Operating Manual

Modular Ventilation Control Unit M-VENT

SIMON
we create fire safety

| BA | M-VENT-5/-10/-20/-40(-AP/-S) | EN | 1.2 |

SIMON LINK

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> **ℹ** These operating instructions are only valid with the supplied
> supplementary sheet „Safety instructions and Warranty conditions"!

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1. Preface

1.1. Validity of the manual

> **ℹ INFORMATION**
>
> As of July 2019, this manual applies to M-VENT control systems with firmware version from mid 2019 and SIMON LINK 2.2.0 or higher!

1.2. SIMON LINK

> **ℹ INFORMATION**
>
> Functions that can be configured or enabled with SIMON LINK are marked with the SIMON LINK logo!
>
> You can find more information about SIMON LINK on our website
>
> **short.simon-protec.com/slen**

1.3. SIMON PLUS

> **ℹ INFORMATION**
>
> SIMON PLUS are extra features, available at an additional charge, which must be enabled ex works or on site by a SIMON service technician.
>
> For more information, please contact our technical sales department.

1.4. Use for the intended purpose

The M-VENT product family (Modular Ventilation) consists of electrical control devices in a sheet steel housing with power supply and complete control and regulation electronics for the operation of 24 V DC actuators for daily aeration and ventilation.

Ventilation signals from

- ventilation buttons
- wind/rain detectors

can be processed.

1.5. Functional description

The control systems of the M-VENT product family consist of three components (optionally up to five):

- Power Supply (switching power supply)
- Central Interface ZI-100
- Motor Relay MR-120-V
- Message Interface MI-100
  (optional/not included in the standard scope of delivery)
- Bus Interface BI-100
  (optional/not included in the standard scope of delivery)

All components are equipped with tension spring terminals (0.5 mm² – 2.5 mm²).

Table 1: Mechanical properties M-VENT-xx-AP

Dimensions (W x H x D)	• M-VENT-5-AP/ M-VENT-10-AP: 301 x 323 x 85 mm • M-VENT-10-AP/ M-VENT-20-AP: 400 x 516 x 155 mm
Weight (basic configuration)	• M-VENT-5-AP (301 x 323 x 85 mm): ca. 4,2 kg • M-VENT-10-AP (301 x 323 x 85 mm): ca. 4,5 kg • M-VENT-10-AP (400 x 516 x 155 mm): ca. 9,0 kg • M-VENT-20-AP (400 x 516 x 155 mm): ca. 9,5 kg
Protection rating	IP20 according to EN 60529
Housing	Steel sheet (powder-coated)
Colour	RAL 9010

Table 2: Mechanical properties M-VENT-xx-S

Dimensions (W x H x D)[1]	M-VENT-5-S/ M-VENT-10-S/ M-VENT-20-S/ M-VENT-40-S: 400 x 600 x 200 mm
Weight (basic configuration)	M-VENT-5-S: ca. 11,5 kg M-VENT-10-S: ca. 12 kg M-VENT-20-S: ca. 12,5 kg M-VENT-40-S: ca. 13,5 kg
Protection rating[2]	IP66 according to EN 60529
Housing	Steel sheet (powder-coated)
Colour	RAL 7035

1. Standard sizes; dimensions may vary according to customer requirements.
2. If suitable cable glands are used.

Table 3: Connection and operation

Connection	See Chapter 4. "Electrical connection" on page 14.
Actuator cut-off in every position (STOP command)	Yes
Maximum cable length between control unit and actuator	See Chapter 4.3. "Motor Relay – MR-120-V" on page 15.
Maintenance	See supplementary sheet "Safety instructions and warranty conditions"!

Table 4: Installation and ambient conditions

Operational temperature	-5 to 60 °C
Storage temperature	
Suitable for external installation	Only with special types of housings – in case of doubt, please contact our technical sales department.

Table 5: Approvals and certificates

EU compliant	In accordance with EMC Directive 2014/30/EU and Low Voltage Directive 2014/35/EU.

2. Components

2.1. Power supply

The power supply of the M-VENT product family consists of a switching power supply in different power classes (5 A, 10 A, 20 A or 40 A).

Figure 1: Example – Variant M-VENT-5-AP

Dimensions (W x H x D): 301 x 323 x 85 mm

Figure 2: Example – Variant M-VENT-10-S

Dimensions (W x H x D): 400 x 600 x 200 mm

2.2. Technical data (rated values)

Table 6: Mains connection data

Operating voltage (continuous operation)	230 V AC
Permissible voltage range (short-time operation)	195 V AC – 264 V AC
Power consumption[1]	2,0 A/230 V (M-VENT-5)) 2,8 A/230 V (M-VENT-10) 5,0 A/230 V (M-VENT-20) 6,0 A/230 V (M-VENT-40)
Pre-fuse for mains isolation (-F1)	• Fuse terminal 10 A (G-fuse)[2] • D01 16 A (gL / gG)
Connection power	460 VA (M-VENT-5) 644 VA (M-VENT-10) 1150 VA (M-VENT-20) 1380 VA (M-VENT-40)
Inrush current	≤ 40 A (M-VENT-5) ≤ 35 A (M-VENT-10) ≤ 80 A (M-VENT-20) ≤ 50 A (M-VENT-40)
Frequency range	47 Hz – 63 Hz
Power supply conductor cross-section	at least 1.5 mm²
Terminal design	0,5 mm² – 2,5 mm²
Protection class	I ⏚

1. Power consumption at maximum output load.
2. Only M-VENT-5-AP/M-VENT-10-AP with housing size (WxHxD) 301x323x85 mm.

Table 7: Technical data switching power supply 5 A

Input voltage	195 – 264 V AC
Output voltage	24 V DC (±1%)
Output voltage ripple	≤ 80 mV (Vpp)
Output power	0 – 5 A/120 W

Table 8: Technical data switching power supply 10 A

Input voltage	195 – 264 V AC
Output voltage	24 V DC (±1%)
Output voltage ripple	≤ 150 mV (Vpp)
Output power	0 – 10 A/240 W

Table 9: Technical data switching power supply 20 A

Input voltage	195 – 264 V AC
Output voltage	24 V DC (±1%)
Output voltage ripple	≤ 100 mV (Vpp)
Output power	0 – 20 A/480 W

Table 10: Technical data switching power supply 40 A

Input voltage	195 – 264 V AC
Output voltage	24 V DC (±1%)
Output voltage ripple	≤ 180 mV (Vpp)
Output power	0 – 40 A/960 W

2.3. Internal BUS connection

The individual modules are connected to each other through the BUS connections (RJ45 sockets).

> ⚠ **ATTENTION**
>
> The RJ45 sockets, installed on the M-VENT modules, are only intended for the internal BUS communication of the modules.
> Do not connect to an external LAN port or anything similar!

2.3.1. Terminal plugs AS-110

The AS-110 terminating plugs are necessary for reliable operation of the BUS connection and must be plugged into the BUS ends (first and last module).
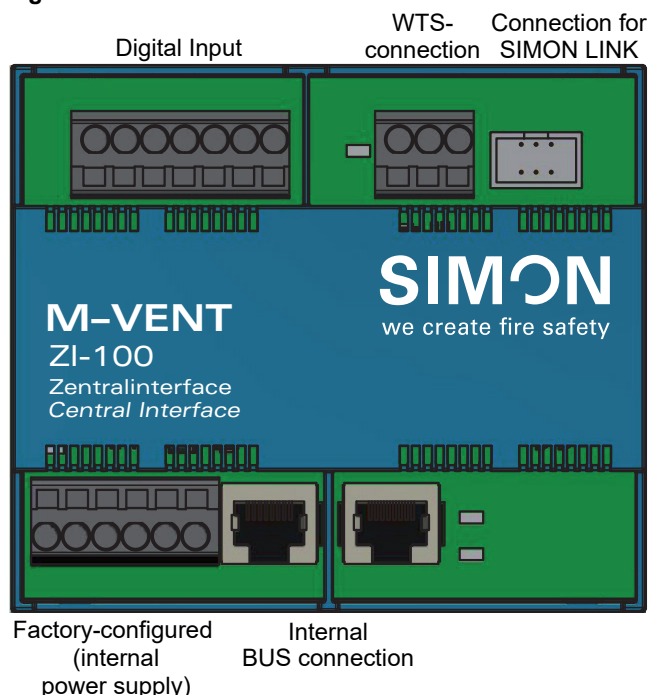
> ⚠ **ATTENTION**
>
> **Do not remove** the AS-110 terminal plugs. Removing the BUS terminating plugs leads to failure of the BUS connection - and thus of the entire control system.

Figure 3: AS-110 terminal plug

2.4. Zentral Interface – ZI-100

Figure 4

The ZI-100 is the central module of the M-VENT modular control panel.

The ZI-100 performs the following tasks:

- Control of the connected bus participants

- Interface for SIMON LINK

- Interface for a remote maintenance module via mobile communication (GPRS)

- Wind/rain detector (WTS) connection

- Digital input (e.g. for central ventilation system)

- Visual indicators:
  - green LED – "OK" mode
  - yellow LED – "Failure" mode
  - white LED – "WTS triggered"

2.4.1. Ventilation

2.4.1.a. Wind/rain detector (WTS) connection

The wind/rain detector (WTS) automatically closes the flaps/windows that are opened for ventilation.
"WTS (close on wind/rain)" must be enabled in the "Ventilation" subfolder of the corresponding motor relay MR-120-V.

2.4.1.b. Global ventilation button

Global ventilation buttons can be connected and configured at the digital inputs. At the MR-120-V modules it is possible to set whether and how to react to this these buttons (ZI-100 digital inputs).

2.4.2. Digital inputs

Five digital inputs can receive different functions, such as time switch signals. They can be evaluated independently of each other as normally open or normally closed. Two 24 V DC terminals (mains/backup) are available to connect the inputs.
The respective functions are shown in the connection plan according to customer requirements. Should you require any changes, please contact our technical sales department.

2.4.3. Maintenance counter

The M-VENT control panels product family has a maintenance counter which optionally outputs a fault after a set time if no maintenance is carried out. This function is switched off by default.

2.4.4. Technical data ZI-100 (-ZI1)

Tabelle 11

Permissible voltage range	21 – 28,2 V DC
Power consumption	max. 30 mA
Wind/rain detector (WTS) connection	See Chapter 4.2. "Central Interface – ZI-100".
Output voltage range (E WTS)	23,6 – 24,8 V DC
Current rating WTS	max. 150 mA
Digital Input connection	See Chapter 4.2. "Central Interface – ZI-100".
Output voltage range (digital input – 24 V DC mains)	23,6 – 24,8 V DC
Output voltage range (digital input – 24 V DC backup)	21,0 – 28,2 V DC
Current rating	max. 150 mA
SIMON LINK connection	6-pin
LED indicator	white: "WTS" yellow: "Failure" green: "OK"

2.5. Motor Relay – MR-120-V

Figure 5

Motor Fuse   Motor1 | Motor2 connection   Ventilation 1/ Ventilation 2   Analog input

Factory-configured (internal power supply)   Internal BUS connection
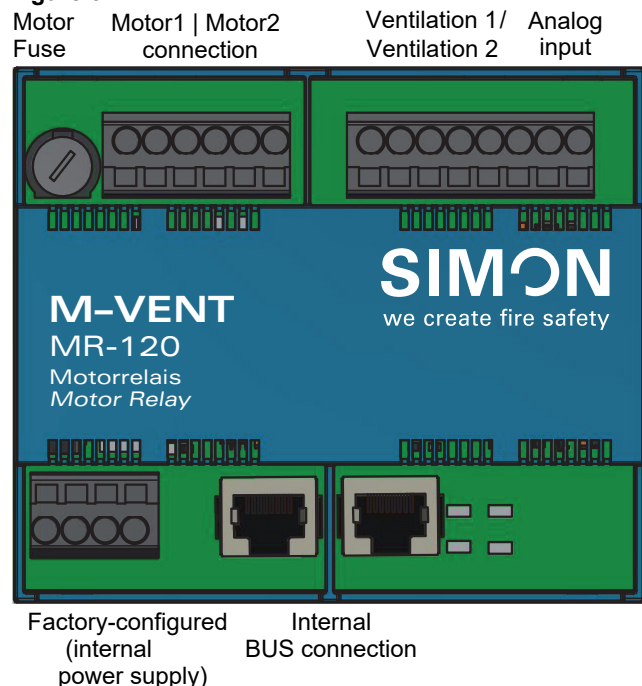
The MR-120-V provides the output voltage for the actuators. The output at terminals "S" and "O" is designed in the pole changing technique.

OPEN: S=„+" O=„–"
CLOSE: S=„–" O=„+"

At the MR-120-V, you can find:

- 10 A fuse for the motor outputs
- two interfaces for actuators including separate line monitoring
- two contacts for ventilation function (e.g. button/thermostat)
- analog input (0 – 10 V DC / 4 – 20 mA) for sequential triggering of actuators for ventilation purposes
- visual indicators:
  - two white LEDs – triggering in "OPEN"/"CLOSE" direction
  - yellow LED – "Failure"
  - green LED – "OK"

2.5.1. Triggering of the load relays ("S" and "O" terminals)

The power output for the actuators is represented by two power relays which operate in pole changing technique to ensure OPEN/CLOSE triggering. The M-VENT motor outputs are fitted with overload protection.

2.5.2. Connection ventilation button/ input ventilation signals

Two ventilation buttons or comparable ventilation signals can be connected in parallel to the M-VENT. The behaviour of the ventilation function is influenced by the triggering type and duration.

> **SIMON LINK**   It is possible to use input signals from other modules.

2.5.2.a. Action behaviour of ventilation buttons

The dead man's function activates automatically if the ventilation button is pressed for more than three seconds (auto dead man's function). The dead man's function is a safety function in which the actuators only move as long as the respective direction button is pressed. The actuators stop as soon as the button is released.

If the ventilation button is touched only briefly, the ventilation command is switched to continuous triggering. A stop function is achieved by briefly re-pressing the ventilation button in the OPEN direction, e.g. when opening (tip-stop function).

> **SIMON LINK**   Each motor relay can be readjusted per ventilation button connection (LT1/LT2, mode open/ CLOSE) as follows:

- auto dead man + tip-stop
- auto dead man
- no dead man + tip-stop
- no dead man
- dead man only

2.5.2.b. Open delay in vent mode

> **SIMON LINK**   The MR-120-V allows you to set a start delay for certain applications (e.g. in combination with sun protection systems in front of windows). This ventilation triggering will be displayed immediately, received and processed and can be indicated by a MI-100 signal interface. After the intended ventilation start delay time has been elapsed, the actuators move to the intended position

2.5.2.c. WTS (wind/rain-detector)

> **SIMON LINK**   For each motor relay it can be defined whether it should react to the central WTS signal (ZI-100).

2.5.2.d. Gap ventilation

> **SIMON LINK**   The gap ventilation function allows the user to open the smoke and heat exhaust/vents up to any defined stroke. This is done by setting the opening time with SIMON LINK. When the ventilation button is pressed, the actuators open to the set position

⚠️ **ATTENTION**

A new OPEN command is only accepted by the MR-120-V after the CLOSE gap ventilation time has fully elapsed.

2.5.2.e. Automatic close

This function closes the opening units automatically following a freely adjustable ventilation time. This function is used to set the waiting time after which the drives are to be closed automatically. This setting can be parameterized in seconds (s), minutes (min) or hours (h) up to a maximum of 24 hours.

2.5.2.f. Eco mode

If this function is activated, the motor outputs are de-energised 3 minutes after receipt of the last ventilation command.

2.5.2.g. Time until next thermostat query

If a connected thermostat is overridden by a manual command (e.g. by desired intermittent ventilation through a connected ventilation button), it must be determined how long the control system must wait before sending a new query to the thermostats. This waiting time can be set from 10 seconds to 12 hours in 1 second steps.

To be able to use this function, at least one button under the ventilation sources must be assigned "T" for thermostat.

2.5.2.h. Ventilation ONLY with analog input (optional) — Dependency logic

With this function, the analog input is used with the aid of an external analog circuit as an additional condition for the execution of a ventilation function (dependency logic). For this purpose, the analog input (terminal "+") is permanently checked for a continuous signal (min. 0.8 mA). As long as the signal is present, a ventilation function can be performed. If this is not the case, none of the connected actuators is electrically controlled.

⚠ **ATTENTION**

The continuous signal is only detected from 0.8 mA. The maximum current at the input must not be exceeded! This input is deactivated by default.

2.5.3. Analog input (optional)

This input allows a gap or partial ventilation to be controlled. For example, this control signal can come from a building control system.
For this purpose, the total opening and closing times must be measured and then entered on site. The connected actuators then move to the required position, proportional to the applied supply voltage or current. To ensure that this opening mechanism works properly, the actuators **must be closed completely at least once daily.**

⚠ **ATTENTION**

Before connecting, the type of the input signal (current/voltage) must be determined via SIMON LINK. The analog input is deactivated by default.

2.5.4. Technical data MR-120-V (-MR1)

Table 12:

Permissible voltage range	21 – 28,2 V DC
Power consumption (standby mode)	5 mA – 20 mA
Actuator connection	2 x 3 terminals (S/G/O)
Ventilation connection	2 x 3 terminals (E/Z/A)
Analog input connection	1 x 2 terminals (+/−)
LED indicator	yellow: "Failure" green: "OK" white: "OPEN" white: "CLOSE"

Table 13: Motor channel output data

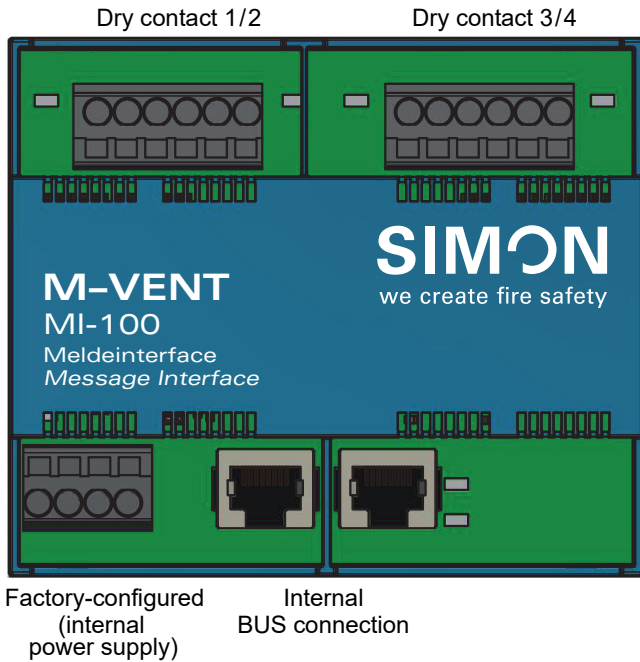| Switch-on duration	ED 30%
Permissible voltage range	23,0 V DC – 24,5 V DC
Continuous operation: Output current (I_{out}) ($I_{out} = I_{mot1} + I_{mot2}$)	depending on the switching power supply, up to 10 A
Pause time between change of direction	500 ms
Output fuse for actuators Fuse character type T (delayed)	10 A
Output voltage ripple Vpp (0 A < I_{out} < 10 A)	≤ 500 mV

Table 14: Connection data for ventilation connections

Output voltage range (E)	23,0 V DC – 24,5 V DC
Current rating (E)	max. 150 mA

Table 15: Connection data for analog input

Permissible voltage range	0 V DC – 10 V DC
Permissible current range	4 mA – 20 mA

2.6. Message Interface – MI-100 (optional)

Figure 6

Dry contact 1/2   Dry contact 3/4

Factory-configured   Internal
(internal   BUS connection
power supply)

The MI-100 is an optional alarm module. If an MI-100 was supplied with this controller, the dry contacts (relay: NC/C/NO) are assigned by default as follows:

- Contact 1 – freely parameterizable
- Contact 2 – OK indication
- Contact 3 – WTS triggered
- Contact 4 – Mains operation

This assignment may differ from the standard due to customer requirements.

> **ℹ INFORMATION**   **SIMON LINK**
>
> The pin assignments can be configured with SIMON LINK.

The MI-100 has following additional visual indicators:

- one white LED each (next to the signal relay terminal block) – "Relay ON"
- yellow LED – "Failure"
- green LED – "OK"

> **⚠ ATTENTION**   **SIMON LINK**
>
> To add an MI-100, it is essential to match the hardware and software versions of the controller. For further information, please contact our technical sales department and keep the serial number of the control system at hand!

> **ℹ INFORMATION**
>
> The video "Add message interface MI-100" provides an exemplary explanation for retrofitting a module. This can be found on our YouTube channel **short.simon-protec.com/mi100video**

2.6.1. Assigning parameters to the dry signal contacts

For each contact (relay) the following parameters can be set:

- **Condition** (logical operation)
- **Switching delay**: 0 seconds (Off) to 1 hour
- **Hold time**: 0 seconds (unlimited) / 1 second to 1 hour

2.6.1.a. Condition (logical operation)

SIMON LINK The logical operators NOT, AND, OR and enclosing brackets can be used to parameterize the dry contacts. A statement always consists of three elements:

- **a logical statement** (no entry = "statement is true" or NOT = "the statement is negated")
- the **origin of the statement**
- and the **statement**

Origin of the statement

Various sources are available as the origin of the statement (the names of the sources correspond to the respective module identifiers):

- "*": all modules of the control system
- "ZI1": the ZI-100 of the control system
- "MR*": all MR-120-V of the control system
- "MR1": the first MR-120-V of the control system
  "MR2": the second MR-120 of the control system
  ...
- "MI1": the first MI-100 of the control system
  "MI2": the second MI-100 of the control system
  ...

Statement

Various meaningful values are possible, depending on the source of the statement (subject to SIMON LINK updates):

- *****: Failure
- **ZI**:
  - ~ Failure
  - ~ Mains failure
  - ~ WTS close on wind/rain
  - ~ Signal 1/2/3/4/5 (digital input)
- **MR/MR***:
  - ~ Failure
  - ~ Alarm triggered
  - ~ Command Open
  - ~ Command Close
- **MI**:
  - ~ Failure
  - ~ Relay on 1/2/3/4

Logical operation

The relays only differentiate between ON and OFF and in the same way the logic operations only differentiate between YES and NO. This means:

$$NOT(NOT(statement)) = statement.$$

Logical operators are defined as follows:

– **NOT**:

Statement is true	Statement is **NOT** true
Yes	No
No	Yes

– **AND**:

Statement1 is true	Statement2 is true	Statement1 **AND** Statement2 are true
Yes	Yes	Yes
Yes	No	No
No	Yes	No
No	No	No

– **OR**:

Statement1 is true	Statement2 is true	Statement1 **OR** Statement2 is true
Yes	Yes	Yes
Yes	No	Yes
No	Yes	Yes
No	No	No

Examples

– The statement "Wind/rain-detector has triggered" on the ZI-100 is to be evaluated:

ZI1:WTS__close_on_wind/rain_

– The system is in OK operating state:

NOT(*:Failure)

– The statement "No failure" at the first MR-120-V and the second MR-120-V is to be evaluated:

NOT (MR1:Failure) AND NOT(MR2:Failure)

2.6.1.b. Switching delay

After reaching the condition (logical statement is true), the dry contact (relay) can be switched either immediately or after a preset time (1 second to 1 hour).

2.6.1.c. Hold time

After reaching the condition (logical statement is true), the dry contact (relay) is switched either as long as the condition remains true or for a preset time (1 second to 1 hour).

Even if the condition changes during the hold time, the relay remains switched until the hold time has elapsed. Only after the holding time has elapsed the relay is released and reacts again to status changes of the condition.

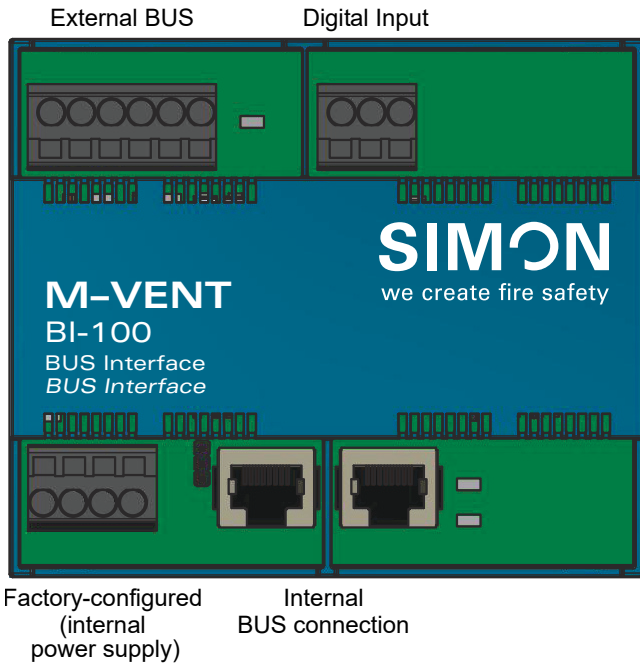### 2.6.2. Technical data MI-100

Table 16

Permissible voltage range	21 – 28.2 V DC
Power consumption	37 mA – 100 mA
Connection of DRY contacts 1 and 2	2 x 3 terminals (NO/C/NC)
Connection of DRY contacts 3 and 4	2 x 3 terminals (NO/C/NC)
LED indicator	4x white: "Relay ON" Yellow: "Failure" Green: "OK"

Table 17: Connection data for dry signal contacts "NO/C/NC"

Voltage rating of the switching contacts (C - NO)	max. 30 V DC
Voltage rating of the switching contacts (C - NC)	max. 30 V DC
Current rating of the switching contacts (C - NO)	max. 1 A
Current rating of the switching contacts (C - NC)	max. 1 A
Switching capacity per switching contact	30 W

2.7. BUS Interface – BI-100 (optional)

Figure 7

External BUS   Digital Input

Factory-configured   Internal
(internal   BUS connection
power supply)

The BI-100 is an optional BUS interface.

The BI-100 supports 32 virtual ventilation buttons that can be assigned to the individual MR120 modules as ventilation sources using SIMON LINK. These virtual ventilation buttons can be controlled via the external bus.Ventilation commands like OPEN, CLOSE, STOP and OPEN with programmable time limit can be executed.

The module also has two digital inputs that can be evaluated via the external bus.

In addition, the BI-100 provides an overview of the entire system. Detailed states of individual modules can be queried.

The optional watchdog enables the monitoring of the communication flow and in the event of a bus communication failure, it can also stop the ventilation function and report a fault.

The BI-100 has the following additional visual indicators:

- green LED (next to the BUS terminal block)
- yellow LED – "Failure"
- green LED – "OK"

⚠ ATTENTION

To add a BI-100, hardware and software versions of the controller have to be synchronised. For further information, please contact our technical sales department and keep the serial number of the control system at hand!

ℹ INFORMATION

The video "Add message interface MI-100" provides an exemplary explanation for retrofitting a module. This can be found on our YouTube channel **short.simon-protec.com/mi100video**

2.7.1. MODBUS

The BI-100 provides an EIA-485 RTU-MODBUS TP interface (TP=twisted pair) and SG/A/B terminals (SG=signal ground). The communication speed is adjustable from 300 bps to 57600 bps. It is also possible to set the parity, stop bits and a watchdog function. If the MODBUS communication is lost, the BI-100 goes into fault mode.

2.7.2. KNX

BI-100 may be shipped as BI-100-KNX, including a certified ModBus-KNX gateway. This gateway provides 250 freely configurable channels (KNX data points). The basic ModBus functions can be transferred.

2.7.3. Digital inputs

There are 2 digital inputs. A 24 V DC terminal (mains) is available to connect the inputs.

Central ventilation commands (e.g. time control signals etc.) can be connected to the digital input of the BI-100. These are shown in the connection plan according to customer requirements. Should you require any changes, please contact our technical sales department.

2.7.4. Technical data BI-100 (-BI1)

Table 18

|	
Permissible voltage range	21 – 28.2 V DC
Power consumption	max. 30 mA
MODBUS connection	2 x 3 terminals (SG(signal ground)/A/B)
Digital input connection	See Chapter 4.5. "BUS Interface – BI-100 (optional)" on page 16.
Output voltage range (digital input – 24 V DC mains)	23.6 – 24.8 V DC
Current rating	max. 150 mA
LED indicator	green: "BUS" yellow: "Failure" green: "OK"

3. Mechanical connection

3.1. M-VENT-XX-AP

➢ Mark the positions of the mounting points of the M-SHEV-XX-AP (siehe Figure 8: „Mounting points").

➢ Drill the holes.

➢ Fasten the M-VENT-XX-AP through the bottom of the housing using four screws suitable for the respective mounting surface (not supplied).

Figure 8: Mounting points

⭕ Mounting points
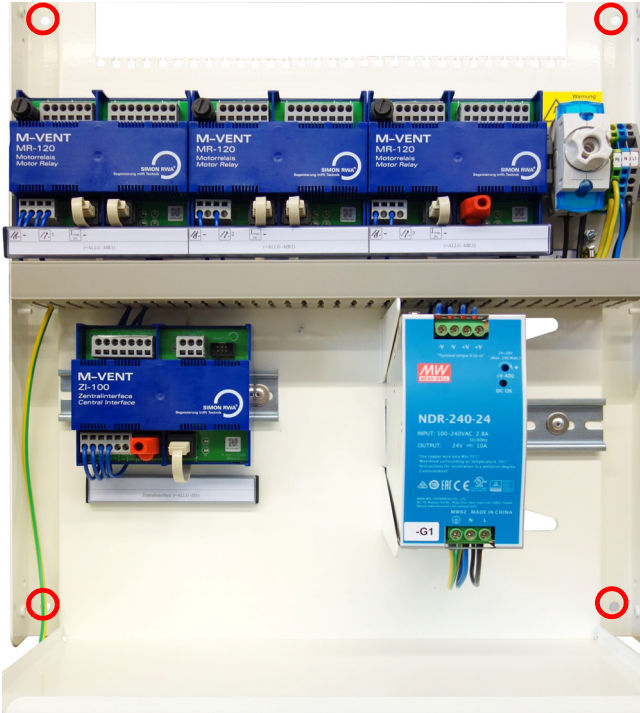
3.2. M-VENT-XX-S

➢ Remove the 4 plastic caps on the back of the M-VENT housing.

➢ Mark the positions of the housing's direct mounting points (see Figure 9: "Mounting points (back of housing)") or mount the four wall fixing lugs (see Figure 10: "Wall fixing lugs") supplied to the housing and then mark the positions of the mounting holes to be drilled.

➢ Drill the holes.

➢ Fasten the M-SHEV with four suitable screws (not supplied) through the bottom of the housing or, if used, with the aid of four wall fixing lugs.

Figure 9: Mounting points (back of housing)

⭕ Mounting points

Figure 10: Wall fixing lugs

4. Electrical connection

⚠️ **DANGER**

The system must be mounted by specialist personnel (qualified electricians) only. All relevant national safety regulations and directives apply to mounting, installation and commissioning.

Improper mounting can create a risk of electric shock. All safety regulations must be complied with. Follow the current assembly instructions. Wrong mounting can lead to serious injury.

⚠️ **DANGER**

The testing of systems must be carried out in accordance with the applicable national regulations (in Germany among others. DIN VDE 0100 Part 600).

⚠️ **DANGER**

Disconnect the connection cable completely (all-pole) from the mains. No voltage must be present when connecting the M-VENT!

➢ Insert the connection cable.

➢ Connect the cables according to the connection plan.

➢ Where applicable, attach the strain relief to the cable comb using cable ties.

4.1. 230 V AC connection(-x1)

➢ Connect the cables according to the connection plan
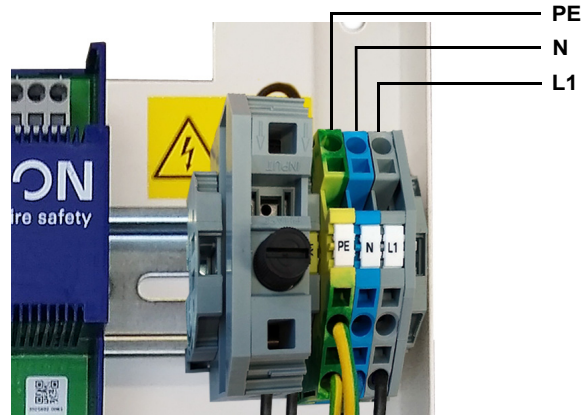
Figure 11: M-VENT-XX-AP (301 x 323 x 85 mm)

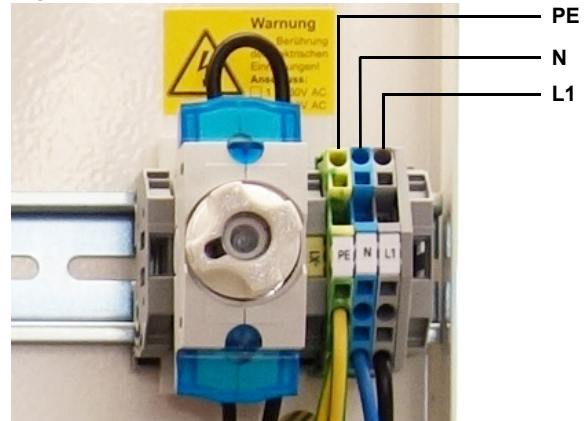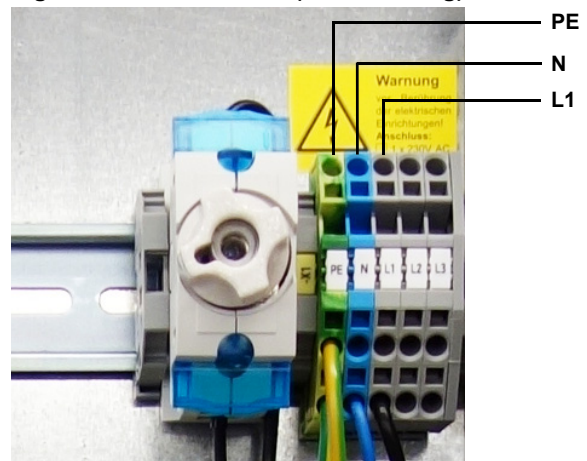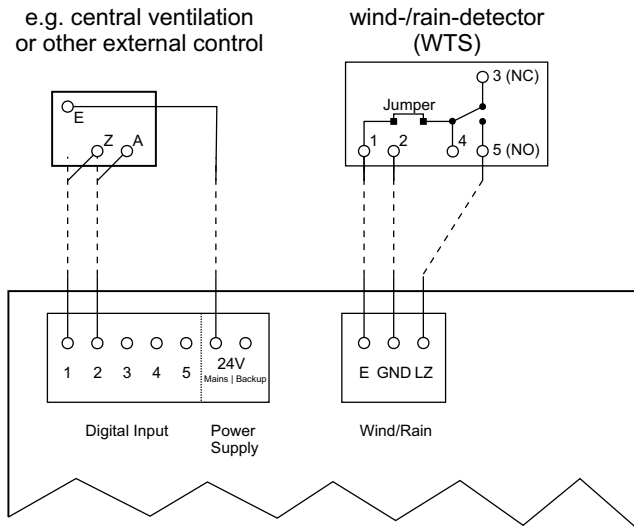**Figure 12: M-VENT-XX-AP (400 x 516 x 155 mm)**

Figure 13: M-VENT-XX-S (steel housing)

4.2. Central Interface – ZI-100

➢ Connect the cables according to the connection plan.

Figure 14: Connection example for ZI-100.
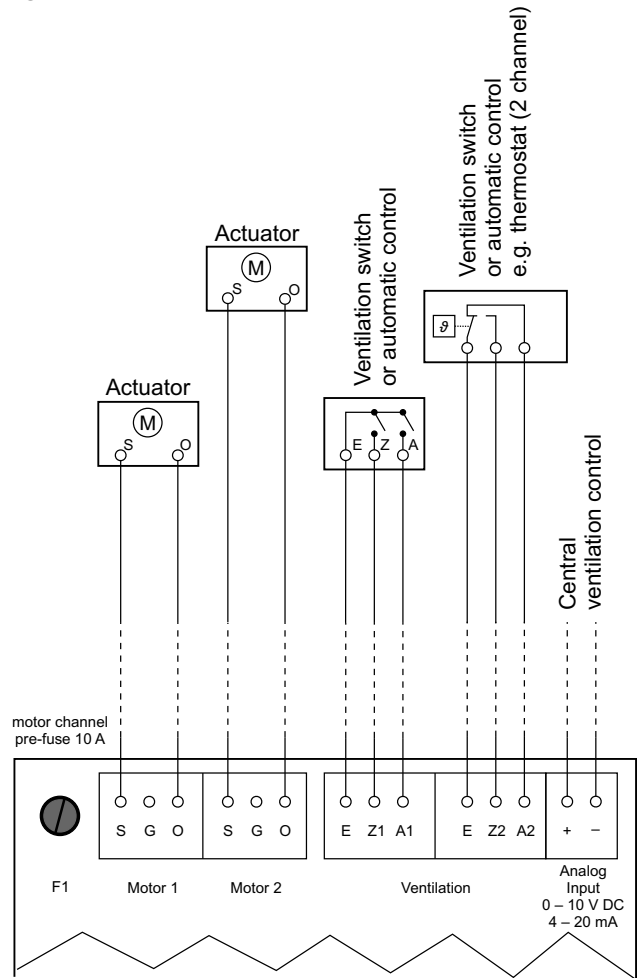

4.3. Motor Relay – MR-120-V

ℹ️ **INFORMATION**

Size information for motor cable (empirical formula):

Wire cross section [mm²] = single cable length [m]
x number of actuators
x current consumption
per actuator [A]
/ 73.

The DIN VDE 0100 and DIN VDE 0298 regulations continue to apply.
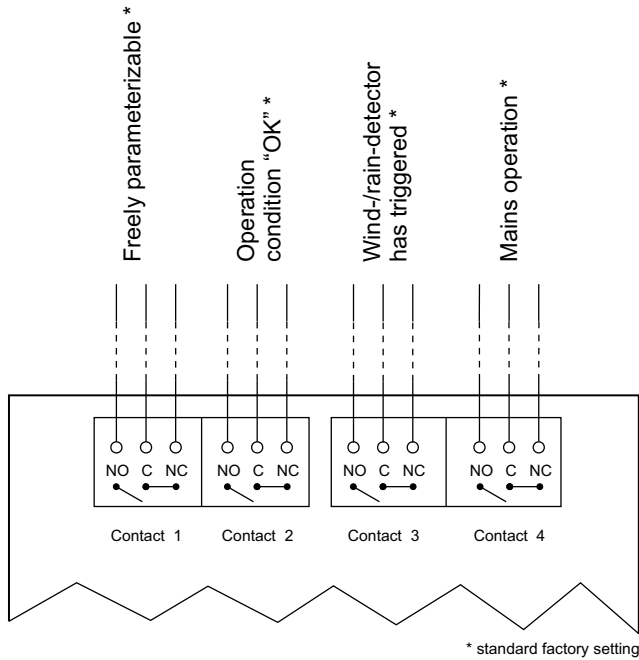
➢ Connect the cables according to the connection plan.

Figure 15: Connection example for MR-120-V

4.4. Message Interface – MI-100 (optional)

➢ Connect the cables according to the connection plan.

Figure 16: Connection example for MI-100

* standard factory setting
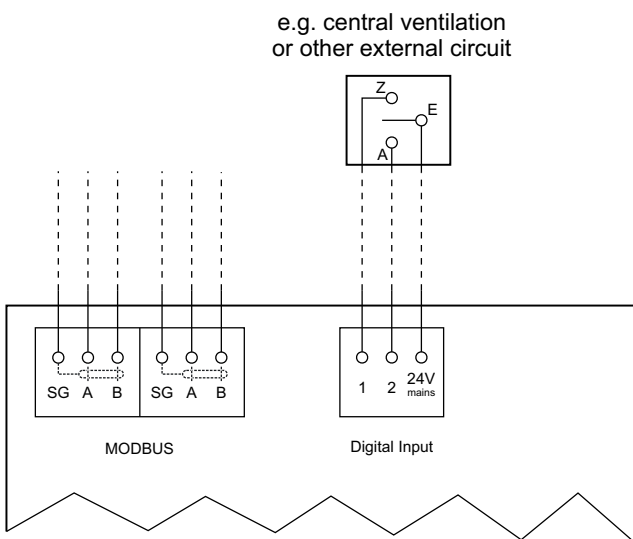

INFORMATION

SIMON LINK

The assignments of the dry contacts/relays can be set with SIMON LINK.

4.5. BUS Interface – BI-100 (optional)

➢ Connect the cables according to the connection plan.

Figure 17: Connection example for BI-100

5. Commissioning

5.1. M-VENT-XX-AP

➢ Connect the PE cable to the PE connection on the lid.

➢ Fit the lid and fasten it at the side using the two screws. The lid has symmetrical fastening features, i.e. it can be used on the "right" or "left". The lid can alternatively be equipped with a lock.

Figure 18: PE connection

5.2. M-VENT-XX-S

➢ Ensure that the PE connection is attached to the lid.

Figure 19: **PE connection**