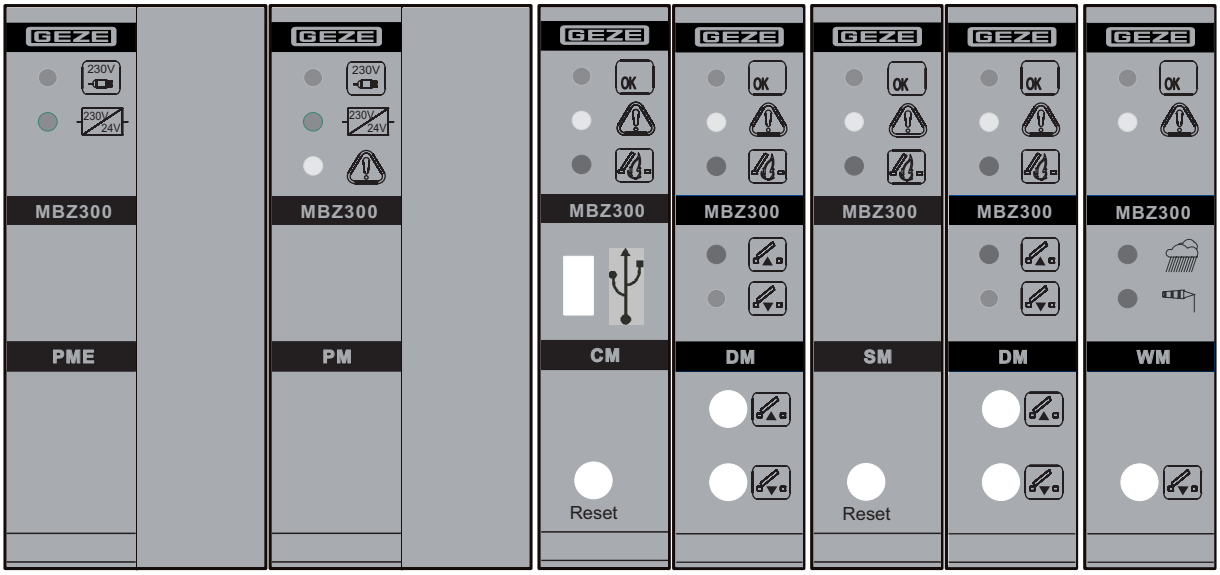


MBZ300

Emergency power control unit

GB Installation instructions

GEZE

Table of contents

1 Symbols and illustrations

Warnings
In these instructions, warnings are used to warn against material damage and injuries.
- ▶ Always read and observe these warnings.
- ▶ Observe all the measures that are marked with the warning symbol and warning word.

Warning symbol	Warning word	Meaning
	**DANGER**	Danger for persons. Non-compliance will result in death or serious injuries.
	**WARNING**	Danger for persons. Non-compliance can result in death or serious injuries.
	**CAUTION**	Danger for persons. Non-compliance can result in minor injuries.
–	**CAUTION**	Information on avoiding material damage, understanding a concept or optimising the processes.

Further symbols and means of representation
Important information and technical notes are emphasised in order to illustrate the correct operation.

Symbol	Meaning
	means “important note”
	means “additional information”
▶	Symbol for an action: Here you have to do something. ▶ Observe the sequence if there are several action steps.

2 Product liability

In accordance with the liability of manufacturers for their products as defined in the German “Produkthaftungsgesetz” (Product Liability Act), the information contained in these instructions (product information and intended use, misuse, product performance, product maintenance, obligations to provide information and instructions) is to be observed. Non-observance releases the manufacturer from his statutory liability. GEZE shall not be liable if devices from other manufacturers are used with GEZE equipment.

3 Safety instructions

3.1 General information

The specifications in this description always refer to the factory standard configuration. Changes to the software configuration of the control unit may only be carried out by qualified personnel trained by GEZE. A warranty claim against the manufacturer or distributor of the control unit does not exist for damage that is due to interventions in the control unit which are not authorised by the manufacturer or its distributor.
The specifications in this description have to be observed when connecting components. Planning and calculation of the power network is to be done by an installer and has to be carried out in accordance with the statutory regulations (in Germany for example in accordance with MLAR).
- ▶ Before the system is approved for operation carry out and log an insulation measurement of the supply network of the system.


- ▶ Contact GEZE if support is required for planning and setting up the system.

These instructions must be followed in order to ensure the safety of persons.
- Eliminate all the faults in the system immediately.
- Always keep the installation instructions on hand near the control unit (e.g. in a plastic envelope directly on the front door of the emergency power control unit).

Duties of the owner-operator
- Secure workplace against unauthorised entry.
- Ensure that installation, commissioning and maintenance are only carried out by qualified personnel authorised by GEZE. Unauthorised changes made to the system will mean that GEZE is no longer responsible for any resulting damages.
- Ensure that the keys for the control cabinet and the RWA button are only available to instructed personnel.

Electrical system
- Before working on the electrical system, interrupt the power supply (mains and battery) and verify the safe isolation from supply.
- Ensure that the connection to the power supply is only carried out by a qualified electrician. The power connection and earth conductor test must be carried out in accordance with DIN VDE 0100-600.
- Use an on-site double pole overload cut-out as the line-side disconnecting device in accordance with the permissible current carrying capacity of the cable.

After the system housing has been opened, live parts are exposed. The system has to be disconnected from the mains and battery voltage before any intervention in the control unit. The connecting terminals for system components in parts have a low voltage of ≤50 V.
- Do not activate the mains and battery voltage until all the system components have been connected.
- When replacing the batteries only use batteries approved by GEZE.
- Make sure that the control unit cannot be opened by unauthorised persons.
- Only use the cables prescribed in the cable plan. Lay shields in compliance with the wiring diagram.
- Specify cable types (e.g. fire protection cables) and required degree of protection in agreement with the local inspection authority.
- Always use insulated wire-end ferrules for wire cores.
- Insulate the cores that are not used.
- Secure loose cables with cable ties.

Maintenance check
A safety-related test with maintenance has to be carried out by a GEZE-authorised specialist as required – at least once a year. You are given written proof of the test. All the batteries have to be replaced after 4 years at the latest.

Spare parts
GEZE is not liable if products from other manufacturers are used with GEZE equipment.
- Use only original GEZE parts for repair and maintenance work.

Regulations and standards
Warranty claims require mounting, installation and maintenance in accordance with the manufacturer's specifications by a specialist company. Observance of all the relevant statutory regulations and instruction in correct operation lie in the responsibility of the owner-operator or the installer commissioned by the owner-operator respectively.

- Maintain the system in accordance with the statutory regulations.
- Observe the maintenance specifications.
- Observe the latest versions of guidelines, standards and country-specific regulations, in particular:
  - ASR A1.7 "Guidelines for doors and gates"
  - DIN VDE 0100-600 "Setting up of low-voltage installations"
  - DIN EN 60335-2-103 "Safety of electrical devices for home use and similar purposes; special requirements for drives for gates, doors and windows"
  - Accident prevention regulations, especially BGV A1 (VBG 1) "General regulations" and BGV A3 (VBG 4) "Electrical systems and equipment"
  - VDE 0833 "Alarm systems for fire, intrusion and hold-up"
  - VDE 0815 "Wiring cables for telecommunication and data processing systems"
  - MLAR "Model Guideline for Line Systems"

3.2 Behaviour in the event of a fire

WARNING!
Danger of fatal injury in case of malfunctions during a fire since the escape routes can fill with smoke!
The system has to work interference-free.
- Have all faults eliminated immediately.
- If the **yellow** fault display of the RWA button lights up, inform those responsible immediately.

The emergency functions of the RWA emergency power control unit are triggered by the RWA button in case of a fire.
In order to reset a fire alarm the RWA emergency power control unit may only be opened by an instructed operator. The safety instructions and fire protection regulations in particular must be observed.

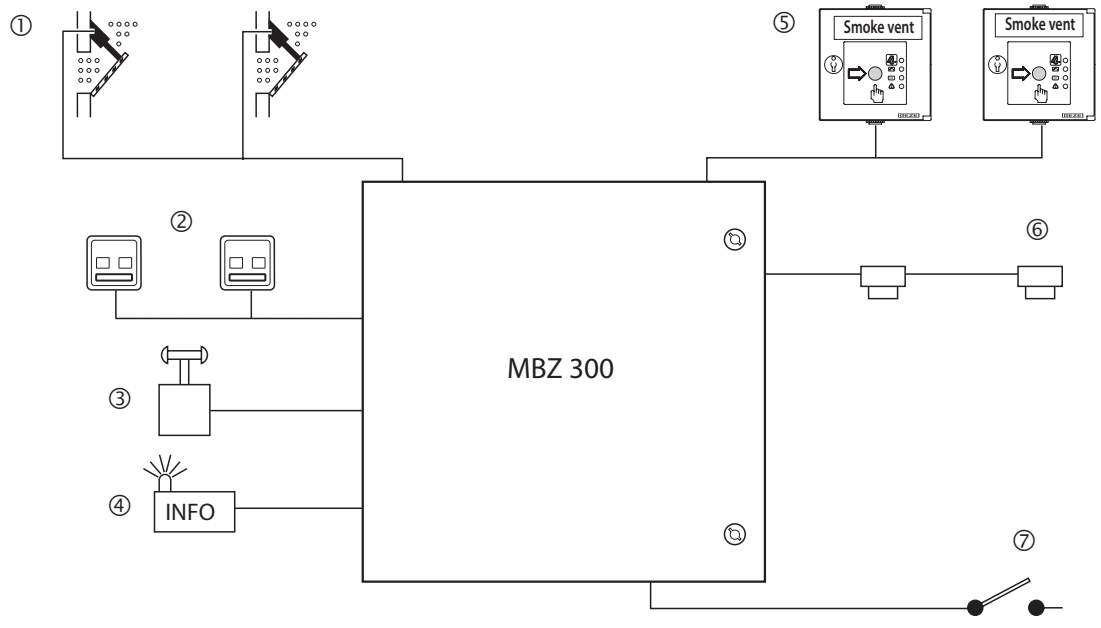
3.3 Intended use

With the emergency power control unit rooms are ventilated and smoke extracted automatically in the event of a fire.
The MBZ300 emergency power control unit meets the requirements of sound engineering practice and conforms to the applicable safety regulations. The system is designed solely for use in dry rooms.

4 Functions and properties

The RWA emergency power control unit is the central control unit to which all components are connected. The RWA emergency power control unit controls the behaviour of the components, supplies them with power and bridges power outages.
The RWA emergency power control unit controls the smoke and heat extraction (RWA) of stairwells, factory buildings etc. Windows and smoke extraction openings can be controlled for normal ventilation operation.
In the event of a fire alarm the windows and smoke extraction openings are opened or closed automatically, depending on the configuration of the RWA emergency power control unit.

4.1 Overview of the RWA emergency power control unit



1 Drives of windows and smoke extraction flaps
1 Vent switch
1 Rain/wind control
1 Alarm/fault signals
1 RWA button
1 Smoke detector and heat differential detector
1 Alarm from external fire alarm system

4.2 Properties

- Controlling of motorised 24 V DC drives for smoke and heat extraction in case of fire
- Controlling of a controlled natural ventilation (if necessary also triggering of pressure-gas generators and retention magnets)
- Processing of triggering signals from manual and automatic smoke alarms and smoke alarm systems
- Manual and automatic ventilation control (via vent switches, wind-rain sensors, room temperature sensor, etc.)
- Forwarding of all important operating states to external evaluation components
- Possibility for maintenance, configuration and update using PC software for Windows© (via USB port)
- Integration in an external BUS system (e.g. CAN)
- NRA/RWA operation using batteries in the event of a mains power failure
- Line monitoring of all the connected manual and automatic detectors as well as of the drive lines
- Optical operating and fault messages for fast fault localisation
- Digital storage of important operating states and of the service settings
- Internal BUS system for modular equipping:
  - Power module **PM** for controlling and monitoring the mains and battery voltage as well as charging circuit and battery
  - Power module extension **PME** for controlling and monitoring more than one switching power supply unit (max. 3 switching power supply units 24 A for 72 A)
  - Control module **CM** for connecting manual and automatic smoke alarms as well as external EMERGENCY-OPEN triggering signals; with USB port
  - Sensor module **SM** with connection possibilities as control module **CM**. The sensor module requires a control module to be present.
  - Drive module **DM** for 10 A max. drive current for connection of 24 V DC drives, diverse pushbuttons and control units. Pressure-gas generators or retention magnets can be triggered or supplied by appropriate programming.
  - Weather module **WM** for operating wind and rain sensors and wind-direction-dependent opening and closing of smoke vents in the event of a fire
- USB interface for configuring and controlling the control unit via software, for updates and for storing user information
- Temperature sensor for temperature-dependent battery charging

All the units are located in a lockable surface-mounted housing made of painted sheet steel (RAL 7035) with locking insert (two-way key bit, 3 mm) in enclosure rating IP 30. The housing dimensions depend on the version and equipment of the control unit.

4.3 GEZE MBZ300 modular principle

Hardware configuration

- The modules can be mounted on a standard top-hat rail (TS 35). After correct connection the module is recognised immediately and integrated automatically into the system via the BUS. Faults and errors during connection are indicated through rapid flashing of the status displays or through the fault display (see chapter 5.1.5).

Software configuration

- Smoke zones and ventilator groups can be configured in a range of different ways thanks to the modular system.
- The possibilities of the software configuration and the extensive field of application of the modules mean that special installations in the control unit are hardly necessary for special applications.

4.4 Components of the MBZ 300 control unit

4.4.1 Power supply (depending on the version)

- 1 switching power supply unit 10 A and 2 emergency power batteries 12 V (minimum equipment)
- 1 switching power supply unit 24 A and 2 emergency power batteries 12 V
- 2 switching power supply units 24 A (= 48 A) and 2 emergency power batteries 12 V
- 3 switching power supply units 24 A (= 72 A) and 2 emergency power batteries 12 V (maximum equipment)

4.4.2 Modules

- Power module **PM**:
  - 24 A or 10 A (depending on switching power supply unit)
- Power module extension **PME**:
  - 24 A or 10 A additionally (depending on switching power supply unit) for the 2nd or 3rd switching power supply unit
- Control module **CM** (exactly 1 required for the first smoke zone):
  - Detector lines (max. 3) and connection for ventilation control
  - USB port
  - Ventilation control commands take priority over the sensor modules (the other smoke zones)
- Sensor module **SM** (for further smoke zones) (max. 16 per control unit):
  - Detector lines (max. 3) and connection for ventilation control units (additional)
  - Ventilation control commands have a lower priority than the control module
- Drive module **DM** or **DME**:
  - Drive line up to a max. of 10 A/20 A (with a corresponding software configuration pressure-gas generators or retention magnets can be triggered, for example)
  - Connection of ventilation control units and operating status displays
- Weather module **WM** (max. 1 required):
  - Connection of wind and rain sensor and/or of wind direction sensor

4.5 Standard control units

The following standard control units are available preconfigured from GEZE:

	MBZ 300 standard control units				
	N10	N24	N48K	N48G	N72
Control cabinet size W x H x D [mm]	400 x 500 x 200	600 x 600 x 250	600 x 600 x 250	600 x 800 x 250	600 x 800 x 250
Mat. no.	137016	137017	137017	137018	137018
Output current for drives (max.)	10 A	24 A	48 A	48 A	72 A
Mains adapters (installed)	1x 10 A	1x 24 A	2x 24 A	2x 24 A	3x 24 A
Modules (installed)	1x PM 1x CM 1x DM	1x PM 1x CM 3x DM	1x PME 1x PM 1x CM 6x DM	1x PME 1x PM 1x CM 6x DM	2x PME 1x PM 1x CM 9x DM
Smoke zones	1	1	1	1	1
Ventilator groups	1	3	6	6	9
Slots for further modules	8	18	5	13	8
Batteries (suitable types)	12 Ah	17 Ah, 24 Ah, 38 Ah	24 Ah, 38 Ah	24 Ah, 38 Ah	38 Ah
Battery connection	Tab connector 6.3 mm	Ring cable lug M5	Ring cable lug M5	Ring cable lug M5	Ring cable lug M5

Extension possibilities:
- further ventilator groups through installation of additional drive modules DM
- further smoke zones or alarm lines through installation of additional sensor modules SM

5 Installation

Installation sequence (overview)

▶ Before starting work check the completeness and correctness of the delivery using the delivery note (control unit size, batteries, modules, etc.). Later complaints can no longer be recognised.

▶ Check the configuration of the equipment of the RWA emergency power control unit and adapt/extend if necessary.
▶ Fix the housing securely in place and keep it easily accessible for maintenance.
▶ Mount the drives and control elements (observe the permissible connection values and specifications of the respective installation instructions).
▶ Insert the cables through the cable glands in the control unit.
▶ Connect external components.

5.1 Equipment and configuration of the MBZ 300 control unit

Overview of the modules and components

- Power module **PM**
- Power module extension **PME**
- Control module **CM**
- Sensor module **SM**
- Drive module **DM / DME**
- Weather module **WM**
- Mains adapter 10 A, PS10A
- Mains adapter 24 A, PS24A

Minimum and maximum equipment

- The minimum equipment consists of 1 switching power supply unit, 1 power module **PM**, 1 control module **CM** and 1 drive module **DM**.
- The maximum equipment can contain up to 64 BUS modules at a max. of 72 A (3 switching power supply units with 24 A each). If more capacity is required, several units can be configured via the software as a combined unit.

5.1.1 Determining the correct equipment of the control unit

Switching power supply units and power modules

- The number of switching power supply units and power module extensions **PME** requires results from the maximum drive current. The power module **PM** is always required. One **PME** each is required for every further switching power supply unit.

▶ From the maximum current requirement you determine:

- Number of switching power supply units (10 A or 24 A, max. 3 switching power supply units)
- Number of power module extensions (**PME**, each 24 A max., 1 per switching power supply unit, max. 1 **PM** + 2 **PME**)
- Battery types for emergency power supply

Batteries for emergency power supply

▶ Observe the following when selecting the batteries:

- Back-up time for emergency power operation in the event of power failure
- Max. drive current
- Number and types of the modules
- Number of connected detectors

The emergency power supply has to be guaranteed for 72 h and motor operation then still has to be possible for a subsequent 180 s (2x opening and 1x closing) at the maximum motor current.

Typical own consumption of the modules (with battery voltage 24 V)

- Power module **PM** 16.1 mA
- Power module extension **PME** 0.0 mA
- Control module **CM** 20.6 mA (incl. 3 detector line terminators)
- Sensor module **SM** 12.6 mA (incl. 3 detector line terminators)
- Drive module **DM** 5.3 mA
- Drive module **DME** 5.3 mA
- Weather module **WM** 13.0 mA
- **CAN** module 6.0 mA

Maximum permissible own current consumption for all control unit modules

SNT / Battery	7 Ah	12 Ah	17 Ah	24 Ah	38 Ah
10 A	42 mA	120 mA	140 mA	240 mA	350 mA
24 A		70 mA	120 mA	200 mA	300 mA
48 A			80 mA	170 mA	300 mA
72 A				100 mA	300 mA

SNT = switching power supply unit

Observe the control cabinet size when selecting the batteries.

Examples for the selection of the required battery capacity for MBZ 300 standard control units:

Battery capacity	N10	N24	N48K	N48G	N72
12 Ah	Motor current: 10 A 1x SM, 5x DM 20x RWA button 30x smoke detector	–	–	–	–
17 Ah	–	Motor current: 24 A 1x SM, 8x DM 20x RWA button 30x smoke detector	–	–	–
24 Ah	–	Motor current: 24 A 4x SM, 12x DM 40x RWA button 60x smoke detector	Motor current: 48 A 1x SM, 9x DM 30x RWA button 40x smoke detector	Motor current: 48 A 1x SM, 9x DM 30x RWA button 40x smoke detector	–
38 Ah	–	Motor current: 24 A 8x SM, 24x DM 60x RWA button 60x smoke detector	Motor current: 48 A 5x SM, 22x DM 60x RWA button 60x smoke detector	Motor current: 48 A 5x SM, 22x DM 60x RWA button 60x smoke detector	Motor current: 72 A 3x SM, 18x DM 40x RWA button 60x smoke detector

The required capacity has to be calculated in the case of deviating combinations.

Drive modules DM for ventilator groups
One drive module **DM** allows a max. of 10 A for the connection of a ventilator group.
Calculation examples:

Current required	Drives modules 10 A	Switching power supply units	Power modules
16 A	2 (20 A)	1x 24 A	1 (**PM**)
30 A	3 (30 A)	1x 24 A + 1x 10 A	2 (**PM** + **PME**)

Control module CM and sensor modules SM
A control module **CM** is always needed. It monitors the first smoke zone. One sensor module **SM** each is required for every further smoke zone.

Weather module
A weather module **WM** is required if the ventilation is to be controlled via wind and rain sensors or if wind-direction-dependent opening or closing is required in the event of a fire.

Housing
The housing size results from the number and layout of the modules, the number of the switching power supply units required and the size of the batteries.

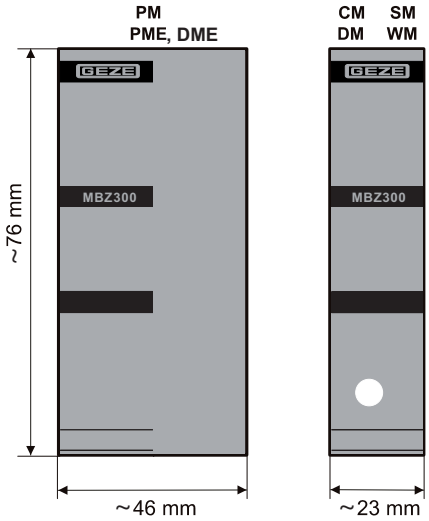
5.1.2 Space required for the modules and components on the top-hat rail (width)

Modules

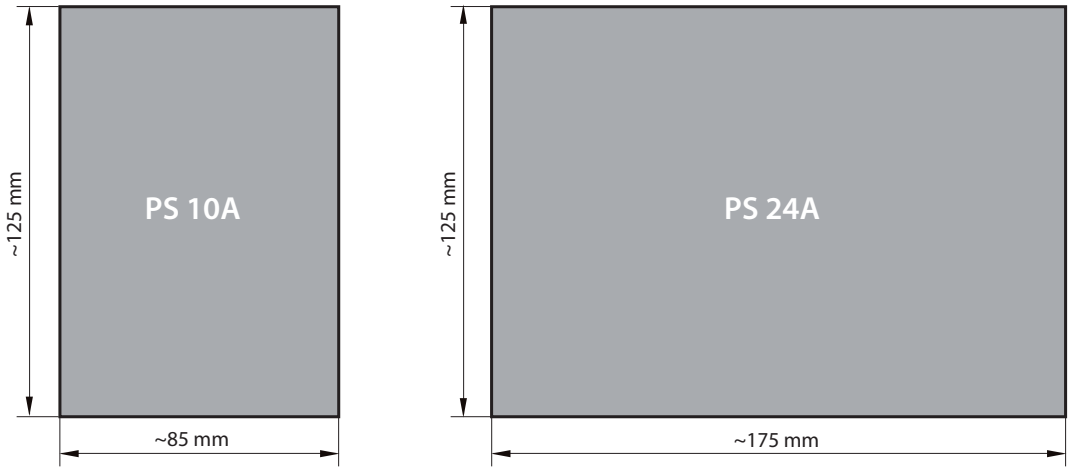
- Control module **CM**, sensor module **SM**, drive module **DM**, weather module **WM**
  - approx. 23 mm
- Power module **PM**, power module extension **PME, DME**
  - approx. 46 mm

Examples

- **PM**, **CM** and **DM** (minimum equipment):
  46 + 23 + 23 = 92 mm
  – or –
  with **WM**:
  92 + 23 = 115 mm



Switching power supply units



If there is only one switching power supply unit with 10 A, the space it requires on the top-hat rail is added to that of the modules. Otherwise the switching power supply units are located on a separate top-hat rail.

5.1.3 Dimensions of the batteries

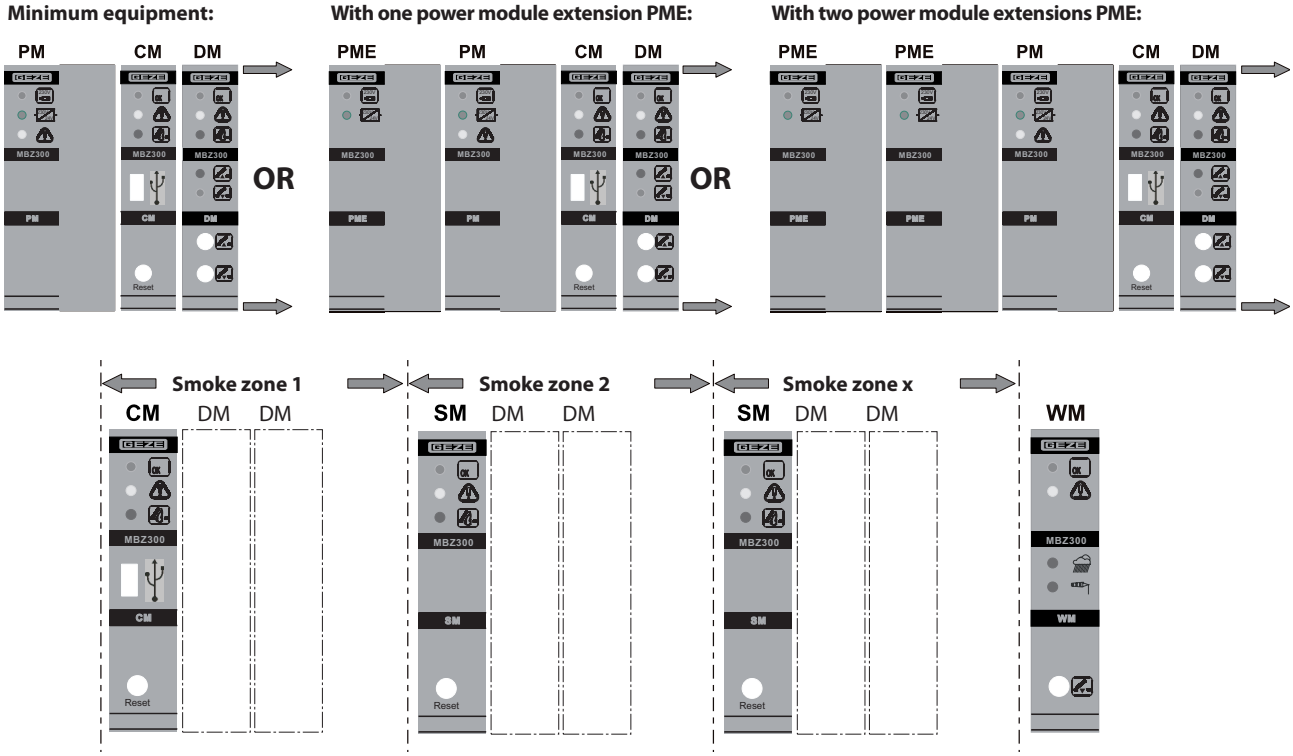
Battery type	Nominal voltage [V]	Capacity [Ah]	Length [mm]	Width [mm]	Height [mm]	Weight [kg]	Pole type
NP 12-12	12	12	151	98	97.5	4.09	6.3 mm
NP 17-12 I	12	17	181	76	167	5.97	M5
NP 24-12 I	12	24	166	175	125	8.92	M5
NP 38-12 I	12	38	197	165	170	13.93	M5

The dimensions apply for 1 battery. Two batteries are required per control unit.

5.1.4 Layout of the modules on the top-hat rail

It is imperative that the module layout on the top-hat rail be observed.

- ▶ Place the modules on the top-hat rail in the following order directly next to each other (from left to right):
  - Power module extensions **PME** (if present)
  - Power module **PM**
  - Control module **CM** and associated drive modules **DM** (if present)
  - One sensor module SM and respective associated drive modules **DM** (if present) for each further smoke zone
  - Weather module **WM** (if present)



5.1.5 Changing the module configuration

As long as the system has not yet been configured with the PC, the number, type and order of the modules are recognised automatically after every restart and integrated into the standard configuration (self-teaching function).
If the assignment of the drive modules to the smoke zones has to be changed subsequently (for example because an additional SM module has been installed), the system has to be reconfigured.

- ▶ Press the RESET pushbutton on the CM module for approx. 20 s until all the operating LEDs flash.

The modules are now readdressed automatically.

- ▶ Only connect or disconnect modules in deenergized state, switch mains voltage and battery off first.

5.2 Connection of the MBZ 300 control unit

The following three connection types exist for the modules:

- Supply voltage
  - Power module **PM**
  - Power module extension **PME**
  - Drive module **DM**
- BUS connection (ribbon cable)
  - All modules (only connection **PME** – **PM** on the module top, remaining modules on the bottom)
- External components
  - Detectors, drives, etc. (plug-in terminals on the module top)

5.2.1 Connection of the supply voltage

The following has to be connected (if not already done in the factory):

- Internal power supply
- Batteries (also have to placed central housing)
  - Switching power supply units to the power module **PM** and, if necessary, power module extensions **PME**
  - Drive modules **DM** to the supply voltage

All the other modules do not require a connection to the supply voltage. The following diagrams show the connection for:

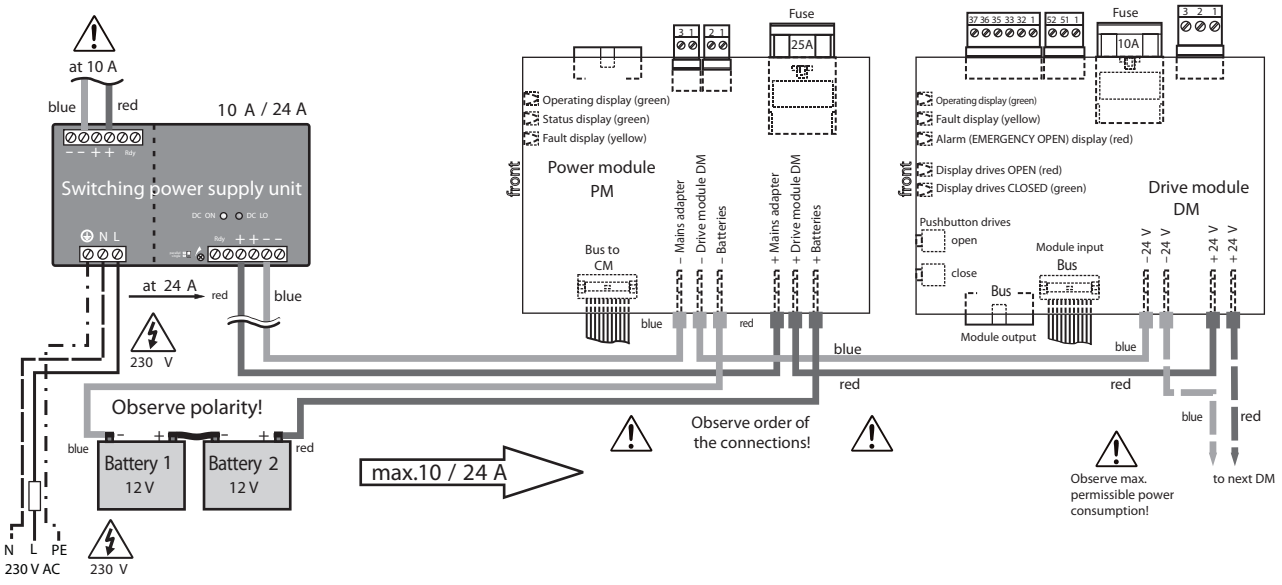
- **1** power module **PM** with **1** switching power supply unit 10 A or 24 A
- **1** power module **PM** with **1** power module extension **PME** and **2** switching power supply units 10 A or 24 A
- **1** power module **PM** with **2** power module extensions **PME** and **3** switching power supply units 10 A or 24 A
-

The number of drive modules **DM** that can be connected to a switching power supply unit with **PM** or **PME** depends on the maximum current consumption at the respective switching power supply unit.

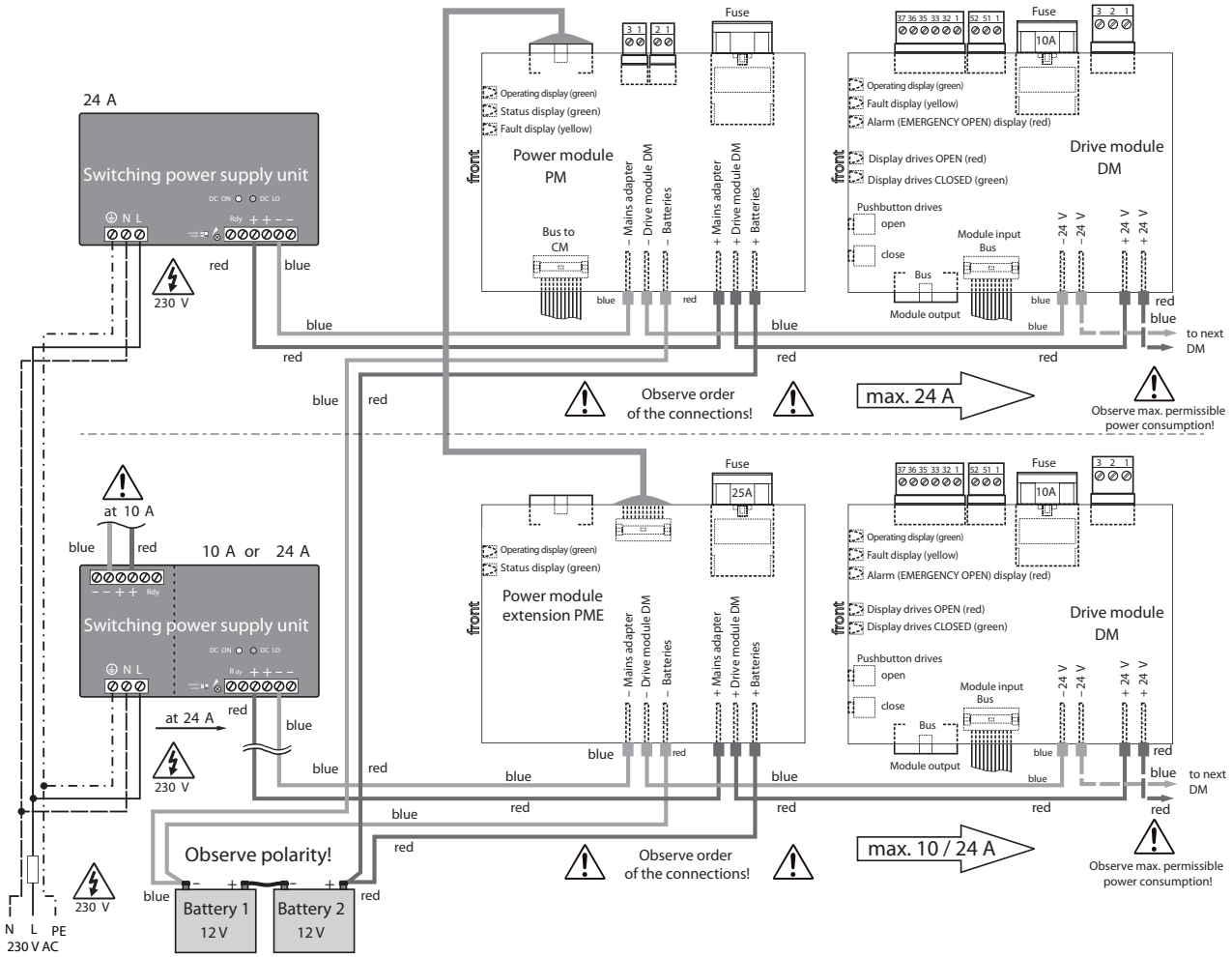
Application examples:

- Switching power supply unit 10 A with **1 DM** at max. 10 A power consumption
  – or –
  Switching power supply unit 10 A with **2 DM** for two ventilator groups with max. 5 A power consumption each
- Switching power supply unit 24 A for **2 DM** with max. 10 A power consumption each
  – or –
  Switching power supply unit 24 A for **4 DM** if the max. power consumption of 10 A per **DM** and 24 A total are not exceeded

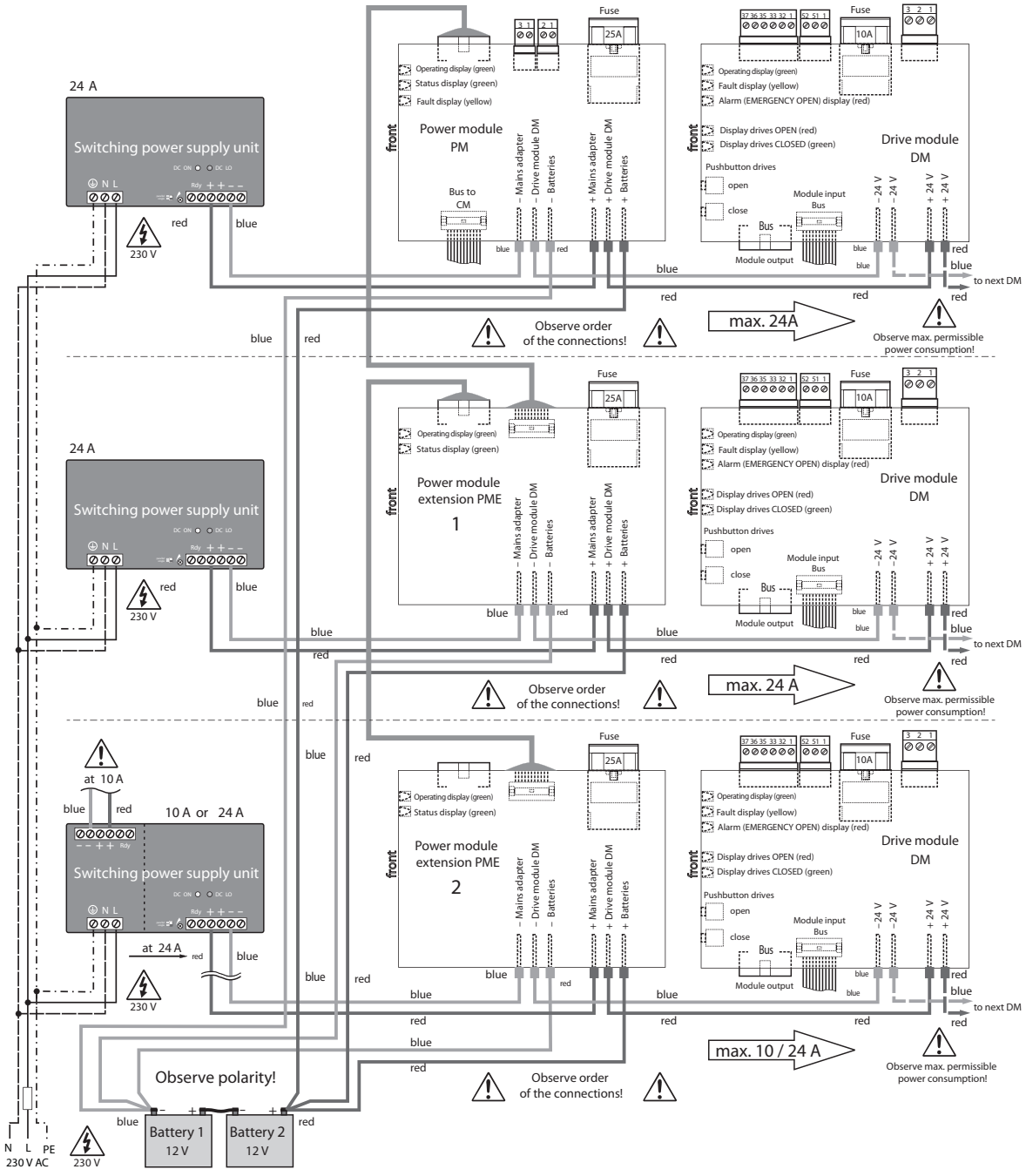
Connection with one switching power supply unit



Connection with two switching power supply units



Connection with three switching power supply units



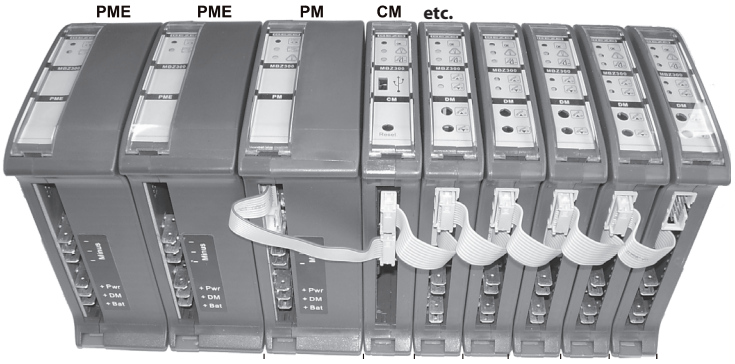
5.2.2 Connection of the internal BUS connection

The BUS connections of the modules for the ribbon cable are located on the bottom (only connection **PME** to **PM** on the module top). The modules can be connected with each other irrespective of their function in the system (digital BUS system). If the BUS system is spread over several top-hat rails, a special-version BUS cable (special length) has to be used.

The modules have to be located correctly (see Chapter 7.1) in order to function properly.

BUS connection bottom (PM, CM, DM, SM, WM)

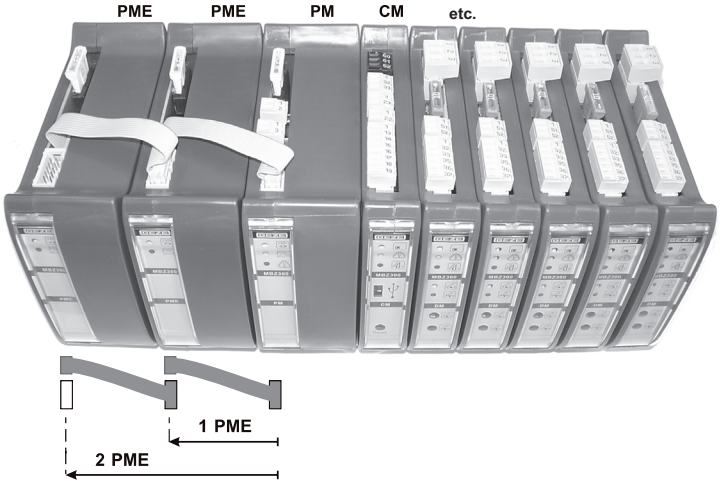
- Modules from PM connected diagonally (bottom and from left to right).



No connection at the bottom between **PM**, **PME 1** and **PME 2**. After the **PM**, **CM** always follows as the next module.

BUS connection top (PME, PM)

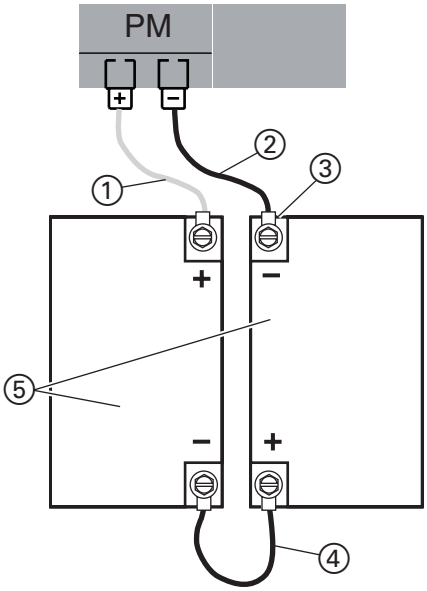
- Connect modules **PME 1**, **PME 2** and **PM** diagonally (top and from left to right).



- All the further connections are made at the top.
- Only connect or disconnect the bus cable in a deenergized state.
- Switch mains voltage and battery off first.

5.2.3 Connection and installation of the batteries

CAUTION!
Incorrectly connected batteries can cause damage to property.
- ▶ When connecting the batteries ensure that the polarity is correct.



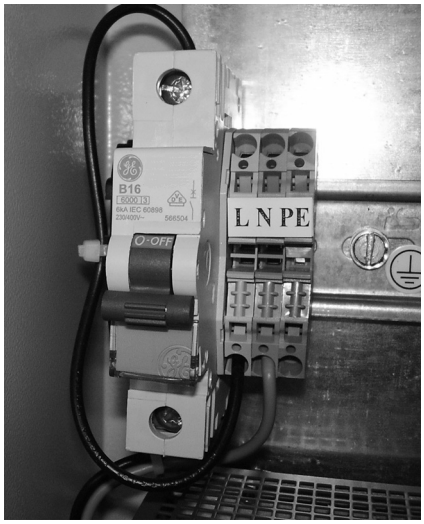
1 Connecting cable **+** (red)
2 Connecting cable **–** (blue)
3 Ring cable lug with cable
4 Connecting cable batteries (black)
5 Batteries 12 V

- ▶ Battery size and number of **PME** have to be set correctly using the configuration software.

5.2.4 Mains connection

After all the components have been connected and configured correctly as well as the connections checked, the mains voltage can be connected by a qualified electrician.

WARNING!
Danger of fatal injury due to electric shock.
- ▶ Before connection the voltage supply, switch off the power supply and secure it against restarting.
- ▶ Ensure the safe isolation from the customer power supply cable.

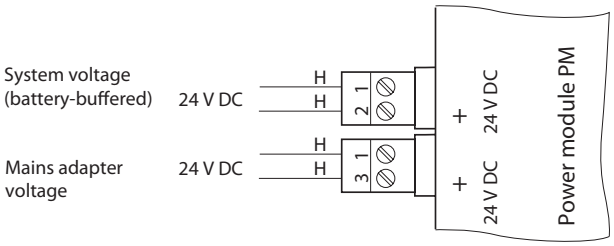


- ▶ Connect the on-site power supply cable to the mains connection terminals of the emergency power control unit.

5.2.5 Connecting external components

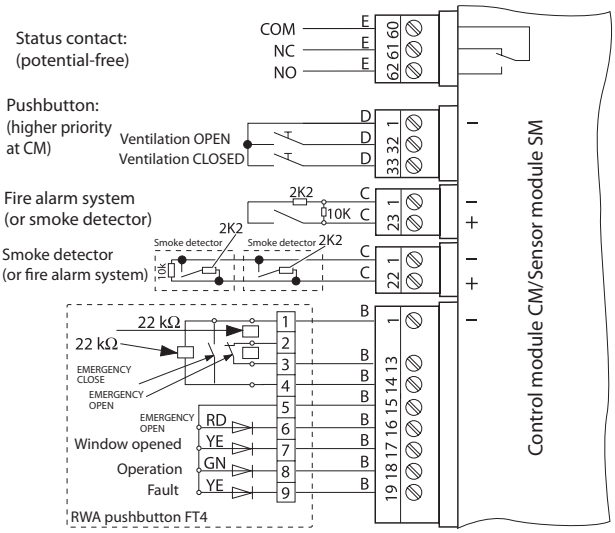
- ▶ Make sure that the electrical installation is carried out in accordance with the applicable regulations and guidelines.
- ▶ For low voltages only use cables **without earth conductors**.

Power module PM

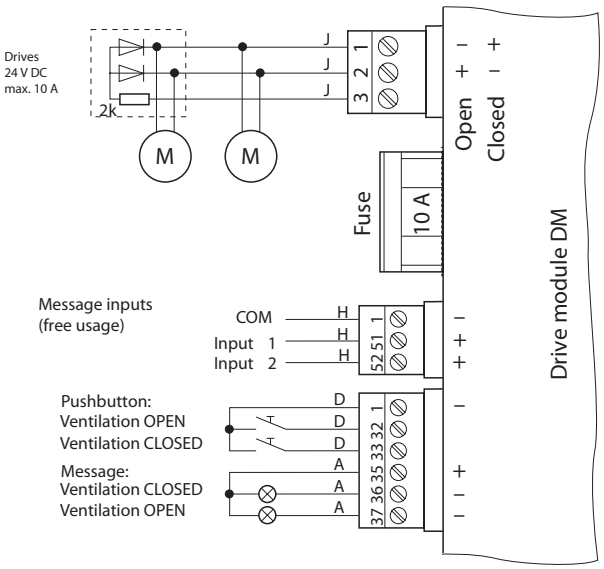


The current required for battery-buffered system voltage (power module **PM**) reduces the battery operating duration.
For this reason larger batteries may have to be used.

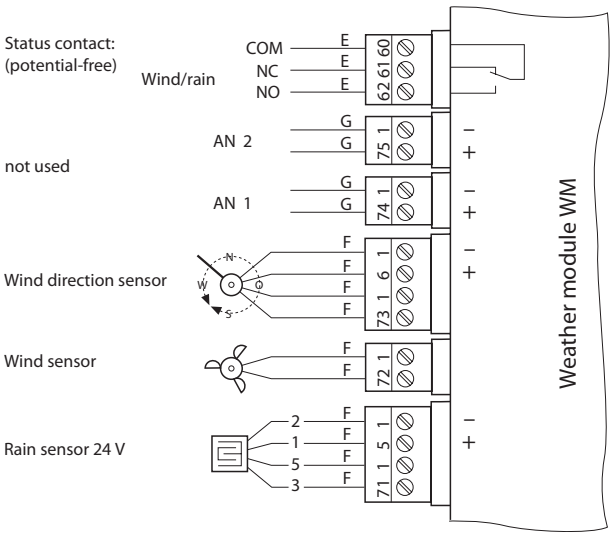
Control module CM/Sensor module SM



Drive module DM / DME



Weather module WM



If a wind direction sensor is used, wind and, if necessary, rain sensors have to be interconnected with the connection of the wind direction sensor (see Chapter 8.6).

Connection	Current	Cable cross-section/ diameter	Cable length	Terminal cross-section (max.)	Other
A	≤100 mA	≥0.8 mm	≤400 m	1.5 mm²	
B	–	≥0.8 mm	≤400 m	1.5 mm²	Connect a max. of 10 pushbuttons in series
C	≤100 mA	≥0.8 mm	≤400 m	1.5 mm²	Max. of 10 smoke or heat detectors
D	≤200 mA	≥0.8 mm	≤400 m	1.5 mm²	
E	≤500 mA	≥0.8 mm	≤400 m	1.5 mm²	Potential-free, max. 42 V
F	–	≥0.8 mm	≤200 m	1.5 mm²	
G	4…20 mA	≥0.8 mm	≤400 m	1.5 mm²	24 V DC
H	≤500 mA	–	–	1.5 mm²	24 V DC
J	–	≥1.5 mm²	–	≤2.5 mm²	Connection for drives, see calculation equation

The cable cross-section for the drives depends on the type and number of drives. However, it has to amount to at least 1.5 mm². A cable up to max. 2.5 mm² can be terminated to the drive module **DM**; larger cross-sections have to be connected via additional series terminals.

Calculation equation for cable cross-section (drives)

Cable cross-section = Cable length × Total current of all drives / 73
Examples of maximum cable lengths depending on cable cross-section and total current of the drives:

	1 A	2 A	4 A	6 A	10 A
1.5 mm²	100 m	50 m	25 m	16 m	10 m
2.5 mm²	180 m	90 m	45 m	30 m	18 m
4.0 mm²	280 m	140 m	70 m	45 m	28 m
10.0 mm²	–	360 m	180 m	120 m	72 m

This calculation takes a tolerable drop in voltage of approx. 2 V over the cable into account.

5.3 Installing the CAN module

The system must be configured for this application using the system software.

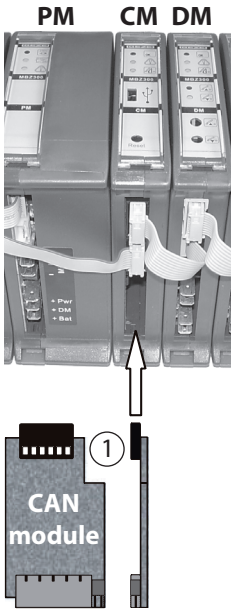
The CAN module is used for connecting several control units to one control and triggering unit via CAN-bus. One CAN module is required for each control unit to be connected via CAN-bus.
The system can manage a max. of 30 control units linked by CAN-bus.

Inserting the CAN module

- Briefly remove all the connections on the control module CM (internal bus, top plug-in terminals with external connections etc.).
- Loosen the control module from the top-hat rail.
- Insert the CAN module (1) into the control module CM from below.

The fault display of the control module also signalises possible problems with the CAN-bus link.

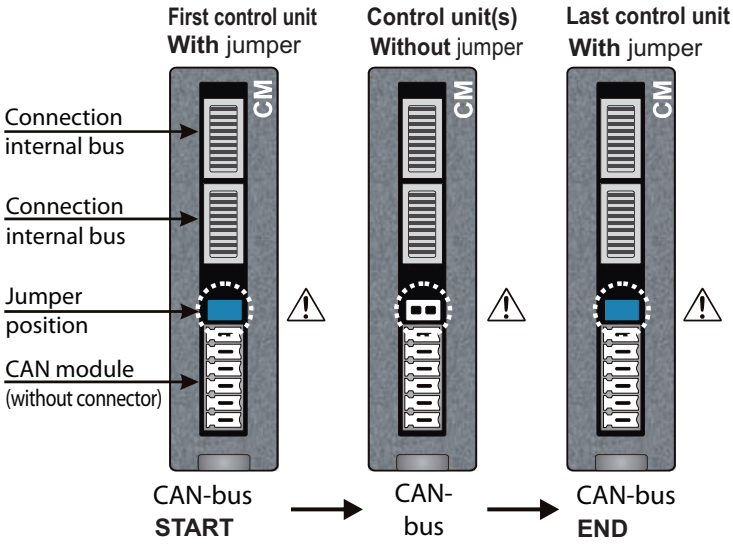
If the CAN module has to be removed, push it upwards slightly during removal.



Setting the jumper

- Insert the jumper (terminator) in the first and last control units linked via the CAN-bus.

All the control units in between must not have a jumper

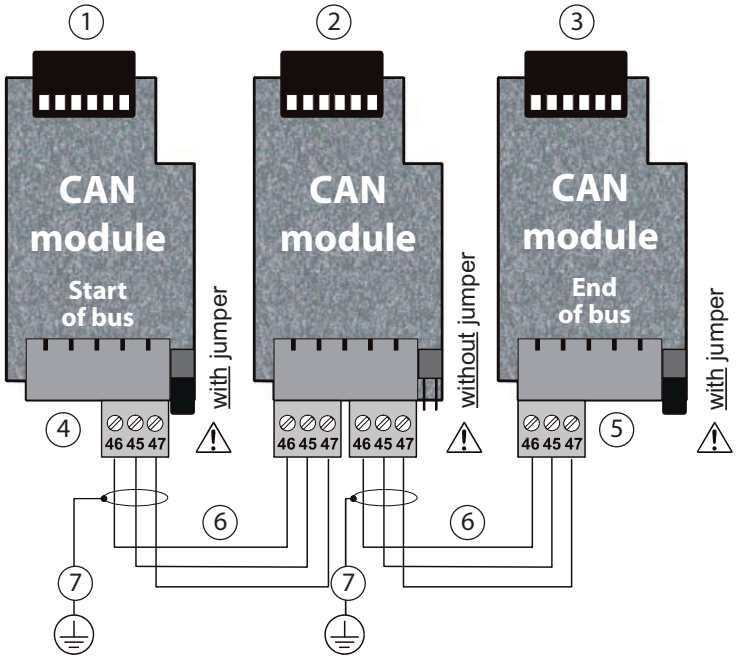


Wiring the CAN module

1 First control unit
1 Control unit(s)
1 Last control unit
1 Start of bus
1 End of bus
1 CAN-bus
1 Shield

Recommended cable type:
2 x 2 x 0.8 mm; up to 500 m

- A bus-capable fire protection cable must be used if necessary.
- The diagram on the right shows a completely connected and inserted CAN module.



- Make sure that the shield (7) is connected asymmetrically with the metal housing.
- The ground of one control unit must not be connected with the ground of another control unit.
- Watch the bus topology. Do not install any branch lines.

CM with connected CAN module

- Set the CAN addresses by software during commissioning.

6 Commissioning

Before operation approval of the control unit:
- ▶ Make sure that all the external components have been mounted and connected completely.
- ▶ Take changes that have resulted during installation into consideration (e.g. larger batteries may be necessary in case of a battery-buffered system voltage of the power module **PM**).
- ▶ Make sure that the batteries have been charged for at least 8 hours before service readiness.
- ▶ Check all the functions of the system carefully.

- ▶ Do not carry out settings that may have to be done via USB with software (wind speed, self-locking or dead-man, etc.) until the system has been installed completely.

The system configuration can be called up and stored or printed out with the software of the unit manufacturer via USB at the control module **CM** (refer also to Chapter 10).

When the system is taken into operation, all the green status displays of the modules flash for a max. of 3 minutes while the system is being configured. All the green status displays must light up continuously after configuration.

Permanent flashing of the green status displays signals a fault at the control module **CM**.
- ▶ Check the BUS connection between power module **PM** and control module **CM**.
- ▶ Check the connection of the supply voltage at the power module **PM**.

7 Operation

7.1 General points about operation

WARNING!
Danger of fatal injury in case of malfunctions during a fire since the escape routes can fill with smoke!
The system has to work interference-free.
- ▶ Have all faults eliminated immediately.
- ▶ If the yellow fault display of the RWA button lights up, inform those responsible immediately.

Faults in the system have to be eliminated immediately.
- ▶ Ensure that the operator of the system is instructed at least in the operating modes described below.

Manual triggering at alarm (EMERGENCY-OPEN)
- ▶ Break the glass at the RWA button and press the alarm button.

Manual opening and closing of the ventilation
- ▶ Press the OPEN or CLOSE switch at the vent switch or the ventilation control unit.
  - ▫ Pressing the switch briefly for approx. 1 second is sufficient for self-locking (no continuous contact)
  - ▫ In the case of dead-man operation the ventilation only opens or closes as long as the switch is kept pressed.

The process can be stopped by pressing the OPEN and CLOSE switches simultaneously.

Automatic opening and closing (e.g. wind-rain control) takes priority over manual operation.

7.2 Venting mode

The service technician can set parameters for several functions using the MBZ300 configuration software.

Opening and closing windows
The windows are divided into ventilator groups. Each ventilator group has one or more vent switches which you can use to open and close the windows of the ventilator group together.
It is possible to configure parallel circuits and priority circuits.

Opening width restriction
The service technician can specify a time-controlled opening width limitation of the windows separately for each drive module. When the drives receive an Open signal via the vent switch, they stop after the specified opening time. Further opening of the windows is not possible until the Close switch has been pressed.

The opening width restriction is only effective during ventilation operation, not during a fire alarm.

Rain/wind control
If a rain/wind control is connected, all the windows are closed in the case of rain or strong wind. The vent switches are then out of operation.

Automatic step control
The service technician can configure an automatic step control for each motor line. The drives are then only actuated for an adjustable time whenever an actuation signal is given by a vent switch.

Automatic ventilation control
When this setting is used, the drives are closed again automatically after an adjustable period after they have been opened.

7.3 Alarm operation

Triggering an alarm
Manually:
- ▶ Break the glass at the RWA button.
- ▶ Press in the pushbutton.

Automatic triggering in the following situations:
- ▫ A smoke detector detects smoke.
- ▫ A heat differential detector detects a temperature rise which exceeds the limit.
- ▫ A fire alarm system sends an alarm signal to the RWA emergency power control unit.
- ▫ A coupled RWA emergency power control unit triggers an alarm.

Processes and signals during an alarm
When an alarm is triggered the alarm program of the RWA emergency power control unit runs:
- ▫ Windows and smoke extraction flaps of the smoke zone open (normal configuration) or close.
- ▫ A red alarm display lights up on the RWA buttons: 
- ▫ The RWA emergency power control unit emits external signals, for example to a horn (depending on configuration).
- ▫ The vent switches are disabled.
- ▫ The rain/wind control is ignored.
- ▫ Wind-direction-dependent actuation of the DM (depending on configuration)

Terminating an alarm
The alarm state can be cancelled by two methods:
- ▶ Resetting the RWA emergency power control unit.

– or –
- ▶ Resetting any RWA button of the smoke zone.

When the alarm state has been cancelled, alarm signals are no longer emitted and the vent switches can be operated again.

WARNING!
Danger of fatal injury in case of malfunctions during a fire since the escape routes can fill with smoke!
If the system is not reset completely (the red alarm display still lights up), it is not completely functional in the case of a new alarm.
- ▶ Always reset the system completely after an alarm.

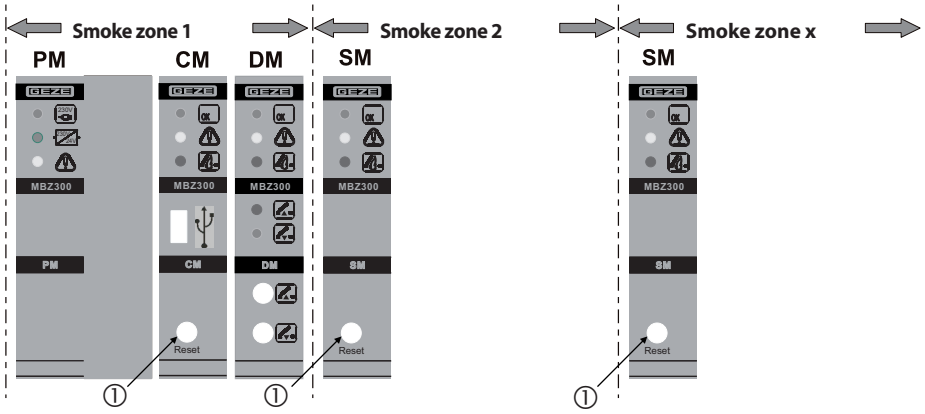
Resetting the system completely
The method for resetting the RWA emergency power control unit depends on the cause of the alarm.

By an RWA button:
▶ Reset the RWA button.

By a smoke detector or by a heat differential detector:
▶ Reset the smoke detector line and RWA button.

By an external fire alarm system:
▶ Switch off the alarm signal of the external fire alarm system and reset the RWA button.

Resetting smoke detector lines



WARNING!
Danger of fatal injury due to electric shock.
▶ Do not touch any components except the Reset (1) pushbutton of the corresponding control or sensor module on the inside of the control cabinet of the RWA emergency power control unit.
▶ Close the control cabinet after resetting.

▶ Open the control cabinet using the key provided.
▶ Press the Reset switch.
The smoke detectors are reset.
▶ Lock the control cabinet again.

Checking resetting
After the alarm has been reset, the red alarm indicator lamp on the RWA buttons goes out, alarm signals are no longer emitted and the windows can be opened and closed again with the vent switches. The RWA emergency power control unit is ready for alarms again.
If the red alarm indicator lamp does not extinguish, at least one of the following alarm signals is still active at the RWA emergency power control unit and has to be deactivated:
- Alarm signal of an RWA button
- Alarm signal of a smoke detector
- Alarm signal of a coupled control unit
- Alarm signal from an external fire alarm system

7.4 Power failure and faults

Power failure and faults are displayed by the fault LED on the RWA buttons and by the LEDs of the emergency power control unit.

Operating mode	Fault LED on the RWA button	Emergency power control unit (on the CM)
Normal	Green, lights up continuously	Green, lights up continuously
Power failure	Yellow, flashes briefly (0.1 s)	Yellow, flashes briefly (0.1 s)
Fault	Yellow, lights up continuously or flashes	Yellow, lights up continuously or flashes

Power failure
The RWA emergency power control unit has an integrated emergency power supply that can bridge power failures for at least 72 hours (e.g. for maintenance work or during a fire). This requires the batteries to be in good condition.
The emergency functions of the RWA emergency power control unit are maintained during a power failure. On the other hand, the normal ventilation operation via the vent switch is disabled in order to maintain the capacity of the batteries as long as possible.

WARNING!
Danger of fatal injury due to electric shock.
- ▶ Work on the power supply may only be carried out by a qualified electrician.

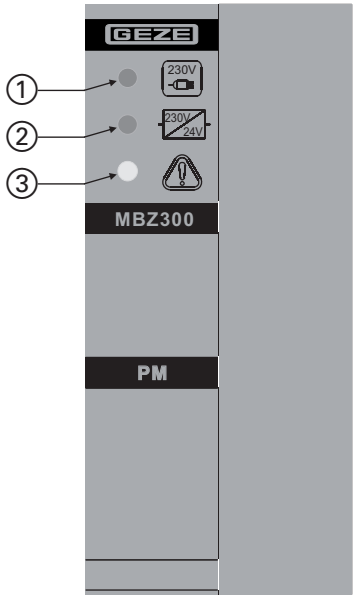
- ▶ Eliminate the cause of the power failure and check the power supply to the RWA emergency power control unit.
  - ▫ If necessary, replace the fuse.
  - ▫ In case of faults despite an intact power supply, contact a specialist authorised by GEZE.

Fault
Work in the control cabinet is required in case of a fault where the yellow fault LED lights up.
- ▶ Contact a specialist authorised by GEZE.

8 Module description

8.1 Power module PM

Functions:
- Monitoring of the mains power supply
- Checking of the battery charge voltage
- Switching over to battery operation in case of power failure
- Connection for sensor used to monitor the battery temperature
- VdS tested



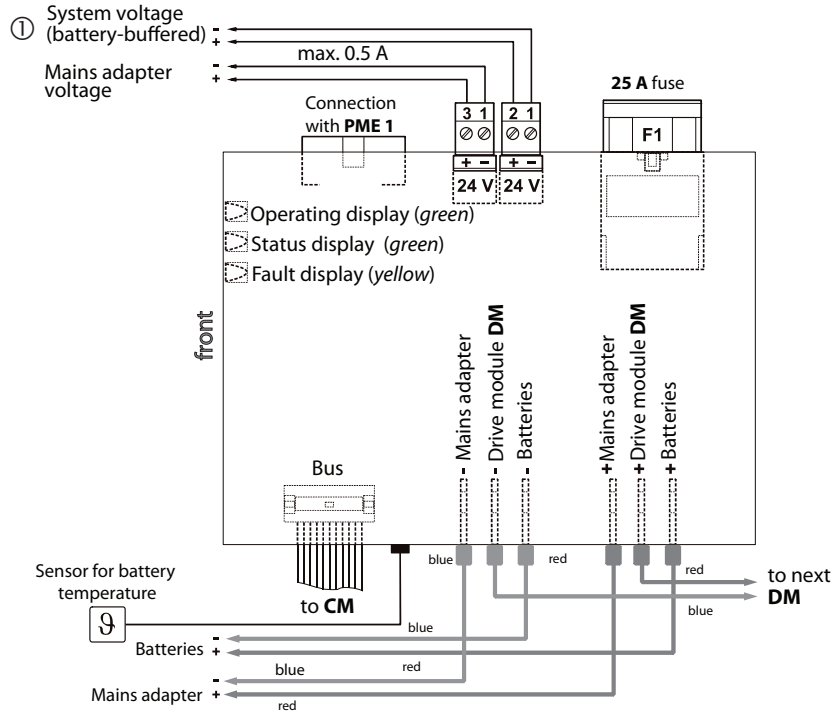
1 Operation (green)
1 Status (green)
1 Fault (yellow)

Displays

Symbol	Status	Operating mode/Fault
230V 230V 24V	Green, light up continuously	Mains operation
230V 24V	Green, flashes briefly (0.1 s)	Battery operation
230V	Off	
230V	Off	Power failure; voltage supply too low
230V	Green, flashes rapidly	Communication fault BUS connection
230V 24V	Off	System out of operation or system voltage OFF (deep discharge protection)
	Yellow, lights up continuously	Fault; fuse or charging circuit defective
	Yellow, flashes slowly	Fault; no battery connection or fuse at **PME** defective
	Yellow, flashes rapidly	Fault; system voltage switched off due to overload
230V 230V 24V	Green, light up continuously	Connection to **PME** interrupted (system switches to battery operation)
	Yellow, flashes slowly	

The yellow fault display reacts with a delay of approx. 30 seconds.

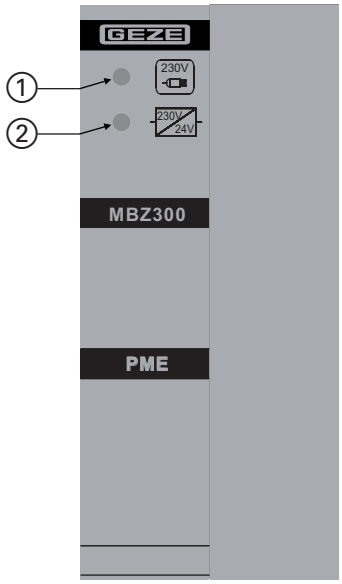
Power module PM connections



If the battery-buffered system voltage (1) is used, the battery operating duration is reduced, so that larger batteries may be required.

8.2 Power module extension PME

Functions:
- Monitoring of the mains power supply in case of more than one switching power supply unit
- Switching over to battery operation in case of power failure
- VdS tested



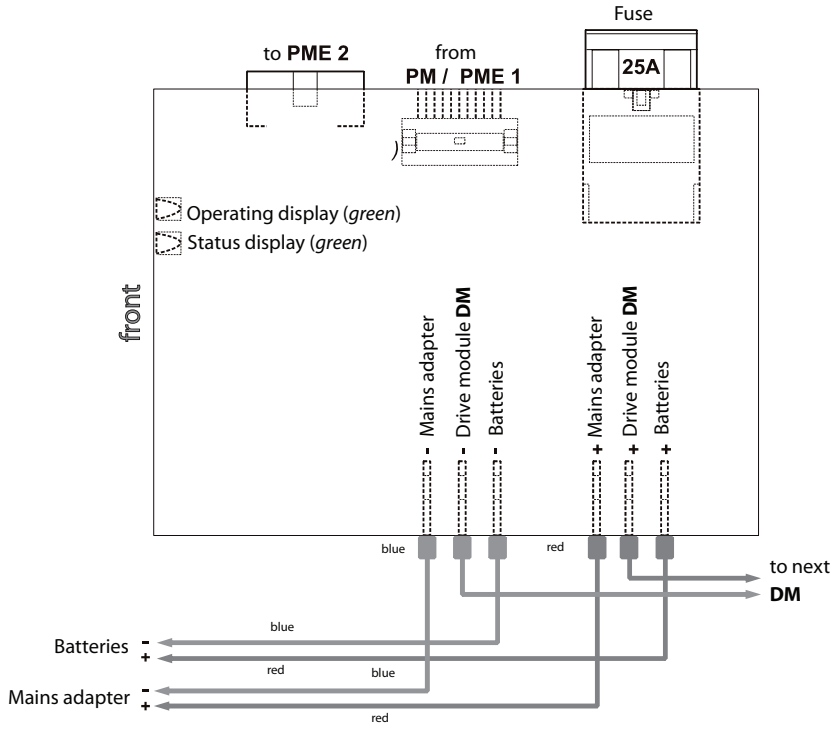
1 Operation (green)
2 Status (green)

Displays

Symbol	Status	Operating mode/Fault
230V 230V 24V	Green, light up continuously	Mains operation
230V 24V	Green, flashes briefly (0.1 s)	Battery operation
230V	Off	

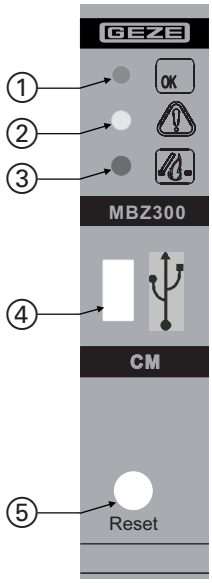
The faults are displayed by the yellow fault display on the power module **PM**.

Power module extension PME connections



8.3 Control module CM

Functions::
- Monitoring of three smoke alarm lines for triggering and faults
- Processing of the signals from vent switches
- Connections for external LED displays (operation, fault, alarm and “Window opening”)
- Basic equipment of the control unit (direct connection to the power module **PM** via BUS cable)
- Resetting of the smoke detectors via pushbutton
- Connection for external computer for configuration, maintenance and query of operating log (via manufacturer software)
- VdS tested



1 Operation (green)
1 Fault (yellow)
1 Alarm (red)
1 USB port
1 Resetting of the smoke detector lines

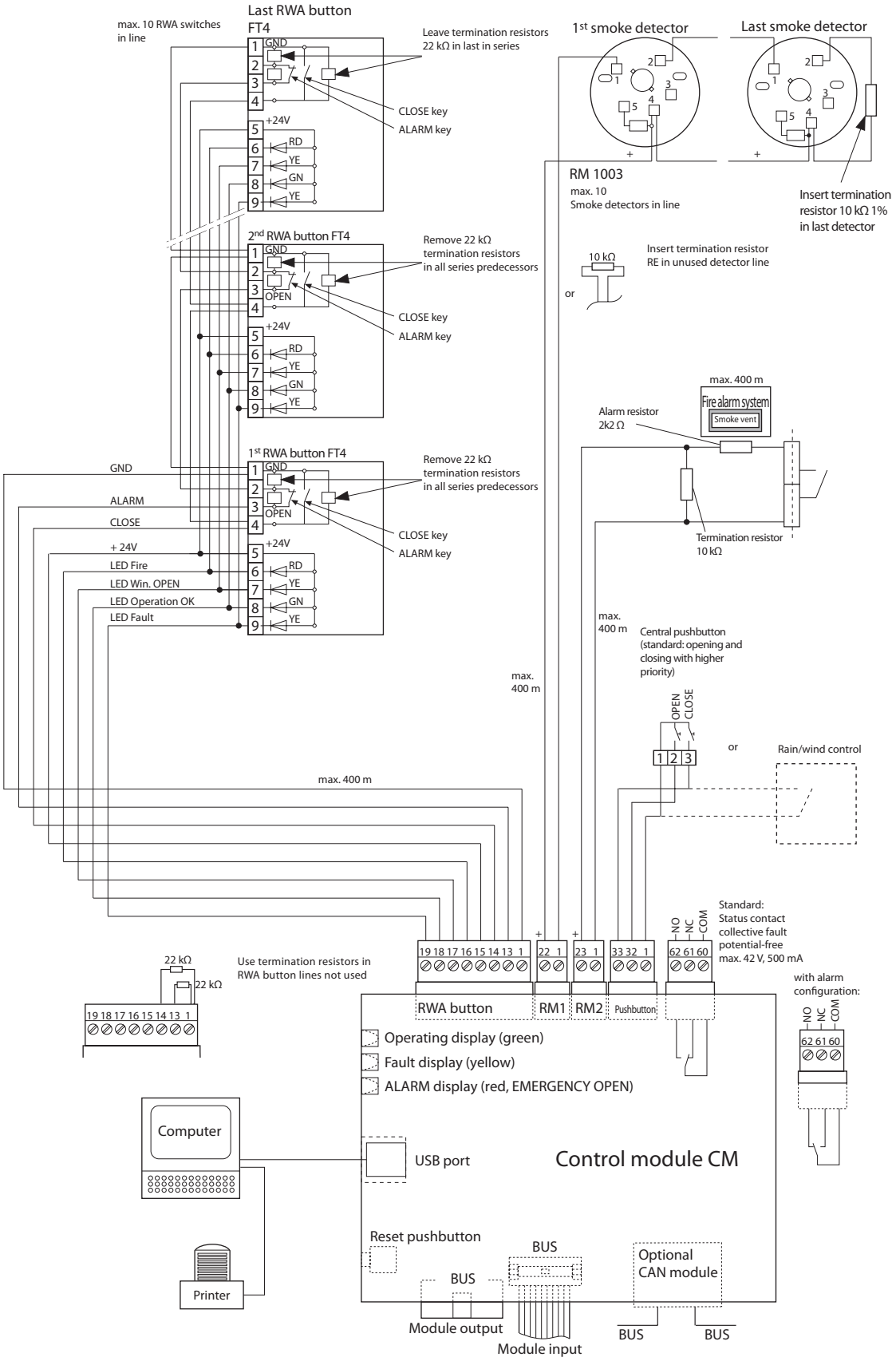
Displays

Symbol	Status	Operating mode/Fault
OK	Green, lights up continuously	Mains operation
	Red, lights up continuously	Alarm triggering (EMERGENCY OPEN)
	Red, flashes slowly	Smoke detector still active after EMERGENCY CLOSE
	Red, flashes rapidly	Manual detector still triggered after EMERGENCY CLOSE
	Yellow, lights up continuously	Fault; detector line RWA switch or fault DM module
OK	Off	
	Yellow, flashes slowly	Fault; detector line RM1
OK	Off	
	Yellow, flashes rapidly	Fault; detector line RM2
OK	Off	
	Yellow, flashes briefly (0.1 s) (1 x per s)	Fault; system in battery operation
OK	Off	
	Yellow, flashes rapidly with 1 s pause	Battery fault
OK	Off	
	Yellow, flashes rapidly	Short-circuit; EMERGENCY CLOSE
OK	Green, flashes rapidly	
	Yellow, 1 x slow flash	Module selection does not correspond to system configuration
OK	Green, continuously	
	Yellow, 2 x flash	System maintenance check must be carried out
OK	Green, continuously	

Symbol	Status	Operating mode/Fault
	Yellow, 3 x flash	CAN participant missing
	Green, continuously	
External display “Window opening” on RWA button	Off	All the windows in the smoke zone closed
	Yellow, lights up continuously	At least 1 ventilator group in the smoke zone is opened
	Yellow, flashes slowly	At least 1 ventilator group in the smoke zone has been actuated (open or closed)

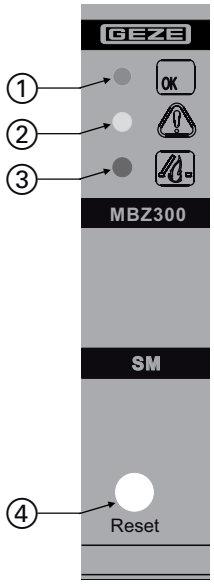
A max. of 10 detectors may exist per alarm group in each detector line (cable length ≤400 m).

Control module CM connections



8.4 Sensor module SM

Functions::
- Monitoring of three smoke alarm lines for triggering and faults
- Processing of the signals from vent switches
- Connections for external LED display (operation, fault, alarm and “Window opening”)
- Use only possible with a control module **CM** present
- Resetting of the smoke detectors via pushbutton
- VdS tested



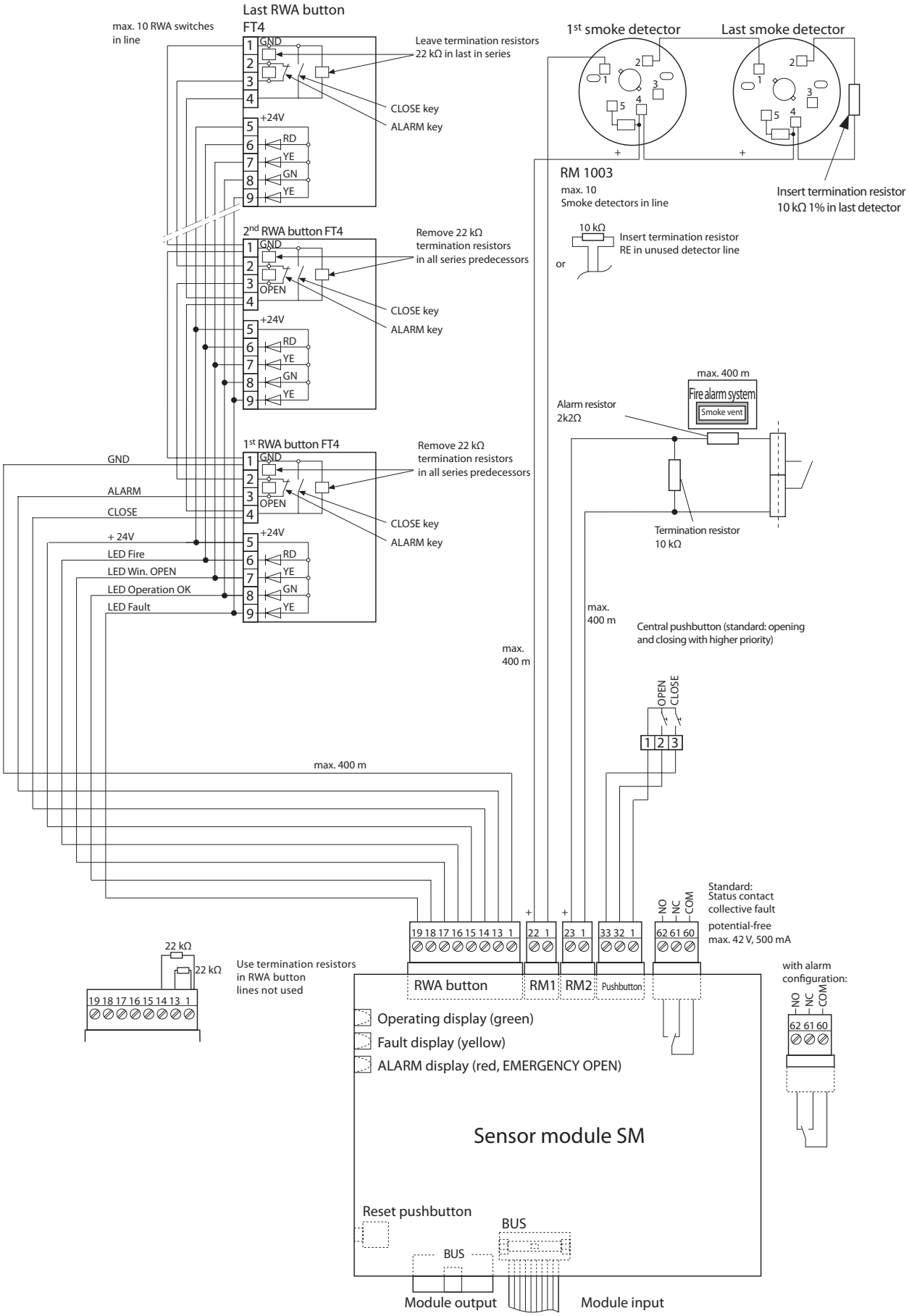
1 Operation (green)
1 Fault (yellow)
1 Alarm (red)
1 Resetting of the smoke detector lines

Displays

Symbol	Status	Operating mode/Fault
OK	Green, lights up continuously	Mains operation
	Red, lights up continuously	Alarm triggering (EMERGENCY OPEN)
	Red, flashes slowly	Smoke detector still active after EMERGENCY CLOSE
	Red, flashes rapidly	Manual detector still triggered after EMERGENCY CLOSE
	Yellow, lights up continuously	Fault; detector line RWA switch or fault DM module
OK	Off	
	Yellow, flashes slowly	Fault; detector line RM 1
OK	Off	
	Yellow, flashes rapidly	Fault; detector line RM 2
OK	Off	
	Yellow, flashes briefly (0.1 s)	Fault; system in battery operation
OK	Off	
External display “Window opening” on RWA button	Off	All the windows in the smoke zone closed
	Yellow, lights up continuously	At least 1 ventilator group in the smoke zone is opened
	Yellow, flashes slowly	At least 1 ventilator group in the smoke zone has been actuated (open or closed)

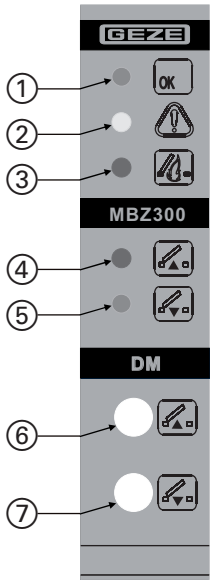
A max. of 10 detectors may exist per alarm group in each detector line (cable length ≤400 m).

Sensor module SM connections



8.5 Drive module DM / DME

Functions::
- Connection for motorised drives up to max. of 10 A/ DME 20 A
- Monitoring of the drive power through closed-circuit current (for fault, short-circuit, interruption)
- Processing of the signals of vent switches (if required also end position messages of drives)
- Connections for external signal transfer (for end position status of drives)
- VdS tested



1 Operation (green)
1 Fault (yellow)
1 Alarm (red)
1 OPEN (red)
1 CLOSED (green)
1 Open (pushbutton)
1 Close (pushbutton)

Displays

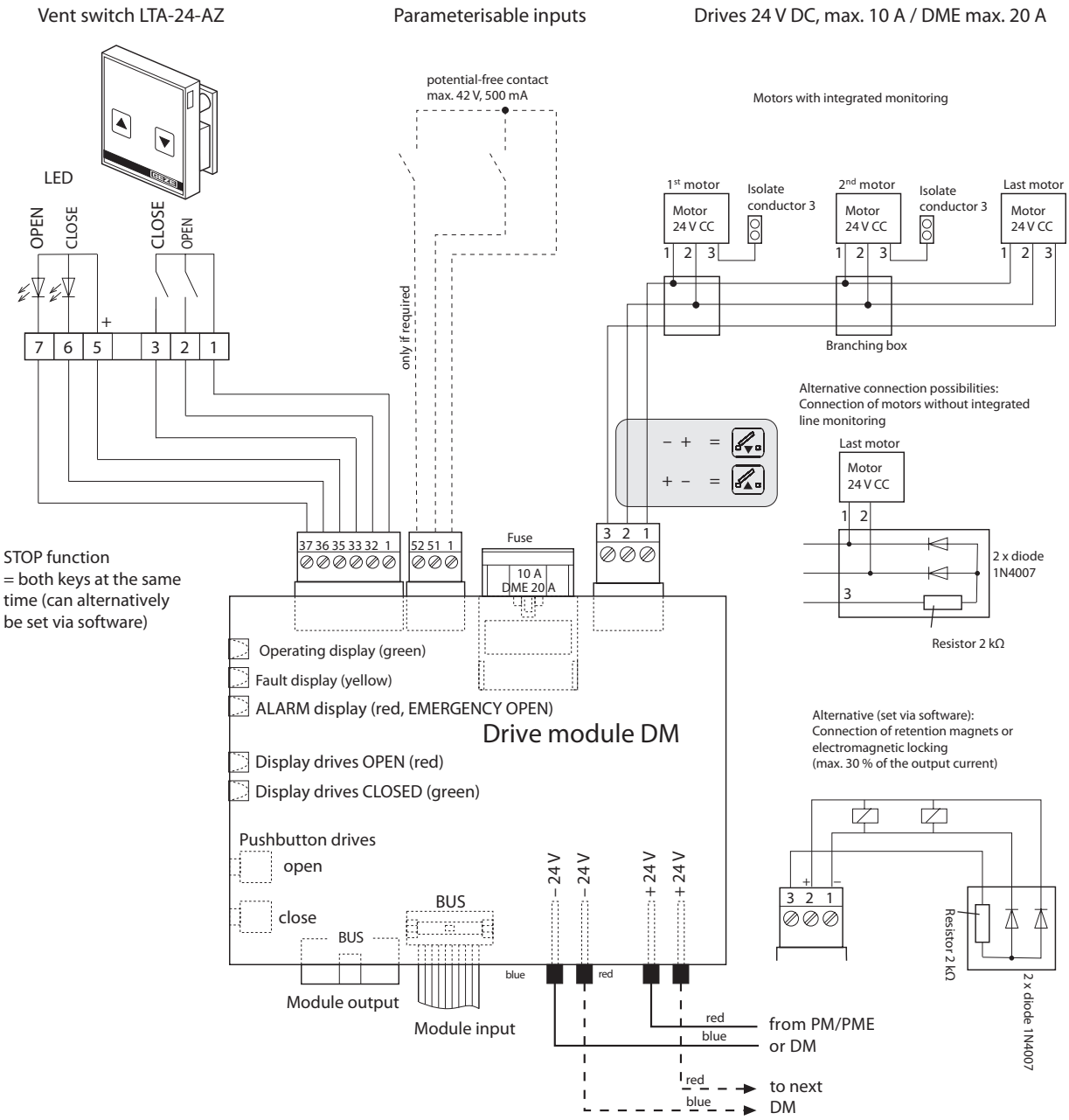
Symbol	Status	Operating mode/Fault
	Red	Open drive (motor relay OPEN active) as long as motor switch-off time is running
	Green	Close drive (motor relay CLOSE active) as long as motor switch-off time is running
		In operation
	Red, light up continuously	Alarm triggering (EMERGENCY OPEN); drives are opened
	Red, flashes briefly (0.1 s)	Alarm triggering with battery operation
	Green, flashes rapidly	Fault (e.g. no BUS connection, error at the control module CM)
	Yellow, lights up continuously	Fault (e.g. module fuse defective, short-circuit, line interrupted, supply voltage faulty) Fault is indicated on the CM
	Off	

Taster

Symbol	Function
	Open drives; can be operated manually
	Close drives; can be operated manually

Observe the maximum current consumption of 10 A (per DM) or 20 A (per DME) and the max. current consumption per mains adapter when connecting the drives.

Drive module DM / DME connections



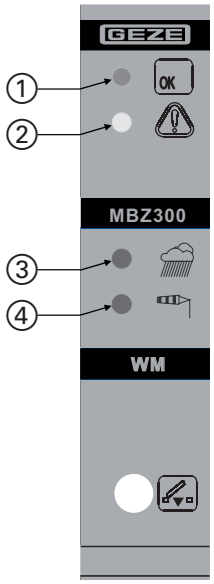
The total current of all the drive modules **DM** must not exceed the maximum current of the mains adapters.

The motor supply line is monitored by conductor 3 of the last motor in each group.
- Isolate conductor 3 on the other motors of the group.
- Line monitoring must not be replaced by a bridge to GND.

- Only 30% of the max. output current of the mains adapter may be used in the “retention magnet” operating mode. The battery has to be designed according to the required emergency power supply duration.

8.6 Weather module WM

Functions::
- Connections for 1 wind and rain sensor each
- Wind direction sensor for wind-dependent opening and closing in the event of fire
- Processing of the signals of external ventilation control units
- Connections for external signal transfer



1 Operation (green)
1 Fault (yellow)
1 Rain (red)
1 Wind (red)

Displays

Symbol	Status	Operating mode/Fault
OK	Green, lights up continuously	In operation
	Red, lights up continuously	Rain sensor active
	Red, lights up continuously	Wind sensor active
	Red, flashes slowly	Main wind direction detected
	Red, flashes slowly	Wind-direction-dependent opening and closing of smoke extraction units (depending on setting) in the RWA case
	Display on the modules **DM** and **CM** or **SM** respectively	
	One of them lights up on drive modules **DM** depending on setting	
	Yellow, lights up continuously	Fault (e.g. from wind/rain sensor or wind direction sensor)
OK	Off	
OK	Green, flashes rapidly	Fault BUS connection

Changing the settings of the wind sensor

▶ Connect a computer with configuration software via USB.

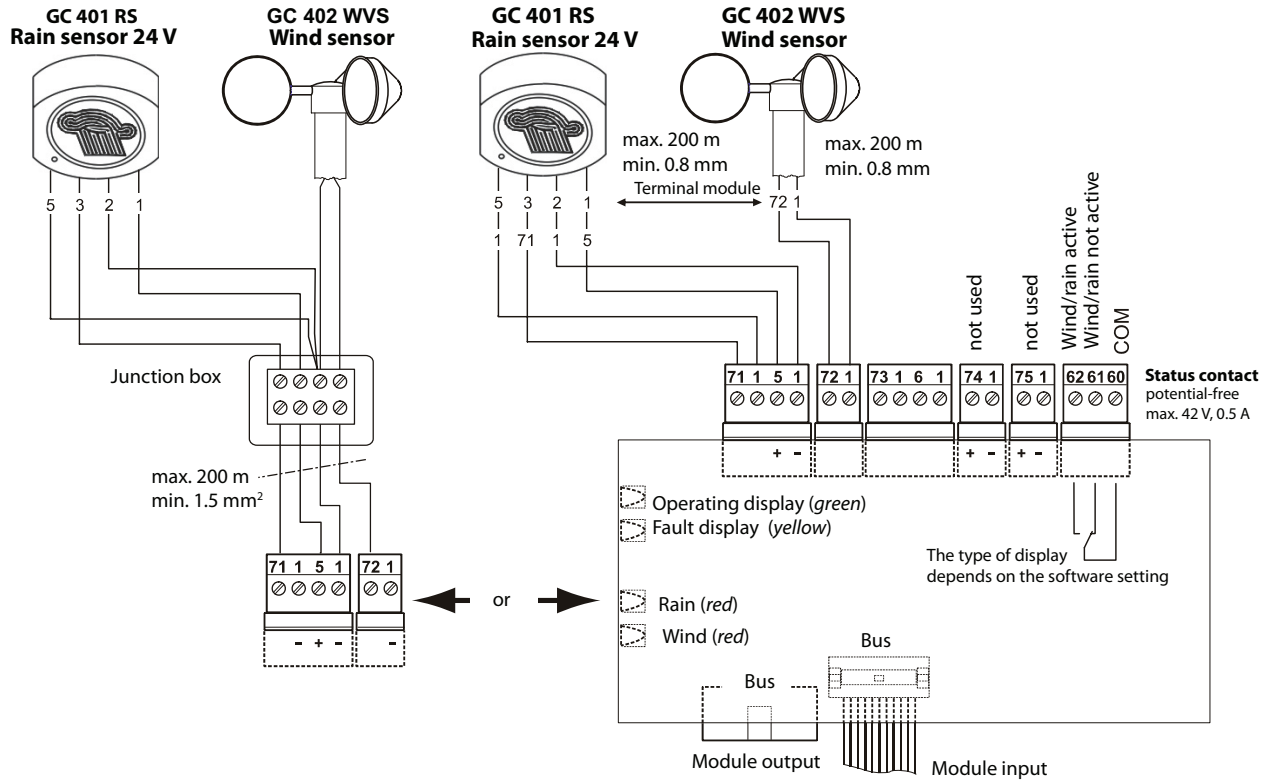
Wind speed:

▶ Adapt the triggering threshold for the wind sensor (factory setting 2 m/s).

Wind-direction-dependent opening and closing of smoke extraction units:

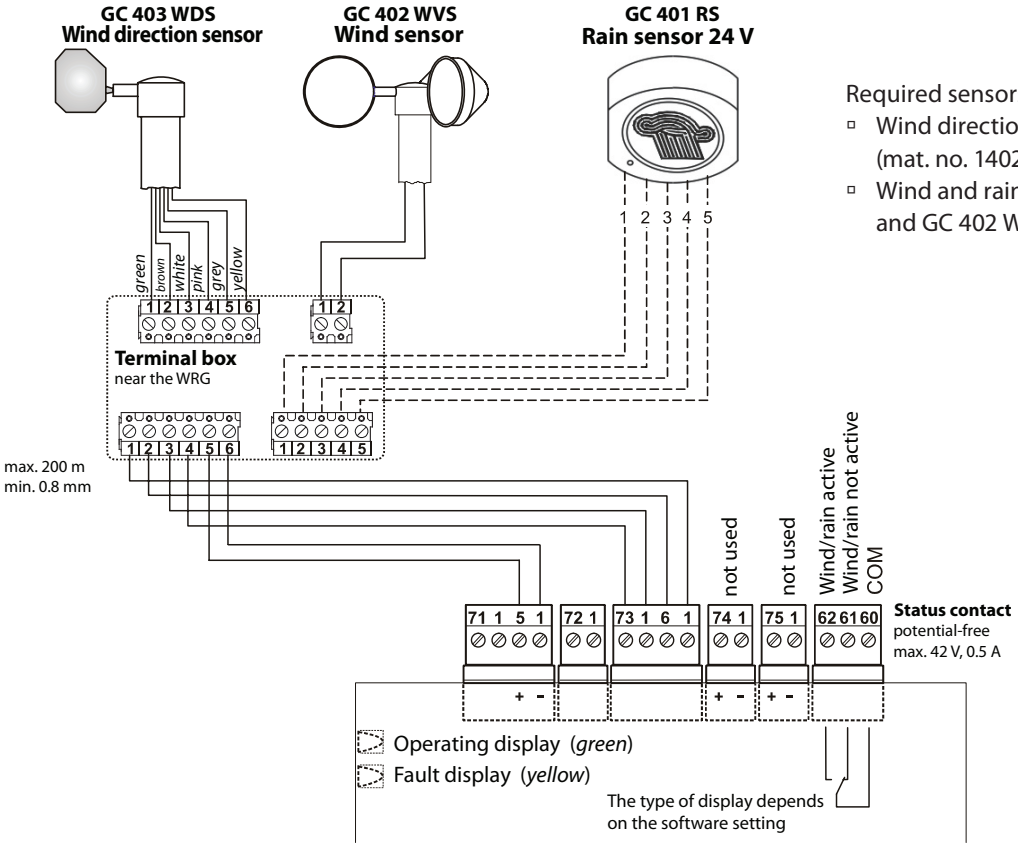
▶ Adapt the configuration of the control unit to the respective application case.

Connection of a wind and rain sensor set (mat. no. 140229) to the weather module WM



Connection of wind-direction-dependent opening and closing

Module always has to be configured by software for this application.

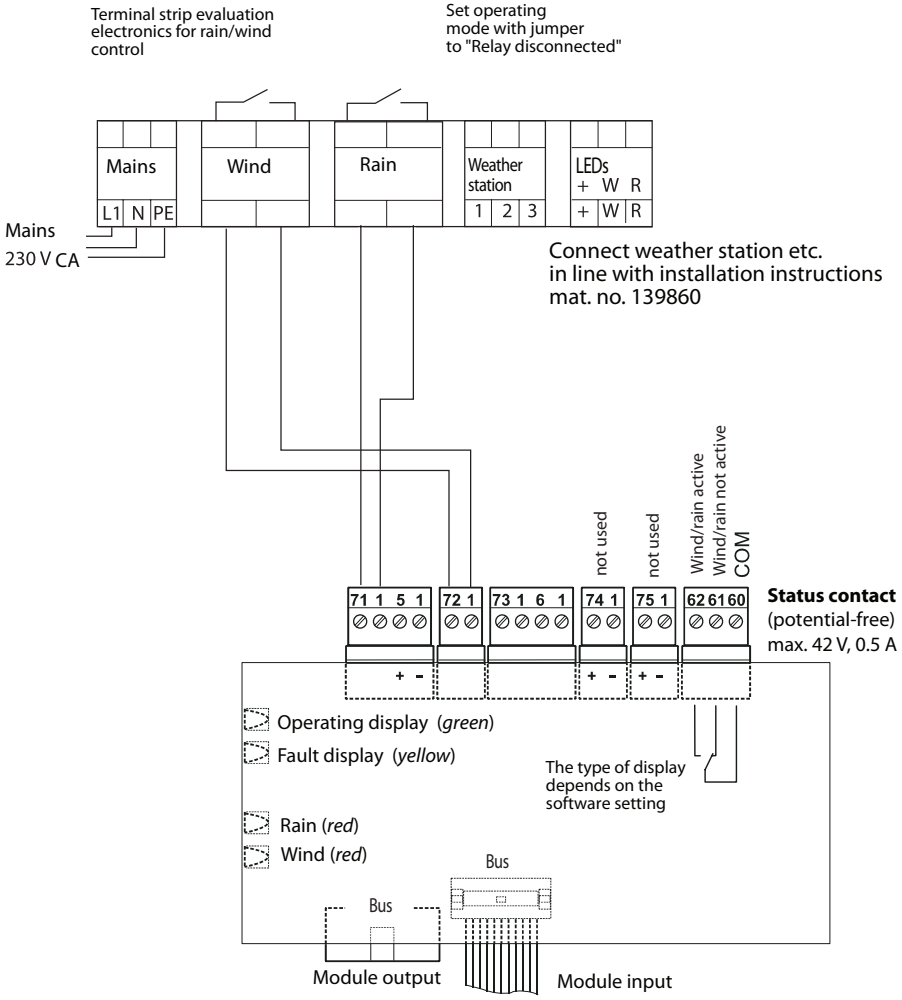


Required sensors:

- Wind direction sensor GC 403 WDS (mat. no. 140228)
- Wind and rain sensor set GC 401 RS and GC 402 WVS (mat. no. 140229)

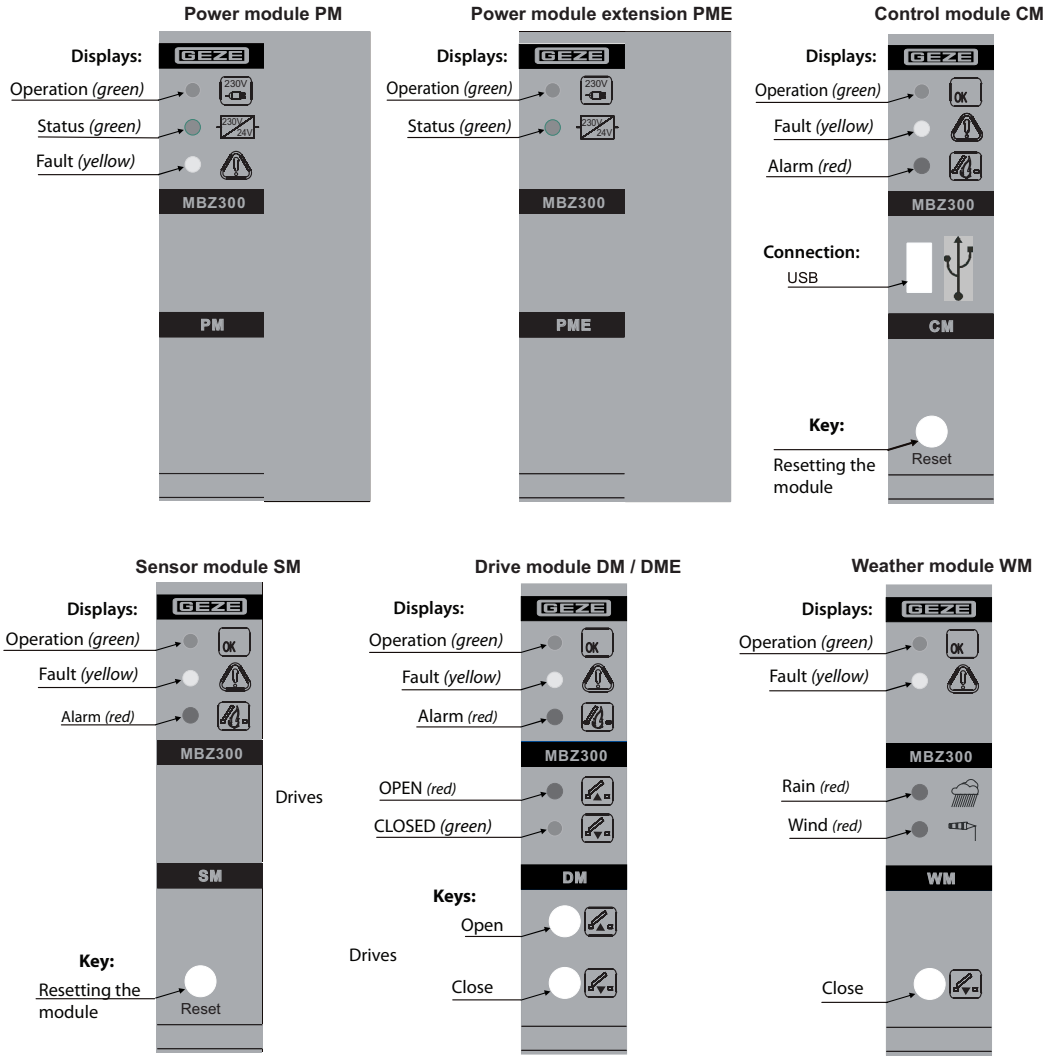
Connection off rain/wind control (mat. no. 091529)

"Wind" input must be configured to switching contact setting.



9 Overview of the displays

WARNING!
Danger of fatal injury in case of malfunctions during a fire!
The system and its display elements have to function correctly.
▶ Have all faults eliminated immediately.



Operation

Display element/Symbol	Display
	Light up continuously (green)
– or –	Green (ventilations closed) Red (ventilations open)
	Red (weather module **WM**) in case of rain and/or wind

Alarm triggering / EMERGENCY OPEN

Display element/Symbol	Display
	Red (on modules **CM**, **SM** and **DM** of the corresponding smoke zone)
	Red; indicates which drive module **DM** the smoke and heat extraction units are opened for

EMERGENCY CLOSE (closing of the smoke and heat extraction units) is possible with the RWA button. Smoke detectors have to be reset using the Reset pushbutton on the control or sensor module.

Fault

Display element/Symbol	Display
	Yellow (fault display on all the modules); Module **PM** detects the faults of all connected **PME**

Detailed meanings of the faults can be found under descriptions of the individual modules.

10 Module configuration

The control unit is configured in the factory.
All the specifications in this description refer to the standard setting.

The configuration can be modified by instructed qualified personnel using optional software. For this purpose a computer with the installed configuration software has to be connected via the USB port to the control module **CM**.
Most important configuration possibilities:

- Assigning and combining ventilator groups
- Self-locking or dead-man operation of the vent switches
- Priority of the ventilation control units (by default the vent switch on the control module **CM** for common closing has a higher priority)
- Assigning and combining of smoke zones (by default the drive modules **DM** subordinated to the control module **CM** or sensor module **SM** belong to one triggering unit)
- Function of external displays (status contact on the **CM/SM**)
- Connection of pressure-gas generators or retention magnets instead of drives to the drive module **DM** (mode of operation)
- End position message of the drives at the drive module **DM** or disable inputs
- Setting for wind-direction-dependent opening and closing in case of fire
- Wind speed
- Operating mode for wind and rain sensors
- Storing and logging the settings during commissioning and maintenance
- Retrieving stored faults
- Localising faults

11 Maintenance check

The entire system has to be checked and maintained at regular intervals:
- Function check: monthly
- Maintenance check: annually
- ▶ Carry out and document maintenance in accordance with the inspection book “Power-operated windows in ventilation and RWA systems as well as SHEVs”.

Checking and maintenance work may only be carried out by trained personnel.

11.1 Maintenance check on the control unit

- ▶ Check the mains voltage (230 V AC).
- ▶ Check the terminal connections and ribbon cables (firm seating and condition).
- ▶ Check the cables and connecting wires (for damage).
- ▶ Check the displays and pushbuttons on the modules.
- ▶ Check the fuse links.
- ▶ Check the installation date of the battery and replace it if necessary (4 years after installation at the latest).
  - Dispose of non-functional batteries properly.
  - Note down the installation date of the new battery.
- ▶ Check the system voltages.
- ▶ Check the charging device.
- ▶ Check the connections of the BUS system and voltage supply of the modules (firm seating and condition).
- ▶ Check the function of the modules.

12 Help with problems

Problem	Cause	Measure
Fault LED on the RWA button lights up or flashes yellow.	Fault	▶ Contact a specialist authorised by GEZE.
Fault LED at the RWA button flashes yellow/briefly (0.1 s).	Power failure	▶ Have the power supply to the RWA emergency power control unit checked by a qualified electrician. ▶ If necessary, replace the fuse. ▶ In case of faults despite an intact power supply, contact a specialist authorised by GEZE.
Pressing the vent switch does not move the windows.	Power failure or other fault	▶ Check whether the fault LED on the RWA button is flashing or is lit (measures, see above).
	Rain/wind control active	The windows cannot be reopened until the rain and wind have diminished.
Windows can only be opened partially.	Opening width restriction active	If the windows often have to be opened wider than the pre-setting: ▶ Have the opening width restriction adjusted.

13 Storage

RWA emergency power control unit

- Store the RWA emergency power control unit in a protected location.
- If the system has already been in operation: Disconnect the RWA emergency power control unit from the mains and from the battery.

Lead batteries

Lead batteries discharge automatically during storage. For this reason, the following points must be observed:

- Keep the storage time as short as possible.
- Store the batteries or packed RWA emergency power control unit protected against heat at temperatures below 30 °C.
- If the system is not put into operation, recharge the batteries every 7 months at the latest.

Recharging batteries

There are 2 possibilities for recharging the batteries:

- Recharge the batteries with a standard charging device.

– or –

- Connect the batteries to the RWA emergency power control unit.
- Insert the battery fuse.
- Connect the control unit to the mains.
- Charge the batteries for approx. 36 hours.

- Note down the new charging date on the batteries.

14 Disposal

All the components of the RWA emergency power control unit have to be disposed of in accordance with the statutory regulations for hazardous waste.
Batteries contain highly toxic substances and may therefore only be disposed of at the collection centres specified by the legislator.

Information regarding the battery directive

(Applicable in Germany and in all other Member States of the European Union as well as in other European countries, together with the countries' own provisions for a separate used battery collection system.)
In accordance with the Battery Directive, we are obliged to inform you of the following in connection with the sale of batteries or accumulators resp. in connection with the delivery of devices containing batteries or accumulators: accumulators and batteries may not be disposed of with household waste. Disposal with household waste is expressly forbidden according to the Battery Directive. As the final consumer, you are bound by law to return spent batteries. Please return used batteries to a communal collection site or retail collection location. Following use, you may return by mail any batteries received from us. The address is: GEZE GmbH, Incoming Goods, Reinhold-Vöster-Str. 21-29, D-71229 Leonberg.
Batteries which contain harmful substances are identified by a symbol of a crossed-out rubbish bin. The chemical designation of the harmful substance is specified underneath the rubbish-bin symbol: Cd for Cadmium, Pb for lead, Hg for mercury.

15 Technical data

Electrical data and connection values		
Operating voltage (primary)		195…253 V AC
Frequency		50…60 Hz
Pre-fuse		16 A
Power consumption		240 W (N10), 480 W (N24), 960 W (N48), 1440 W (N72)
Output voltage for drives		24 V DC ±5 %; battery operation ±15 %
Switching currents of the drive lines per drive module **DM**		10 A (max.) / DME 20 A
Emergency power supply		72 h (max.)
Battery voltage (charge voltage temperature-compensated)		2 x 12 V
Nominal capacity		Version-specific (see information plate)
Current output switching power supply unit 10 A (short-term operation)		10 A (30% duty ratio)
Current output switching power supply unit 24 A (short-term operation)		10 A (30% duty ratio)
Continuous current draw		Approx. 30% of the nominal current
Detectors per detector line	manual (RWA button)	10 units (max.)
	automatic (detector)	10 units (max.)
Detectors per control unit	manual (RWA button)	60 units (max.)
	automatic (detector)	60 units (max.)
Minimum output voltages acc. to EN 12101-10 Tab. 5	Drives: Alarm lines:	19.3 V 18.2 V

- The internal emergency power supply (batteries) ensures that the RWA emergency power control unit can still open the connected drives at least 2x and close them at least 1x after 72 hours of mains power failure in case of correct design and regular maintenance.
- Only use batteries approved by VdS.

Typical own consumption of the modules in battery operation (at a battery voltage of 24 V)	
Power module **PM**	16.1 mA
Power module extension **PME**	0 mA
Control module **CM**	20.6 mA (incl. 3 detector line terminators)
Sensor module **SM**	12.6 mA (incl. 3 detector line terminators)
Drive module **DM** (10 A) / **DME** (20 A)	5.3 mA
Weather module **WM**	13.0 mA

Ambient conditions	
Ambient temperature range (acc. to EN 12101 Class 1)	–5 … +40 °C
Relative humidity	75% (mean value across entire service life) 90% (max. 96 h continuous operation at +40 °C)

Mechanical data	
Surface-mounted housing	Painted sheet steel (RAL 7035) with locking insert (two-way key bit, 3 mm)
Enclosure rating	IP 30, in accordance with EN 12101-10 environment class 1
Housing dimensions	Depending on the unit equipment

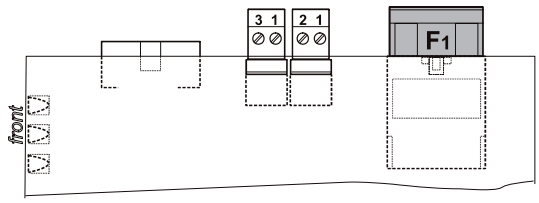
Tests
DIN EN 12101-10, E DIN EN 12101-9, VdS 2581, VdS 2593

15.1 Fuses

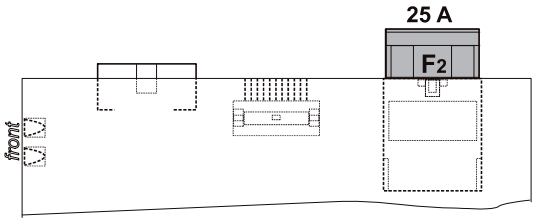
Overview of the modules and fuses (respectively at the module top)

Module	Fuse
Power module PM	F1 = 25 A (flat-type automobile fuse ISO 8820-3)
Power module extension PME 1	F2 = 25 A (flat-type automobile fuse ISO 8820-3)
Power module extension PME 2	F3 = 25 A (flat-type automobile fuse ISO 8820-3)
Drive module DM	Fx = 10 A (flat-type automobile fuse ISO 8820-3)

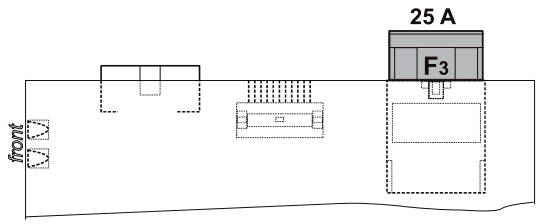
Power module PM **25 A** (24 A version)



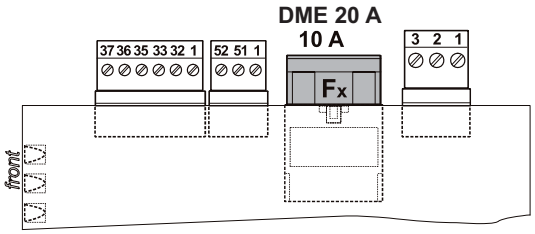
Power module extension PME 1



Power module extension PME 2



Drive module DM / DME



16 Declaration of conformity

GEZE

EG-Konformitätserklärung
EC-Declaration of Conformity
CE-Déclaration de conformité

Der Hersteller
(The manufacturer, Le fabricant)

GEZE GmbH,
Reinhold-Vöster-Straße 21-29
D-71229 Leonberg
Tel.: +49(0)7152/203-0

erklärt hiermit, dass folgendes Produkt
(hereby declares that the following product, déclare par la présente que le produit suivant):

Produktbezeichnung
(Product designation,
Désignation du produit):

Notstromsteuerzentrale
(emergency power control system,
centrale de commande du courant de secours)

Typenbezeichnung
(Type designation,
Désignation du modèle)

MBZ300

Seriennummer / Baujahr
(Serial number, Numéro de série /
Year of manufacture,
Année de construction)

siehe Typenschild
(See identification plate, cf. plaque signalétique)

den Bestimmungen der Richtlinie Elektrische Betriebsmittel zur Verwendung innerhalb bestimmter Spannungsgrenzen (2006/95/EG) und Elektromagnetische Verträglichkeit (2004/108/EG) entspricht.

(complies with the provisions of the directive relating to electrical equipment designed for use within certain voltage limits (2006/95/EC) and the directive relating to electromagnetic compatibility (2004/108/EC).

(répond les dispositions des directives sur le matériel électrique destiné à être utilisé dans certaines limites de tension (2006/95/CE) et sur la compatibilité électromagnétique (2004/108/CE).)

Folgende Normen wurden angewandt
(The following standards have been applied,
Les normes suivantes ont été appliquées):

E Din EN 12101-9
DIN EN 12101-10
DIN EN 60730-1
DIN EN 60204-1
DIN EN 55022
DIN EN 61000-4-3
DIN EN 61000-4-6

Dokumentationsverantwortlicher war: Peter Igl / TB3, Tel.: +49(0)7152/203-0
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CE

Leonberg, den 16. Dezember 2009

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