

MBZ300

Emergency power supply control unit

EN Installation instructions

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Symbols and illustrations

Warning notices




Warning notices are used in these instructions to warn you of property damage and personal injury.

- ▶ Always read and observe these warning notices.
- ▶ Observe all measures marked with the warning symbol and warning word .

Warning symbol	Warning word	Meaning
	DANGER	Danger to persons. Non-compliance will result in death or serious injuries.
	WARNING	Danger to persons. Non-compliance can result in death or serious injuries.
	CAUTION	Danger to persons. Non-compliance can result in minor injuries.

Further symbols and illustrations

Important information and technical notes are highlighted to explain correct operation.

Symbol	Meaning
	means "important information"; Information on avoiding material damage, understanding a concept or optimising the operation sequences
	means "additional Information"
	Symbol for an action: This means you have to do something. ▶ If there are several actions to be taken, keep to the given order.

Product liability

In compliance with the liability of the manufacturer for his products as defined in the German "Product Liability Act", compliance with the information contained in this brochure (product information and intended use, misuse, product performance, product maintenance, obligations to provide information and instructions) must be ensured. Failure to comply releases the manufacturer from his statutory liability. GEZE makes no guarantee for combinations with third-party devices.

1 Safety instructions

1.1 General information

The details in these instructions always refer to the factory provided standard configuration. Changes to the software configuration of the control panel can only be made by trained GEZE specialised personnel. No warranty claims may be made against the manufacturer or distributor of the control panel for damage that is due to interventions in the control panel which are not authorised by the manufacturer or its distributor.

The details in these instructions must 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 released for operation, an insulation measurement of the system's line network must be performed and logged.



- ▶ Contact GEZE if support is needed for planning and system set-up.



These instructions must be followed to ensure personal safety.

- ▶ Immediately resolve any system malfunctions.
- ▶ Always keep the installation instructions on hand near the control panel (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 mounting, commissioning and maintenance are only carried out by qualified personnel authorised by GEZE. If unauthorised changes are made to the system, GEZE cannot be made liable in any way whatsoever 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, disconnect the power supply (mains and battery) and verify the safe isolation from supply.
- ▶ Ensure that only a trained electrician completes the connection to the mains voltage. The power connection and safety earth conductor test must be carried out in accordance DIN VDE 0100-600.
- ▶ Make sure that work is always only done by a qualified electrician or a "qualified electrician for restricted work".
- ▶ An on-site, 2-pole circuit breaker with locking option is to be used as a line-side disconnecting device, in accordance with the permissible cable current load.

Live parts are exposed after the system housing has been opened. The system must be disconnected from the supply and battery voltage before every intervention in the control panel. The supply terminals of the system components partially have a low voltage of ≤ 50 V.

- ▶ Do not activate the mains and battery voltage until all system components have been connected.
- ▶ When replacing the batteries use only batteries approved by GEZE.
- ▶ Ensure that the control panel cannot be opened by unauthorised persons.
- ▶ Use only the cables specified on the cable plan provided. Cables must be shielded in compliance with the wiring diagram.
- ▶ Determine cable types (e.g. fire control cable) and required IP rating in agreement with the local official approval authority.
- ▶ As a rule, always use insulated wire cores.
- ▶ Insulate wires that are not used.
- ▶ Secure loose cables with cable ties.

Maintenance

A safety-related test with maintenance has to be carried out by a GEZE-authorised specialist as required – at least once a year. You will receive written verification about the check. All batteries must be replaced every four years at the latest.

Spare parts

GEZE does not accept any warranty for combinations with third-party products.

- ▶ Use only original GEZE parts for repair and maintenance work.

Regulations and standards

Warranty claims require assembly, installation and service to be performed by a specialist company according to the manufacturer's specifications. The owner-operator and/or installer commissioned by the owner-operator must observe all relevant legal regulations and have been briefed on proper operation.

- ▶ Perform system maintenance according to legal regulations.
- ▶ Observe the maintenance specifications.
- ▶ Observe the latest versions of directives, standards and country-specific regulations, in particular:
 - ASR A1.6 "Windows, fanlights, translucent walls"
 - DIN VDE 0100-600 "Setting up low-voltage systems"
 - DIN EN 60335-2-103 "Household and similar electrical appliances - Safety; Particular requirements for drives for gates, doors and windows"
 - Accident prevention regulations, especially DGUV regulation 1 "Accident prevention regulation, basics of prevention" and DGUV regulation 3 "Accident prevention regulation, electrical installations and equipment"
 - VDE 0833 "Danger alarm systems for fire, break-in and assault"
 - VDE 0815 "Installation cable and lines for remote and information processing systems"
 - MLAR "Model Guideline for Line Systems"

1.2 What to do in the event of fire



WARNING!

Danger to life from malfunctions in the event of fire, as the escape route can fill with smoke!

The system must function without faults.

- ▶ Eliminate all faults 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 guidelines and fire prevention regulations in particular must be observed.

1.3 Intended use

The rooms are ventilated with the emergency power control unit and smoke is automatically removed in the event of fire.

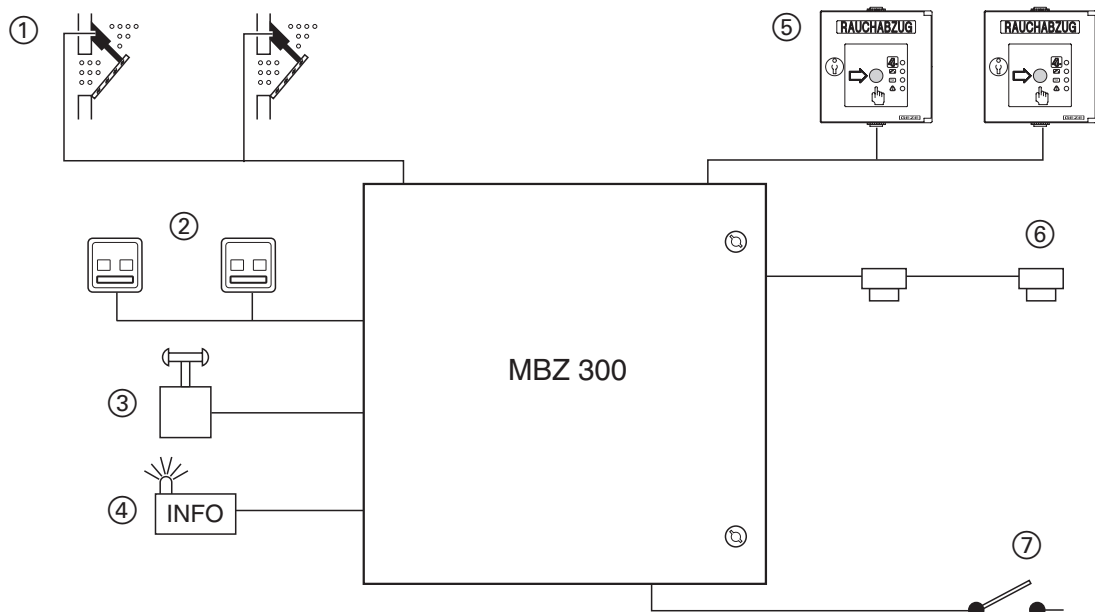
The MBZ300 emergency power control unit fulfils sound engineering practice and conforms to the applicable safety regulations. The system is exclusively intended to be used in dry rooms.

2 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 case 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.

2.1 Overview of the RWA emergency power control unit



- | | | | |
|---|---|---|---|
| 1 | Drives for the windows and smoke extraction flaps | 5 | RWA button |
| 2 | Vent switch | 6 | Smoke detector and heat detector |
| 3 | Rain/wind control | 7 | Alarm from external fire alarm control unit |
| 4 | Alarm/fault signals | | |

2.2 Properties

- Control of electromotive 24 V DC drives for smoke and heat extraction in the event of fire
- Controlling of a controlled natural ventilation (if necessary also triggering of pressure-gas generators and hold-open magnets)
- Processing of triggering signals of manual and automatic fire detectors and fire alarm systems
- Manual and automatic ventilation control (via vent switches, wind-rain sensors, room temperature sensor etc.)
- Forwarding of all significant operating statuses to external evaluation components
- Possibility for maintenance, configuration and update with PC software for Windows® (via USB port)
- Integration in an external BUS system (e.g. CAN)
- NRA/RWA operation using rechargeable batteries in the event of main power supply outage
- Line monitoring of all the connected manual and automatic detectors as well as of the drive lines
- Visual operation and malfunction messages for fast error localisation
- Digital recording of important operating statuses and 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 fire detectors as well as external EMERGENCY-OPEN triggering signals; with USB port
 - Sensor module **SM** with the same 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, various push buttons and control units. Pressure-gas generators or hold-open magnets can be triggered or supplied by corresponding programming
 - Weather module **WM** for operating wind and rain sensors and wind-direction-dependent opening and closing of smoke extraction units in the case of fire
 - Relay module **ERM** for the notification of error and operating statuses via 6 signal relays
- USB interface for configuring and controlling the control panel via software, for updates and for storing user information
- Thermal detector 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 IP rating 30. The housing dimensions depend on the version and equipment of the control panel.

2.3 GEZE MBZ300 modular principle

Hardware configuration

- The modules can be installed 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

- Fire sections and ventilator groups can be configured in varied ways thanks to the modular system.
- Thanks to the possibilities of the software configuration and the extensive area of application of the modules, special installations in the control panel are hardly necessary for special applications.

2.4 Components of the MBZ300 control panel

2.4.1 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)

2.4.2 Modules

- Power module **PM**:
 - 24 A or 10 A (depending on switching power supply unit), with MBZ300 N8 max. 8 A possible
- 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 fire section):
 - Detector lines (max. 3) and connection for ventilation control
 - USB port
 - Ventilation control commands take priority over the sensor modules (the other fire sections)
- Sensor module **SM** (for further fire sections) (max. 16 per control panel):
 - 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 hold-open 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
- Relay module **ERM**:
 - 6 potential-free status contacts for the notification of error and operating statuses

2.5 Standard control units

The following standard control units are available from GEZE:

MBZ300 standard control units						
	N8	N10	N24	N48K	N48G	N72
Control cabinet dimensions W x H x D [mm]	300 × 400 × 200	400 × 500 × 200	600 × 600 × 250	600 × 600 × 250	600 × 800 × 250	600 × 800 × 250
Mat. no.	185684	137016	137017	137017	137018	137018
Output current for drives (max.)	8 A	10 A	24 A	48 A	48 A	72 A
Power supplies (installed)	1×10A	1× 10 A	1× 24 A	2× 24 A	2× 24 A	3× 24 A
Modules (installed)	1×PM 1×CM 1×DM	1× PM 1× CM 1× DM	1× PM 1× CM 3× DM	1× PME 1× PM 1× CM 6× DM	1× PME 1× PM 1× CM 6× DM	2× PME 1× PM 1× CM 9× DM
Fire sections	1	1	1	1	1	1
Ventilation groups	1	1	3	6	6	9
Slots for further modules	1	8	18	5	13	8
Batteries (can be inserted)	7 Ah	12 Ah	17 Ah, 24 Ah, 38 Ah	24 Ah, 38 Ah	24 Ah, 38 Ah	38 Ah
Battery connection	Tab connector 4.8 mm	Tab connector 6.3 mm	Ring cable lug M5	Ring cable lug M5	Ring cable lug M5	Ring cable lug M5

Extension options:

- Further ventilator groups through installation of additional drive modules DM
- Further fire sections or alarm lines through installation of additional sensor modules SM (not possible with MBU300 N8)

2.6 Object-specifically pre-configured control panels

In addition to the standard control panels, the object-specifically pre-configured control panels (Mat. 137453) are available from GEZE. A wide range of configurations can be selected for these control panels, e.g.

- Power range and housing size as per the basic control unit (N10, N24 ...)
- Number and sequence of the modules
 - Drive modules DM, DME
 - Sensor modules SM
 - Additional relay modules ERM for operating and error messages
 - Weather module WM
 - CAN module for connecting several control panels
- Additional series terminals for DME or larger cable cross-sections
- Size of the battery
- Pre-setting of various parameters, e.g.
 - Status contacts
 - Configuration of venting groups
 - Configuration of fire sections

3 Installation

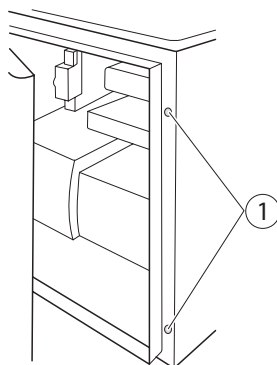
Installation sequence (overview)

- ! ▶ Before starting work check the completeness and correctness of the delivery against the delivery note (control panel size, batteries, modules, etc.). Later complaints will not be accepted.
 - The MBZ300 emergency power control unit must be installed in a location protected from heat.
- ▶ Have someone hold the control cabinet and the MBZ300 emergency power control unit during screwing.
- ▶ Check the configuration of the MBZ300 emergency power control unit equipment and adapt/supplement if necessary.
- ▶ Fasten the housing securely and keep easily accessible for maintenance.
- ▶ Mark fastening holes.
- ▶ Select suitable fastening agents for the base.
- ▶ Drill holes and insert dowels.
- ▶ Screw the control cabinet in place.
- ▶ Screw the MBZ300 emergency power control unit in place.
- ▶ Mount drives and control devices (observe permissible connection values and specifications of the respective installation instructions).
- ▶ Cut off the graduated nipples in accordance with the cable diameter.
- ▶ Route the cables through the graduated nipples into the control panel.
- ▶ Connect external components.
- ▶ Connect mains power supply.
- ▶ Install and connect batteries.
- ▶ Put the system into operation.

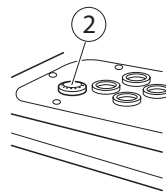
3.1 Control cabinet ventilation

There are batteries installed in the control cabinet which need ventilating for safety reasons. There are ventilation holes on the front of the control cabinet for this, and a ventilation plug on the top of the control cabinet.

- ! **Damage caused by overheating**
 - ▶ Do not seal the bore holes (1) on the front of the control cabinet.
 - ▶ Do not remove or seal the ventilation plug (2) on the top of the control cabinet.



Bore holes



Ventilation plug

3.2 Equipment and configuration of the MBZ300 control panel

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**
- Relay module **ERM**
- Power pack 10 A, PS10A
- Power pack 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.

3.2.1 Determining the correct equipment of the control panel

Switching power supply units and power modules

The number of switching power supply units and power module extensions **PME** required 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 case of power failure
 - Max. drive current
 - Number and types of the modules
 - Number of detectors connected

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 caps)
- Sensor module **SM** 12.6 mA (incl. 3 detector line caps)
- Drive module **DM** 5.3 mA
- Drive module **DME** 5.3 mA
- Weather module **WM** 13.0 mA
- **CAN** module 6.0 mA
- Relay module **ERM** 6.0 mA

Maximum permissible own current consumption for all control panel modules

SNT / Battery	7 Ah	12 Ah	17 Ah	24 Ah	38 Ah
8 A	48 mA				
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



Consider the control cabinet size when selecting the batteries.

Examples for the selection of the required battery capacity for MBZ300 standard control units:

Battery capacity	N8	N10	N24	N48K	N48G	N72
7 Ah	Motor current 8A 2× DM 20× RWA-button 20× smoke detector					
12 Ah		Motor current: 10 A 1× SM, 5× DM 20× RWA-button 30× smoke detector	–	–	–	–
17 Ah		–	Motor current: 24 A 1× SM, 8× DM 30× RWA-button 30× smoke detector	–	–	–
24 Ah		–	Motor current: 24 A 4× SM, 12× DM 40× RWA-button 60× smoke detector	Motor current: 48 A 1× SM, 9× DM 30× RWA-button 40× smoke detector	Motor current: 48 A 1× SM, 9× DM 30× RWA-button 40× smoke detector	–
38 Ah		–	Motor current: 24 A 8× SM, 24× DM 60× RWA-button 60× smoke detector	Motor current: 48 A 5× SM, 22× DM 60× RWA-button 60× smoke detector	Motor current: 48 A 5× SM, 22× DM 60× RWA-button 60× smoke detector	Motor current: 72 A 3× SM, 18× DM 40× RWA-button 60× smoke detector

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

Drive modules DM for ventilator groups

One drive module **DM** makes max. 10 A (with MBZ300 N8 max. 8 A) possible 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

One control module **CM** is always required. It monitors the first fire section. 1 sensor module **SM** is required for each further fire section.

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 case of fire.

Relay module ERM

The relay module **ERM** makes the notification of error and operating statuses possible. It has 6 potential-free detector relays that can be configured with the system software.

Housing

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

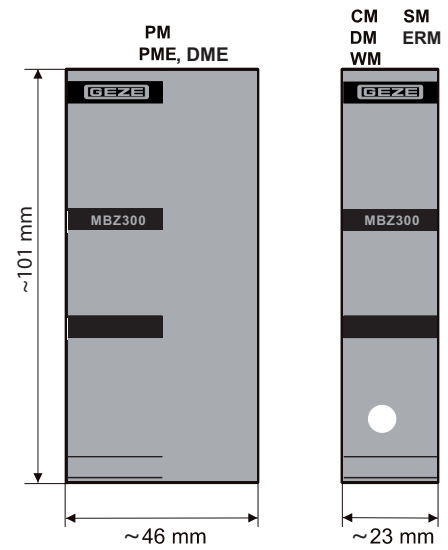
3.2.2 Space required for the modules and components on the top-hat rail (width)

Module

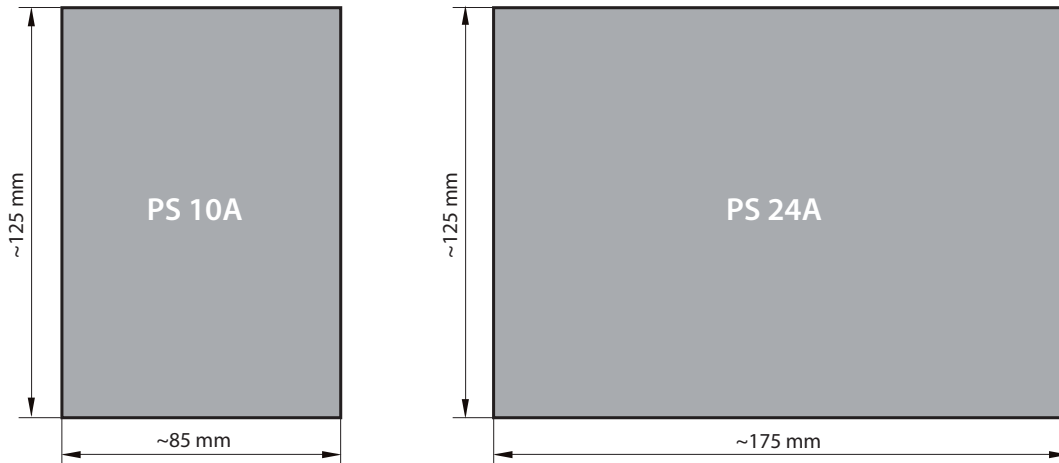
- Control module **CM**, sensor module **SM**, relay module **ERM**, drive module **DM**, weather module **WM**
 - approx. 23 mm
- Power module **PM**, power module extension **PME, DME**
 - approx. 46 mm

Examples

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



Switching power supply units



If there is only one switching power supply unit with 10 A, its required space 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.

3.2.3 Dimensions of the batteries

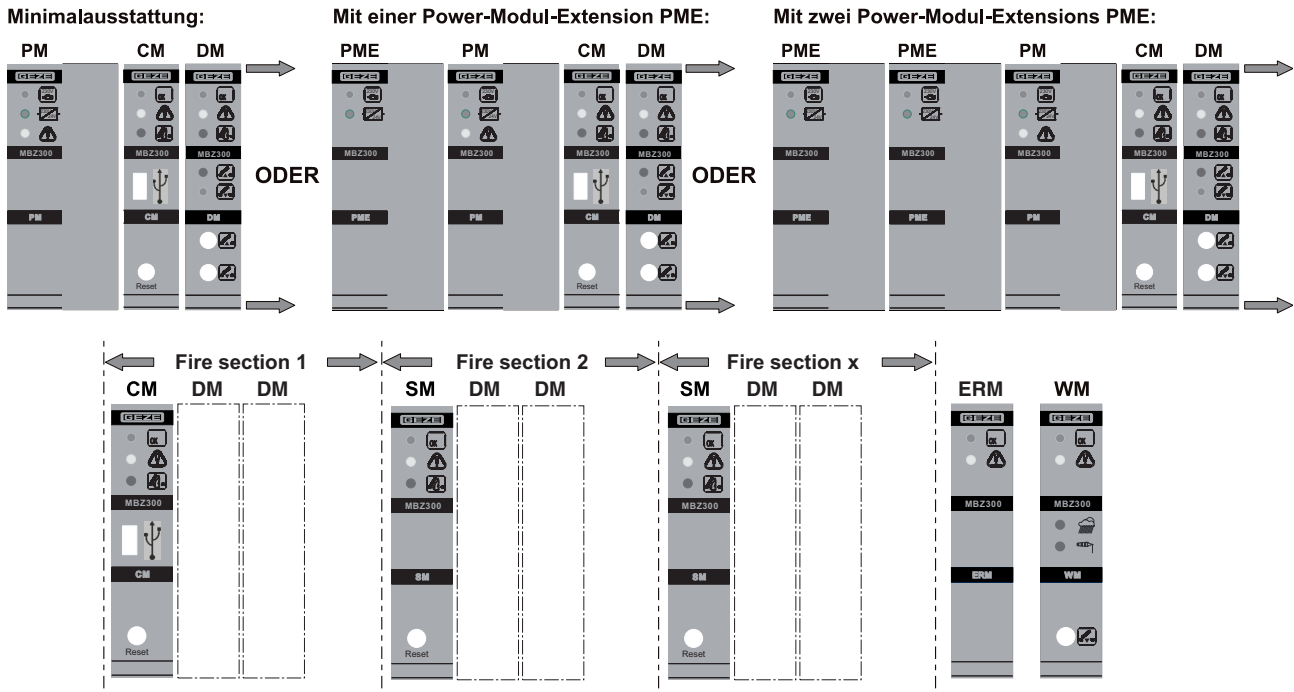
Battery type	Nominal voltage [V]	Capacity [Ah]	Length [mm]	Width [mm]	Height [mm]	Weight [kg]	Pole type
NP 7-12	12	7	151	65	97.5	2.2	4.8 mm
NP 12-12	12	12	151	98	97.5	4.09	6.3 mm
NP 17-12 I	12	17	181	76	167	5.97	M5
NP 24-12 I	12	24	166	175	125	8.92	M5
NP 38-12 I	12	38	197	165	170	13.93	M5

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

3.2.4 Layout of the modules on the top-hat rail

! It is imperative that the module layout on the top-hat rail is 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)
 - For each further fire section one sensor module **SM** and respective associated drive modules **DM** (if present)
 - Weather module **WM** (if present)



3.2.5 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 fire sections has to be changed subsequently (for example because an additional SM module has been installed), the system has to be reconfigured.

- ▶ Press the RESET push button 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 de-energised state, switch mains voltage and battery off first.

3.3 Connection of the MBZ300 control panel

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 the 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)

3.3.1 Connection of the supply voltage

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

- Internal power supply
- Batteries (also have to be placed in the 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 (with MBZ300 N8 max. 8 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

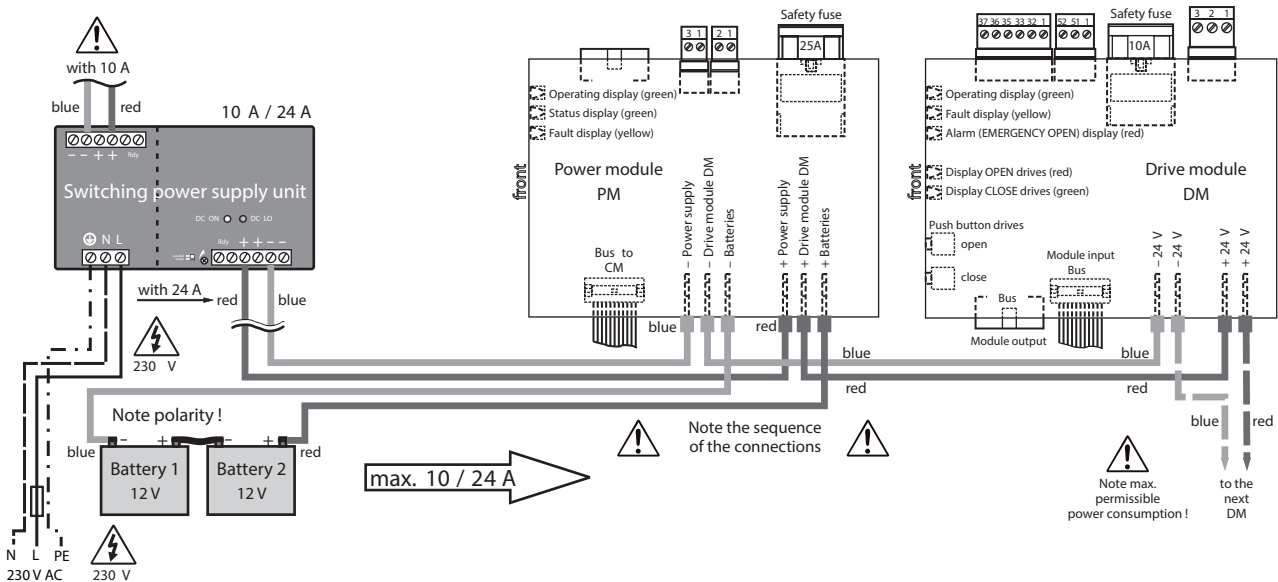


The number of drive modules **DM** that can be connected to a switching power supply unit with **PM** or **PME** depends on the maximum current consumption at the respective switching power supply unit.

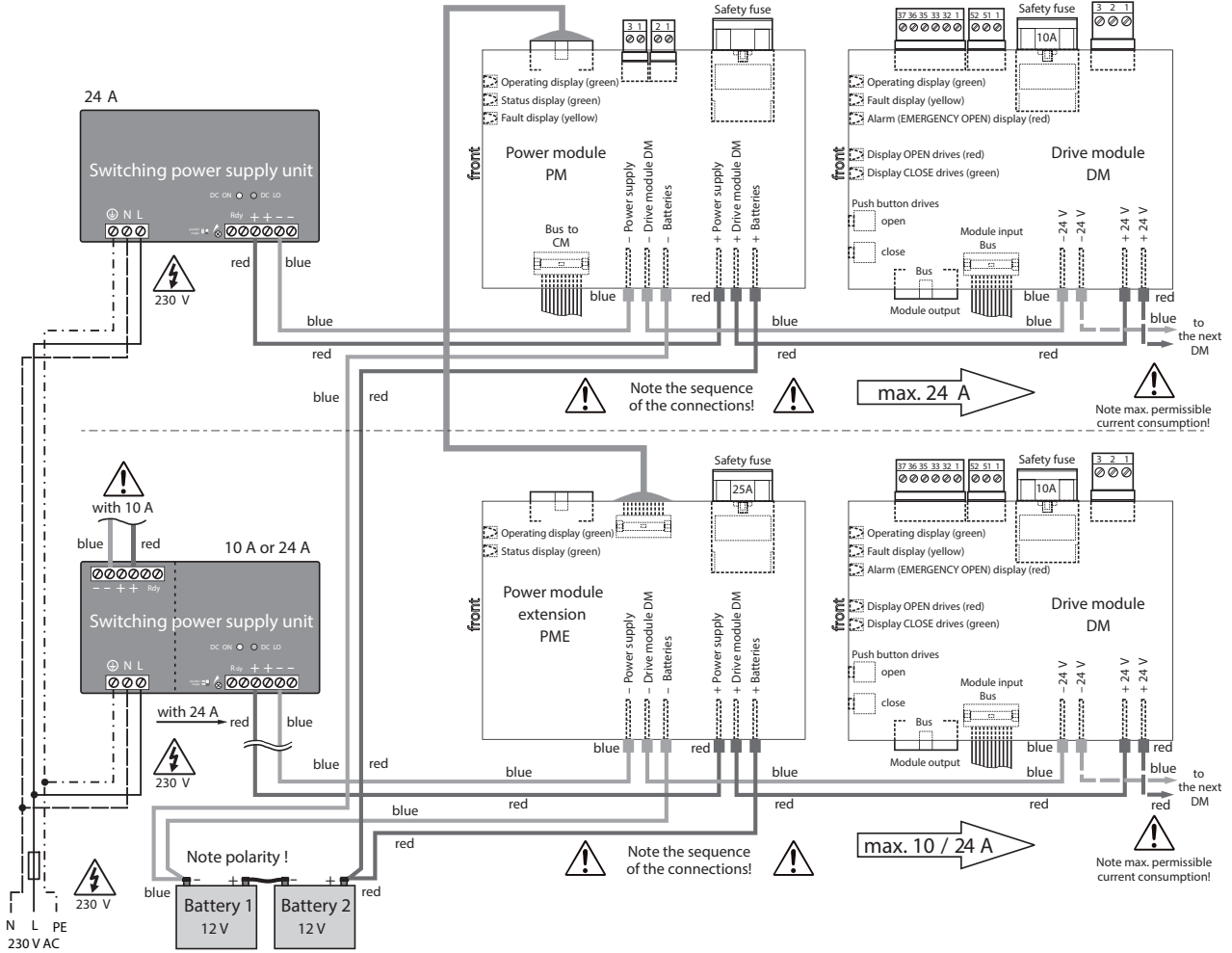
Application examples:

- Switching power supply unit 10 A with 1 **DM** for max. 10 A current consumption (for MBZ300 N8 max. 8 A)
 - or –
 - Switching power supply unit 10 A with 2 **DM** for two ventilator groups with max. 5 A current consumption each
- Switching power supply unit 24 A for 2 **DM** with max. 10 A current consumption each
 - or –
 - Switching power supply unit 24 A for 4 **DM**, if the max. current consumption does not exceed 10 A per **DM** and 24 A in total

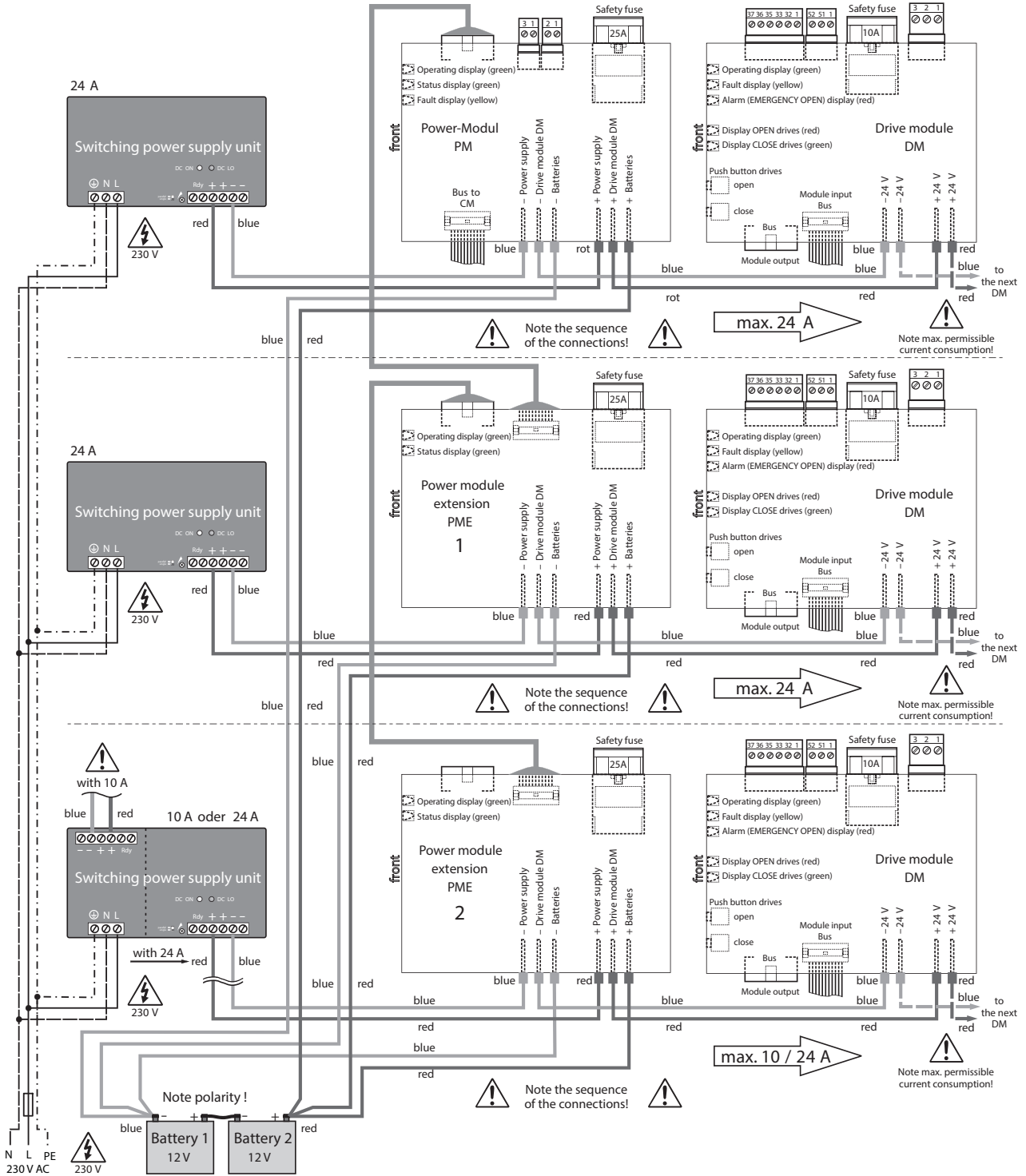
Connection with one switching power supply unit



Connection with two switching power supply units



Connection with three switching power supply units



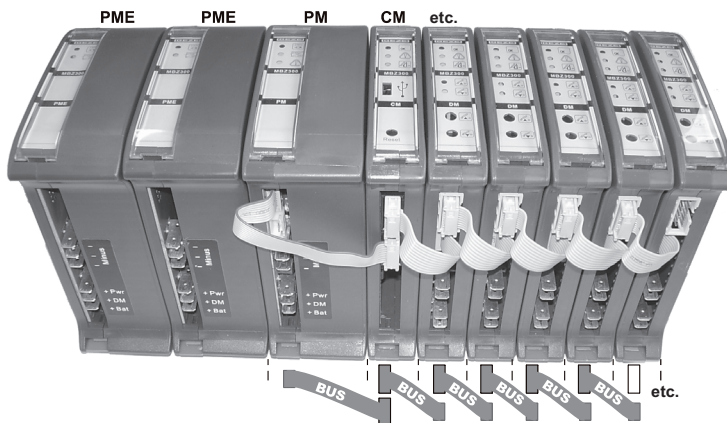
3.3.2 Connection of the internal BUS connection

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 to each other irrespective of their function in the system (digital BUS system). If the BUS system is distributed on several top-hat rails, a special-version BUS cable (special length) has to be used.

! In order for the modules to work properly they have to be located correctly (see Chapter 7.1).

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

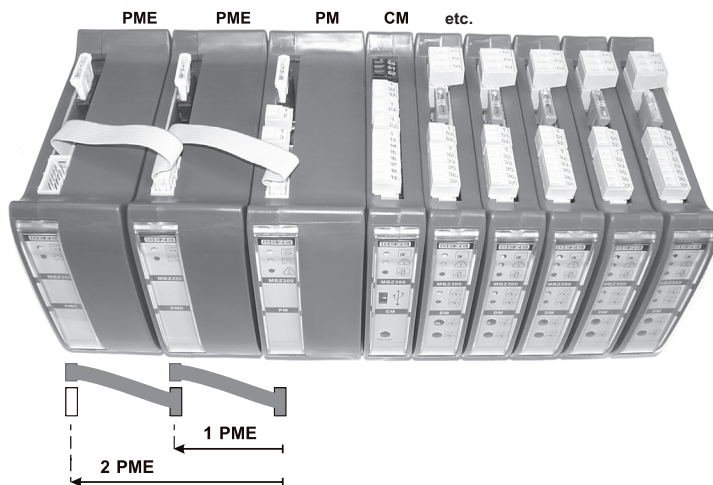
- ▶ Connect modules from PM diagonally (bottom and from left to right).



! No connection at the bottom between **PM**, **PME 1** and **PME 2**. After **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).

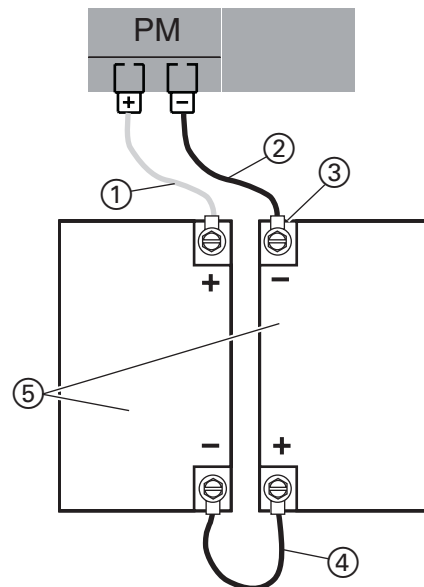


- !**
 - ▶ All the further connections are made at the top.
 - ▶ Only connect or disconnect the bus cable in a de-energised state.
 - ▶ Switch mains voltage and battery off first.

3.3.3 Connection and installation of the batteries

- !** Batteries that have not been connected properly can lead to property damage.
 - ▶ Ensure correct polarity when connecting the batteries.

- 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.

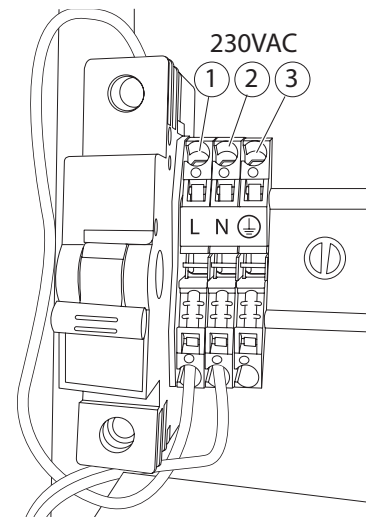
- ▶ Depending on their size, set or place the batteries in the bottom of the control cabinet.
- ▶ Arrange the batteries in such a way that their poles cannot touch.

3.3.4 Mains connection

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

- ⚠ WARNING!**
Risk of fatal injury due to electric shock!
 - ▶ Turn off the power feed and ensure it is not turned back on before connecting the voltage supply.
 - ▶ Ensure there is no voltage in the on-site feeder.

- ▶ Connect the 230 V AC on-site feeder to the mains connection terminals of the emergency power control unit.
 Cable cross-section mains connection cable:
 1.5 mm² ... 2.5 mm²

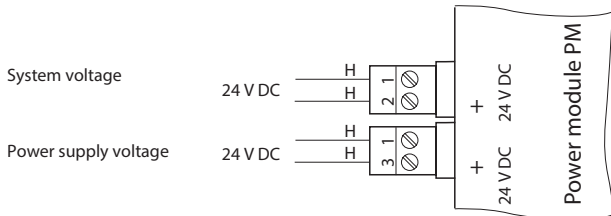


- 1 L
- 2 N
- 3 PE

3.3.5 Connecting external components

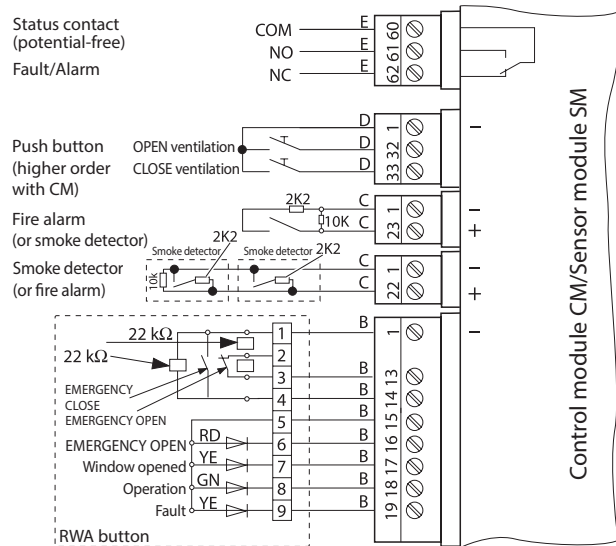
- ! ▶ Ensure that the electrical installation is carried out in accordance with the applicable regulations and guidelines.
- ▶ For low voltages use only cables **without protective conductor**.

Power module PM

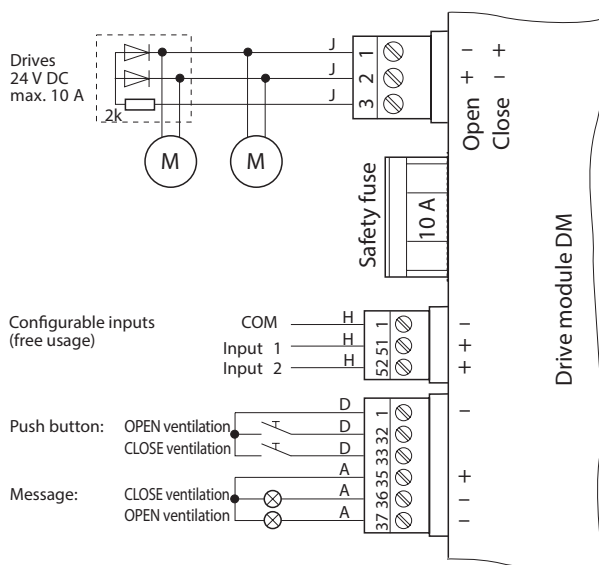


The current required for battery-buffered system voltage (power module **PM**) reduces the battery operating duration. Therefore larger batteries may have to be used.

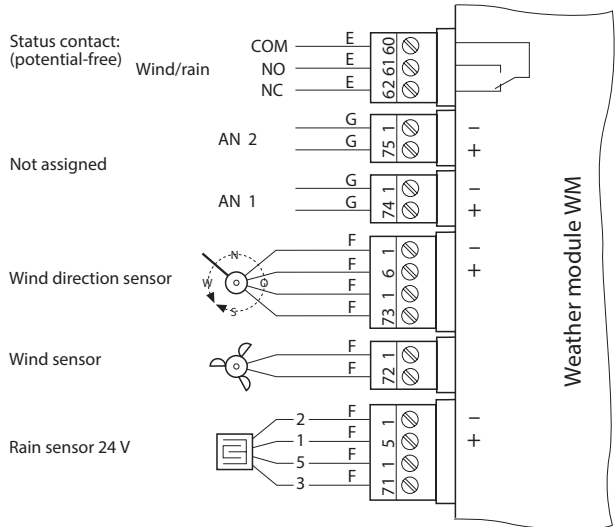
Control module CM/Sensor module SM



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 mm ²	
B	-	≥0.8 mm	≤400 m	1.5 mm ²	Connect a max. of 10 push buttons in series
C	≤100 mA	≥0.8 mm	≤400 m	1.5 mm ²	max. 10 smoke or heat detectors
D	≤200 mA	≥0.8 mm	≤400 m	1.5 mm ²	
E	≤500 mA	≥0.8 mm	≤400 m	1.5 mm ²	potential-free, max. 30 V DC
F	-	≥0.8 mm	≤200 m	1.5 mm ²	
G	4...20 mA	≥0.8 mm	≤400 m	1.5 mm ²	24 V DC
H	≤500 mA	-	-	1.5 mm ²	24 V DC
J	-	≥1.5 mm ²	-	≤2.5 mm ²	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 be at least 1.5 mm². A cable up to max. 2.5 mm² can be connected to the drive module **DM**, larger cross-sections must be connected using additional series terminals.

Calculation equation for cable cross-section (drives)

Cable cross-section = Cable length × Total current of all the drives / 73

Examples for maximum cable lengths depending on cable cross-section and total current of drives:

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

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

3.4 Installing the CAN module

! The system must be configured for this application using the system software. With the MBZ300 N8, the CAN module can only be used for the minimum configuration (1×PM, 1×CM, 1×DM).

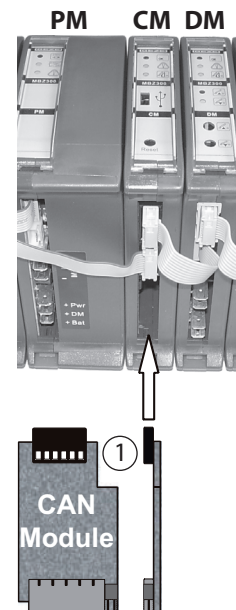
The CAN module is used for connecting several control panels to one control and triggering unit via CAN-bus. One CAN module is required for each control panel to be connected via CAN bus. The system can manage a max. of 30 control panels linked by CAN-bus.

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 signals possible problems with the CAN-bus link.

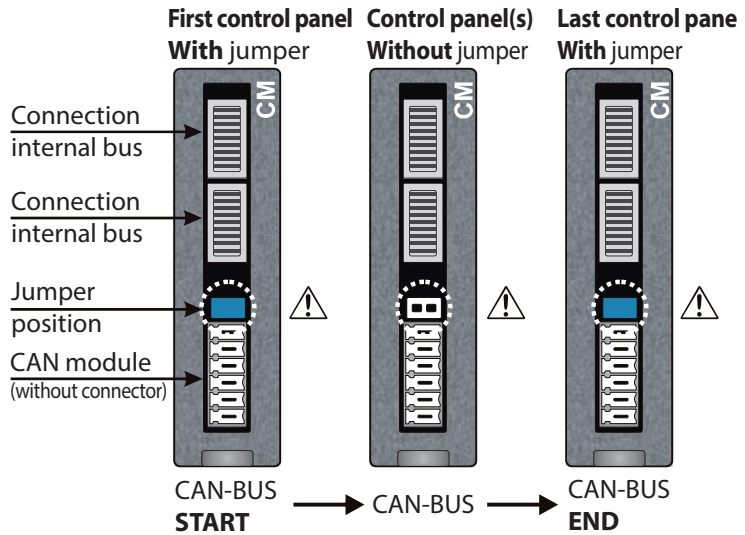
i If the CAN module needs to be pulled out, press this slightly above when pulling it out.



Setting the jumper

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

! All the control panels in between must not have a jumper.

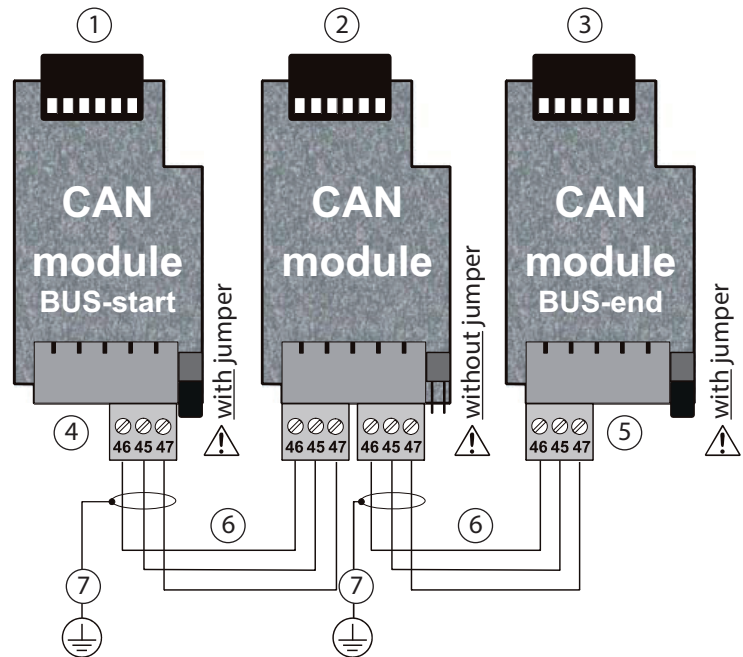


Wiring the CAN module

- 1 First control panel
- 2 Control panel(s)
- 3 Last control panel
- 4 Start of bus
- 5 End of bus
- 6 CAN-bus
- 7 Shield

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

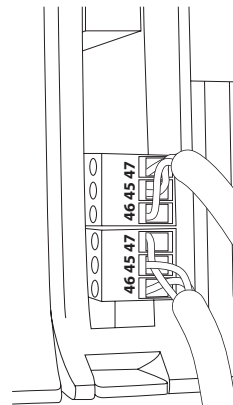
- A bus-capable fire protection cable must be used if necessary.
- The diagram on the right shows a completely connected and inserted CAN module.



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

CM with connected CAN module

- ▶ Set the CAN addresses by software during commissioning.



4 Commissioning

Before enabling operation of the control panel:

- ▶ Ensure that all external components are completely assembled and connected.
- ▶ Take changes into consideration that have resulted during the installation (e.g. larger batteries may be necessary in case of a battery-buffered system voltage of the power module **PM**).
- ▶ Ensure 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 carried out via USB with software (wind speed, latching 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 put 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 with 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**.

5 Operation

5.1 General mode of operation



WARNING!

Danger to life from malfunctions in the event of fire, as the escape route can fill with smoke!

The system must function without faults.

- ▶ Eliminate all faults immediately.
- ▶ If the **yellow** fault display of the RWA button lights up, inform those responsible immediately.



System malfunctions must be remedied immediately.

- ▶ Ensure that the system operator has been instructed at least in the modes of operation described below.

Manual triggering for alarm (EMERGENCY-OPEN)

- ▶ Break the glass at the RWA button and press the alarm switch.

Manual opening and closing of the ventilation

- ▶ Press the OPEN or CLOSE button on the ventilation button or ventilation control unit.
 - Pressing the switch briefly for approx. 1 second is sufficient for latching (no continuous contact).
 - In the case of dead-man operation the ventilation only closes as long as the push button is pressed.

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



Automatic opening and closing (e.g. wind-rain control) overrides manual activation.

5.2 Ventilation mode

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

Opening and closing windows

The windows are divided into ventilation 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 connections 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 from the vent switch, they stop after the prescribed opening time. Further opening of the window is only possible after the close-button has been pressed.



The opening width restriction is only effective in ventilation mode, 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 inoperative.

Interval mechanism

The service technician can configure an automatic interval mechanism for each motor line. The drives are then only activated for an adjustable time whenever an activation signal is given by a vent switch.

Automatic ventilation control

In this setting the drives are automatically closed after an adjustable period of time following the opening operation.

5.3 Alarm mode

Triggering the alarm

Manually:


- ▶ Break the glass at the RWA button.
- ▶ Press the button.

Automatic triggering in the following situations:

- A smoke detector detects smoke.
- A heat detector detects a temperature increase above the limit value.
- A fire alarm central unit sends an alarm signal to the RWA-emergency power supply control unit.
- A coupled RWA emergency power control unit triggers an alarm.

Procedures and signals during an alarm

When an alarm is triggered the alarm program of the RWA emergency power control unit runs:

- Windows and smoke vent flaps in the fire section open (normal configuration) or close.
- A red alarm display lights up on the RWA buttons: 
- The RWA emergency power supply control unit emits external signals, for example to a horn (depending on configuration).
- The vent switches are locked.
- The rain/wind control is ignored.
- Wind-direction-dependent activation of the DM (depending on configuration)

Ending the alarm

The alarm status can be cancelled in two ways:

- ▶ By resetting the RWA emergency power control unit.
- or –
- ▶ By resetting any RWA button of the fire section.

When the alarm status is cancelled, no more alarm signals are sent and the vent switches can be operated again.

**WARNING!**

Danger to life from malfunctions in the event of fire, as the escape route can fill with smoke!

If the system has not been completely reset (the red alarm indicator is still lit), it will not be fully functional if the alarm is repeated.

- ▶ Always completely reset the system after an alarm.

Completely resetting the system

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

By an RWA button:

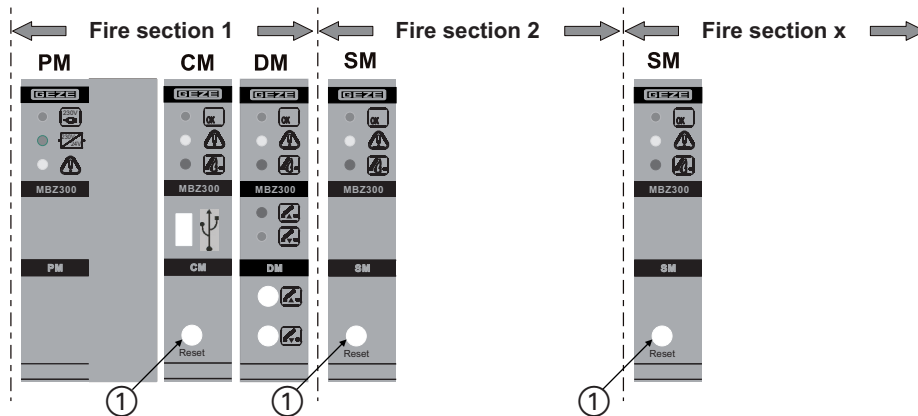
- ▶ Reset the RWA button.

By a smoke detector or a heat detector:

- ▶ Reset the smoke detector line and RWA button.

By an external fire alarm control unit:

Switch off the alarm signal of the external fire control unit and reset the RWA button. Resetting smoke detector lines



WARNING!

Risk of fatal injury due to electric shock!

- ▶ Do not touch any components except the Reset (1) switch of the corresponding control or sensor module in the inside of the control cabinet of the RWA emergency power control unit.
- ▶ Close the control cabinet after resetting.

- ▶ Open the control cabinet with the supplied key.
- ▶ Press the reset push button.
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 extinguishes, alarm signals are no longer sent 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 go out, at least one of the following alarm signals is still active on the RWA emergency power supply control unit. This has to be deactivated:

- Alarm signal from an RWA button
- Alarm signal from a smoke detector
- Alarm signal from a coupled control panel
- Alarm signal from an external fire alarm control unit

5.4 Power failure and fault

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

Operating status	Fault LED on the RWA button	Emergency power supply control unit (on the CM)
Normal	green, steady light	green, steady light
Power failure	yellow, flashes briefly (0.1 s)	yellow, flashes briefly (0.1 s)
Fault	yellow, steady light or flashing	yellow, steady light or flashing

Power failure

The RWA emergency power supply 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). The batteries must be in proper condition for this.

The emergency functions of the RWA emergency power supply control unit remain during a power failure. In contrast, normal ventilation operation via the vent switches is locked in order to maintain the capacity of the batteries for as long as possible.



WARNING!

Risk 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 of the RWA emergency power supply control unit.
 - Change fuse if necessary.
 - Inform a specialist authorised by GEZE in the event of a fault despite intact power supply.

Fault

Work in the control cabinet is required in case of a fault with a yellow illuminated fault LED.

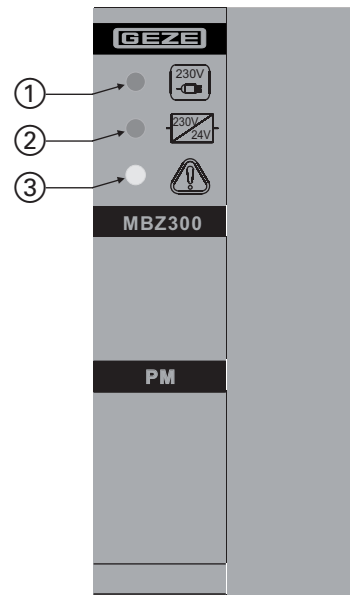
- ▶ Contact a specialist authorised by GEZE.

6 Module description

6.1 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



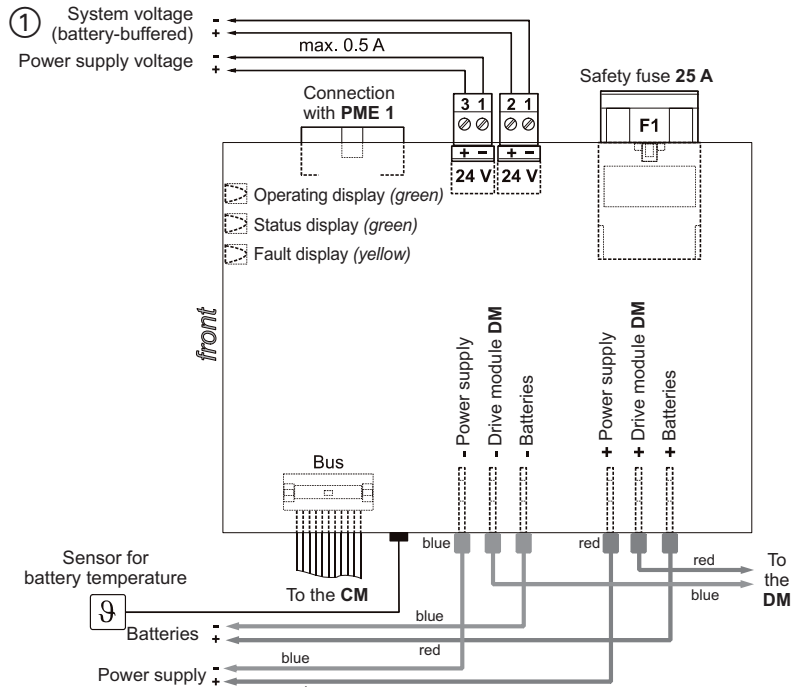
- 1 Operation (green)
- 2 Status (green)
- 3 Fault (yellow)

Displays

Symbol	Status	Mode of operation/fault
	green, steady lights	Mains operation
	green, flashes briefly (0.1 s)	Battery operation
	off	
	off	Power failure; voltage supply too low
	green, flashes rapidly	Communication fault BUS connection
	off	System out of operation or system voltage OFF (deep discharge protection)
	yellow, steady light	Fault; fuse or charging circuit defective
	yellow, flashes slowly	Fault; no battery connection or fuse with PME defective
	yellow, flashes rapidly	Fault; system voltage switched off due to overload
	green, steady lights	Connection to PME interrupted (system switches to battery operation)
	yellow, flashes slowly	

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

Connections for power module PM

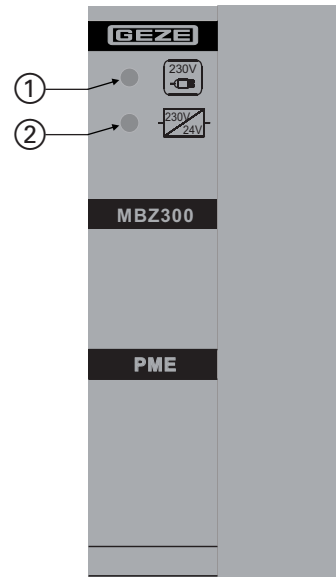


If the battery-buffered system voltage (1) is used, the battery operating life is reduced, so that larger batteries may be required.

6.2 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



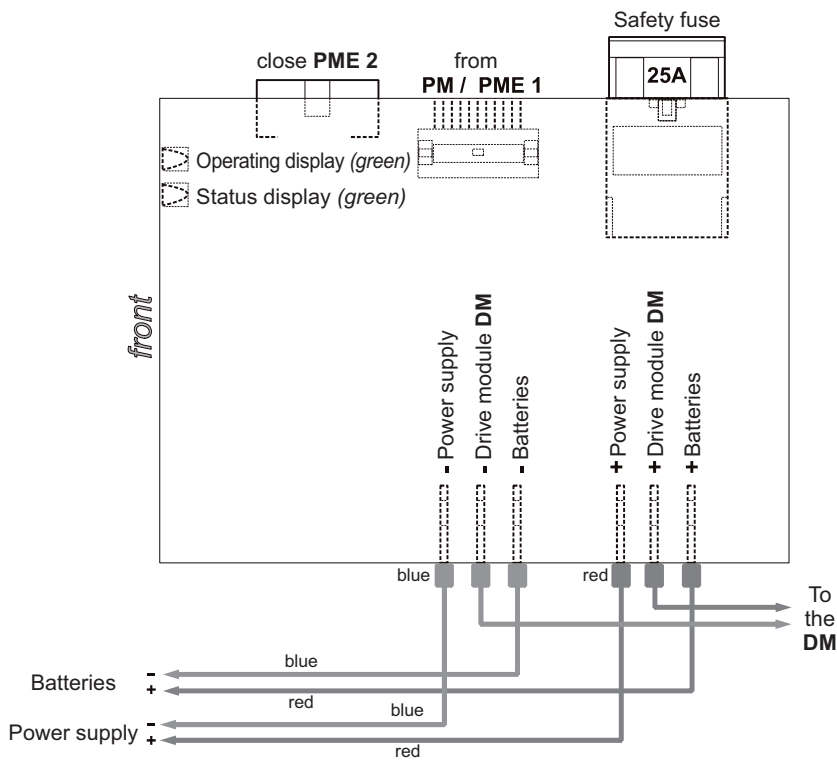
- 1 Operation (green)
- 2 Status (green)

Displays

Symbol	Status	Mode of operation/fault
	green, steady lights	Mains operation
	off	Battery operation
	off	

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

Connections for power module extension PME



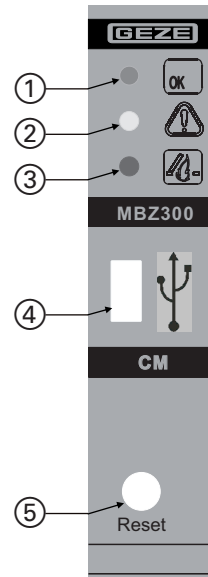
6.3 Control module CM

Functions:

- Monitoring of three fire alarm lines for triggering and faults
- Processing of the signals of vent switches
- Connections for external LED displays (operation, fault, alarm and "Window opening")
- Basic equipment of the control panel (direct connection to the power module **PM** via BUS cable)
- Resetting of the smoke detectors via push button
- Connection for external computer for configuration, maintenance and query of operating log (via manufacturer software)



▫ VdS tested

- 1 Operation (green)
- 2 Fault (yellow)
- 3 Alarm (red)
- 4 USB port
- 5 Resetting of the smoke detector lines



Displays

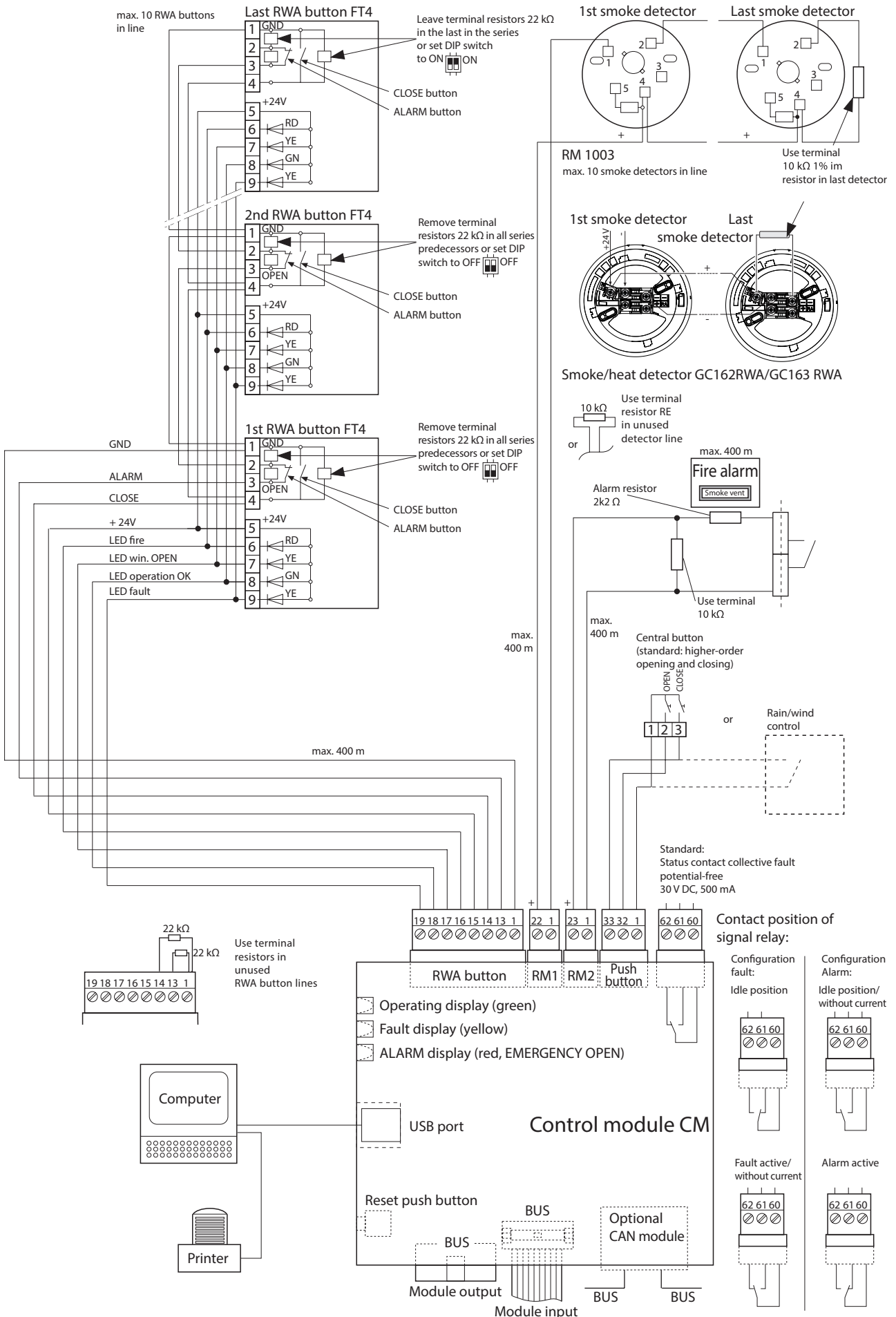
Symbol	Status	Mode of operation/fault
	green, steady light	Mains operation
	red, steady light	Alarm triggering (EMERGENCY OPEN)
	red, flashes slowly	Smoke detector still active after EMERGENCY CLOSE
	red, flashes rapidly	Manual detector still triggered after EMERGENCY CLOSE
	yellow, steady light	Fault; detector line RWA button or fault DM module
	off	
	yellow, flashes slowly	Fault; detector line RM1
	off	
	yellow, flashes rapidly	Fault; detector line RM2
	off	
	yellow, flashes briefly (0.1 s) (1 x per s)	Fault; system in battery operation
	off	
	yellow, flashes rapidly with 1 s pause	Battery fault
	off	
	yellow, flashes rapidly	Short-circuit; EMERGENCY CLOSE
	green, flashes rapidly	
	yellow, 1 x slow flash	Module selection does not correspond to system configuration
	green, steady light	
	yellow, 2 x flash	System maintenance check must be carried out
	green, steady light	

Symbol	Status	Mode of operation/fault
	yellow, 3 x flash	CAN participant missing
	green, steady light	
External display "Open window" on RWA button	off	All the windows in the fire section closed
	yellow, steady light	At least 1 ventilator group in the fire section is opened
	yellow, flashes slowly	At least 1 ventilator group in the fire section has been triggered (open or closed)



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

Connections for control module CM

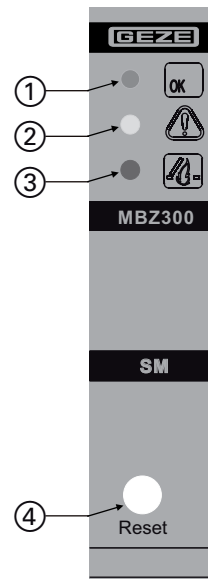


6.4 Sensor module SM

Functions:

- Monitoring of three fire alarm lines for triggering and faults
- Processing of the signals of vent switches
- Connections for external LED display (operation, fault, alarm and "Window opening")
- Use only possible if there is a control module **CM**
- Resetting of the smoke detectors via push button
- VdS tested

- 1 Operation (green)
- 2 Fault (yellow)
- 3 Alarm (red)
- 4 Resetting of the smoke detector lines

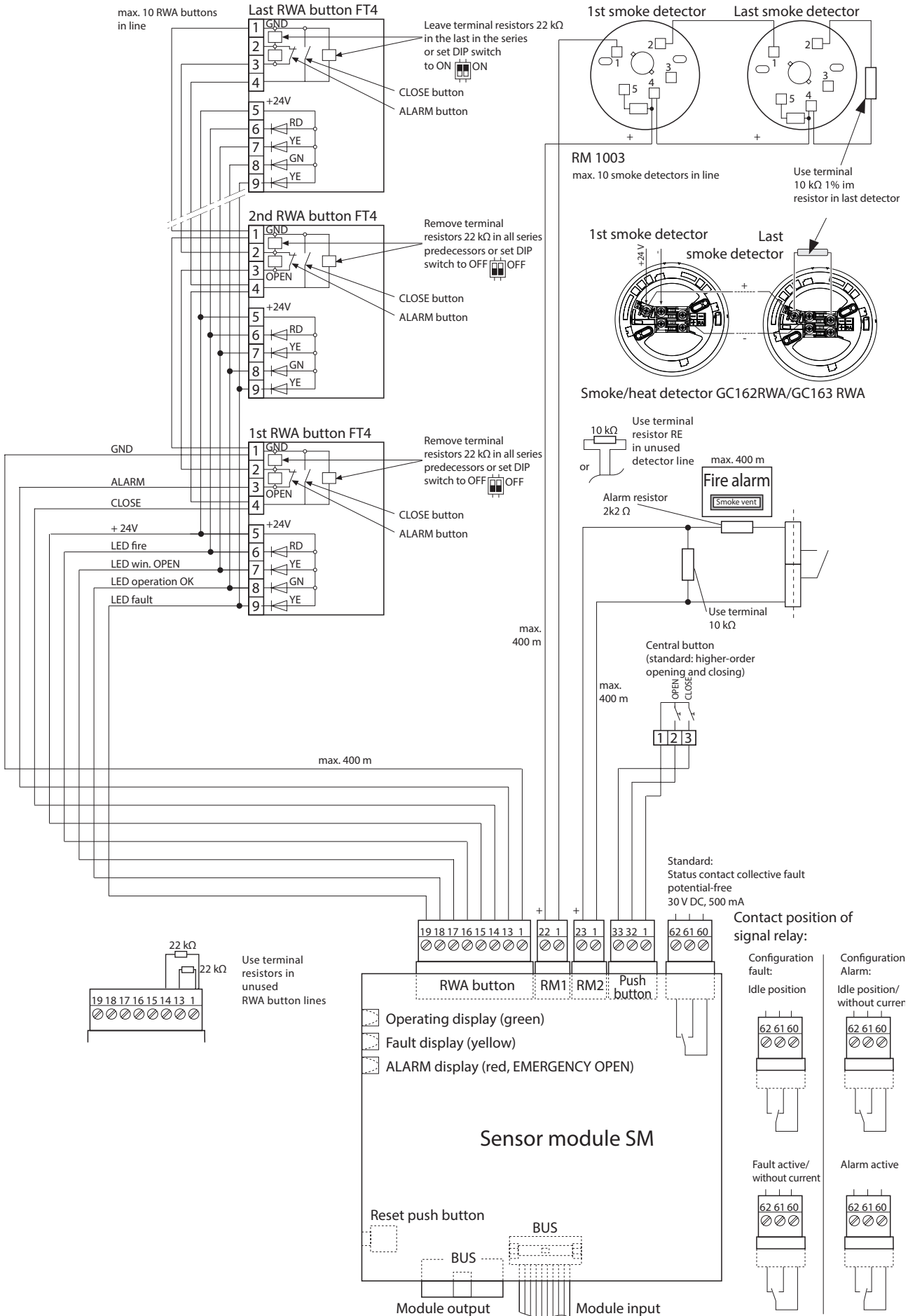


Displays

Symbol	Status	Mode of operation/fault
	green, steady light	Mains operation
	red, steady light	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, steady light	Fault; detector line RWA button or fault DM module
	off	
	yellow, flashes slowly	Fault; detector line RM 1
	off	
	yellow, flashes rapidly	Fault; detector line RM 2
	off	
	yellow, flashes briefly (0.1 s)	Fault; system in battery operation
	off	
External display "Open window" on RWA button	off	All the windows in the fire section closed
	yellow, steady light	At least 1 ventilator group in the fire section is opened
	yellow, flashes slowly	At least 1 ventilator group in the fire section has been triggered (open or closed)

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

Connections for sensor module SM

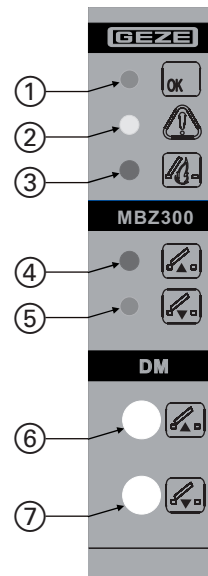


6.5 Drive module DM / DME

Functions:

- Connection for electromotive drives up to max. 10 A/ DME 20 A (with MBZ300 N8 max. 8 A)
- Monitoring of the drive power through fail-safe (for fault, short-circuit, interruption)
- Processing of the signals of vent switches (if required also limit position messages of drives)
- Connections for external signal transfer (for limit position status of drives)
- VdS tested

- 1 Operation (green)
- 2 Fault (yellow)
- 3 Alarm (red)
- 4 OPEN (red)
- 5 CLOSED (green)
- 6 Open (push button)
- 7 Close (push button)



Displays

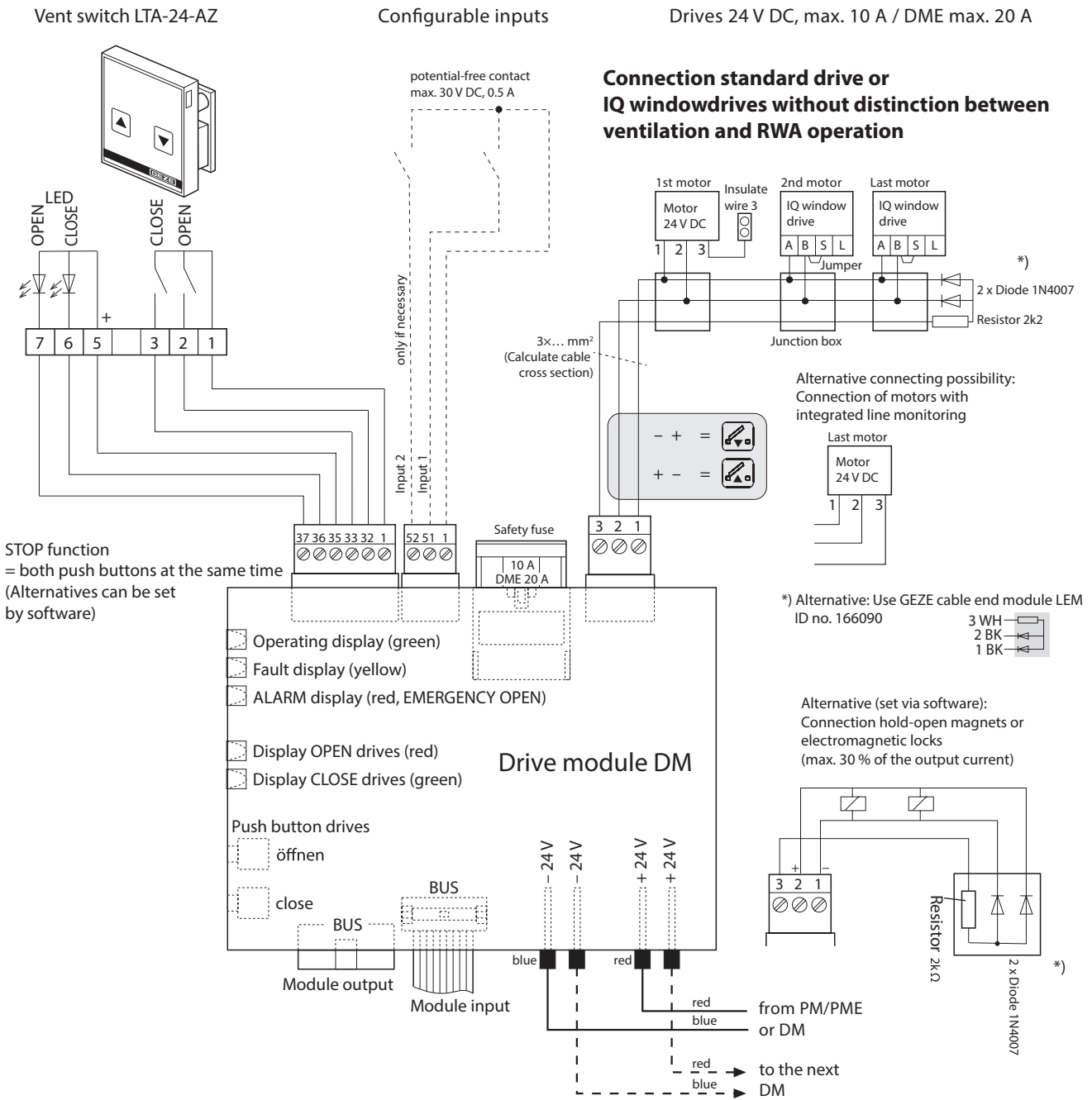
Symbol	Status	Mode of operation/fault
	red	Open drive (motor relay OPEN active) as long as motor switch-off time is running
	green	Close drive (motor relay CLOSE active) as long as motor switch-off time is running
	green, steady light	In operation
	red, steady lights	Alarm release (EMERGENCY OPEN); drives are opened
	red, flashes briefly (0.1 s)	Alarm release with battery operation
	green, flashes rapidly	Fault (e.g. no BUS connection, error at the control module CM)
	yellow, steady light	Fault (e.g. module fuse defective, short-circuit, line interrupted, supply voltage faulty)
	off	Fault is indicated on the CM

Push button

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.

6.5.1 Connections for drive module DM / DME

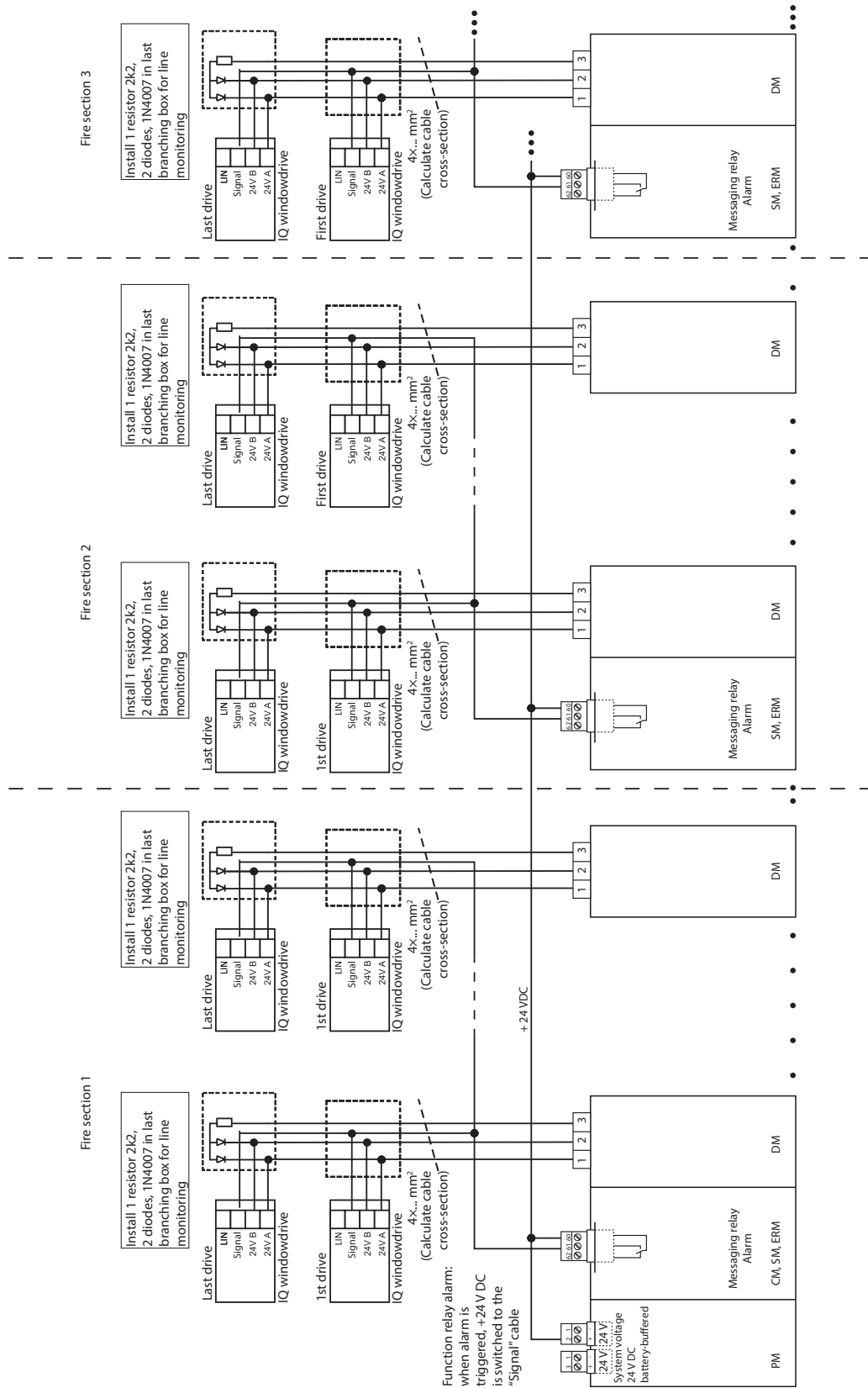


! The total current of all the drive modules **DM** must not exceed the maximum current of the mains adapters.

! The motor supply line is monitored with a third wire with a diode/resistance combination at the last motor in every group. Alternatively, use the GEZE cable end module LED (166090).
 ▶ Line monitoring may not be replaced by a bridge to GND.

! ▶ Only 30% of the max. output current of the power supply may be used in the “hold-open magnet” mode of operation. The battery has to be designed according to the required emergency power supply duration.

6.5.2 IQ window drives connection with differentiation between ventilation and RWA mode



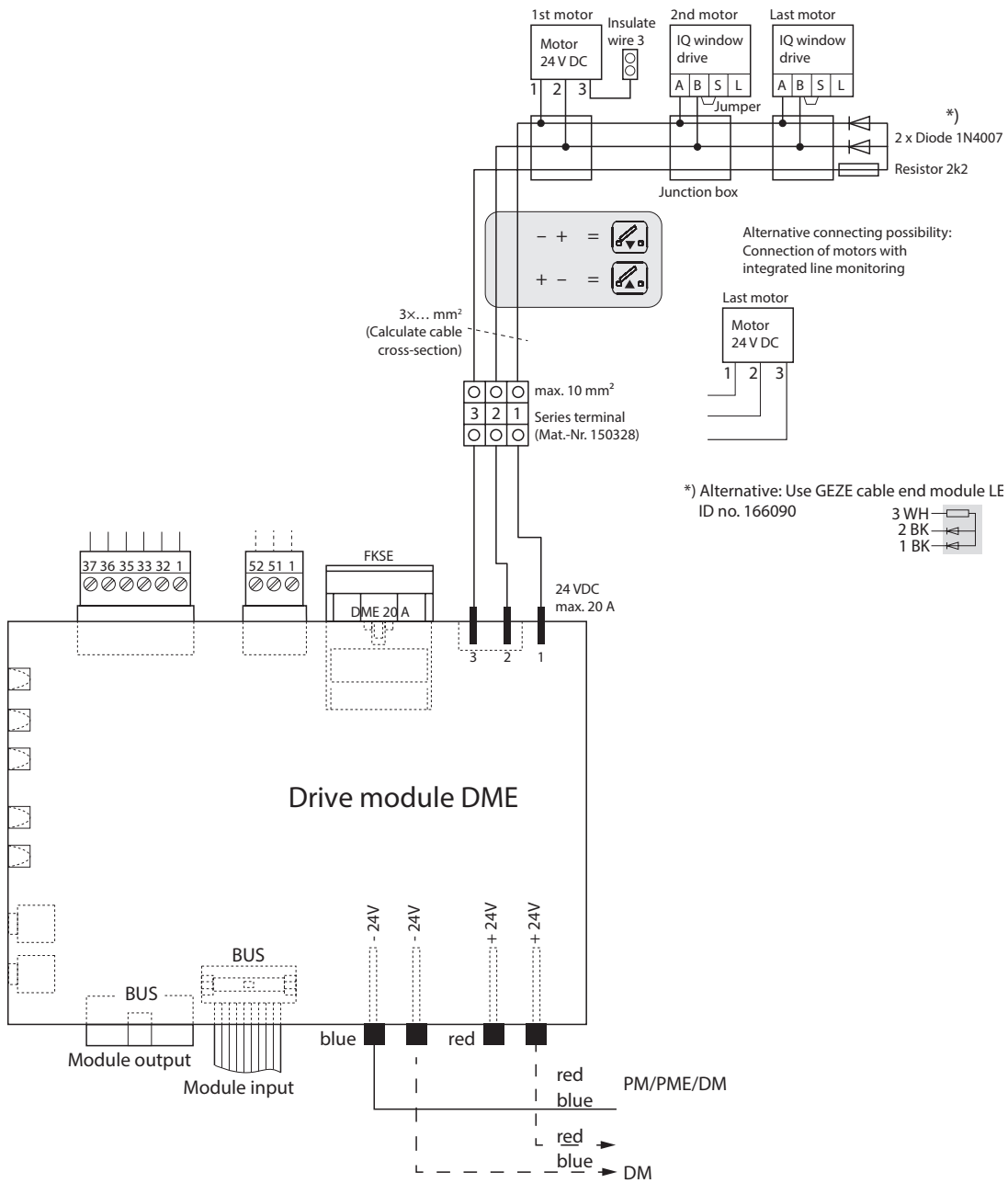
▫ The detector relays must be configured to "Alarm" and assigned to individual fire sections.



With the MBZ300 N8 the alarm relay is already pre-wired for 1 alarm group for the signal cable S. Series terminals for connections 1,2,3,S are installed.

6.5.3 Connection diagram for drive module DME

Standard drive connection or IQ windowdrives connection with differentiation between ventilation and RWA mode



DME accessories

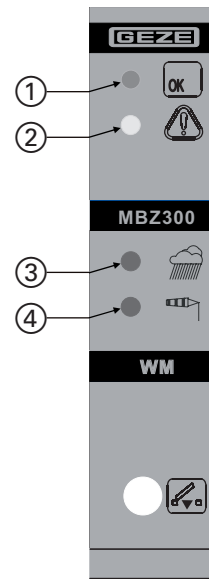
- Series terminals:
The series terminals (mat. no. 150328) are not included in the scope of supply for the drive module DME and must be ordered separately.
- Connection cables for series terminals:
The connection cables for the series terminals are included in the scope of supply for the drive module DME.

6.6 Weather module WM

Functions:

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

- 1 Operation (green)
- 2 Fault (yellow)
- 3 Rain (red)
- 4 Wind (red)



Displays

Symbol	Status	Mode of operation/fault
	green, steady light	In operation
	red, steady light	Rain sensor active
	red, steady light	Wind sensor active
	red, flashes slowly	Main wind direction detected
	red, flashes rapidly	Triggering threshold for wind sensor exceeded. Close the window in ventilation mode
	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, steady light	Fault (e.g. from wind/rain sensor or wind direction sensor)
	off	
	green, flashes rapidly	Fault BUS connection

Changing the wind sensor settings

- ▶ Connect a computer with configuration software via USB.

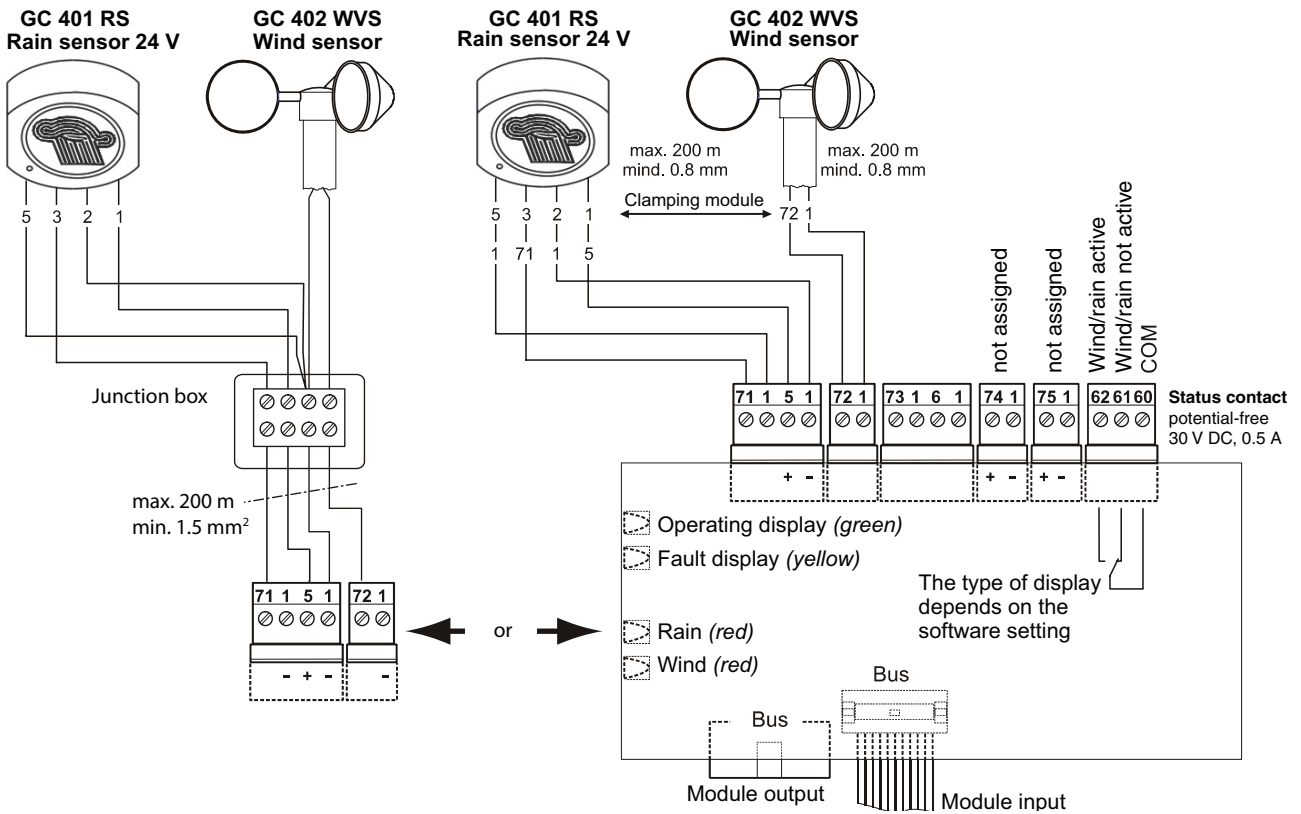
Wind speed:

- ▶ Adapt the triggering threshold for the wind sensor (set to 2 m/s in the factory).

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

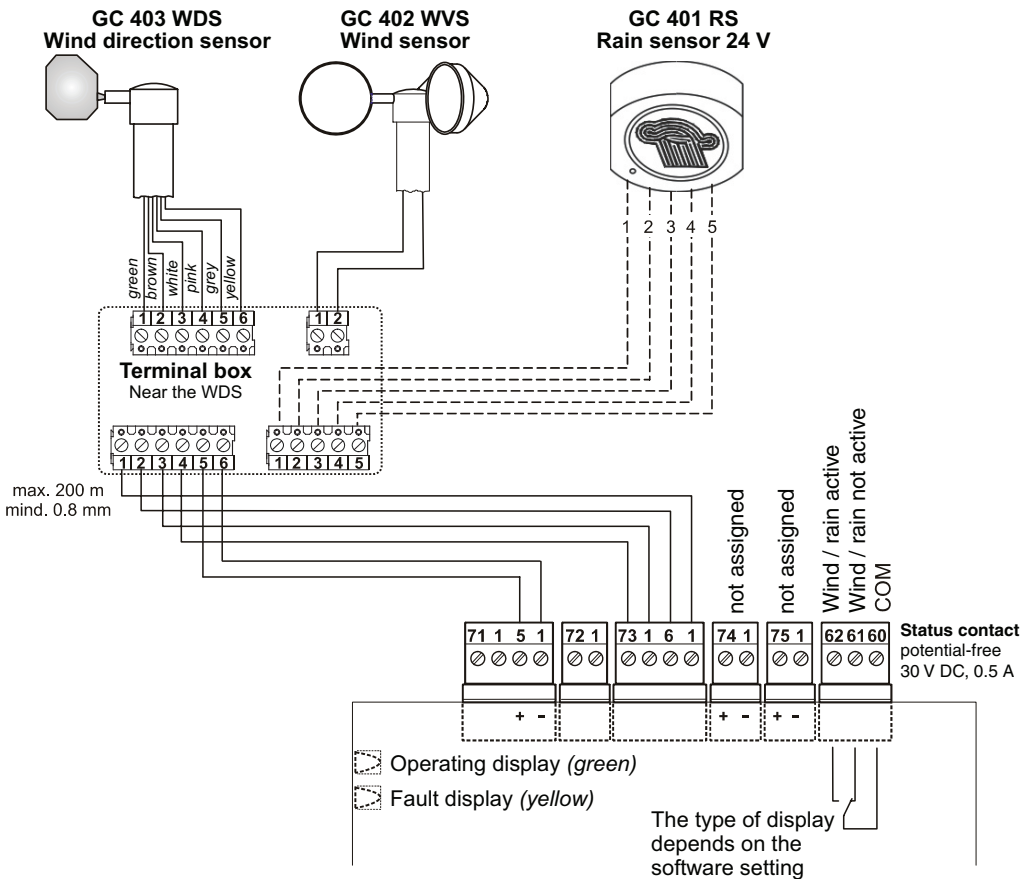
- ▶ Adapt the configuration of the control panel to the respective application.

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



Connection of wind-direction-dependent opening and closing

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



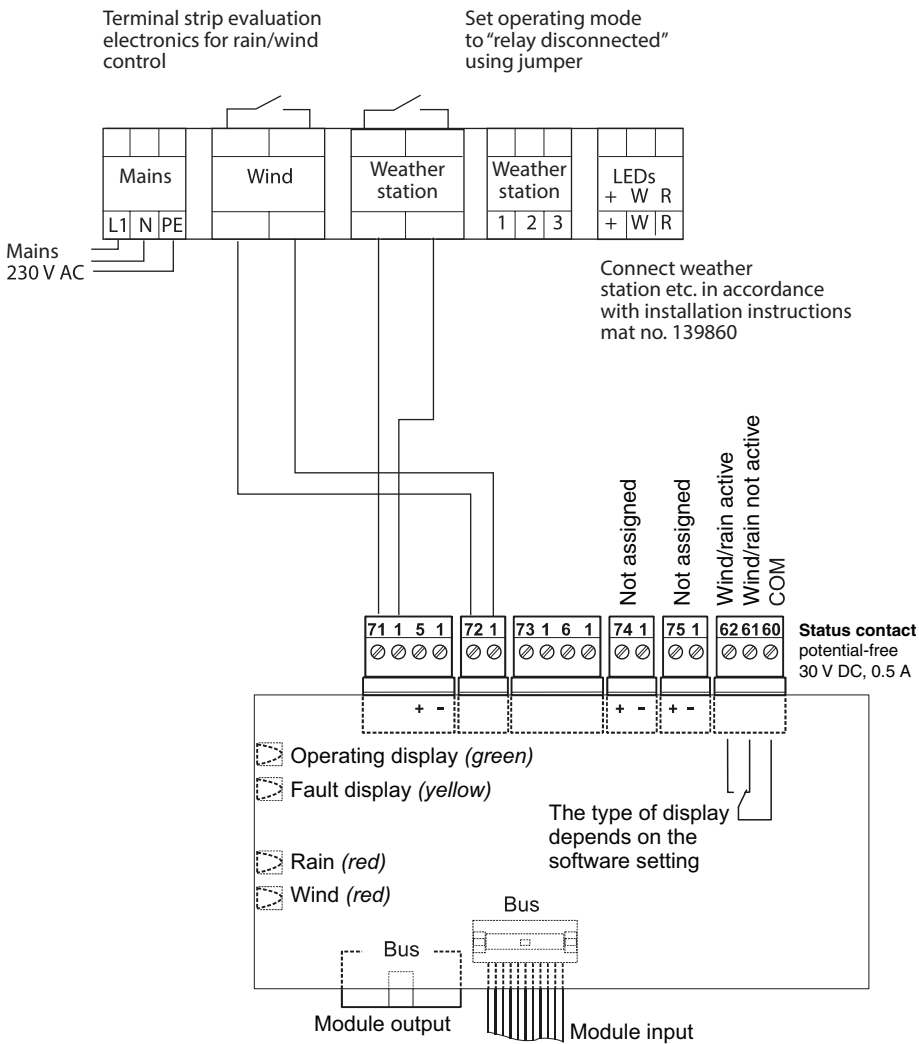
Required sensors:

- 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 of rain/wind control (mat. no. 091529)



“Wind” input must be configured to switching contact setting.

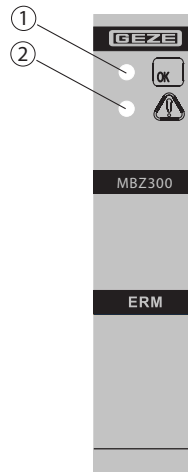


6.7 Relay module ERM

! The relay module ERM must be configured with the MBZ 300 software.

6.7.1 Functions

- 6 configurable relay outputs
- Notification of error and operating statuses

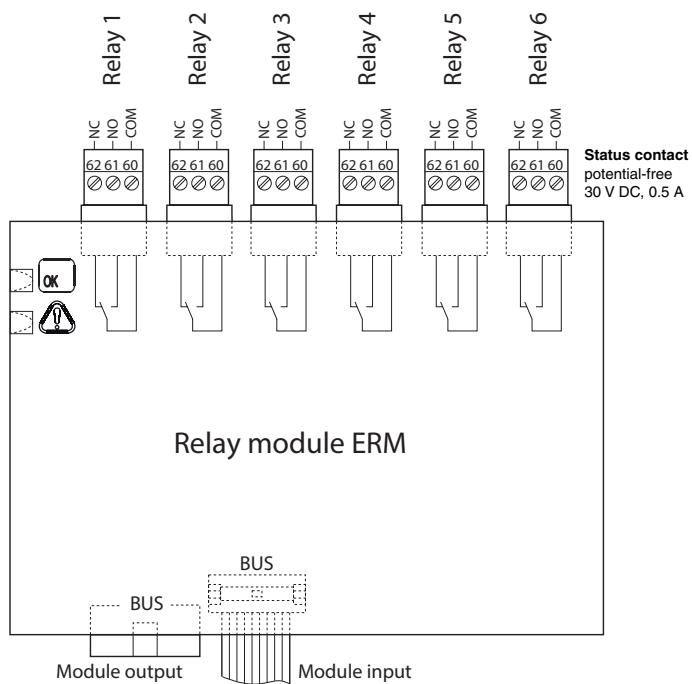


- 1 Operation (green)
- 2 Fault (yellow)

Display

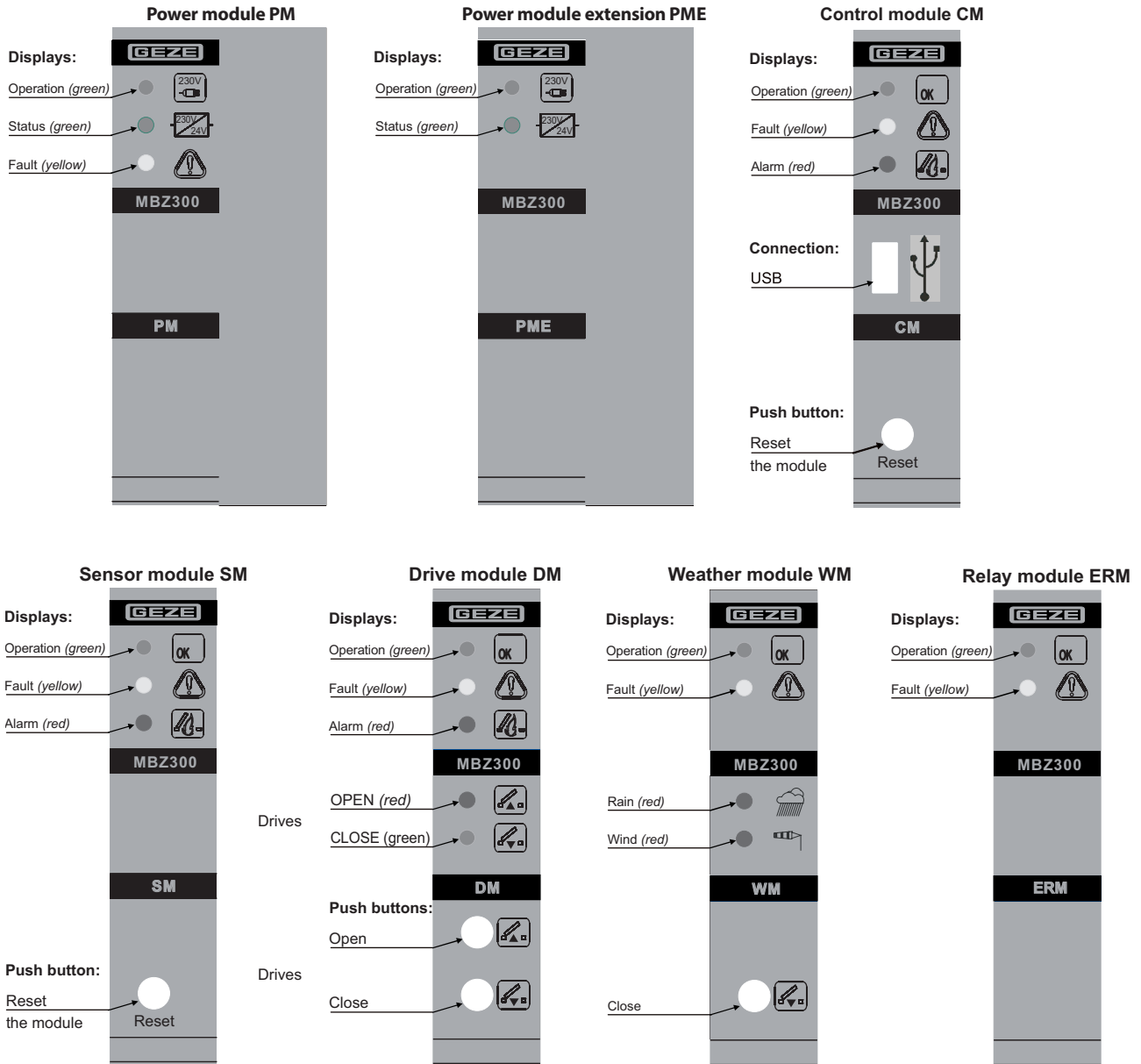
Symbol	Status	Mode of operation / fault
	green, steady light	In operation
	yellow, steady light	Fault
	green, flashes rapidly	Bus connection fault

6.7.2 Connection diagram for relay module ERM



7 Overview of the displays



WARNING!
Danger to life in case of malfunctions during a fire!
 The system and its display elements must function correctly.
 ▶ Eliminate all faults immediately.




Operation


Display element/symbol	Display
OK, 230V, 230V/24V	steady lights (green)
Green icon (pencil)	green (ventilation closed)
- or - Red icon (pencil)	red (ventilation open)
Weather icons (cloud, rain, wind)	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 fire section)
	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 switch 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 the connected PME at the same time

-  Detailed meanings of the faults at the descriptions of the individual modules.

8 Module configuration

The control panel 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 an 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 vent groups
- Self-locking or dead-man operation of the vent switches
- Priority of the ventilation control unit (by default the vent switch at the control module **CM** for common closing has a higher priority)
- Assigning and combining of fire sections (by default the drive modules **DM** subordinated to the control module **CM** or sensor module **SM** belong to a triggering unit)
- Function of external displays (status contact on the **CM/SM**)
- Connection of pressure-gas generators or hold-open 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
- Mode of operation for wind and rain sensors
- Storing and logging the settings during commissioning and maintenance
- Calling up stored faults
- Localising faults
- Assigning the relay of the relay module ERM to operating and error messages

9 Maintenance

The entire system must be checked and serviced at regular intervals:

- Functional test: monthly
- Maintenance: annual
- ▶ Carry out and document maintenance in accordance with the inspection book "Power-operated windows in ventilation and RWA systems as well as NRWGs".



Control and maintenance work can only be performed by trained specialised personnel.

9.1 Maintenance of the control panel

- ▶ Check mains voltage (230 V AC).
- ▶ Check the terminal connections and ribbon cables (firm fit and condition).
- ▶ Check the cables and connecting wires (for damage).
- ▶ Check the displays and switches on the modules.
- ▶ Check the fuse links.
- ▶ Check installation date of batteries and change batteries if necessary (4 years after installation at the latest).
 - Properly dispose of batteries that no longer function.
 - Note down the installation date of the new batteries.
- ▶ Check system voltages.
- ▶ Check the charging device.
- ▶ Check the connections of the BUS system and voltage supply of the modules (for firm fit and condition).
- ▶ Check the function of the modules.

10 Help in the event of a problem

Problem	Cause	Measure
Fault LED at 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).	Mains power failure	<ul style="list-style-type: none"> ▶ Have the power supply to the RWA emergency power control unit checked by a qualified electrician. ▶ Change fuse if necessary. ▶ Inform a specialist authorised by GEZE in the event of a fault despite intact power supply.
Pressing the vent switch does not move the windows.	Power failure or other malfunction	▶ Check whether the fault LED on the RWA button is flashing or is lit steadily (measures, see above). The windows can only be opened again when the rain and wind have died down.
	Rain/wind control active	
Windows can only be opened partially.	Window opening limiter is active	If the windows are to be frequently opened beyond the pre-setting: <ul style="list-style-type: none"> ▶ Adjust window opening limiter.

11 Storage

RWA emergency power control unit

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

Lead batteries

Lead batteries self-discharge during storage. Therefore the following must be observed:

- ▶ Keep 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 used, re-charge batteries every 7 months at the latest.

Recharging batteries

There are 2 possibilities for recharging the batteries:

- ▶ Recharge batteries with a customary battery charger.
- or –
- ▶ Connect the batteries to the RWA emergency power control unit.
- ▶ Insert battery safety fuse.
- ▶ Connect the control panel to the mains.
- ▶ Charge batteries for about 36 hours.



- ▶ Note the new charging date on the batteries.
-

12 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 therefore can only be disposed of at collection points prescribed by law.

Information on the German Battery Act

(Applicable in Germany and all other countries in the European Union, together with the country's own regulations of a separate used battery-return system.)

In accordance with the Battery Directive, we are obliged to inform you of the following in connection with the sale of batteries or rechargeable batteries respectively in connection with the delivery of devices containing batteries or rechargeable batteries: Rechargeable batteries and batteries must not be disposed of with household waste. Disposal with household waste is expressly forbidden according to the Battery Directive. As the end-consumer, you are legally obliged to return used batteries. Please dispose of batteries at a municipal collection point or in store. Batteries obtained from us can be returned to us by mail. The address is: GEZE GmbH, Incoming Goods, Reinhold-Vöster-Str. 21-29, 71229 Leonberg/Germany.

Batteries which contain harmful substances are identified by a symbol of a crossed-out rubbish bin. The chemical identifier of the harmful chemical, Cd for cadmium, Pb for lead, Hg for mercury, is located under the garbage can symbol.

13 Technical data

Electrical data and connection values		
Operating voltage (primary)	230 V AC, -15 %, +10 %, (195 V ... 253 V AC)	
Frequency	50 Hz (47-63 Hz)	
Back-up fuse	16 A	
Power consumption	240 W (N8, N10), 480 W (N24), 960 W (N48), 1440 W (N72)	
Output voltage for drives	24 V DC $\pm 5\%$; battery operation $\pm 15\%$	
Switching current 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 cycle), with MBZ300 N8 8 A	
Current output switching power supply unit 24 A (short-term operation)	24 A (30% duty cycle)	
Continuous current draw	approx. 30% of the nominal current	
Detectors per detector line	manual (RWA buttons)	10 units (max.)
	automatic (detectors)	10 units (max.)
Detectors per control panel	manual (RWA buttons)	60 units (max.)
	automatic (detectors)	60 units (max.)
Minimum output voltages in accordance with EN 12101-10 Tab. 5	Drives:	19.3 V
	Detector lines:	18.2 V
Status contacts, potential-free	max. 0.5 A / 30 V DC	



- 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 if designed properly and maintained at regular intervals.
- 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
Relay module ERM	6.0 mA

Ambient conditions	
Ambient temperature range (as per EN 12101 Class 1)	-5 ... +40 °C
Relative humidity	75% (average value over the entire life span) 90% (max. 96 h of continuous operation at +40 °C)
Installation location	max. 5000 m a.s.l. Excess voltage cat. II Degree of soiling 2

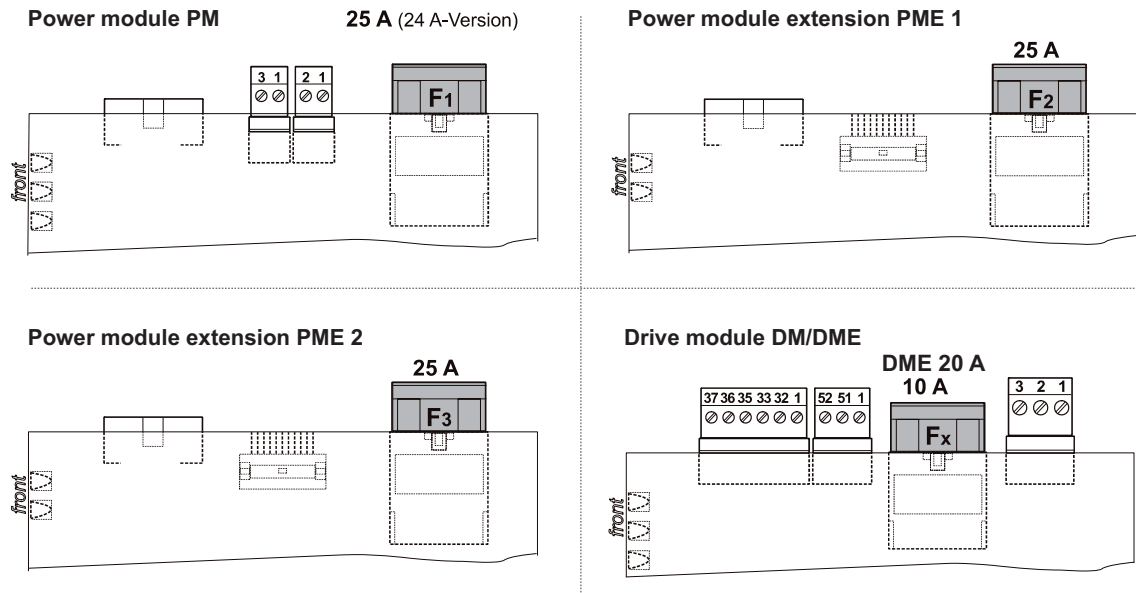
Mechanical data	
Surface-mounted housing	Painted sheet steel (RAL 7035) with locking insert (dual bit, 3 mm)
IP rating	IP 30, in compliance with EN 12101-10 environment class 1
Housing dimensions	Depending on the unit equipment

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

13.1 Safety fuses

Overview of the modules and fuses (each on the top of the module)

Module	Safety fuse
Power module PM	F1 = 25 A (automotive blade-type fuse ISO 8820-3)
Power module extension PME 1	F2 = 25 A (automotive blade-type fuse ISO 8820-3)
Power module extension PME 2	F3 = 25 A (automotive blade-type fuse ISO 8820-3)
Drive module DM	F _x = 10 A (automotive blade-type fuse ISO 8820-3)



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