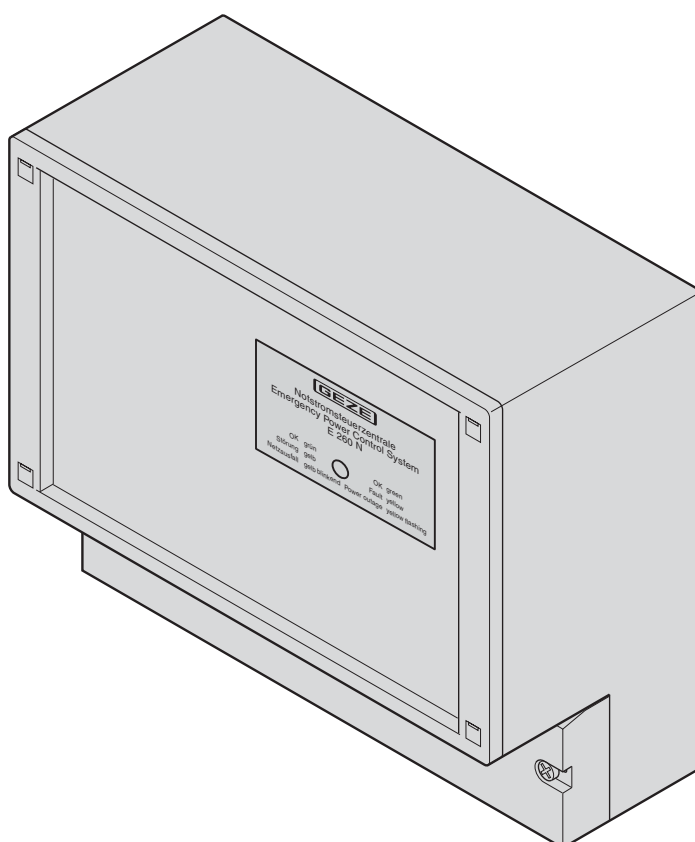


# RWA-Emergency Power Control System

E260 N2/N4/N8/N12



**VdS**

## Installation and Operating Manual



Id. No. 113959



Material-Nr. 104361



N. mat. 113961



N° de suite 113960

# Symbols and conventions

## Danger and information symbols



### **DANGER**

Indication of danger which can lead to death or injury.



Indication of danger which can lead to material damages.



Tips for optimum working.

## Conventions within the text

- Enumeration mark
- ⇒ Introduces an action to be executed

Multi-stage activities are numbered:

1. First activity
2. Second activity
3. ...

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# 1 Operation

## 1.1 Safety instructions for the operator and the user

**Intended use** The RWA system is used to ventilate and, in the event of a fire, automatically extract smoke from rooms.  
Your RWA-Emergency Power Control System is a state of the art system and complies with the valid safety regulations. GEZE shall not be responsible for damage resulting from changes made to the RWA-Emergency Power Control System arbitrarily.

**Obligations of the user** As the user, you must ensure that the person operating the RWA-Emergency Power Control System has been instructed in the operation of the system as described in Chapter 1 of this manual. Please ensure that the key for the RWA switch can only be accessed by authorised persons.



**Please keep this manual and the connection diagram where it can be easily accessed.**

Check the display of the RWA-Emergency Power Control System on a regular basis - at least every 4 days. In the event of a fault, read Section 1.6, What to do when ...?

**In the event of a fire** The emergency functions of the RWA-Emergency Power Control System can be triggered in the event of a fire from a smoke extractor.



**To reset a fire alarm, the RWA-Emergency Power Control System may only be operated by an operator who has read Chapter 1, Operation in this manual. In particular, the safety instructions in Section 1.4, Fire alarm must be complied with.**

**Instruction** The client or the owner-operator has to be instructed in proper use of the RWA system during commissioning or handing over.  
The client or the owner-operator has to confirm in writing that the instruction has been carried out.

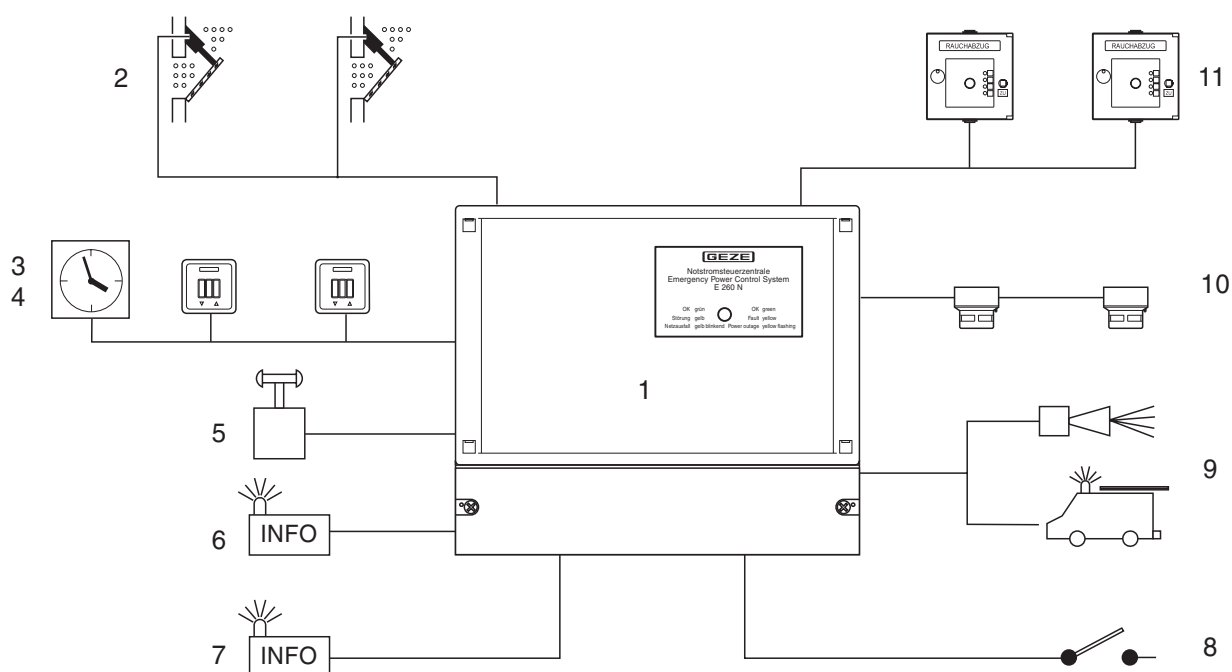
**Maintenance** As needed - but at least once a year - you must have a specialist approved by GEZE inspect the system and perform any necessary maintenance. You will receive a written report regarding the inspection. The two batteries must be replaced after no more than 4 years.

## 1.2 Overview of the RWA-Emergency Power Control System

**Function** The RWA-Emergency Power Control System controls the extraction of smoke and heat (RWA) from staircases, factory halls, etc. Windows and smoke extraction vents are controlled for normal ventilation operation.

If a fire alarm is triggered, the windows and smoke extraction vents are automatically opened or closed, depending on the configuration of your RWA-Emergency Power Control System.

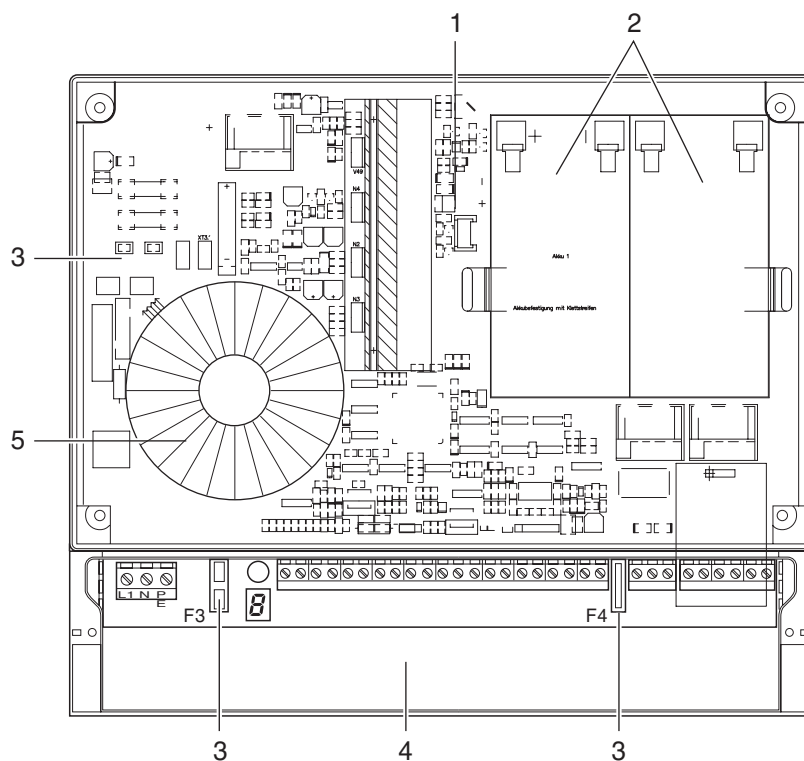
The RWA-Emergency Power Control System controls the components, supplies them with current and provides backup in mains failure conditions.



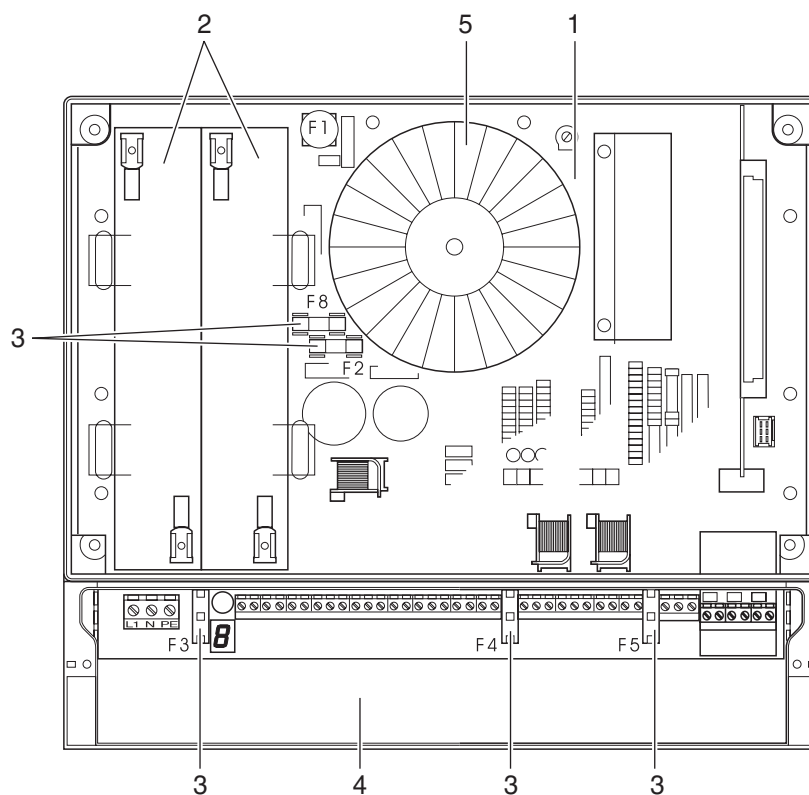
- 1 RWA-Emergency Power Control System
- 2 Drives for the windows and smoke extraction vents
- 3 Ventilator switch
- 4 Timer switch
- 5 Rain and wind control/sensor
- 6 Window Open signal (optional)
- 7 Fault signal (optional)
- 8 Alarm from external fire alarm system
- 9 Alarm signal (retransmission of alarm signal) (optional)
- 10 Smoke sensors and heat differential sensors
- 11 RWA switch

### 1.2.1 The electrical components of the RWA-Emergency Power Control System

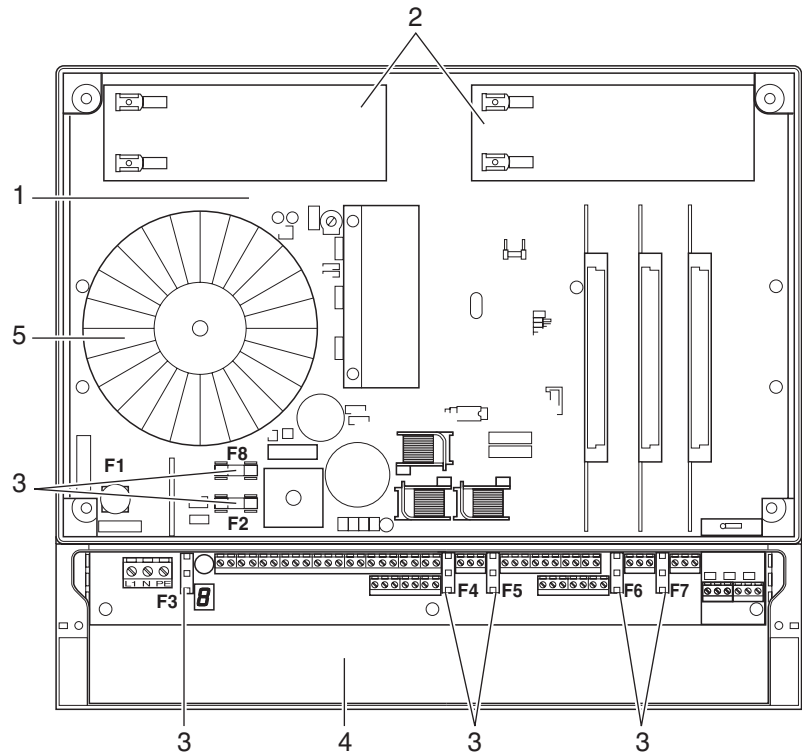
E 260 N2



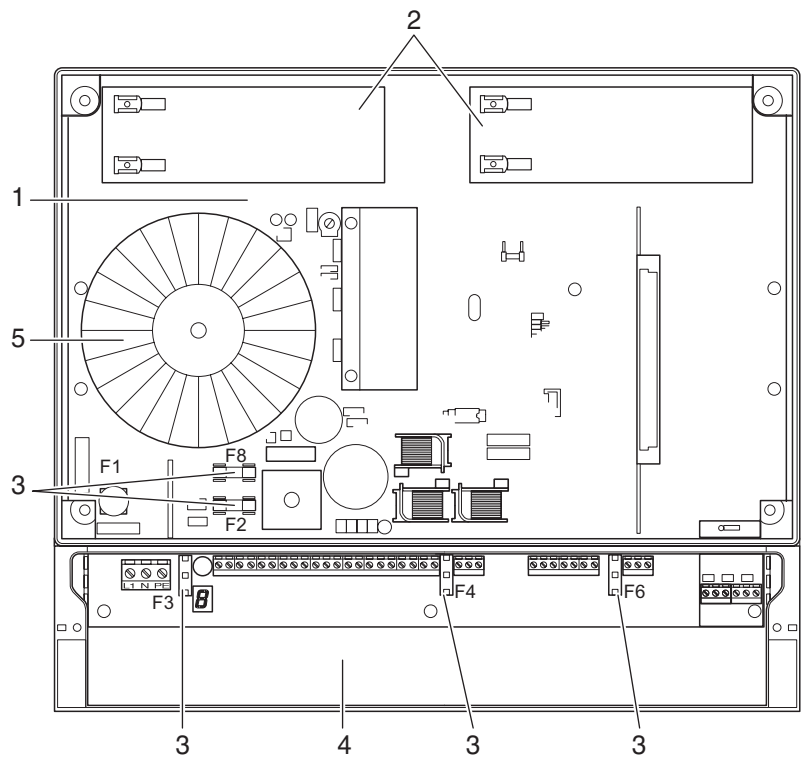
### E 260 N4



## E 260 N8



## E 260 N12



- 1 Main circuit board
- 2 Batteries
- 3 Fuses
- 4 Terminal compartment
- 5 Transformer

## 1.2.2 Components for ventilation operation

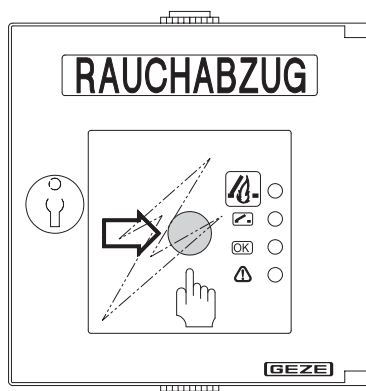
<b>Drives</b>	The drives open and close windows and/or smoke extraction vents.
<b>Ventilator switches</b>	The user can operate the window drives using the ventilator switches.
<b>Timer switch</b>	If a timer switch is connected, windows can be opened or closed at preset times.
<b>Rain/wind sensor</b>	If a rain/wind sensor is connected, all windows will be closed in the event of rain or strong wind. The ventilator switches are then disabled.
<b>Window Open signal</b>	The Window Open signal lamp is lit when a window is open or not completely closed.







The controller sets this signal based on the switching signals from the ventilator switch.  
The windows are not directly monitored.

## 1.2.3 Components used in the case of alarm

<b>RWA switch</b>	<p>In the event of a fire, you can manually trigger an alarm by pressing the RWA switch. The RWA-Emergency Power Control System then initiates the alarm program set by the service technician.</p> <p>See Section 1.4, Fire alarm for details on how to clear the alarm.</p> <p>The 4 signal lamps on the RWA switch signify the following:</p>
-------------------	--



Symbol	LED	Meaning
	red	Illuminates when the fire alarm is triggered by a RWA switch, smoke sensor or an external fire alarm system.
	yellow	Illuminates when a window is open or not fully closed. Flashes for 60 seconds when a window is opened or closed.
	green	Illuminates when the RWA switch and the RWA-Emergency Power Control System are functioning properly.
	yellow	Illuminates in the event of a fault.



### Smoke sensor and heat differential sensor

If a smoke sensor detects smoke or a heat differential sensor registers a sharp increase in temperature, the fire alarm is triggered.

See Section 1.4, Fire alarm, for details on how to clear the alarm.

### Alarm signal (optional)

The RWA-Emergency Power Control System transmits an external alarm signal if the fire alarm is triggered. This can be used, for example, to trigger an audible alarm or the alarm can be relayed to the fire station.

### External fire alarm system

If your RWA-Emergency Power Control System is connected to an external fire alarm system, this can also trigger the fire alarm.

See Section 1.4, Fire alarm, for details on how to clear the alarm.

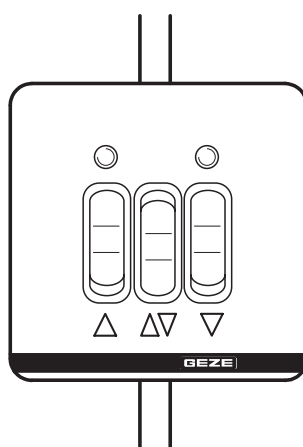
### Fault signal (optional)

The RWA-Emergency Power Control System transmits an external signal in the event of a fault. This can, for example, be connected to a warning lamp.

## 1.3 Ventilation operation

### Opening and closing windows

The windows are divided into ventilator groups. For each ventilator group, there are one or more ventilator switches which can be used to open or close all the windows in that ventilator group at the same time.




- Press the Open button  $\triangle$  to open a window.
- Press the Close button  $\nabla$  to close a window.
- Press the Stop button  $\triangle\nabla$  to stop the opening or closing of a window.

The opening and closing of the windows is indicated by LEDs on the RWA switches and ventilator switches in the following manner:

Window	RWA switch yellow signal lamp Window OPEN	Ventilator switch green signal lamp	Ventilator switch red signal lamp
fully closed	off	on	off
opens	flashes (for 60 s)	off	flashes (for 60 s)
fully or partly open	on	off	on
closes	flashes (for 60 s)	flashes (for 60 s)	off

The signal on the ventilator switch only applies for the windows in its ventilator group, while the signal on the RWA switch refers to all the attached ventilator groups.

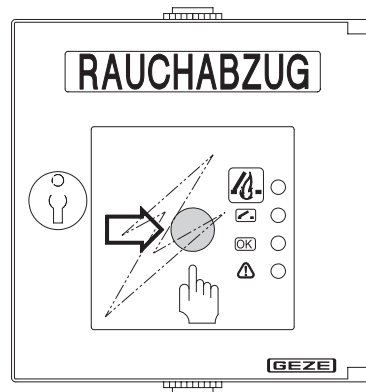
Therefore, the yellow Window Open signal lamp  on an RWA switch is not extinguished until the windows in all the ventilator groups in its alarm group are closed.

**Rain/wind sensor** If a rain/wind sensor is installed, the windows will close automatically in the event of rain or strong wind. As long as the rain/wind sensor is active, the windows cannot be opened with the ventilator switch.

In the event of a fire alarm, the windows will also open when the rain/wind sensor is active.

**Power outage** In the event of a power outage, ventilation operation is disabled, which saves the batteries for use in the event of a fire. It is only possible to close the windows which are already open.

## 1.4 Fire alarm



**Triggering the fire alarm** To manually trigger the fire alarm:


1. Break the glass on the RWA switch.
2. Depress the pushbutton until it clicks into place.

The fire alarm is triggered automatically in the following situations:

- A smoke sensor detects smoke.
- A heat differential sensor detects a sharp increase in temperature.
- A fire alarm system transmits an alarm signal to the RWA-Emergency Power Control System.

### Procedures and signals during the fire alarm

If a fire alarm is triggered, the alarm program of the RWA-Emergency Power Control System executes:

- Windows and smoke extraction vents open (normal configuration) or close.
- The red fire alarm signal lamp  on the RWA switch is illuminated.
- The RWA-Emergency Power Control System transmits external signals, for example to an audible signal or the fire station.
- The ventilator switches are disabled.
- The rain/wind sensor is ignored.

### Stopping the fire alarm

You can clear the alarm condition in two ways:

- Reset the RWA-Emergency Power Control System.

or

- Reset any RWA switch.

When the alarm condition has been cleared, the audible alarm signal stops and the ventilator switches are again useable.



### GEFAHR

If the system is not fully reset (the red fire alarm LED is still lit), the system will not function properly if a new alarm is triggered!

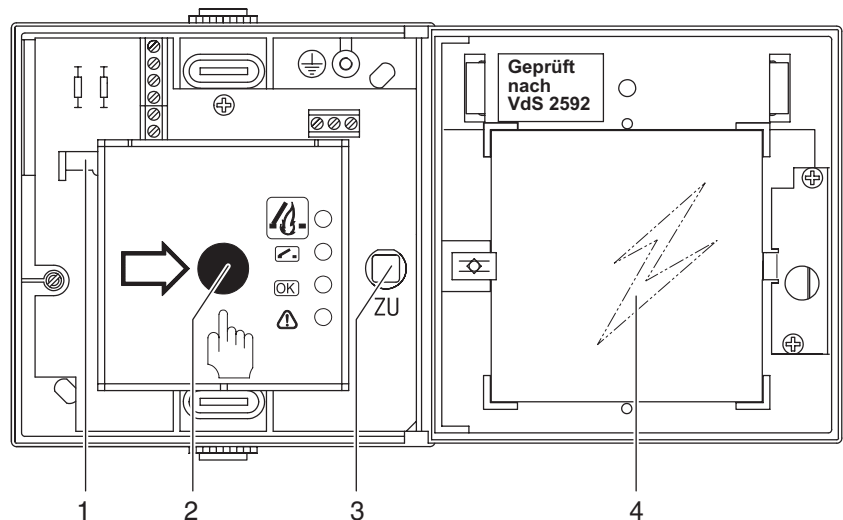
- Always reset the system fully after an alarm.

### Resetting the system fully

The way in which the RWA-Emergency Power Control System is prepared for another alarm is dependent on the cause of the alarm:

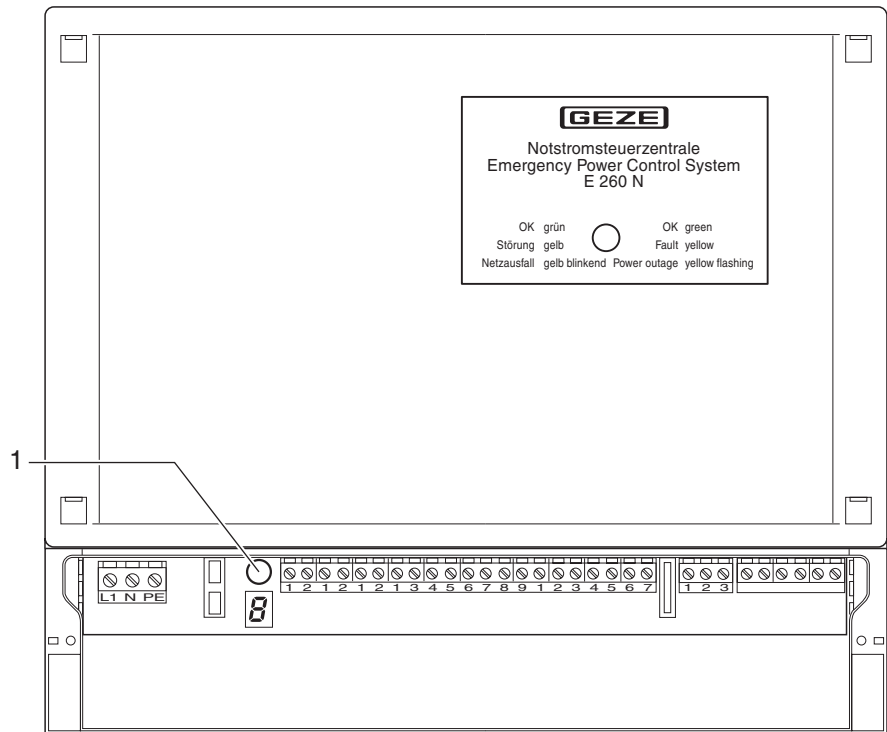
- If the fire alarm has been triggered by an RWA switch, reset this RWA switch (see next section).
- If the fire alarm was triggered by a smoke sensor or a heat differential sensor, reset the RWA-Emergency Power Control System (see next but one section).
- If the fire alarm was triggered by an external fire alarm system, please ensure that the alarm signal from this fire alarm system is switched off.

### Resetting an RWA switch



1. Open the RWA switch using the key.
2. Release the black pushbutton (2) using the slider (1).
3. Reset the fire alarm by pressing the green Close button "ZU" (3).  
The windows and smoke extraction vents Close again, the alarm is cleared and the RWA-Emergency Power Control System is reset.
4. Replace the broken glass (4).
5. Lock the RWA switch again.

## Reset the RWA-Emergency Power Control System





### DANGER

#### Risk of death through electrical shock!

- ⚠ Do not touch anything inside the control panel case of the RWA-Emergency Power Control System except the white Reset button (1).
  - ⚠ Relock the control panel case immediately after use.
1. Unscrew the lid that covers the terminal compartment of the control panel case.
  2. Press the white Reset button (1).  
The alarm is cleared, the RWA-Emergency Power Control System and the smoke sensors are reset.
  3. Relock the control panel case.
  4. Close the windows and smoke extraction vents using the ventilator switches.

### Checking the reset

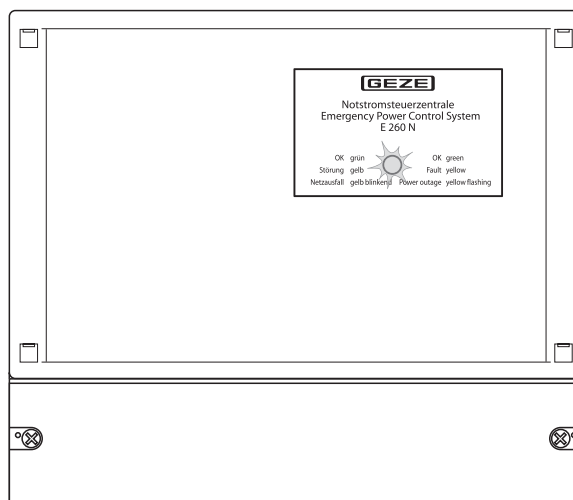
After the alarm is reset, the red fire alarm signal lamp  on the RWA switches is extinguished, the audible alarm stops and the windows can again be opened and closed with the ventilator switches. The RWA-Emergency Power Control System is ready for another alarm.

If the red fire alarm signal lamp  is not extinguished, there is at least one of the following alarm signals on the RWA-Emergency Power Control System which you must clear:

- Alarm signal from an RWA switch
- Alarm signal from a smoke sensor
- Alarm signal from an external fire alarm system

## 1.5 Power outage and fault

The operating condition of the RWA-Emergency Power Control System is indicated by an LED on the front door:



LED	operating condition
illuminated green	normal operation, no fault
yellow flashing	power outage
illuminated yellow	other fault

### Power outage

The RWA-Emergency Power Control System has an integrated emergency power supply, that can bridge a power outage of at least 72 hours, for example during maintenance work or in the event of a fire. The prerequisite is that the batteries are in proper working order.

The emergency functions of the RWA-Emergency Power Control System are sustained during a power outage. However, the normal operation of the ventilation using the ventilator switch is disabled to maintain the capacity of the battery for as long as possible. It is only possible to close already open windows.



### DANGER

#### Risk of death through electrical shock!

- Any work on the power supply should only be performed by a qualified electrician.

Rectify the cause of the power failure:

- Check the power supply to which the RWA-Emergency Power Control System is connected and, if necessary, replace the fuse.

If the power supply is in order:

- Contact a GEZE-approved specialist.

### Fault

In the event of a fault with an LED illuminated yellow, work is required in the control panel case.

- Contact a GEZE-approved specialist.

## 1.6 What to do when ...?

Problem	Cause	Action
Yellow signal lamp is illuminated on the RWA-Emergency Power Control System.	Fault	Contact a GEZE-approved specialist.
Yellow signal lamp is flashing on the RWA-Emergency Power Control System.	Mains power outage	Check the power supply to which the RWA-Emergency Power Control System is connected and, if necessary, replace the fuse. If the power supply is in order: Contact a GEZE-approved specialist.
Depressing the ventilator switch does not move the windows.	Mains power outage or other fault	Check whether the signal lamp on the RWA-Emergency Power Control System is flashing or illuminated yellow.
	Rain/wind sensor active	The windows can only be opened again once the rain or wind has subsided.

## 2 Installation and maintenance

### 2.1 Safety instructions for installation and maintenance

- Authorised personnel**
- Installation may only be performed by qualified electricians or GEZE-approved specialists.
  - Repair and maintenance work, however, may only be performed by GEZE-approved specialists.

- Working with safety in mind**
- Before any maintenance or installation work is carried out on the RWA-Emergency Power Control System, disconnect the power supply.
  - Comply with the regulations, standards and guidelines and, in particular, the latest version of the VDE 0833/0815 guidelines.
  - Consult the local approval authorities to determine the type of cable (for example fire protection cable) and the required type of protection.
  - Use only original GEZE parts for repair and retrofitting work.
  - When replacing the batteries, use only batteries recommended by GEZE.

**Disclaimer** If any changes are made to the system by an unauthorised person, or if components other than GEZE original parts or GEZE recommended batteries are used, GEZE shall not be liable for any resultant damage.

## 2.2 Storage

### Storing the RWA-Emergency Power Control System

- Store the RWA-Emergency Power Control System in a protected area.
- If the unit has already been in use:
  - ✧ Disconnect the RWA-Emergency Power Control System from the mains and remove the battery fuse (see Section 2.5.4, Electrical connection).

### Storing lead gel batteries

The lead gel batteries will discharge automatically when stored. Therefore:

- Minimise the storage time.
- Store batteries or packed RWA-Emergency Power Control System protected from heat at temperatures of less than 30 °C.
- If the system is not operated in the meantime, recharge the batteries no later than 7 months after the previous charge (for the charging date, see the label).

### Recharging the batteries

For recharging the batteries, there are two options:

1. Disconnect or remove the batteries from the RWA-Emergency Power Control System and recharge them using a standard charger.

**or**

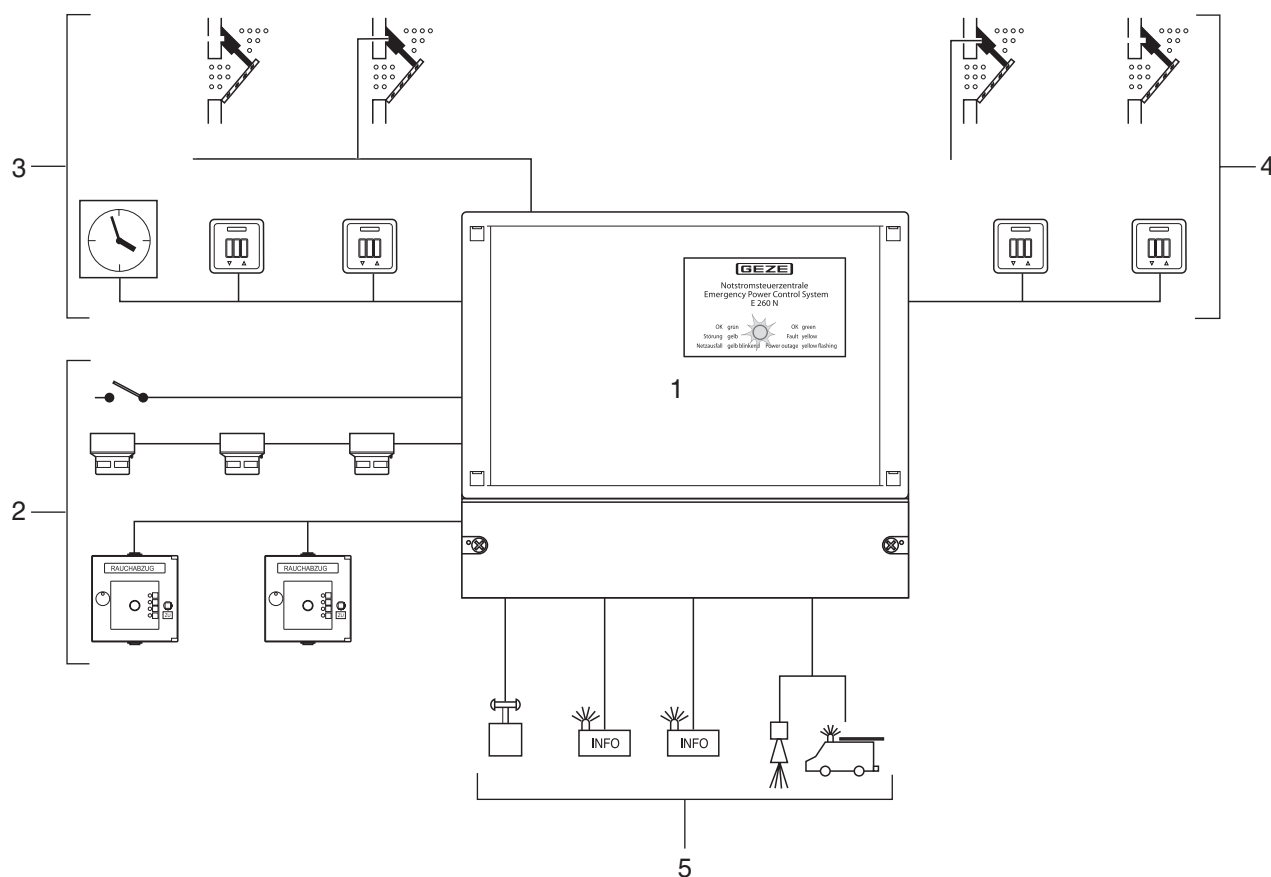
1. Charge the batteries in the RWA-Emergency Power Control System. Connect the RWA-Emergency Power Control System to the mains, insert the battery fuse and charge the battery for about 36 hours (see Section 2.5.4, Electrical connection).
2. Note the new charging date on the battery.



## 2.3 Components of the RWA-Emergency Power Control System

The RWA-Emergency Power Control System controls the extraction of smoke and heat (RWA) from staircases, factory halls, etc. Windows and smoke extraction vents are controlled for normal ventilation operation. In the event of a fire alarm, the windows are automatically opened or closed.

The RWA-Emergency Power Control System offers several configuration and expansion options which are described in the following sections.



1. RWA-Emergency Power Control System
2. Alarm group
3. Ventilator group 1
4. Ventilator group 2 (maximum of 4 ventilator groups with E 260 N8/4)
5. Rain/wind sensor and signals Window Open, Fault and Alarm

## RWA-Emergency Power Control System

The RWA-Emergency Power Control System is the central control unit to which all the other components are connected. The RWA-Emergency Power Control System controls the components and supplies them with power.

The type designation of the RWA-Emergency Power Control System specifies the maximum permissible output current for the drives and the number of ventilator groups that can be connected:

Type designation	Maximum output current to the drives	Maximum number of ventilator groups
E 260 N2/1	2.0 A *	1
E 260 N4/1 to E 260 N4/2	4.0 A	1–2
E 260 N8/1 to E 260 N8/4	7.5 A	1–4
E 260 N12/1 to E 260 N12/2	12 A	1–2

\* or 2 x E205/206 drives, E212-24 V

The number before the slash specifies the power group, the number following the slash gives the number of ventilator groups which can be connected.

### Alarm group

The RWA-Emergency Power Control System has one alarm group. The alarm group consists of two lines:

- An RWA switch line
- A smoke/heat differential sensor line

If either of these lines triggers the alarm, the drives of all of the ventilator groups will be actuated in accordance with the set alarm program.

Moreover, the alarm group can be connected to an external fire alarm system. If the external fire alarm system triggers a fire alarm, it starts the same alarm program as for an alarm from an RWA switch or smoke/heat differential sensor.

### Ventilator groups

Depending on the version, the RWA-Emergency Power Control System supports one, two, three or four ventilator groups. Each ventilator group has two lines:

- A drive line
- A ventilator switch line

All drives for a ventilator group are controlled jointly by one of the associated ventilator switches or by the optional timer switch.



Ventilator groups cannot be retrofitted.

### Rain/wind sensor

You can connect a rain/wind sensor, which closes all the windows in the event of rain or strong winds. The ventilator switches are disabled as long as the rain/wind sensor is active.

### Signals

An optional daughter card provides 3 additional contacts for signals or alarm lines:

- **Alarm:** On which you can, for example, connect an audible alarm or an alarm line to the fire station.
- **Fault:** On which you can, for example, connect a warning lamp.
- **Window Open:** On which you can, for example, connect a warning lamp.

## 2.4 Connection options and configurations

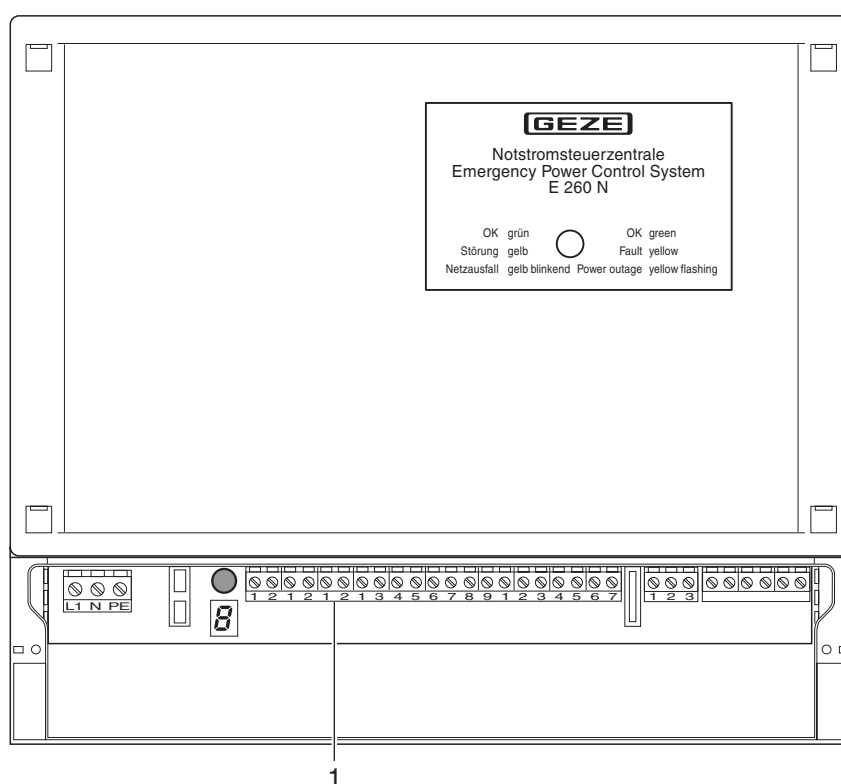
Before the installation, plan all the connections and the configuration of the RWA-Emergency Power Control System. The various options are explained in the following sections.

Discuss the design with the operator. Afterwards, complete the configuration table found in the Appendix. The configuration table is an important reference aid for future maintenance and repair.

Carry out the installation and commissioning work in the sequence described in Section 2.5, Installation.

### Main circuit board

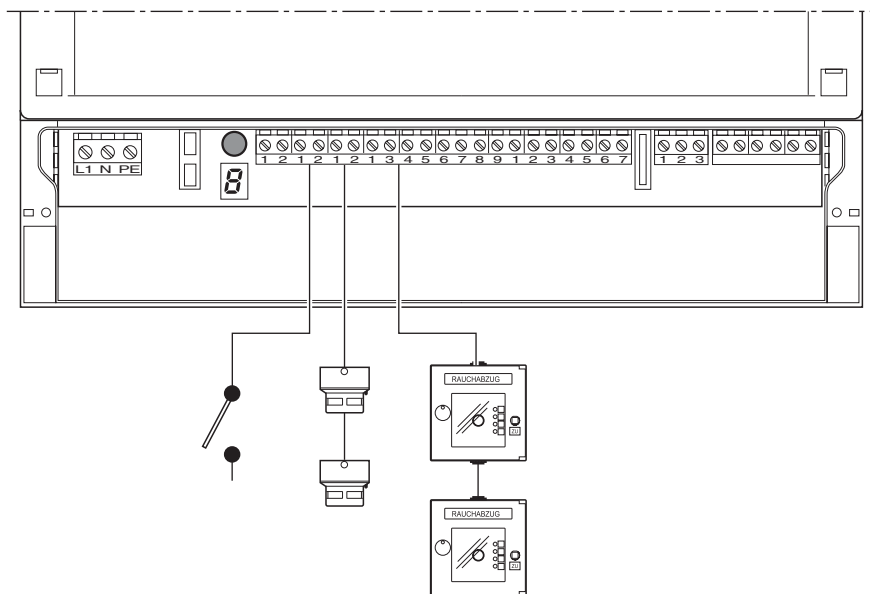
The components of the RWA-Emergency Power Control System are connected to the main circuit board (1).



### 2.4.1 Alarm group

The alarm group consists of a smoke/heat differential sensor line, an RWA switch line and an input for an external fire alarm system.

#### E 260 N2/N4/N8/N12



The alarm from the alarm group acts on all the ventilator groups of the RWA-Emergency Power Control System.

#### RWA switch

A maximum of four (E 260 N2/1) or ten (E 260 N4/1 to N12/2) RWA switches of type FT 4/24 V DC can be connected in line to the alarm group. With the exception of the last RWA switch, remove both terminating resistors from each RWA switch.

#### Smoke/heat differential sensor

Optical smoke sensors of type RM 1003/24V DC or heat differential sensors of type WM 1005/24V DC can be connected to the alarm group - either a max. total of 10 sensors (E 260 N2/1 to N8/4) or a max. total of 20 sensors (E 260 N12).

Both types can be used in any combination since they have the same socket. The terminating resistor, which is delivered with the RWA Emergency Power Control System clamped in the terminal strip, has to be installed in the last socket in the line.

#### External fire alarm system

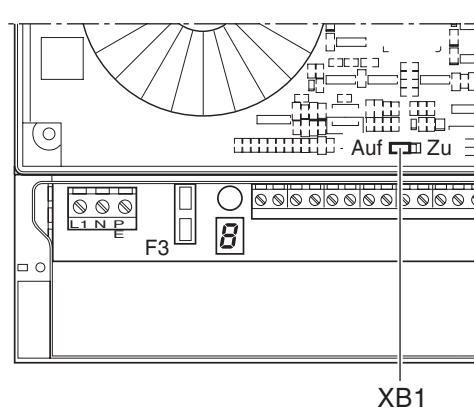
An external fire alarm system with a floating (potential-free) make contact can be connected to the alarm group.

### Setting the direction the drives should run when the alarm is triggered

You can configure the direction that the drives will run in the event of an alarm:

- The drive direction is set with Jumper XB1 at the back of the main circuit board.

#### E 260 N2/N4/N8/N12



Jumper	Position	Function
<b>XB1</b> (red)	"Auf" (open)	With alarm from alarm group: Drives in <b>Auf</b> (opening) direction With <b>Zu/Reset</b> (close/reset): Drives in <b>Zu</b> (closing) direction (Standard setting)
<b>XB1</b> (red)	"Zu" (close)	With alarm from alarm group: Drives in <b>Zu</b> (closing) direction With <b>Zu/Reset</b> (close/reset): Drives in <b>Auf</b> (opening) direction



**If you change the running direction of the drives, you must also re-label all the RWA switches.**

- Replace the word "**Zu**" (close) with the word "**Auf**" (open) on every RWA switch.

### 2.4.2 Ventilator groups

A ventilator group consists of a ventilator switch line and a drive line to open and close the windows. As an option, a timer switch can be connected to the ventilator switch line.

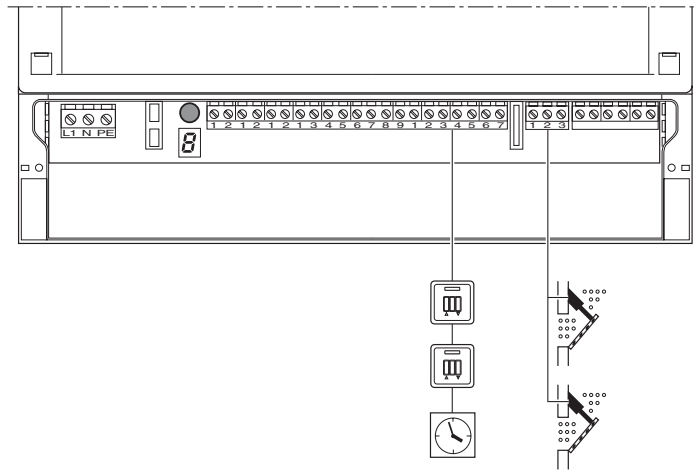
Every drive in a ventilator group reacts simultaneously to the signal from any ventilator switch or timer switch for this ventilator group.

One ventilator group is integrated on the main circuit board. For additional ventilator groups, optional daughter cards are added.

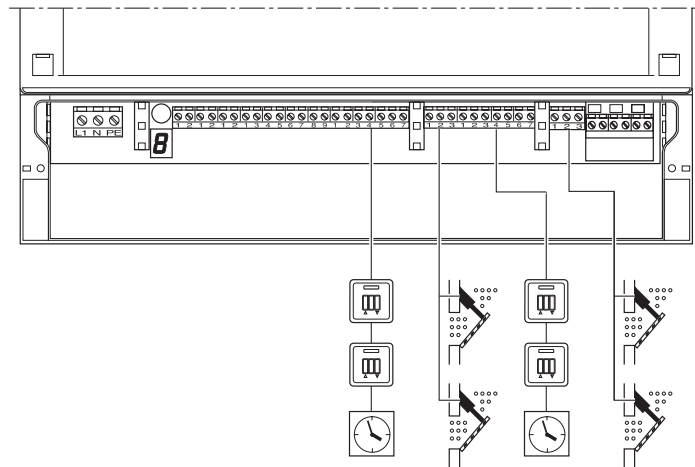


Additional ventilator groups cannot be retrofitted; the number of additional ventilator groups must be specified in the order.

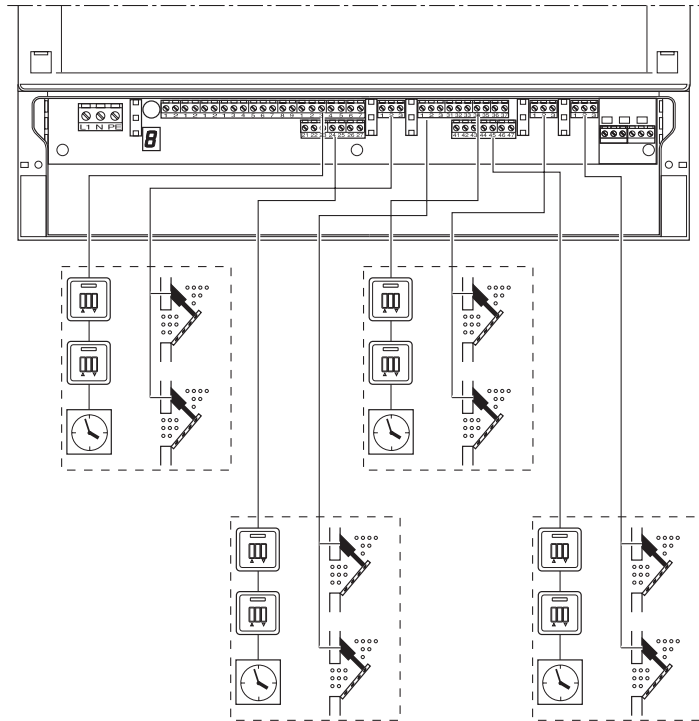
## E 260 N2



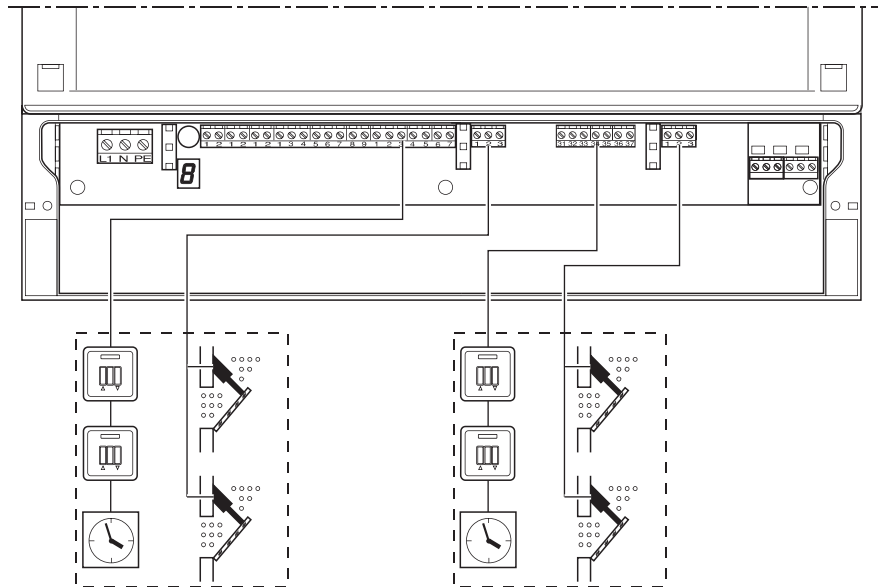
## E 260 N4



**E 260 N8**



**E 260 N12**



**Drives** The drives of a ventilator group are connected in line. Some of the drives recommended by GEZE have an integrated line monitor, which transmits an error message to the RWA-Emergency Power Control System in the event of line break.

For the windows and smoke extraction vents you must use 24 V DC drives with an integrated limit (end position) switch. Recommended drives are:

- GEZE actuating, spindle and chain drives
- Drives which conform with the GEZE specifications

Maximum number of drives:

The total number of drives on a RWA-Emergency Power Control System is limited by the maximum output current of the RWA-Emergency Power Control System:

Type designation	Maximum output current
E 260N 2/1	2.0 A or 2 drives E205/E206/E212-24 V
E 260N 4/1 to E 260N 4/2	4 A
E 260N 8/1 to E 260N 8/4	7.5 A
E 260N 12/1 to E 260N 12/2	12 A

**Ventilator switches** The ventilator switches for a ventilator group are connected in a line. Every ventilator switch on the line simultaneously controls all the drives which are connected to its ventilator group.

Maximum number of ventilator switches:

- 3 ventilator switches with LED, types E 50/5 or E 50/7
- any number of ventilator switches without LED, types E 50/1 or E 50/3

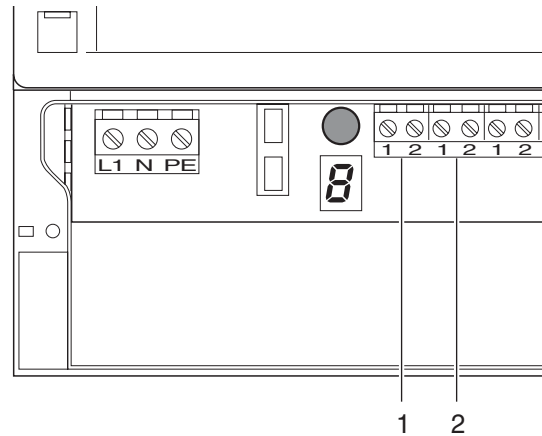
**Timer switch** As an option, a timer switch - such as the GEZE 2-channel timer switch - can be connected to each ventilator switch line. The timer switch must be set to pulse rather than continuous signal.

Since the timer switch and ventilator switch are considered as equal control elements, the RWA-Emergency Power Control System will react to the last signal received.



### 2.4.3 External equipment

You can connect external equipment to the RWA-Emergency Power Control System. This equipment can then either send signals to the RWA-Emergency Power Control System or receive signals from it.



- Rain/wind sensor (floating (potential-free) make contact) (1)
- External fire alarm system (floating (potential-free) make contact) (2)
- Alarm signal (floating (potential-free) alarm contact)\*
- Window Open signal (floating (potential-free) alarm contact)\*
- Fault signal (floating (potential-free) alarm contact)\*

\* optional daughter card required

#### Connecting a rain/wind sensor

You can connect a rain/wind sensor with a floating (potential-free) make contact.

If the rain/wind sensor is triggered:

- The ventilator switch is disabled.
- All the connected drives are run in the "**Zu**" (closing) direction.

The alarm program takes precedence over the rain/wind sensor. Which means in the event of an alarm:

- The windows are opened even if the rain/wind sensor is active.
- The windows will not be closed, if the rain/wind sensor is triggered after the alarm.

#### Connecting an external fire alarm system

You can connect an external fire alarm system with a floating (potential-free) make contact.

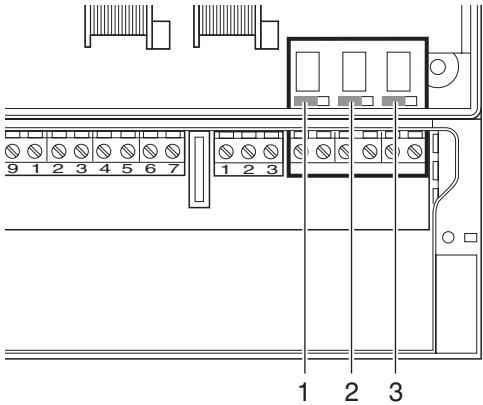
If the external fire alarm system triggers an alarm, the same alarm program will be started as for an alarm from an RWA switch or smoke/heat differential sensor.

The system is reset by the **Reset** button on the RWA-Emergency Power Control System or with the "**Zu**" (close) button on an RWA switch. **Before** the system can be reset, the external alarm signal must be switched off so that the RWA-Emergency Power Control System can respond properly should a new alarm signal arrive from the fire alarm system.

Connecting alarm contacts for Alarm, Window Open and Fault

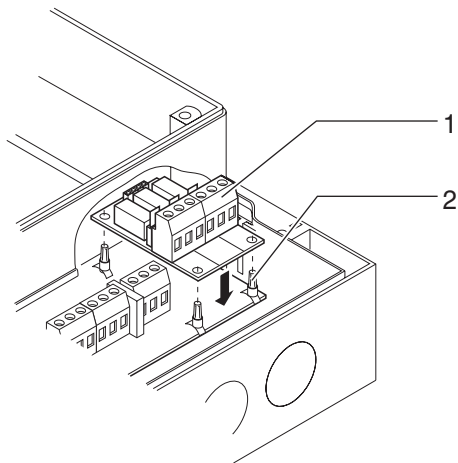
There are 3 floating (potential-free) alarm contacts for output signals: **Alarm**, **Window Open** (optional, cannot be retrofitted) and **Fault**. You can connect signal lamps, audible alarms or alarm signal lines to the fire station to these contacts. The maximum load for each contact is 30 W at 24 V.

⚠ The black jumpers (1), (2) and (3) behind the associated contact terminals configure the contacts as make (NO) or break (NC) contacts.



Jumper	Position	Function
(1)	left	Alarm contact acts as make (NO) contact.
(1)	right	Alarm contact acts as break (NC) contact.
(2)	left	Window Open contact acts as make (NO) contact.
(2)	right	Window Open contact acts as break (NC) contact.
(3)	left	Fault contact acts as make (NO) contact.
(3)	right	Fault contact acts as break (NC) contact.

Installing the "Alarm Contacts" daughter card



1. Switch off the mains and remove the battery fuse.  
The system is now off the circuit and de-energised.
2. Open the case.
3. Insert four spacers (2) into the holes in the main circuit board.
4. Push the "Alarm Contacts" daughter card (1) onto the spacers.

#### 2.4.4 Complete the configuration table

Once you have discussed the configuration with the operator:

- Complete the configuration table found in the Appendix.

#### 2.4.5 Summary of the jumper settings

##### Jumper XB1 on the main circuit board

Jumper	Position	Function
<b>XB1</b> (red)	<b>"Auf"</b> (open)	With alarm from the alarm group: Drives in <b>"Auf"</b> (opening) direction With <b>"Zu/Reset"</b> (close/reset): Drives in <b>"Zu"</b> (closing) direction
<b>XB1</b> (red)	<b>"Zu"</b> (close)	With alarm from the alarm group: Drives in <b>"Zu"</b> (closing) direction With <b>"Zu/Reset"</b> (close/reset): Drives in <b>"Auf"</b> (opening) direction

(also see Section 2.4.1 Alarm group)

##### Alarm contacts Alarm, Fault and Window Open

Jumper	Position	Function
(1) (black)	left	Alarm contact acts as make (NO) contact.
(1) (black)	right	Alarm contact acts as break (NC) contact.
(2) (black)	left	Window Open contact acts as make (NO) contact.
(2) (black)	right	Window Open contact acts as break (NC) contact.
(3) (black)	left	Fault contact acts as make (NO) contact.
(3) (black)	right	Fault contact acts as break (NC) contact.

(also see Section "Connecting alarm contacts for Alarm, Window Open and Fault" on the previous page)

## 2.5 Installation

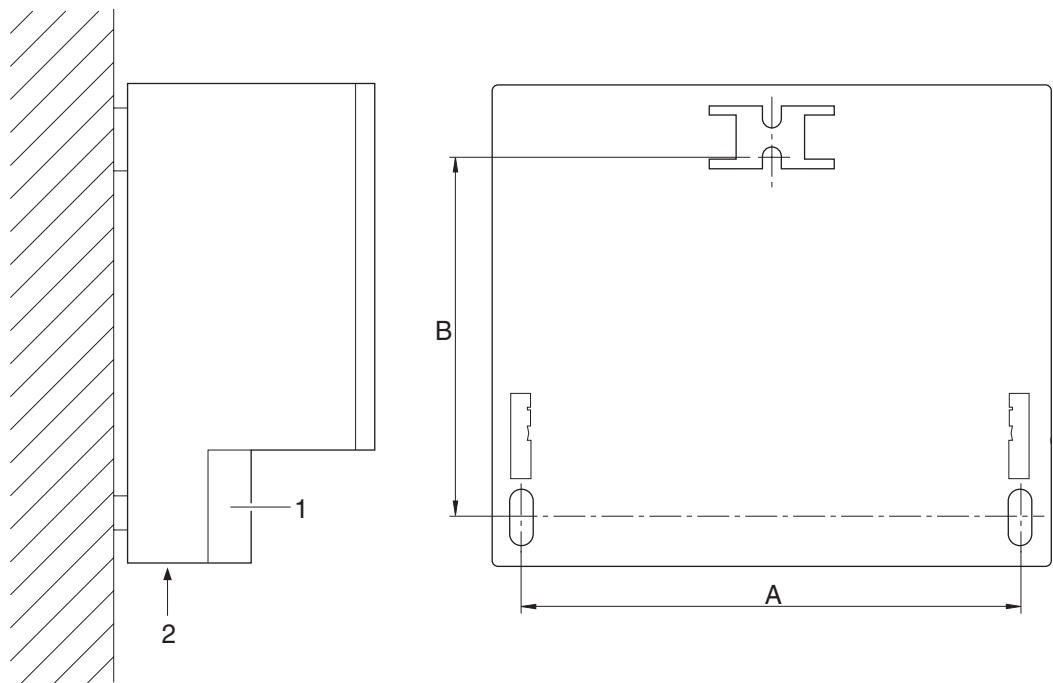
### 2.5.1 Preparation

- Discuss and coordinate the configuration with the owner, designer or operator.
- Consult the local approval authorities to determine the type of cable (for example fire protection cable) and the required type of protection.
- Comply with the maximum permissible cable length and required cable cross-sections.
- Ensure that all the necessary equipment, cable, cable clamps, screws and bolts, etc., are available.
- Ensure that the RWA-Emergency Power Control System installation is protected against excess heat.

### 2.5.2 Assembly



Mount the RWA-Emergency Power Control System on a vertical wall, in such a manner that the terminal compartment (1) and the cable feed (2) are at the bottom.



Drilling dimensions

	E 260 N2	E 260 N4	E 260 N8/E 260 N12
<b>Dimension A</b>	242	281	345
<b>Dimension B</b>	177	220	275

Mount the RWA-Emergency Power Control System in a location protected against excess heat:

1. Mark the holes.
2. Drill and plug the holes.
3. Have someone hold the RWA-Emergency Power Control System while you screw it to the wall.

### 2.5.3 Configuration



#### **DANGER**

**Risk of death through electrical shock!**

**Damage to sensitive components!**

- ✎ Disconnect the mains supply for the RWA-Emergency Power Control System and take precautions that it is not reconnected while you are working.
- ✎ Remove the battery fuse.

Before carrying out any configuration changes or expansions, you must isolate the RWA-Emergency Power Control System from the mains power and remove the battery fuse. Configure the RWA-Emergency Power Control System in accordance with Section 2.4, Connection options and configurations:

1. Install the required daughter card.
2. Set and check the jumpers.
3. Enter the configuration in the configuration table in the Appendix.

### 2.5.4 Electrical connection

#### **Connection diagrams**

You will find the connection diagrams in the packaging of the RWA-Emergency Power Control System.

#### **Cable lengths/cross-sections**

Please comply with the requirements for the cross-section of the cables to the drives:

- The formula for the required cable cross-section based on the cable length and the total current (of all drives):

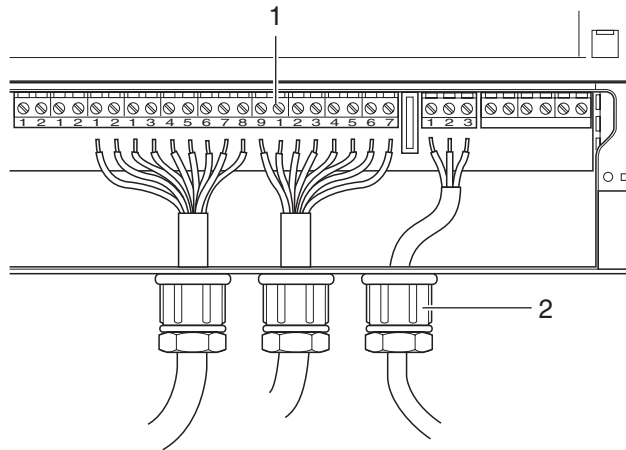
**Required cable cross-section = cable length x total current / 73**

- Minimum cross-section: 1.5 mm<sup>2</sup>
- Maximum cross-section (limited by the diameter of the wiring terminals): maximum 4.0 mm<sup>2</sup>

Table showing the maximum permissible line lengths in relation to total current and cable cross-section::

	1 A	2 A	4 A	6 A
1.5 mm <sup>2</sup>	100 m	50 m	25 m	16 m
2.5 mm <sup>2</sup>	180 m	90 m	45 m	30 m
4.0 mm <sup>2</sup>	280 m	140 m	70 m	45 m
5.0 mm <sup>2</sup>	360 m	180 m	90 m	60 m

## Connecting components



1. Break out the openings in the case required for the lines.
2. Insert cable glands (2) (not included in the delivery) to achieve the required protection type (see table below).
3. Feed the cables through the case and the cable glands into the RWA-Emergency Power Control System.
4. Feed the cables to the wiring terminals (1).

The enclosure of the RWA Emergency Power Control System without cable lead-in fulfils degree of protection IP54.

The degree of protection of cable glands with sealing ring is also IP54.

Thus, the maximum possible degree of protection for the enclosure is achieved by using cable glands with sealing ring.

The recommended sequence for connecting the components is as follows:

1. Connect the RWA switch, smoke sensor and heat differential sensor for the alarm group.
2. Connect the drives and ventilator switches (possibly timer switch) from ventilator group 1.
3. Connect consecutively the drives and ventilator switches (possibly timer switches) from the other ventilator groups.
4. Connect external equipment: Rain/wind sensor, fire alarm system, floating (potential-free) contacts for Alarm, Fault and Window Open.

### Check connections

Before connecting to the mains and to the battery, check the following:

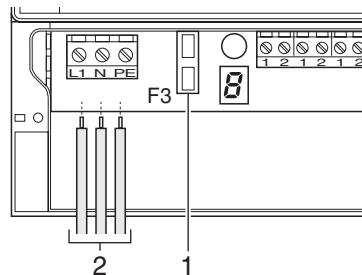
- the component connections
- the configuration (jumper settings)
- that the cable clamps are firmly fixed

### Things that are often forgotten

- The two terminating resistors should only be left in the last RWA switch on the line.
- Install a terminating resistor in the last smoke sensor or heat differential sensor on the line.
- Install a terminating resistor at the "External alarm" input.
- In the case of drives without line monitoring, connect the line monitor terminal to GND (see connection diagram).
- If a ventilator group has not been used, connect the line monitor terminal to GND (see connection diagram).

### Connecting the mains and batteries

After you have connected and configured all the components and checked the connections, connect the battery and mains supply.



### DANGER

#### Risk of death through electrical shock!

- ⚠ Before connecting the RWA-Emergency Power Control System to the mains supply, switch off the mains circuit and take precautions to prevent others from switching it back on.
1. Switch off the mains circuit and take precautions to prevent others from switching it back on.
  2. Connect the mains cable (2).
  3. Place the cover over the terminal compartment.
  4. Switch the mains circuit back on.
  5. Insert the battery fuse **F3** (1).

## 2.6 Function test

Before handing over the system, you must test all the functions of the RWA-Emergency Power Control System. These tests must also be performed during the annual maintenance work.



### **DANGER**

#### **Risk of death through electrical shock!**

⚠ Before touching terminals or mountings, switch off the mains circuit and take precautions to prevent others from switching it back on.

1. Check - with the mains power switched off - that the terminals and mountings are tight.
2. Check the power supply unit and charger.
3. Check the batteries.
4. Check the ventilation operation (opening and closing, LEDs).
5. Check the alarm functions (smoke sensor, heat differential sensor, RWA switch, coupled RWA-Emergency Power Control System) both operating from the mains as well as from emergency power (battery).
6. Check external connections (such as rain/wind sensor).



## 2.7 Operating states and faults

The operating state and any faults are shown on the 7-segment display of the RWA-Emergency Power Control System. If several states or faults occur at the same time, the display will cycle through them one per second.

### Operating state codes

The operating state codes provide information regarding the various alarm states of the RWA-Emergency Power Control System and about the rain/wind sensor. The operating state codes are continuously updated on the 7-segment display.

Display	Operating state
<b>0</b>	System is in order, no fire alarm, system in Open Window (Auf) mode in the event of fire alarm
<b>1</b>	System is in order, no fire alarm, system in Close Window (Zu) mode in the event of fire alarm
<b>2</b>	Fault - battery not connected
<b>3</b>	Fault - battery discharged
<b>4</b>	Fault - smoke sensor line broken or short circuit
<b>5</b>	Fault - RWA switch alarm line broken or short circuit
<b>6</b>	Fault - RWA switch closed line broken or short circuit
<b>7</b>	Fault - motor lines
<b>8</b>	Fault - fuse logic power supply ( <b>F8</b> )
<b>9</b>	Fault - fuse motor supply mains-side ( <b>F2</b> )
<b>A</b>	Fault - fuse battery ( <b>F3</b> )
<b>b</b>	Rain/wind sensor active
<b>C</b>	Fire alarm acknowledged, but signal from source is still present
<b>d</b>	Fire alarm from external alarm
<b>E</b>	Fire alarm from smoke sensor
<b>F</b>	Fire alarm from RWA switch
<b>L</b>	Charger faulty
<b>U</b>	Fault - external alarm line broken or short circuit

## 2.8 What to do when ...?

Problem	Cause	Action
Yellow signal lamp is illuminated on the RWA-Emergency Power Control System.	There are many possible causes.	Evaluate the operating state and fault codes on the 7-segment display.
Yellow signal lamp on the RWA-Emergency Power Control System is flashing.	Mains connection broken.	Check mains connection.
	Primary fuse <b>F1</b> is faulty.	Check fuse <b>F1</b> and replace if necessary.
Depressing the ventilator switch does not move the windows.	Mains power failure or other fault has occurred.	Evaluate the operating state and fault codes on the 7-segment display. Check drives.
	Rain/wind sensor active.	If there is neither rain nor wind: Check the rain/wind sensor.
7-segment display shows: <b>A</b>	Battery fuse <b>F3</b> is either missing or blown.	Check fuse <b>F3</b> and replace if necessary.
7-segment display shows: <b>2</b>	Connection to battery is broken.	Check battery connection.
LED alarm on the RWA switch illuminated, although the system is not in an alarm state.	Alarm has been reset, but there is still an active alarm signal.	Check whether the alarm switch in the RWA switch is released. Check the smoke sensor and heat differential sensor, external alarm, etc., accordingly.
7-segment display indicates fault in an RWA switch line: <b>5</b> or <b>6</b>	Line to the RWA switch is broken.	Check lines. Check the series connection of the RWA switches.
	Terminating resistors have not been installed correctly.	Check both terminating resistors (only leave them in the last switch of the line!).
7-segment display indicates fault in a motor line: <b>7</b>	Motor fuse is blown (green LED next to the motor terminal strip is illuminated).	Check the fuse.
	Motor line monitor fault (green LED next to the motor terminal strip is illuminated).	Check motor lines (motor line 3 may only be connected to the last motor). If there is no motor monitor, terminal 3 must be connected to GND. Check, which motor line has a fault.
7-segment display indicates fault in a smoke sensor line: <b>4</b>	Line to the smoke sensor is broken.	Check lines. Check that the smoke sensor is seated firmly in the socket.
	Terminating resistor missing.	Check the terminating resistor (only leave one in the last socket of the line!).
		Check the resistance value.
7-segment display indicates fault in the "External alarm" line" <b>U</b>	Line is broken or has a short circuit.	
	Terminating resistors are missing or placed incorrectly.	Check the circuiting and the value of the terminating resistors.

## 2.9 Testing and maintenance

The RWA-Emergency Power Control System must be checked annually by a GEZE-approved specialist. The operator must be given a written report covering the tests and maintenance done.



### **DANGER**

#### **Risk of death through electrical shock!**

- ⚠ Before beginning maintenance work on the RWA-Emergency Power Control System, switch off the mains supply and take precautions to prevent others from switching it back on.

### **Test steps**

The complete test consists of the following steps:

1. Perform a complete function test (see Section 2.6, Function test).
2. Every 4 years, replace both batteries and update the charging date on the battery.
3. Check that the drives are clean, if necessary clean and lubricate them.
4. Submit a written report covering the tests and maintenance performed.

## 3 Appendix

### 3.1 Technical data

- Technical characteristics**
- Mains supply 230 V AC 50 Hz, in accordance with DIN IEC 38, 10 A max. back-up fuse
  - Motor output voltage 24 V DC unregulated, residual ripple <20 %, max. 30 V
  - Control voltage 24 V DC  $\pm 10$  %
  - Protection type IP54 (using cable glands with sealing rings)
  - At least 72 hours of emergency power with 2 x 12 V lead gel batteries
  - Integrated regulated charger for the batteries
  - In ventilation operation, the opening time is limited to 300 s by a timer

**Performance characteristics** The following table presents the performance data for the various types of transformers and batteries as well as the maximum permissible output current for all drives::

Type designation	Transformer	Power pack	Maximum output current
E 260N 2/1	80 VA	1.2 Ah	2.0 A*
E 260N 4/1 to E 260N 4/2	130 VA	2.1 Ah	4.0 A
E 260N 8/1 to E 260N 8/4	260 VA	6–7.2 Ah	7.5 A
E 260N 12/1 to 12/2	480 VA	6–7.2 Ah	12 A

\* or 2 drives E205/206, E212-24 V

- Motor operation start-up time (mains operation): 25 %, max. start-up time: 5 min
- Switching capacity of the floating (potential-free) alarm contacts: 30 W at 24 V

- Maximum conductor cross-section**
- Control lines: 2.5 mm<sup>2</sup> maximum
  - Motor lines: 4.0 mm<sup>2</sup> maximum

- Smoke sensor and heat differential sensor**
- Optical smoke sensor with two-wire system using scattered light method, approval in accordance with VdS, sensitivity in accordance with EN 54/Part 7
  - Heat differential sensor with two-wire system, reacts to increase in temperature, approval in accordance with VdS, sensitivity in accordance with EN 54/Part 5, temperature limit 57 °C

- Emergency Power Control System case**
- Plastic
  - Cables fed from below
  - Colour: grey

Dimensions	Width (mm)	x	Height (mm)	x	Depth (mm):
E 260 N2/1	256	x	217	x	112
E 260 N4/1-2	295	x	261	x	112
E 260 N8/1-4	362,4	x	318,5	x	130,5
E 260 N12/1-2	362,4	x	318,5	x	130,5

**Ambient temperature** –5 °C to 40 °C, environmental protection type III

**Environmental conditions** Contamination level 2 in accordance with EN 60730 (normal environmental conditions)

<b>VdS approval</b>	G502031	E 260 N2/1 surface type
	G502032	E 260 N4/1 and E 260 N4/2
	G502033	E 260 N8/1, E 260 N8/2, E 260 N8/3 and E 260 N8/4
	G505004	E 260 N12/1, E 260 N12/2

### 3.2 Fuses

Fused with either glass cartridge 5 x 20 mm (AT) fuses or automotive blade-type fuses. The following fuses are used in the systems:

Designation		System N2/1	System N4/x
Mains fuse	F1	0.8 A T	2 A T
Charger supply	F8	0.8 A T	1.25 A T
Motor power supply	F2	3.15 A T	5 A T
Battery fuse	F3	3 A blade	5 A blade
Motor line 1	F4	3 A blade	4 A blade
Motor line 2	F5	-	4 A blade
Motor line 3	F6	-	-
Motor line 4	F7	-	-

Only use glass cartridge fuses 5 x 20 mm (F1, F2, F8) as per EN 60127-2/3.

Designation		System N8/x	System N12/x
Mains fuse	F1	3.15 A T	4 A T
Charger supply	F8	2 A T	2 A T
Motor power supply	F2	10 A T	16 A T
Battery fuse	F3	10 A blade	15 A blade
Motor line 1	F4	7.5 A blade	15 A blade
Motor line 2	F5	7.5 A blade	15 A blade (F6)
Motor line 3	F6	7.5 A blade	-
Motor line 4	F7	7.5 A blade	-

Only use glass cartridge fuses 5 x 20 mm (F1, F2, F8) as per EN 60127-2/3

### 3.3 Configuration table

**System model** E 260N ○/○

- Alarm group**
- ☐ Number of RWA switches
  - ☐ Number of smoke sensors/heat differential sensors
  - ☐ Closes the windows
  - ☐ Opens the windows

- Ventilator groups**
- |   |  |   |
|---|--|---|
| <input type="checkbox"/> Ventilator group 1 | <input type="radio"/> Number of drives | <input type="radio"/> Number of ventilator switches |
|   | <input type="checkbox"/> Timer switch  |   |
| <input type="checkbox"/> Ventilator group 2 | <input type="radio"/> Number of drives | <input type="radio"/> Number of ventilator switches |
|   | <input type="checkbox"/> Timer switch  |   |
| <input type="checkbox"/> Ventilator group 3 | <input type="radio"/> Number of drives | <input type="radio"/> Number of ventilator switches |
|   | <input type="checkbox"/> Timer switch  |   |
| <input type="checkbox"/> Ventilator group 4 | <input type="radio"/> Number of drives | <input type="radio"/> Number of ventilator switches |
|   | <input type="checkbox"/> Timer switch  |   |

#### External connections

External connection	Connections/Configurations
<input type="checkbox"/> Rain/wind sensor	
<input type="checkbox"/> Fire alarm system	
<input type="checkbox"/> External alarm signal	<input type="checkbox"/> Make contact <input type="checkbox"/> Break contact
<input type="checkbox"/> External fault signal	<input type="checkbox"/> Make contact <input type="checkbox"/> Break contact
<input type="checkbox"/> Window Open	<input type="checkbox"/> Make contact <input type="checkbox"/> Break contact

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