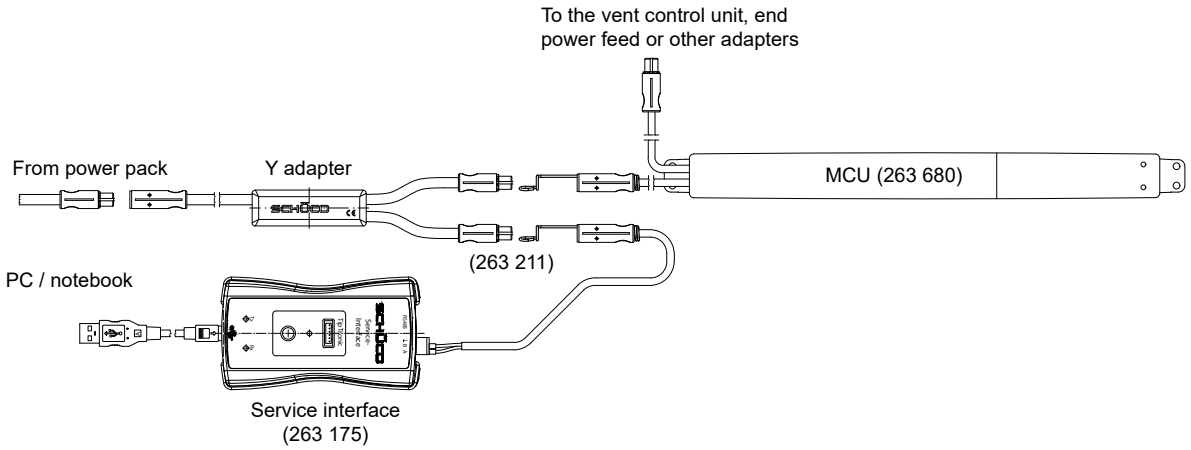
Personal injury and property damage

- ► Only move the system under supervision.
- ► Ensure that all components are connected.
- ► Before raising the sliding drive, check the vents for ease of operation (moving force <150 N).

If safety components are used, ensure that these are connected and configured before starting commissioning in accordance with sections 6.6-6.8.

Initial commissioning, renewed commissioning and the factory reset of the Schüco ASE 60/80 TipTronic multi-vent system are carried out via the Automation Engineering Tool software. See the “Schüco Automation Engineering Tool” operating instructions (document number 10000425841).

The connection between the PC/notebook and sliding system can be established with the Schüco service interface (263 175), for example.



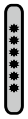
Excerpt from K1020683 (universal power pack 263 200)

6.2.1 Coupling of main control unit and encryption modules

To prevent undesired ingress in the case of vents running outside, the encryption modules installed in the lifting drives must be coupled with the main control unit. In general, this takes place automatically at the start of commissioning (also applies for a slave main control unit).

If no automatic coupling is possible, during commissioning you will be requested by the AET to manually couple the components (e.g. after replacing the main control unit). Proceed as follows:

1. All LEDs of the corresponding operating unit flash at high frequency.
» Manual coupling is required.
2. Press the operating unit of the indicated vent. If no operating unit is installed, use the installation switch (Art. No. 263 696) that you connect to terminal X20.
» All LEDs flash briefly at low frequency as confirmation and then extinguish.
Please note: after coupling, remove the installation switch again.
3. Proceed with all other vents that are to be coupled as described above.



If you are requested to manually couple an installed slave main control unit, press the button under the service cover (see section 4 “Product description”).

6.3 Operation

The Schüco ASE 60/80 TipTronic multi-vent system is moved via individual movement commands and so-called unit settings, which are controlled using the operating units. Individual movement commands are controlled via a brief button press. Here, the possible movement path may be limited by other moving vents.

Unit settings which are triggered via a long button press generally affect multiple moving vents simultaneously and are most useful in systems with multiple moving vents.

In the operating mode with self latching (automatic), the button on the operating unit only needs to be pressed to begin the movement.

Movement command		Description
Briefly press button at top	Briefly press wall operating switch input 1	The vent unlocks and opens
Briefly press button at bottom	Briefly press wall operating switch input 2	The vent closes and locks
Continuously (>2s) press top of operating unit	Continuously (>2s) press wall operating switch input 1	The vent moves to the stored unit position
Continuously (>2) press bottom of operating unit	Continuously (>2s) press wall operating switch input 2	
Briefly press button at top / bottom during movement	Simultaneously press wall operating switch input 1 & 2 during movement	Briefly press button at top / bottom during movement

6.3.1 Applying unit positions

At the factory, the following preset unit positions are stored for the manual types:

Factory setting 1	Close and lock system
Factory setting 2	Maximum opening width of the system
Factory setting 3	Passage on the right and left sides
Factory setting 4	Passage on the left side
Factory setting 5	Passage on the right side

Unit positions can be called up via a long press on an operating unit on the moving vent. As standard, factory setting 1 is called up via a long button press at the bottom. The system closes, irrespective of the vent on which the operating unit was activated.

As standard, an open factory setting (2 to 5) is called up via a long press at the top of an operating unit, even if other vents have to move for this purpose.

In the case of a double vent sliding system, a long button press at the top of the operating unit of the access vent calls up factory setting 2 (maximum opening width of the system), both vents open.

In the case of an E3/1 system, a long button press at the top of the operating unit of the outer vent calls up factory setting 2 (maximum opening width of the system), both vents open.

In the case of an 3F system, a long button press at the top of the operating unit of the fourth vent calls up factory setting 5 (passage on the right side), both right-hand vents open, the other vents close.

Unit positions can also be individually set and configured in accordance with customer requirements.

6.3.2 Wall operating switch

Unit positions are called up via the wall operating switch that is connected to the main control unit. Here, commands can also be given by long and short button presses on the wall operating switch.

6.3.3 BSC (bus operation)

The units can also be controlled via the BSC bus. Refer here to the operating instructions for the Schüco Automation Engineering Tool (doc. no. 10000425841).

6.3.4 Operation without latching feature (deadman)

If operation without self latching (dead man) has been activated, the system can then only be moved via the operating unit and the wall operating switch. Operation by means of bus-compatible end devices is not permissible when dead man operation is active.

Movement command		Description
Press and hold top of operating unit button	Press and hold wall operating switch input 1	The vent unlocks and opens or is moved to the stored unit position.
Press and hold bottom of operating unit button	Press and hold wall operating switch input 2	
Briefly press button at top / bottom (input 1 / input 2)		The vent locks / unlocks when it is in the closed position

6.4 Functioning after power failure (reference cycle)

If the system is closed and locked at the moment of voltage recovery, it takes approx. 10 seconds for the system to be ready for use again.

If the system is not closed and locked, the vents must be referenced by the user.

Proceed as follows:

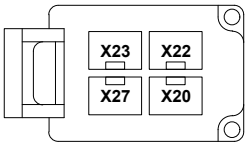
» LEDs 1-3-5 flash alternately to LEDs 2-4-6 on the vents which require a reference cycle.
» Press the bottom of the operating unit.
» The vent closes at safety speed and locks.
1. Perform step 1 for every vent that displays “Reference cycle required”.
   The reference cycle can be performed with the operating unit which is used to close the vents in normal operation.
» You can now operate the system normally again.

6.5 Safety devices

The Schüco ASE 60/80 TipTronic sliding system has a range of safety devices in accordance with DIN EN 16005:
- Finger-trap protection: triggers if the vent encounters an obstacle
- Overload protection: triggers if the vent jams (e.g. due to snow, dirt, foliage, etc.)
- Sensor strip (optional): triggers if the sensor strip is pressed in or activated when moving the vent
- Safety sensors (optional): trigger if a person or an obstacle enters the detection range of the light grid / safety sensors

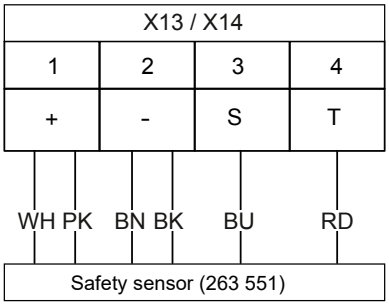
6.6 Connecting the sensor strip to the vent control unit

1. Connect sensor strip kit 1 or 3 to terminal X22 (active when opening the vent).
2. Connect sensor strip kit 2 to terminal X23 (active when closing the vent).



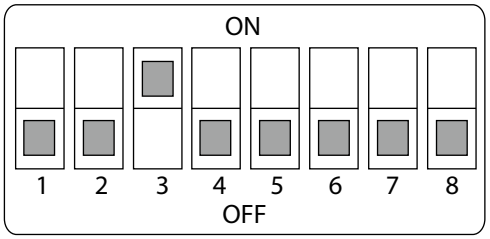
6.7 Connecting safety sensors to the main control unit

6.7.1 Connecting one safety sensor to terminal X13/X14



PIN	Configuration	Colour	Description
X13.1/X14.1	+	WH / PK	Safety sensor power supply
X13.2/X14.2	-	BN / BK	
X13.3/X14.3	S	BU	Safety output
X13.4/X14.4	T	RD	Safety input (testing)

DIP switch	Position
1	Sensor sensitivity – depends on the installation height (see enclosed sensor documentation)
2	
3	ON (top)
4	OFF (bottom)
5	OFF (bottom) *
6	OFF (bottom) *
7	OFF (bottom)
8	OFF (bottom)



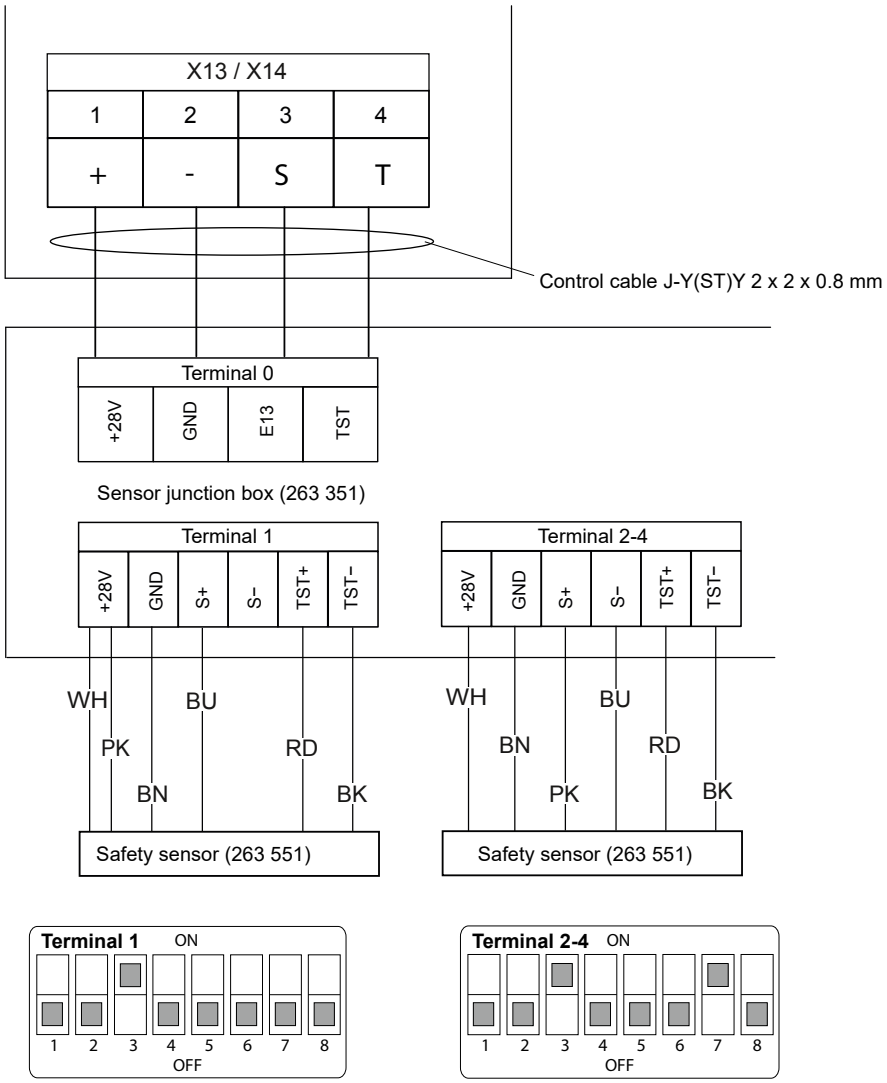
DIP switch OPTEX Presence T (263 551)

* If two or more sensors are installed closely adjacent to one another, you must set a different frequency for each sensor via these two DIP switches.

INFORMATION

For setting the detection area (width and angle) and other functions, observe the documentation enclosed with the sensor.

6.7.2 Connecting 2 to 4 safety sensors to terminal X13/X14 via the sensor junction box



DIP switch	Position	DIP switch	Position
1	Sensor sensitivity – depends on the installation height (see enclosed sensor documentation)	5	OFF (bottom) *
2		6	OFF (bottom) *
3	ON (top)	7	OFF (bottom) - Terminal 1/ ON (top) - Terminal 2-4
4	OFF (bottom)	8	OFF (bottom)

* If two or more sensors are installed closely adjacent to one another, you must set a different frequency for each sensor via these two DIP switches.

INFORMATION

For setting the detection area (width and angle) and other functions, observe the documentation enclosed with the sensor.

Terminal	Configuration	Colour	Description
Terminal 0	+28V	-	Power supply
	GND	-	
	E13	-	Safety output
	TST	-	Safety input (testing)
Terminal 1	+28V	WH/PK	Safety sensor power supply 1
	GND	BN	
	S+	BU	Safety output 1
	S-	-	
	TST+	RD	Safety input (testing) 1
	TST-	BK	
Terminal 2 - 4	+28V	WH	Safety sensor power supply 2 - 4
	GND	BN	
	S+	PK	Safety output 2 - 4
	S−	BU	
	TST+	RD	Safety input (testing) 2 - 4
	TST−	BK	

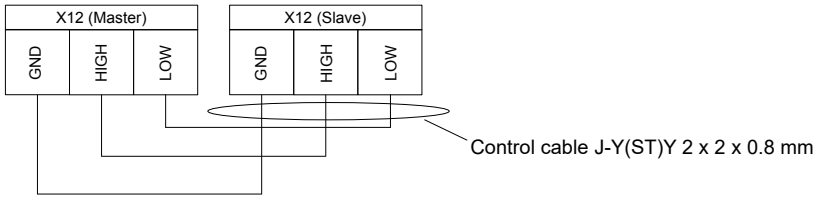
6.7.3 Configuring safety sensors

By means of AET, you have the option of assigning the safety sensors at terminals X13/X14 to the direction of movement of the vents.

Example 1	Connection X13	Vent 1	*Active during closing*	Vent 1 stops if a sensor on terminal X13 is triggered during closing.
Example 2	Connection X14	Vent 2	*Active in both directions*	Vent 2 stops if a sensor on terminal X14 is triggered during opening or closing.

6.8 Connecting slave MCU and master-slave MCU connection

A slave MCU is used if the connection terminals on the master MCU are insufficient, since more than 2 independent sensor terminals or more than 1 wall switch are required.

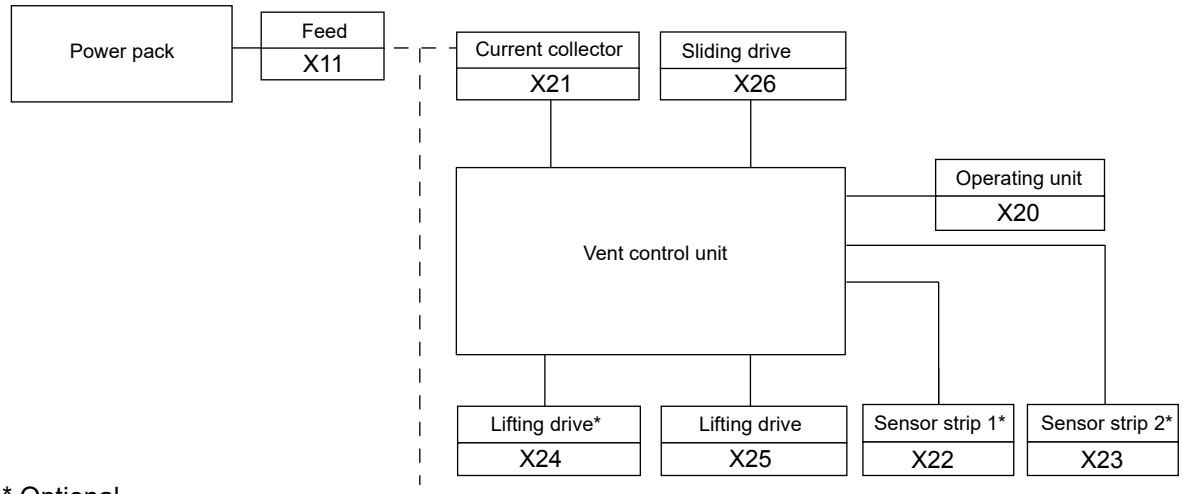


To configure an MCU as a slave, before starting commissioning the DIP switch in the MCU must be set to “Slave” (see section 4).

7. Circuit diagrams

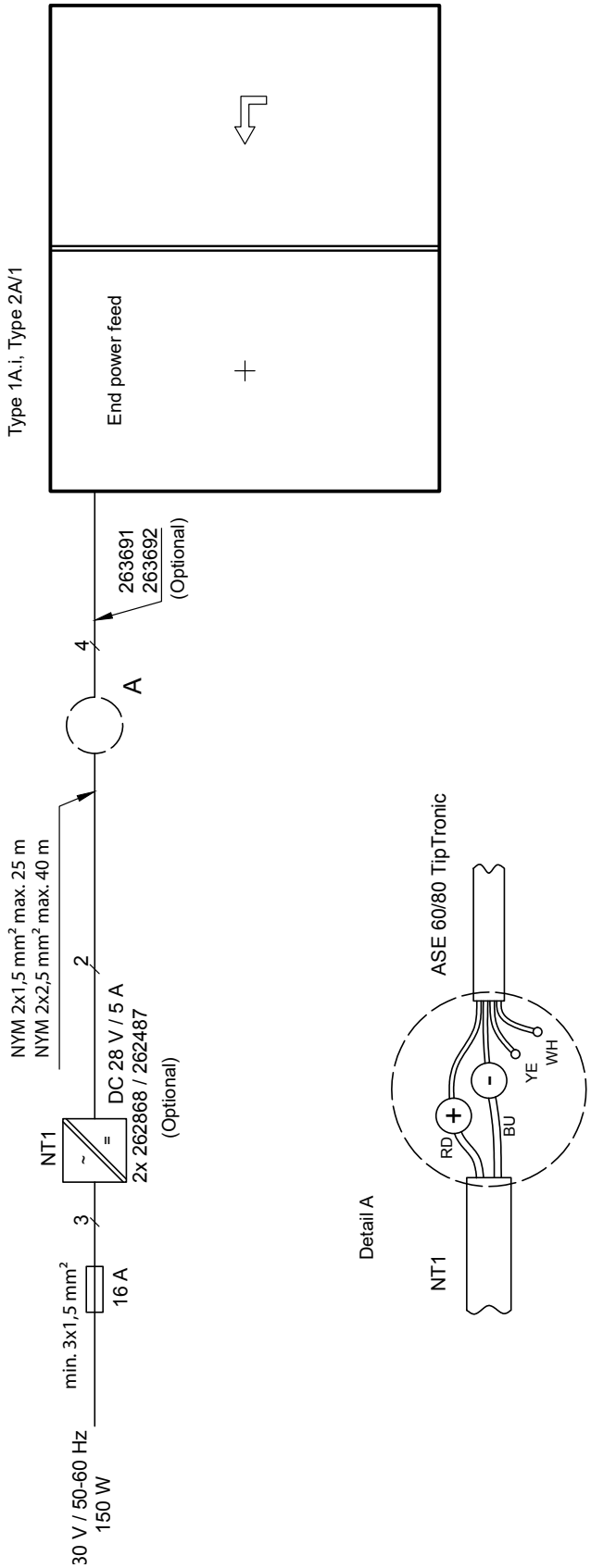
7.1 Basic version circuit diagrams

● Overview of components



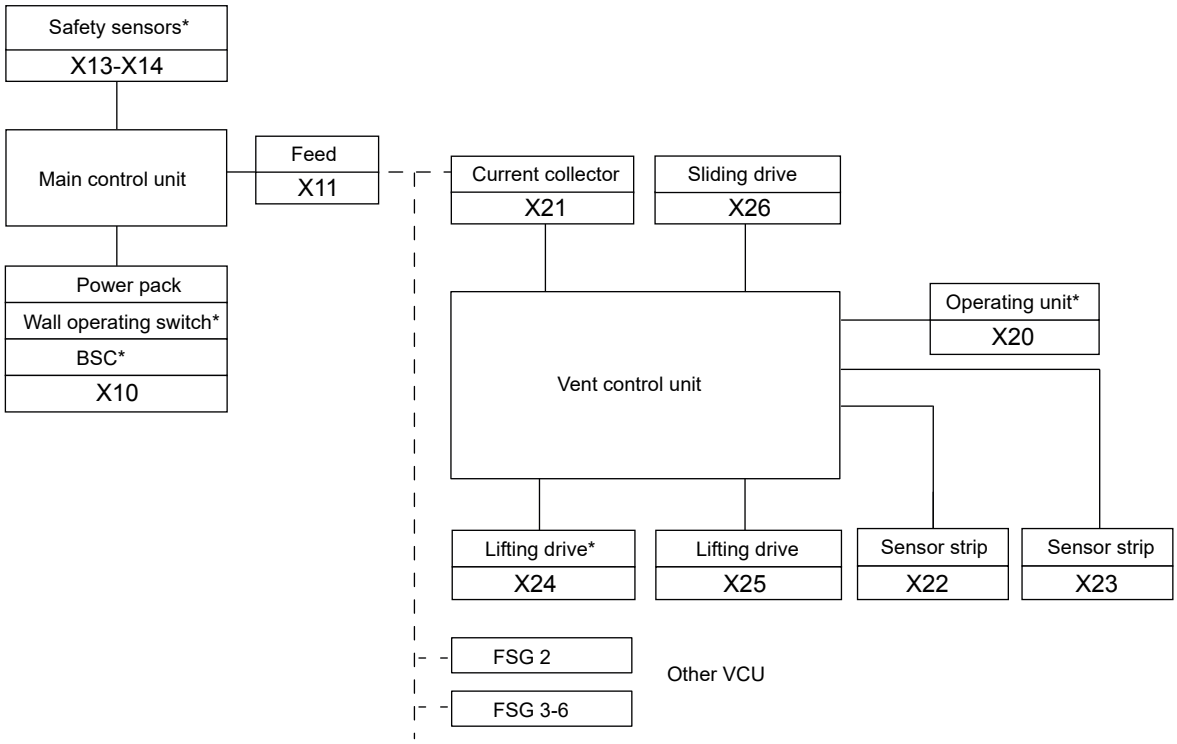
* Optional

Electric cable installation - basic version



7.2 Multi-vent system circuit diagrams

- Overview of components: without encryption

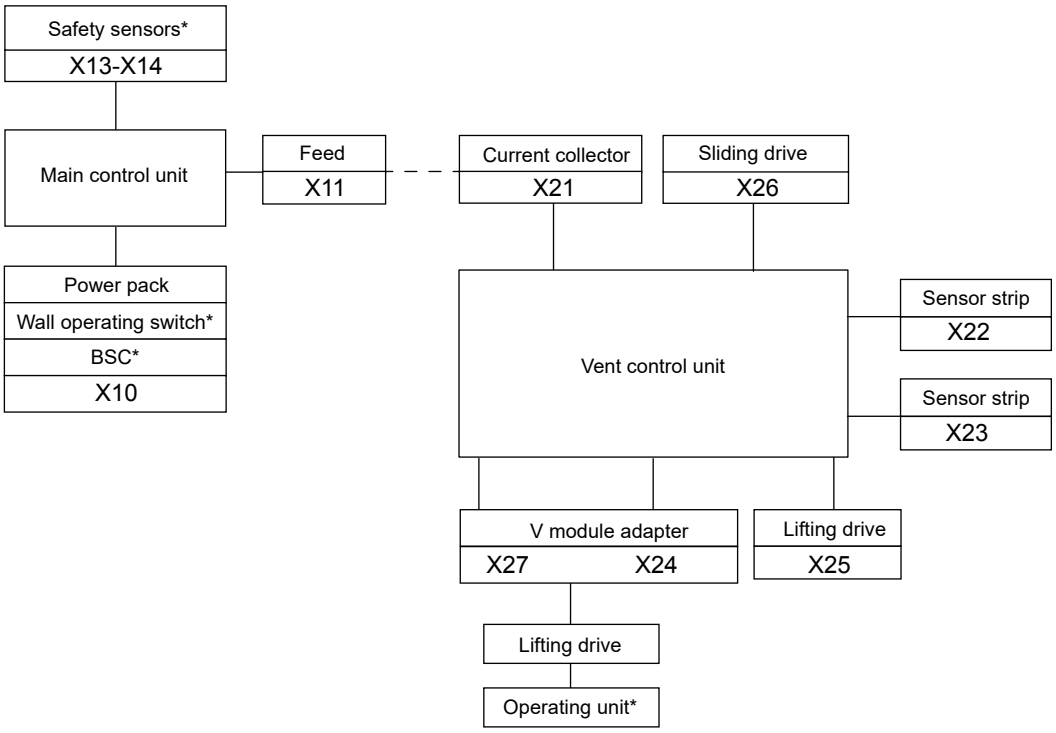


* Optional

● Overview of components: with encryption

INFORMATION

Terminal X20 must not be used.

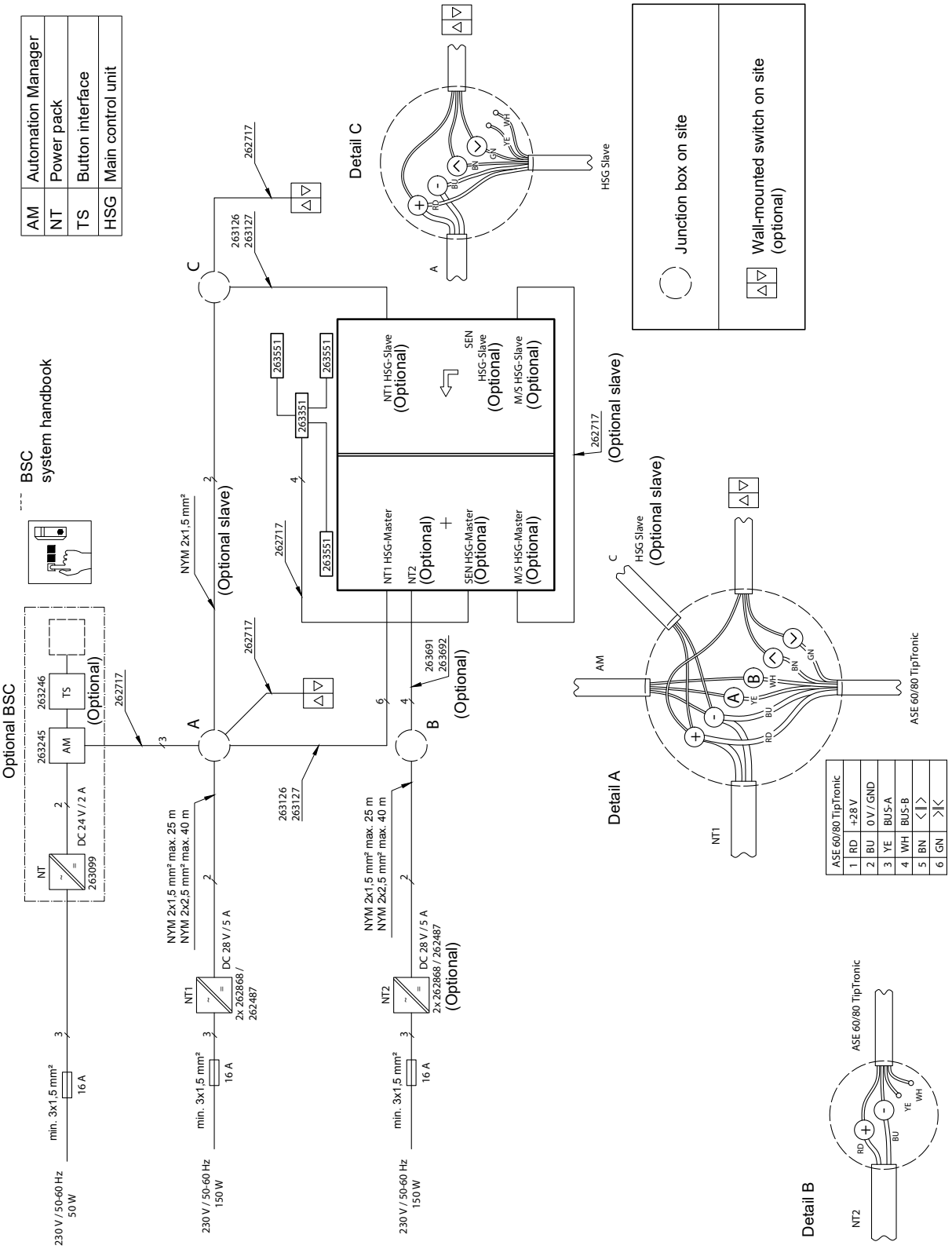


FSG 2

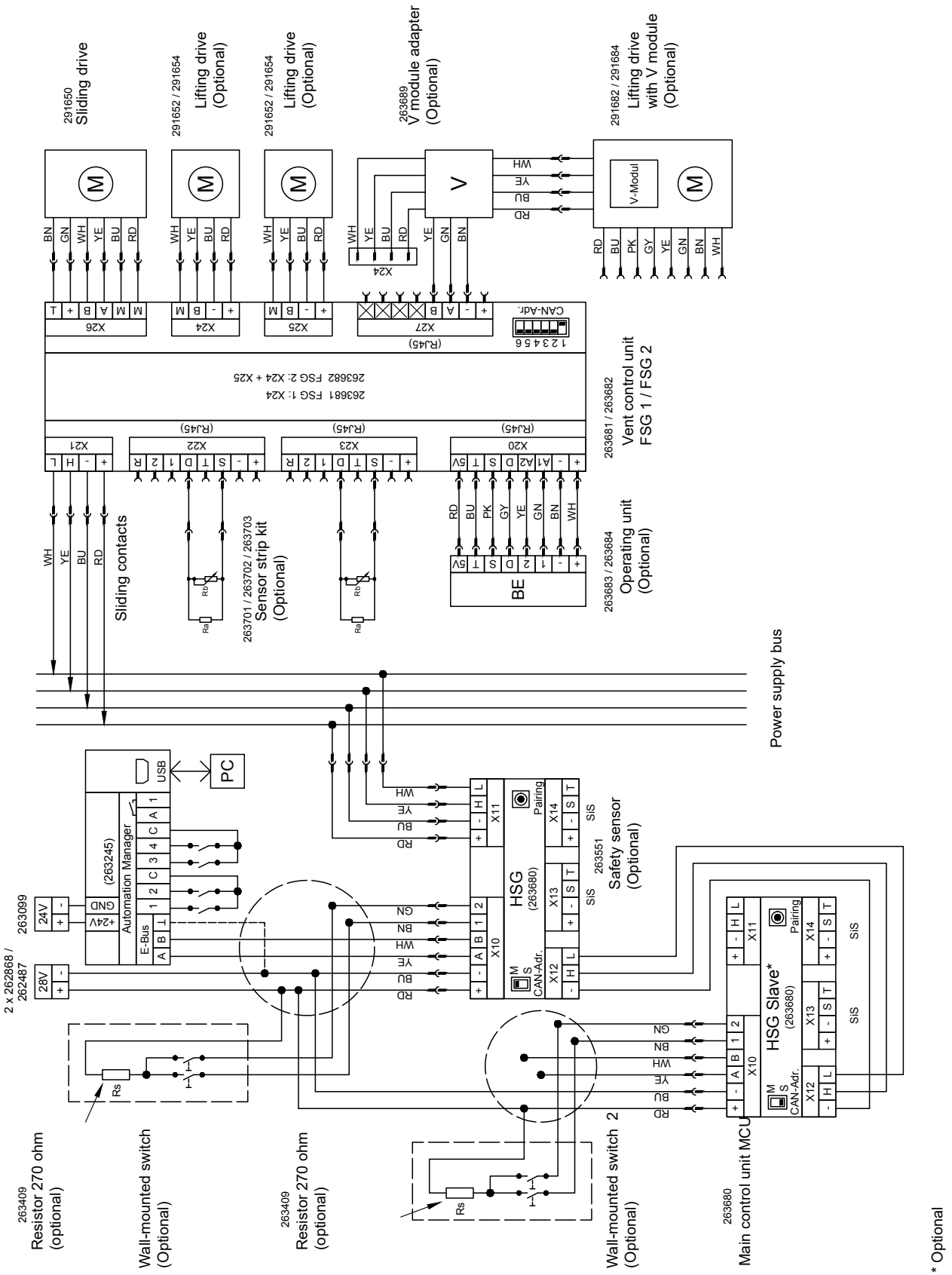
FSG 3-6

* Optional

Electric cable installation

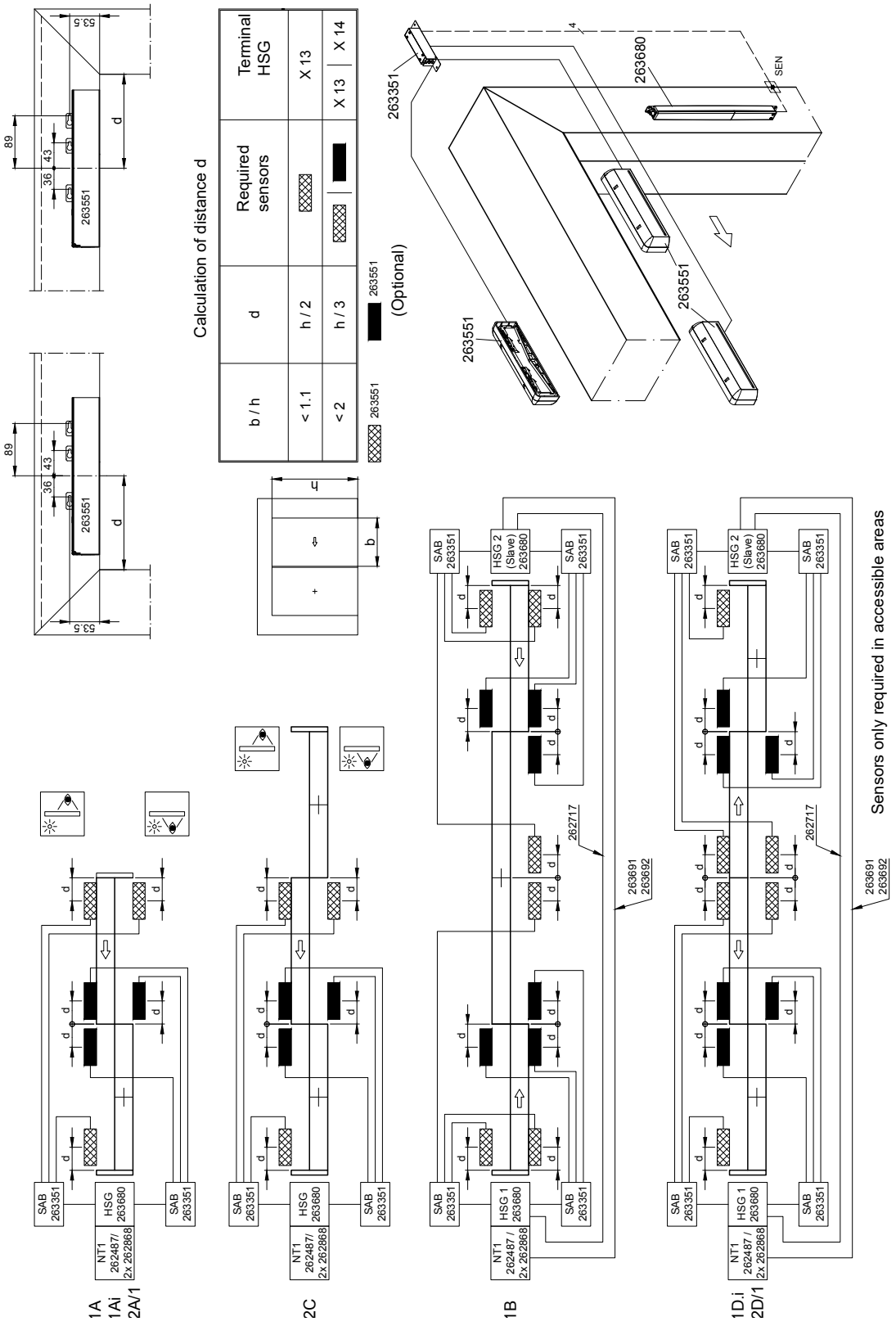


Circuit and wiring diagram



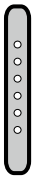
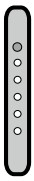
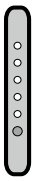
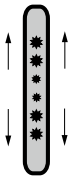
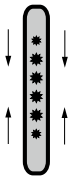
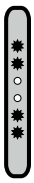
7.3 Installing the safety sensor

Safety sensor - Installation / positioning



8. LEDs overview

8.1 Overview of operating unit statuses

LEDs	Meaning
	The LEDs do not light up, the system is locked.
	The top LED lights up continuously – the system is open.
	The bottom LED lights up continuously – the system is locked. The LED turns off after approx. 3 seconds.
	The LEDs flash from inside to outside, the system is opening.
	The LEDs flash from outside to inside, the system is closing.
	LEDs 1-3-5 flash alternately to LEDs 2-4-6, a reference cycle is required (see section 5.7 / section 6.5).
	The LEDs flash: two top, two bottom, the system has not been commissioned.
	All LEDs flash, the system is being commissioned.

8.2 Events

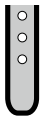
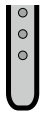
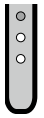
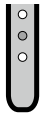
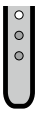
If the system detects deviations from the normal state, this is indicated via events. For example, events can be generated by the triggering of a safety device or a connection fault of an electric component.

8.3 Representation of the address via LED 1-3

To assign these events to a control unit, this is indicated on the bottom three LEDs of the operating unit.

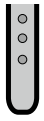
Example:

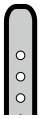
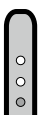
The bottom 3 LEDs of the operating unit light up continuously	The source of the event – master main control unit

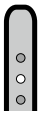
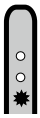
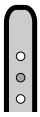
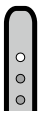
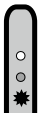
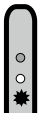
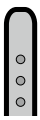
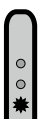
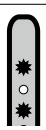
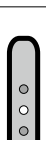
Status of LEDs 1-3			
	Slave main control unit		Vent control unit 3
	Master main control unit		Vent control unit 4
	Vent control unit 1		Vent control unit 5
	Vent control unit 2		Vent control unit 6

8.4 Main control unit events

Example:

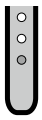
	LEDs 4 and 6 light up continuously, LED 5 flashes	Safety sensor triggered at terminal X14
	LEDs 1-3 light up continuously	Main control unit master event

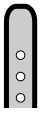
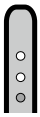
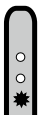
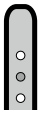
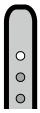
Status of LEDs 4-6	Event number	Meaning	Solution
All LEDs off	0	No error	
	1	Connection error at dead man switch 1	● Check cables between main control unit and wall operating switch ● Check whether the 270 ohm resistor has been correctly installed
	2	Connection error at dead man switch 2	
	3	Safety sensor triggered at terminal X13	● Check sensor field ● Adjust sensor
	4	Safety sensor triggered at terminal X14	
	5	Safety sensor triggered at terminal X13 slave main control unit	
	6	Safety sensor triggered at terminal X14 slave main control unit	
	7	Testing error, safety sensor at terminal X13	● Check sensor DIP switch setting ● Check connection between main control unit and sensor connection box sensor ● Check sensor field
	8	Testing error, safety sensor at terminal X14	
	9	Testing error, safety sensor at terminal X13 slave main control unit	
	10	Testing error, safety sensor at terminal X14 slave main control unit	
	11	Low voltage error	● Check whether the cable length and cross section are correctly dimensioned ● Check whether the power supply is correctly dimensioned ● Check output voltage at the power supply
	12	Overvoltage error	

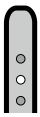
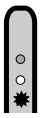
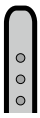
	13	Communication error between main and vent control unit	● Check feed adapter ● Check current collector ● Check connection from the vent control unit ● Check address of the vent control unit ● Check slave DIP switch position and wiring
	14	Self-test error 1	● Restart the system ● If it happens again: Replace main control unit
	15	Self-test error 2	
	16	Self-test error 3	
	17	Configuration is incorrect	
	19	Communication error – encryption module 1	If only this error occurs: Check wiring between vent control unit and lifting drive Replace lifting drive with encryption drive
	20	Communication error – encryption module 2	
	21	Communication error – encryption module 3	
	22	Communication error – encryption module 4	
	23	Communication error – encryption module 5	
	24	Communication error – encryption module 6	
	25	Communication error between main and vent control unit	● See event code 13
	26		
	27		

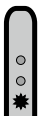
8.5 Vent control unit events

Example:

	LED 4 lights up continuously, LEDs 5 and 6 flash	Maximum movement time of sliding drives exceeded
	LED 1 lights up continuously, LEDs 2 and 3 are off	Vent control unit 1 event

Status of LEDs 4-6	Event number	Meaning	Solution
All LEDs off	0	No error	
	1	Sliding drive connection error	● Check cables between vent control unit and sliding unit ● Replace sliding drive
	2	Lifting drive 1 connection error	● Check cables between vent control unit and lifting drive ● Check mechanical range of movement and position of the lifting drive ● Replace lifting drive
	3	Lifting drive 2 connection error	
	4	Operating unit connection error	● Check cables between vent control unit and operating unit ● Replace operating unit
	5	Short circuit on the sliding drive	● Check cables between vent control unit and sliding drive ● Replace sliding drive
	6	Triggered by jam	● Check for a jam (object, etc.) ● Check fitting for mechanical stiffness ● Remove dirt from runners
	7	Triggered by overcurrent	
	8	Safety sensor triggered at terminal X22	● Check for a jam (object in runner, sensor strip activated or damaged, etc.)
	9	Safety sensor triggered at terminal X23	

	10	Lifting drive 1 has not reached the open position	● Check cables between vent control unit and lifting drive ● Check mechanical range of movement and position of the lifting drive ● Replace lifting drive
	11	Lifting drive 2 has not reached the open position	
	12	Encoder faulty	● Check cables between vent control unit and sliding drive ● Replace sliding drive
	13	Motor driver faulty	● Restart system ● replace sliding drive ● replace vent control unit
	14	Magnet value not valid	● Check magnet seal for correct installation ● Conduct new commissioning ● replace vent control unit
	15	Maximum run time of sliding drive exceeded	● Wait a few minutes ● Generate movement command again
	16	Maximum run time of lifting drive exceeded	
	17	Overvoltage error	● Check whether the cable length and cross section are correctly dimensioned ● Check whether the power supply is correctly dimensioned ● Check output voltage at the power supply
	18	Magnetic sensor faulty	● Restart system ● Replace vent control unit
	19	Excess temperature	● Wait a few minutes ● Check environmental conditions of the vent control unit
	20	Self-test error 1	● Restart system ● Replace vent control unit
	21	Self-test error 2	
	22	Self-test error 3	
	23	Self-test error 4	

	24	Low voltage error	● Check whether the cable length and cross section are correctly dimensioned ● Check whether the power supply is correctly dimensioned ● Check output voltage at the power supply
	25	Sensor strip terminal X22 connection error	● Check connection between sensor strip and vent control unit ● Check connection plug at the sensor strip ● Check sensor strip for mechanical damage
	26	Sensor strip terminal X23 connection error	
	27	Encryption module connection error	If only this error occurs: Check wiring between vent control unit and lifting drive Replace lifting drive with encryption drive

9. Service and support

At Schüco, a high level of customer satisfaction is our priority. If you require further information or encounter problems not dealt with in detail in this document, you can request the requisite information from the Smart Building Technical Support team.

You can reach your contact partners on the service phone numbers below:

Hotline – Metal systems

Please contact your local branch.

Technical Support – Smart Building

Monday – Thursday:	8:00 - 16:30 Uhr
Friday:	8:00 - 15:00 Uhr
Tel.:	+49 (0) 521 - 783 665
E-mail:	Support_Automation@schueco.com

Notes

en Original instructions

The export, fabrication and assembling of Schüco products within the scope of building projects in the USA are subject to specific regulations (product testing/certification) which must be coordinated with Schüco USA LLLP prior to importing the products into the USA. If you have any questions on this matter, please contact Schüco USA LLLP, e-mail: alutechsupport@schuco-usa.com. Schüco International KG assumes no liability for damages which result from the use / fabrication / assembling of products which have not been approved by Schüco for the US market or which are fabricated and assembled there by contractors who are not sufficiently qualified to work with Schüco products.

Please note the special instructions in the general section of the manual for the fabrication and assembly of Schüco products for building projects in the USA.

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

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