2026

Technical catalogue

Control systems

Control systems
Technical Catalogue 08/2026

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Technical catalogue

2026

Dear Clients,

We are pleased to present to you our technical catalogue for natural smoke and heat exhaust control systems. This publication presents in detail Mercor Light&Vent sp. z o.o. products, starting from smoke vents and skylights, through smoke curtains, new generation roof hatches, all the way to the comprehensive review of our control systems. We believe the form in which we present our offer facilitates finding all the necessary information on the individual product series, their components, as well as detailed specifications for the elements of each product offered.

Every merchandise delivered from Mercor Light&Vent sp. z o.o. to the Client is meticulously controlled in accordance with the highest quality assurance standards, and undergoes a number of approval tests. We take pride in providing safety through our business.

We invite you to see the full extent of our offer.

Mercor Light&Vent sp. z o.o. – Export Department

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General description

» Smoke exhaust control systems

Smoke exhaust control systems are dedicated for smoke vents, but may also control other devices, such as: smoke exhaust louvered vents, automatic smoke curtains, or smoke exhaust and air inlet windows.

The choice of control type depends on the function of the protected building, the type of other fire safety elemets with which the natural smoke exhaust control system is to work, financial expectations of investor, and other requirements the user may have.

» Pneumatic smoke exhaust control system

Fig. 1 *Example of pneumatic smoke exhaust control system*

Its' biggest advantage is the simplicity of the design and execution, reliability of operation, and attractive price. It is most often seen in co-operation with sprinklers, where natural smoke exhaust system is activated through thermal release valves calibrated to appropriate temperature, in relation to the sprinkler system.

The system is supplied from cartridges containing compressed CO_2. Installations are most often copper pipe, with compression fittings used for joining. The system may be fixed to structural elements, eliminating the need of introducing additional installation channels. Manual activation of the smoke exhaust system is operated by the lever in alarm boxes. Pneumatic actuators feature higher operating parameters than electric actuators. The greater push and pull force of the pneumatic actuators' piston rod, and the shorter time of work cycle are the parameters that make this type of control preferable for vents of bigger dimensions.

In buildings with compressed air systems, it is worth to consider using it as a supply source for vents used for ventilation purpose. Smoke exhaust vents with additional ventilation function greatly improve the comfort of using the hall, at a relatively minor increase of costs. It is possible to integrate weather automatics with the control system, through additional electric valves installed in ventilation boxes.

» Smoke exhaust electric control system

Fig. 2 *Example of electric smoke exhaust control system*

Natural smoke exhaust systems with electric control are usually designed for staircases, low and medium-high buildings, and in evacuation routes, such as corridors between offices, passages and atriums in malls. They are used less often in large-area halls, due to high costs.

Smoke exhaust vents may be opened manually, e.g. by pressing smoke exhaust alarm button, automatically – through smoke detectors, or remotely – through smoke detection system. In such case, the system is starting to work in the initial fire phase, improving evacuation conditions of building users, or – with more sophisticated control systems – the smoke exhaust scenario may be adapted to changing fire conditions.

A frequent addition to the vents control system are buttons for manual activation of natural ventilation. The ventilation system may be equipped with a weather monitoring unit with wind-rain sensors, allowing automatic closing of vents in case of adverse weather conditions.

1. | Pneumatic control system

Smoke vents with pneumatic smoke exhaust control systems, both point and placed in continuous rooflights, are mainly used in large-area, single-storey buildings, such as storage halls, industrial halls, industrial-storage halls or shopping malls.

Components of pneumatic smoke exhaust control system:
» mcr PROLIGHT smoke vent equipped with: pneumatic actuator and thermal release valve with alcohol ampule and CO_2 cartridge,
» alarm boxes with CO_2 cartridges: manual opening or through electric signal (24 V-; 0,3 A),
» pneumatic smoke exhaust installation made of copper pipe,

Pneumatic smoke exhaust control system may be activated:
» **automatically** – after detecting temperature increase by thermal valves at: 68°C, 93°C, 110°C, 141°C or 182°C installed in vents,
» **automatically (remotely)** – through 24 V- / 0,3 A electric signal from FAS / BMZ (as an option, after connection),
» **manually** – by operator, using CO_2 alarm box.

The main advantages of pneumatic control system of vents are: easy installation, high reliability, lower price in comparison with electric control systems.

1.1 | Thermal release valve

Thermal release valve is used for supplying pneumatic pressure to smoke exhaust actuator from its integrated CO_2 cartridge or CO_2 installation. The releasing of CO_2 cartridge is performed automatically after exceeding the temperature of thermal fuse (alcohol ampule) – its breakage causes the release of the needle punching the CO_2 cartridge. The released gas is directed to pneumatic smoke exhaust actuator, causing the opening of the vent leaf.

Specific features of thermal valves:
» options:
  – **TAVE/TAG-WV 690-41** – opening only
  – **TAVZ/TAG-WV 690-42** – opening and closing
» disposable CO_2 cartridge with 1/2" UNF threaded connection,
» alcohol ampules for temperatures: 68°C, 93°C, 110°C, 141°C, 182°C,
» maximum working pressure: 6 MPa,
» for needle tensioning and ampule replacement in TAVE/TAG-WV 690-41 or TAVZ/TAG-WV 690-42 thermal valves no tools are required.

TAVE/TAG-WV 690-41 type
» smoke exhaust function: manual and remote vent opening (opening only)
» thermal release adapted to work with the alarm box equipped with a manual alarm opening and closing function,
» may be used for single and triple pipe installations,
» 2 x 1/8" connectors,
» integrated initial valve for deaeration of the system or for connecting other control devices (e.g. alarm box or ventilation box),
» optional remote activation through electric signal or pneumatic pressure which enables cooperation with other control systems, e.g. FAS.

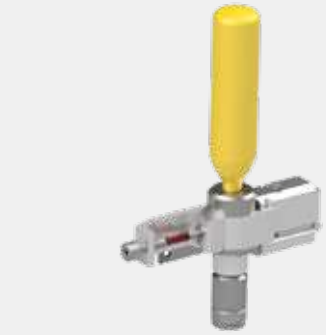


Fig. 3 *TAVE/TAG-WV 690-41 thermal valve*

TAVZ/TAG-WV 690-42 type
» smoke exhaust function: manual and remote vent opening and closing (opening and remote closing option),
» thermal release adapted to work with the alarm box equipped with a manual alarm opening and closing function,
» may be used for double and four-pipe installations,
» 4 x 1/8" connections,
» integrated initial valve for deaeration of the system or for connecting other control devices (e.g. alarm box or ventilation box),
» optional remote activation through electric signal or pneumatic pressure which enables cooperation with other control systems, e.g. FAS.

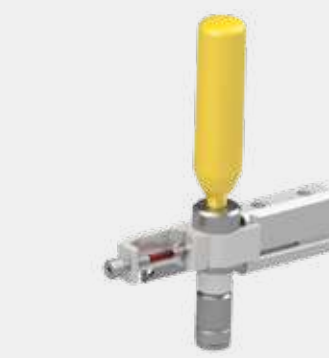


Fig. 4 *TAVZ/TAG-WV 690-42 thermal valve*

1.2 | Pneumatic actuator

Fig. 5 *Pneumatic actuator*

Pneumatic actuator is used for opening the vents leafs for ventilation and/or smoke exhaust function:
» double action pneumatic actuator (opening/closing),
» body of anodised aluminium,
» piston rod of stainless steel with anti-dust protection,
» recommended working pressure: 0.6 ÷ 1.0 MPa,
» maximum static working pressure: 6.0 MPa,
» locking in fully extended position – other executions optional,
» maximum axial force transferred by lock: 8000 N,
» manual lock releasing possible.

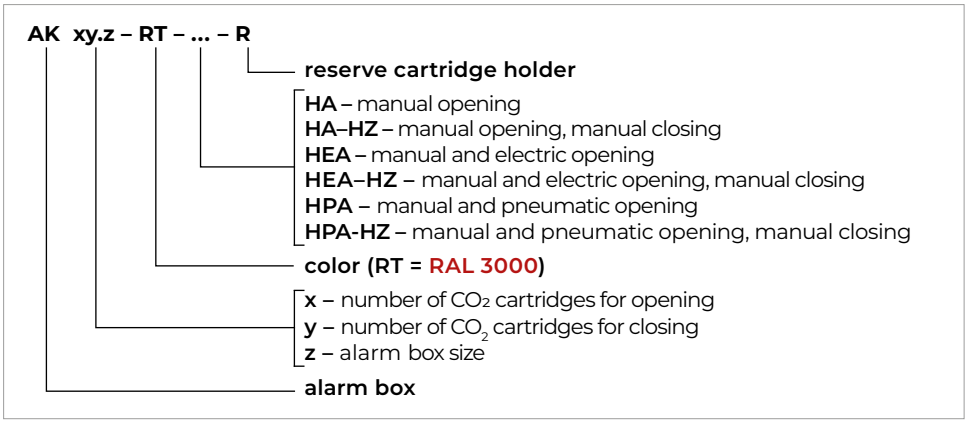
1.3 | Alarm boxes

Fig. 6 *AK 10.5 alarm box (closed or opened)*

Alarm boxes are used for emergency opening of vents using the energy of compressed CO_2 contained in the cartridge installed in the box. The release of gas occurs after manual activation of the valve by using the marked lever causing the firing pin to release, puncturing the CO_2 cartridge protection, and then gas flowing into the installation.

Specific features:
» steel box painted in **RAL 3000** red color,
» lockable cover,
» lever or button controlling emergency opening, including activation indicator, visible through glass panel,
» replaceable glass panel,
» basic functions: opening only, or opening and closing; **optionally:** opening by remote 24 V- signal,
» sizes and number of cartridges in the box dependent on customer's application; box size dependent on the size of installed cartridges,
» connections for Ø6 mm pipe; optionally: for Ø8 mm pipe, output in upper part,
» connections for CO_2 cartridges: 1/2" UNF,
» working temperature: -20°C ÷ 50°C,
» maximum working pressure in CO_2 circuits: 8.0 MPa,
» **note:** connection of boxes in series or parallel require additional elements,
» designed for single group of smoke vents; on special request for larger number of groups,
» AK10 and AK11 type of boxes with reserve cartridge handles.

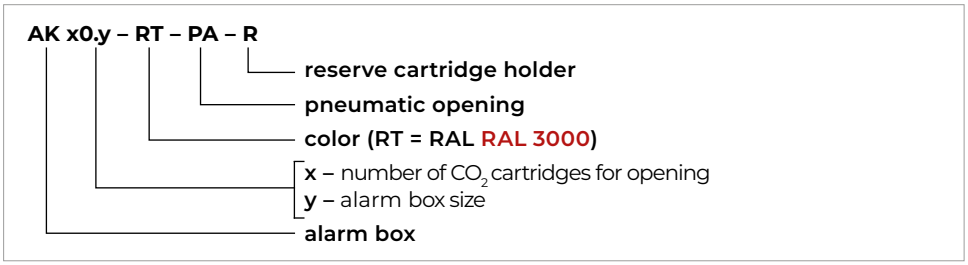
» Parameters of AK xy.z-...-R alarm boxes manually and electrically activated



ALARM BOX TYPE	W [mm]	H [mm]	D [mm]	max. amount of CO_2 to		min. CO_2 amount in RTC [g]	min. length of external pipe [m]	VdS (*)
				OPEN [g]	CLOSE [g]			
AK 10.3-RT-...-R	200	350	130	1 x 150	-	-	-	G507003
AK 10.5-RT-...-R	200	500	130	1 x 500	-	-	-	G507003
AK 10.7-RT-...-R	200	650	130	1 x 750	-	-	-	-
AK 10.9-RT-...-R	220	700	170	1 x 1500	-	-	-	-
AK 11.3-RT-...-R	300	350	130	1 x 150	1 x 150	-	-	G507003
AK 11.5-RT-...-R	300	500	130	1 x 500	1 x 500	-	-	G507003
AK 11.7-RT-...-R	300	350	130	1 x 750	1 x 750	-	-	-
AK 11.9-RT-...-R	320	700	170	1 x 1500	1 x 1500	-	-	-
AK 20.9-RT-...-R	490	700	170	2 x 1500	-	500	10	-
AK 21.9-RT-...-R	490	700	170	2 x 1500	1 x 1500	500	10	-
AK 22.9-RT-...-R	490	700	170	2 x 1500	2 x 1500	500	10	-
AK 30.9-RT-...-R	490	700	170	3 x 1500	-	500	10	-
AK 31.9-RT-...-R	490	700	170	3 x 1500	1 x 1500	500	10	-
AK 32.9-RT-...-R	670	700	170	3 x 1500	2 x 1500	500	10	-
AK 33.9-RT-...-R	670	700	170	3 x 1500	3 x 1500	500	10	-
AK 40.9-RT-...-R	670	700	170	4 x 1500	-	500	10	-
AK 41.9-RT-...-R	670	700	170	4 x 1500	1 x 1500	500	10	-
AK 42.9-RT-...-R	670	700	170	4 x 1500	2 x 1500	500	10	-
AK 50.9-RT-...-R	670	700	170	5 x 1500	-	500	10	-

(*) VdS approval only valid with color RAL 2011 and for variants HA, HA-HZ, HEA, HEA-HZ

» Parameters of pneumatically actuated AK x0.y-PA-R alarm boxes



ALARM BOX TYPE	W [mm]	H [mm]	D [mm]	max. amount of CO_2 to
				OPEN [g]
AK 10.7-RT-PA-R *	300	650	130	1 x 750
AK 10.9-RT-PA-R *	320	700	170	1 x 1500
AK 20.7-RT-PA-R **	300	650	130	2 x 750
AK 20.9-RT-PA-R **	320	700	170	2x 1500
AK 30.7-RT-PA-R **	300	650	130	3 x 750
AK 30.9-RT-PA-R **	320	700	170	3x 1500

(*) Possibility of manual and electric opening
(**) An additional "pilot" box is required to trigger the pneumatic box.

1.4 | Example configurations of alarm boxes

MANUAL ALARM OPENING (HA)

» CO_2 is released for emergency opening of the vents by manually pressing the black button.

MANUAL ALARM OPENING AND CLOSING (HA-HZ)

» CO_2 is released for emergency opening of the vents by manually pressing the black button,
» manual closure by moving the lever downward,
» the box is equipped with separate cartridges for opening and closing,
» protection against faulty operation: the closing button is not visible through the glass panel,
» after switching from opening to closing function, there is automatic deaeration of the part of installation responsible for opening — it is not necessary to remove the cartridge. Deaeration also occurs after switching from closing to opening.

MANUAL AND REMOTE ALARM OPENING (HEA, HPA)

» CO_2 is released for emergency opening of the vents by manually pressing the black button or remotely by an electric (HEA) or pneumatic (HPA) signal, which enables cooperation with other control systems, e.g. FAS.

MANUAL AND REMOTE ALARM OPENING, MANUAL CLOSING (HEA-HZ)

» CO_2 triggering for alarm opening of the vents is done by manually pressing the black button or remotely by electrical signal (HEA), which allows cooperation with other control systems, such as FAS,
» CO_2 triggering for alarm closure of the vents is done by moving the lever down manually,
» the box is equipped with separate cartridges for opening and closing,
» protection against faulty operation: the closing button is not visible through the glass panel,
» after switching from opening to closing function, there is automatic deaeration of the part of installation responsible for opening — it is not necessary to remove the cartridge. Deaeration also occurs after switching from closing to opening.

1.5 | Ventilation boxes

Ventilation boxes are used to open and close the vents for the purpose of comfort ventilation. The boxes contain valves that control the opening and closing of the dampers and the air preparation system.

Specific features:
» steel box painted in RAL 5012 color,
» lockable door, opened to the bottom in standard,
» valves control through levers outside the box,
» Ø6 mm pipe connections,
» includes filter, dehydrator, pressure reducer (output pressure 0 ÷ 1 MPa),
» **options 1:** valves control lever located inside, no air preparation system, configurations for multiple ventilation zones and smoke removal, and interfacing with alarm boxes,
» **options 2:** optional cooperation with an alarm box for alarm opening or opening and closing, with weather monitoring unit for automatic closing of vents in case of rain and strong wind; optional remote opening and closing controlled electrically or pneumatically.

Fig. 7 Example of ventilation box

» Dimensions of selected ventilation boxes

BOX TYPE	BOX DIMENSIONS width x height x depth [mm]	Notes
PLZ 10.0.1	300 x 200 x 80	for single ventilation group, manual control
PLZ 20.1.1-EA230-EZ230	300 x 200 x 80	**1 smoke exhaust group** – opening only (co-operation with alarm box for opening), **1 ventilation group** – with possible ventilation control through 230 V~ signal
PLZ 30.1.1-EZ-230-EA230	300 x 200 x 80	**1 smoke exhaust group** – opening and closing (co-operation with alarm box for opening and closing), **1 ventilation group** – with possible ventilation control through 230 V~ signal

1.6 | Example configurations

1.6.1 | Automatic vent opening by thermal valve (smoke exhaust)

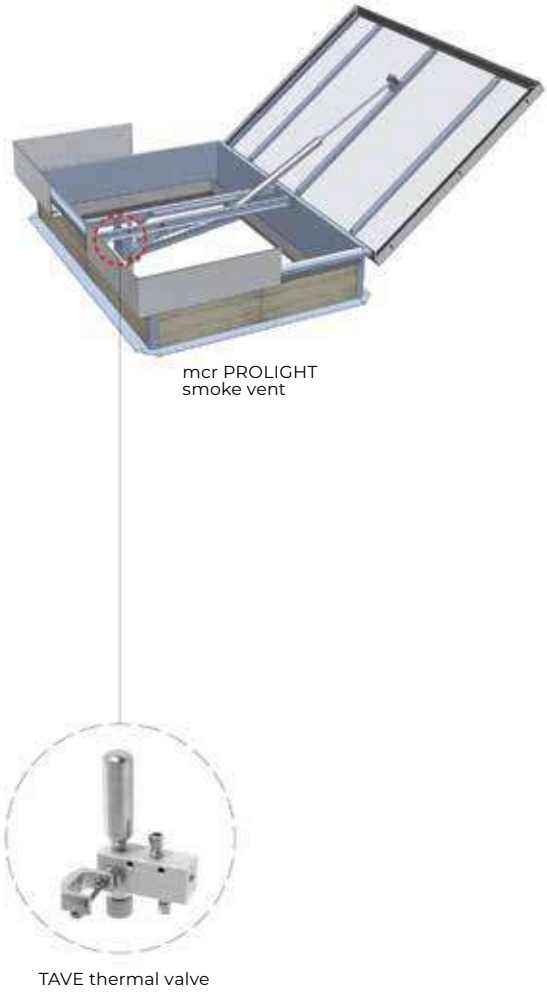


Fig. 8 Smoke exhaust function – automatic alarm opening, by thermal valve with thermal fuse

Devices list
» pneumatic actuator for smoke exhaust,
» TAVE thermal valve.

NOTE
Depending on client's needs, the smoke exhaust system devices may vary from the specifications.

1.6.2 | Automatic and manual vent opening (smoke exhaust)

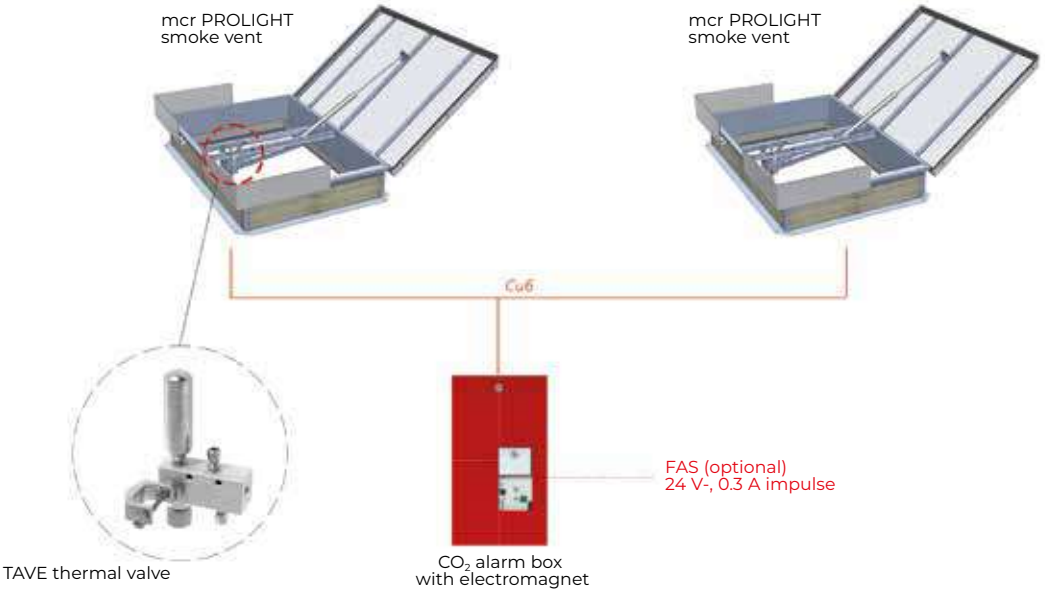


Fig. 9 Smoke exhaust function – automatic and manual alarm opening

Devices list
- pneumatic actuator for smoke exhaust,
- TAVE or TAG-WV 690-41 thermal valve,
- alarm box, AK 10.5-RT-HA-R or AK 10.5-RT-HEA-R for cooperation with FAS.

NOTE
Depending on client's needs, the smoke exhaust system devices may vary from the specifications.

1.6.3 | Automatic and manual vent opening (smoke exhaust) with 230 V~ electric ventilation

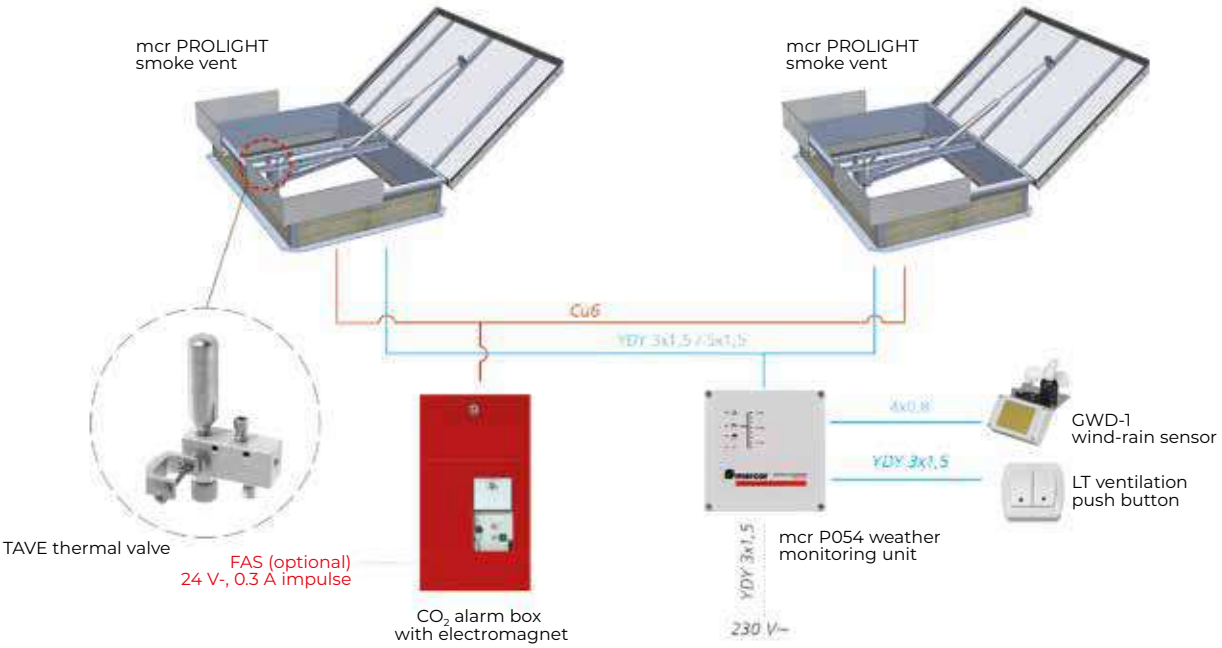


Fig. 10 Smoke exhaust function – automatic and manual alarm opening

Devices list
- pneumatic actuator for smoke exhaust,
- TAVE or TAG-WV 690-41 thermal valve,
- alarm box, e.g. AK 10.7-RT-HA-R or AK 10.7-RT-HEA-R for cooperation with FAS,
- E type actuator for daily ventilation,
- ventilation push button,
- mcr P054 weather monitoring unit,
- GWD-1 wind-rain sensor.

NOTE
Depending on client's needs, the smoke exhaust system devices may vary from the specifications.

The use of weather automatics is recommended for systems with daily ventilation system.

1.6.4 | Automatic and manual vent opening (smoke exhaust), manual closing

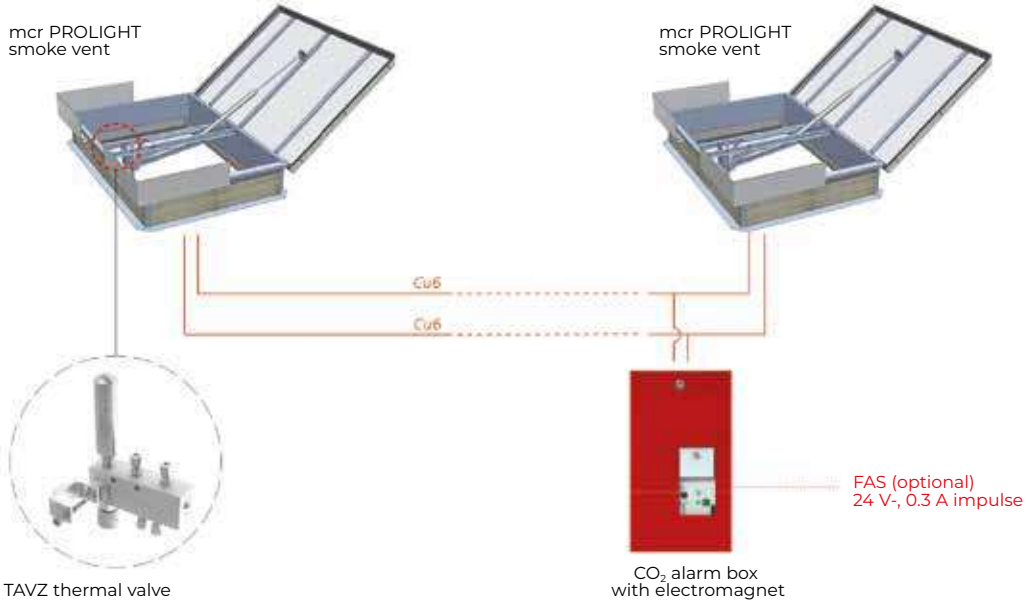


Fig. 11 Smoke exhaust function – automatic alarm opening and manual opening

Devices list
- pneumatic actuator for smoke exhaust,
- TAVZ or TAG-WV 690-42 thermal valve,
- alarm box with AK 11.7-RT-HA-HZ-R or AK 10.7-RT-HEA-HZ-R for cooperation with FAS.

NOTE
Depending on client's needs, the smoke exhaust system devices may vary from the specifications.

1.6.5 | Automatic and manual vent opening (smoke exhaust), manual closing, 230 V~ electric comfort ventilation

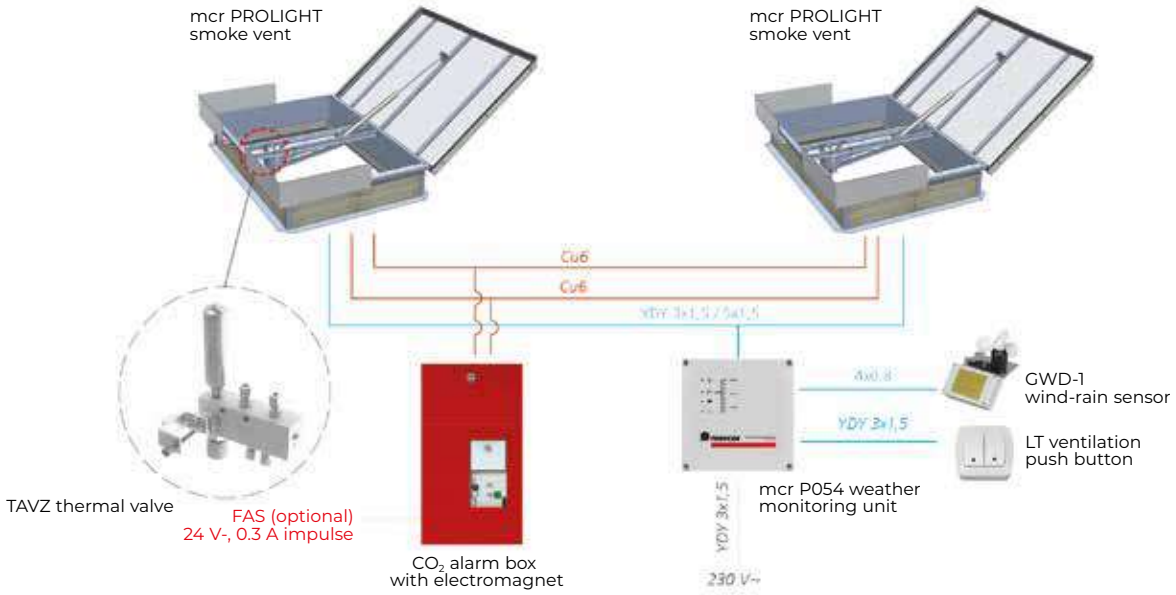


Fig. 12 Smoke exhaust function – automatic and manual alarm opening

Devices list
- pneumatic actuator for smoke exhaust,
- TAVZ or TAG-WV 690-42 thermal fuse,
- alarm box, e.g. AK 11.7-RT-HA-HZ-R or AK 10.7-RT-HEA-HZ-R for cooperation with FAS,
- E type air inlet actuator,
- ventilation push button,
- mcr P054 weather monitoring unit,
- GWD-1 wind-rain sensor.

NOTE
Depending on client's needs, the smoke exhaust system devices may vary from the specifications.

The use of weather automatics is recommended for systems with daily ventilation system.

1.6.6 | Automatic and manual vent opening (smoke exhaust), manual closing, pneumatic comfort ventilation

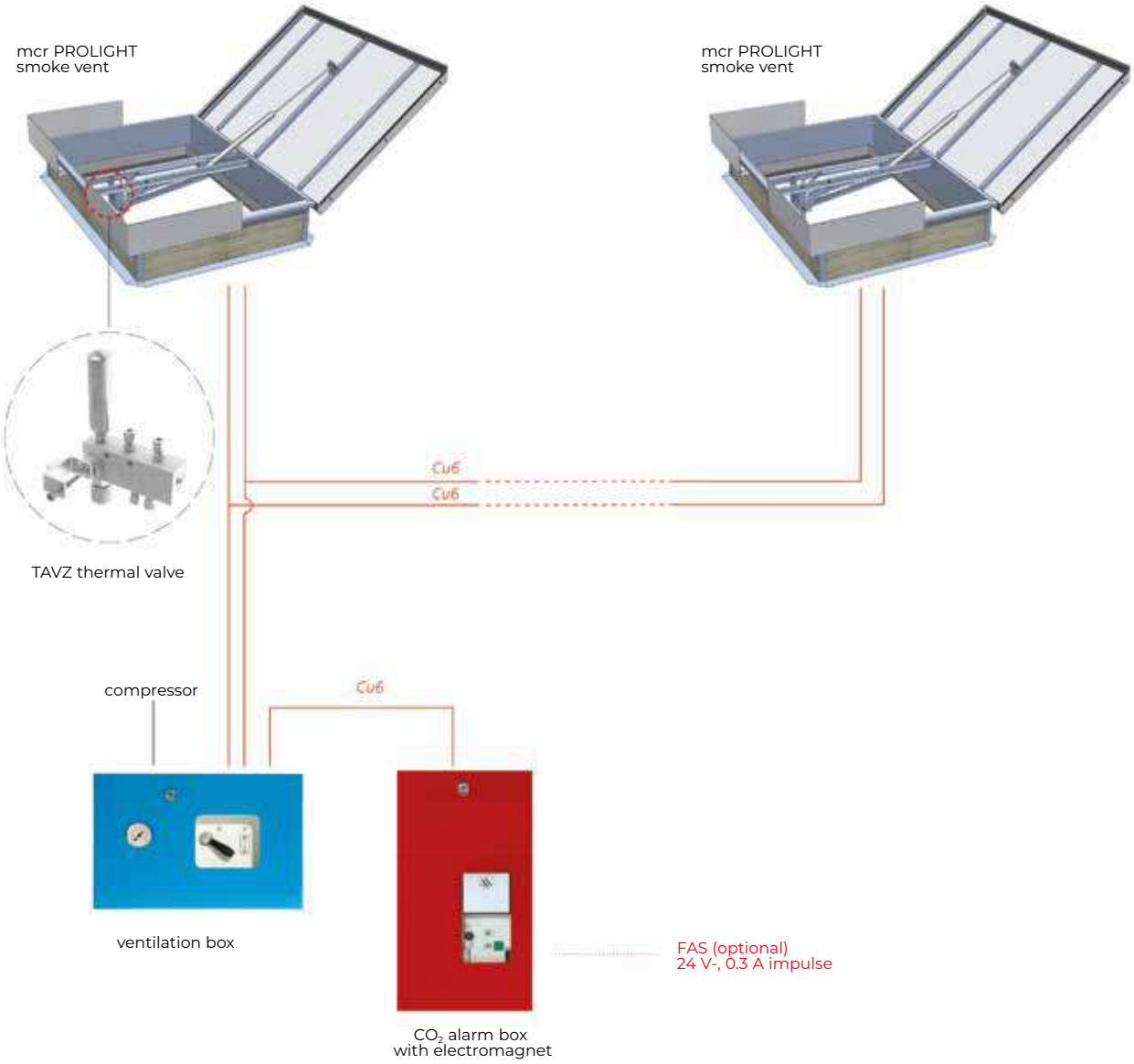


Fig. 13 *Smoke exhaust function – automatic and manual alarm opening, with thermal release valve and alarm box (opening) and pneumatic ventilation function with ventilation box (open/close) – 2-pipe system*

Devices list
» pneumatic actuator for smoke exhaust,
» pneumatic actuator for ventilation,
» ZSV-BVE valve,
» TAVZ or TAG-WV 690-42 thermal valve
» ventilation box with an option for cooperation with FAS, for example, PLZ30.1.1-...,
» alarm box, e.g. AK 10.7-RT-HA-R or AK 10.7-RT-HEA-R for cooperation with FAS.

NOTE
Depending on client's needs, the smoke exhaust system devices may vary from the specifications. The use of weather automatics is recommended for systems with ventilation system.

2. | 24 V-/48 V- electric control system

Smoke vents with electric smoke exhaust control system are mainly used for staircases of public utility buildings, in passages of malls, and smaller storage or industrial halls.

Components of electric smoke exhaust control system:
» mcr PROLIGHT vent with 24 V- electric actuator,
» electric smoke exhaust and ventilation control unit,
» mcr RPO-1 fire alarm buttons,
» optical smoke sensors,
» ventilation push buttons – optional,
» weather monitoring unit mcr P054 with wind-rain sensor GWD-1 (optional),
» electric installations.

Activation options of electric smoke exhaust control system:
» **automatic** – after smoke detection – through a signal from optical smoke sensor,
» **automatic (remote)** – through signal from FAS/BMZ,
» **manually** – by RPO-1 fire alarm button.

Ventilation control through electric smoke exhaust system.
Vents with 24 V- electric actuators may be used for daily ventilation after connecting ventilation push buttons to smoke exhaust control unit. Use of weather automatics is recommended for closing vents in ventilation position in case of strong wind (to protect the vent structure) and/or rain (to protect the user's property). Alarm signals and alarm functions of the control units have priority over ventilation functions.

2.1 | mcr 9705 control unit

mcr 9705 smoke exhaust control unit is used to activate devices of Mercor Light&Vent sp. z o.o. electric smoke exhaust system based on alarm signal from thermal or optical smoke sensors, from manual alarm button or from another control unit (e.g. fire alarm system, building automatics system). The control unit is supplied from 230 V~ and feeds 24 V- voltage to electric smoke exhaust system devices. Thanks to its batteries, control unit may stand-by for 72 hours from power failure, with a single launching of devices possible after that time (e.g. opening smoke vents).

The control unit allows for:
» remote activation of smoke exhaust system devices from fire alarm system (NC voltage-free contact or 24 V- signal),
» activation by the use of alarm buttons,
» automatic activation from conventional smoke sensors (thermal or optical),
» co-operation with mcr RPO-1 fire alarm button,
» providing information of system status: ready / alarm / fault / opening,
» manual opening of smoke exhaust vents for daily ventilation during normal operation without alarm state,
» automatic closing of vents opened for daily ventilation in case of rain fall or strong window, in response to a signal from weather monitoring unit (does not interfere with alarm operation).

Fig. 14 mcr 9705 control unit

European Funds Smart Growth
European Union European Regional Development Fund

» **Technical data of mcr 9705 control unit.**

PARAMETER	VALUE	
model	5 A	8 A
supply voltage	230 V~, 50 Hz	
nominal power	150 VA	250 VA
output voltage, max. current	24 V-, max. 5.2 A	24 V-, max. 8.0 A
back-up power supply	2 psc. of batteries 12 V-, 3.2 Ah, connected in series	
operating temperature range	-5°C ÷ 40°C	
time of operation after mains failure in "ready state"	min. 72 h	
carrying capacity of relay outputs	max. 100 mA, 24 V-	
casing protection rating	IP 54	
dimensions (width x height x depth)	300 x 300 x 120 mm	

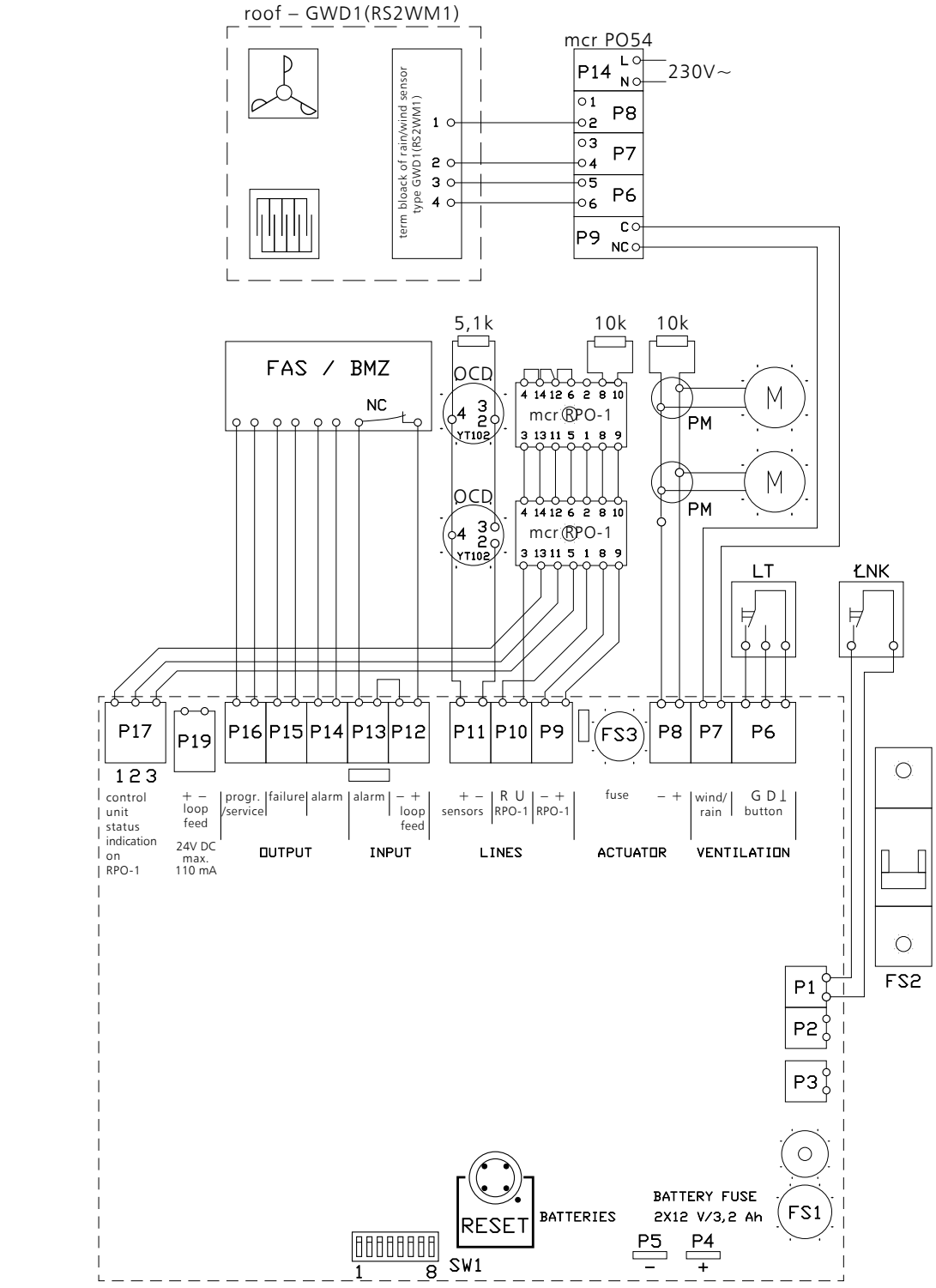
» mcr 9705 – 5 A control units series of types

UNIT TYPE	SUPPLY VOLTAGE	NUMBER OF OUTPUTS (ACTUATOR LINES) LOAD CAPACITY	CASING DIMENSIONS (width x height x depth) [mm]	NOMINAL POWER [VA]	BATTERIES
mcr 9705-5 A	230 V~ 50 Hz	5 A (basic)	300 x 300 x 120	150	2 x (12 V-,. 3.3...3.6 Ah)
mcr 9705-10 A		2 x 5 A	400 x 400 x 200	300	4 x (12 V-, 3.3...3.6 Ah)
mcr 9705-15 A		3 x 5 A	600 x 600 x 200	450	6 x (12 V-, 3.3...3.6 Ah)
mcr 9705-20 A		4 x 5 A	600 x 600 x 200	600	8 x (12 V-, 3.3...3.6 Ah)
mcr 9705-25 A		5 x 5 A	800 x 600 x 300	750	10 x (12 V-, 3.3...3.6 Ah)
mcr 9705-30 A		6 x 5 A	800 x 600 x 300	900	12 x (12 V-, 3.3...3.6 Ah)

» mcr 9705 – 8 A control units series of types

UNIT TYPE	SUPPLY VOLTAGE	NUMBER OF OUTPUTS (ACTUATOR LINES) LOAD CAPACITY	CASING DIMENSIONS (width x height x depth) [mm]	NOMINAL POWER [VA]	BATTERIES
mcr 9705-8 A	230 V~ 50 Hz	8 A (basic)	300 x 300 x 120	250	2 x (12 V-, 3.3...3.6 Ah)
mcr 9705-16 A		2 x 8 A	400 x 400 x 200	500	4 x (12 V-, 3.3...3.6 Ah)
mcr 9705-24 A		3 x 8 A	600 x 600 x 200	750	6 x (12 V-, 3.3...3.6 Ah)
mcr 9705-32 A		4 x 8 A	600 x 600 x 200	1000	8 x (12 V-, 3.3...3.6 Ah)
mcr 9705-48 A		6 x 8 A	800 x 600 x 300	1500	12 x (12 V-, 3.3...3.6 Ah)

2.2 | Typical configuration of smoke exhaust system with mcr 9705-5 A control unit and with mcr P054 weather monitoring unit



LT – ventilation push button
ŁNK – key switch for activationg the “hatch” mode
FAS – fire alarm system
mcr RPO-1 – fire alarm button
mcr P054 – weather monitoring unit
M – electric actuator
OCD – optical smoke sensor
PM – junction box
FS1 – battery fuse
FS2 – 230 V~ main fuse
FS3 – power supply fuse
SW1 – configuration switch for control unit (see operation and maintenance)

2.3 | mcr 0204 control unit

mcr 0204 unit is used to activate devices of Mercor Light&Vent sp. z o.o. electric smoke exhaust system based on alarm signal from thermal or optical smoke sensors and from manual alarm button.The control unit is supplied from 230 V~ and feeds 24 V- voltage to electric smoke exhaust system devices. Thanks to its batteries, control unit may stand-by for 72 hours from power failure, with a single launching of devices possible after that time (e.g. opening smoke vents).

The control unit allows for:

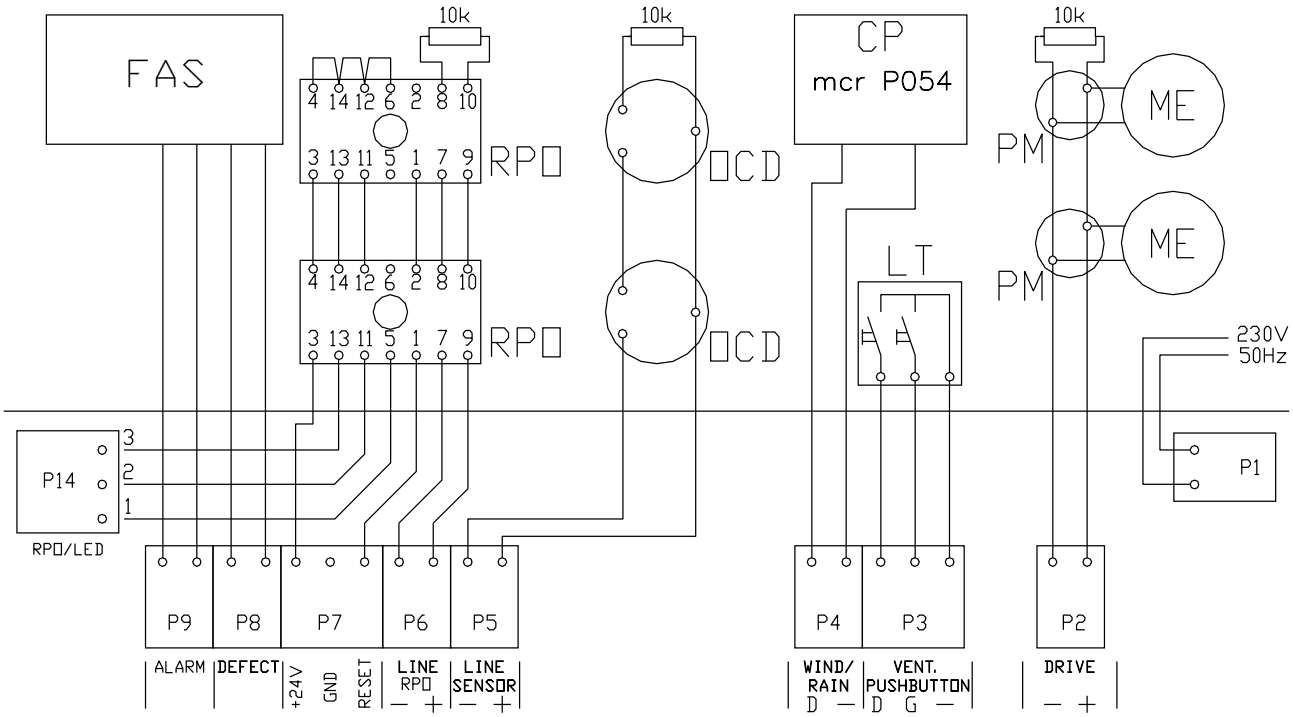
- activation by the use of alarm buttons,
- automatic activation from conventional smoke sensors,
- co-operation with mcr RPO-1 alarm button,
- providing information of system status: alarm/fault,
- manual opening of smoke exhaust vents for daily ventilation during normal operation without alarm state,
- automatic closing of vents opened for daily ventilation in case of rain fall or strong window, in response to a signal from weather monitoring unit (does not interfere with alarm operation).

Fig. 15 *mcr 0204 control unit*

Technical data of mcr 0204 control unit

PARAMETER	VALUE
supply voltage	230 V~, 50 Hz
nominal power	100 VA
output voltage, max. current	24 V-, max. 4 A
battery back-up	2 pcs. of 12 V-, 2 Ah batteries, connected in series
operating temperature range	-10°C ÷ 40°C
maximum thickness of wires entering the unit	1.5 mm
time of operation after mains failure in READY state	min. 72 h
carrying capacity of relay outputs	max. 100 mA, 24 V-
casing protection rating	IP 54
insulation grade	II
dimensions (width x height x depth)	300 x 230 x 86 mm

2.4 | Typical configuration of smoke exhaust system with mcr 0204 control unit and with mcr RPO-1 fire alarm button



FAS – fire alarm system
OCD – optical smoke sensor
mcr RPO-1 – fire alarm button
PM – junction box
M – electric actuator
mcr P054 – weather monitoring unit
LT – ventilation push button
SW1 – configuration switch for control unit (see operation and maintenance)
FS1 – battery fuse
FS2 – 230 V~ main fuse
FS3 – power supply fuse

2.5 | mcr R0424, mcr R0448 extension modules

mcr R04xx extension module is used for supplying a single group of 24 V- actuators of total current consumption from 24 A up to 48 A, depending on variant. The module is controlled by 24 V- signal from mcr 9705 or mcr 0204 control units (from actuators line output).

The modules are made in 7 variants, for example:

mcr R0424

- **mcr R0424-1** 1 output line 24 A,
- **mcr R0424-2** 2 output lines 12 A each,
- **mcr R0424-K** 1 ÷ 10 output lines, 24 A, **(for curtains)**

mcr R0448

- **mcr R0448-1** 1 output line 48 A,
- **mcr R0448-2** 2 output lines 24 A each,
- **mcr R0448-4** 4 output lines 12 A each,
- **mcr R0448-K** 1 ÷ 10 output lines, 48 A. **(for curtains)**

Fig. 16 *mcr R04xx extension module*

The device, in combination with mcr control unit, allows for detection of all damaged actuator lines connected to it. Battery back-up allows for a 72 h stand-by, and at least a single opening of vents in that time. The batteries charging time from complete discharge is up 24 hours.
The device, in combination with mcr control unit, allows for detection of all damaged actuator lines connected to it. Battery back-up allows for a 72 h stand-by, and at least a single opening of vents in that time. The batteries charging time from complete discharge is up 24 hours.

mcr R04xx module features signaling of the following states:

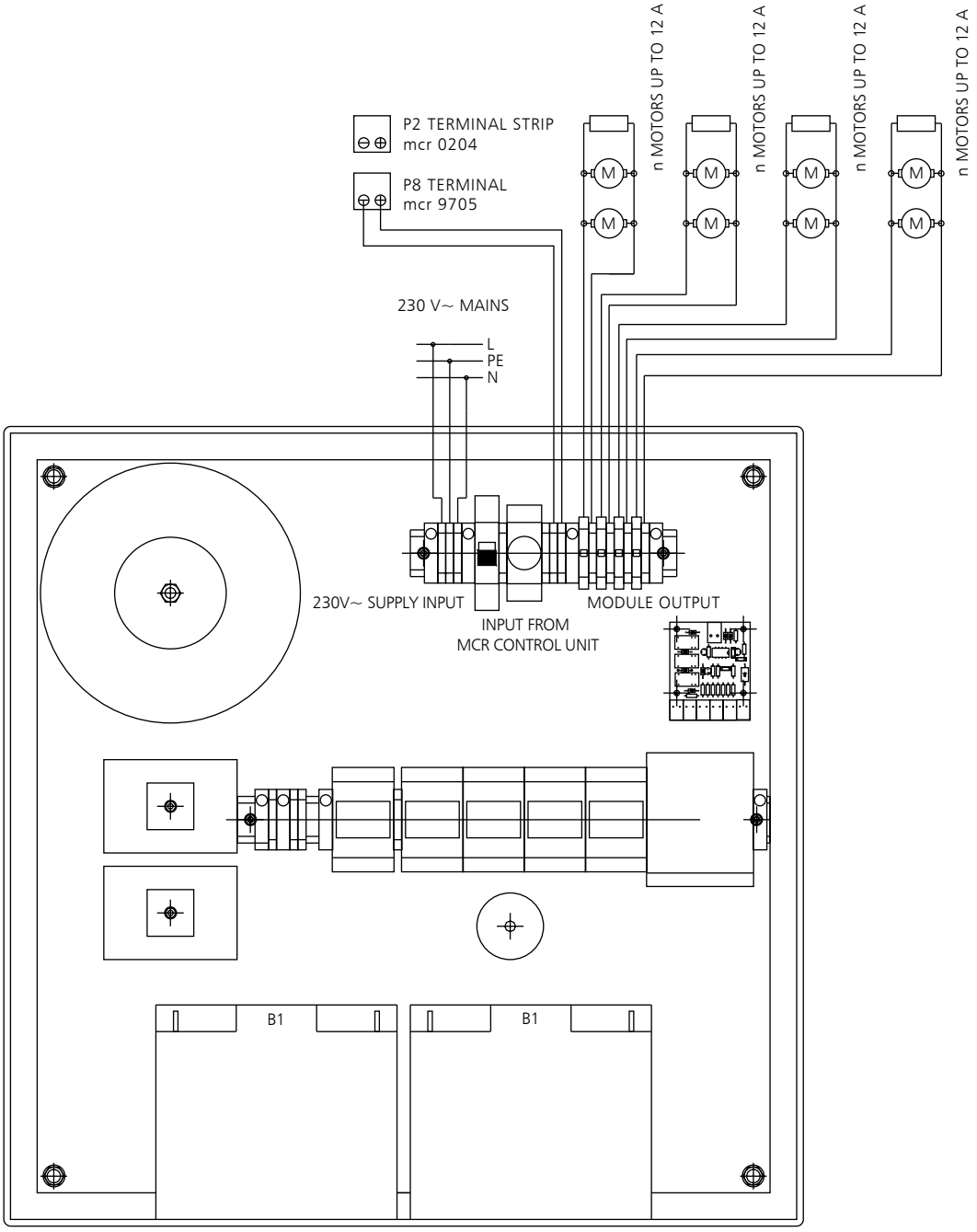
- **230 V~ supply correct** green LED,
- **actuators actions** yellow LED,
- **failure** yellow LED,

- and signal sent to the control panel (in case of actuator line failure, lack of mains power supply, lack of 24 V- backup power supply).

2.5.1 | Technical data of mcr R0424 and mcr R0448 extension modules

PARAMETER	VALUE						
type	mcr R0424			mcr R0448			
variant	0424-1	0424-2	0424-K for mcr PROSMOKE CE curtains	0448-1	0448-2	0448-4	0448-Kx for mcr PROSMOKE CE curtains
number of output lines (actuators) and line carrying capacity	1 x 24 A	2 x 12 A	1 ÷ 10 output lines 1 x 24 A	1 x 48 A	2 x 24 A	4 x 12 A	1 ÷ 10 output lines 1 x 48 A
power supply voltage	230 V~, 50 Hz						
max. mains power consumption	750 VA			1500 VA			
output voltage	24 V-						
operating temperature range	-5°C ÷ 40°C						
dimensions (height x width x depth)	600 x 600 x 200 mm						
casing protection rating	IP 54						
cables output	from the back or top of casing						

2.5.2 | Typical configuration of mcr R04xx extension module (4 x 12 A)



2.6 | mcr R2324-24V, mcr R2348-24V, mcr R2324-48V extension modules

mcr R23xx-24V extension module is used for supplying a single group of 24 V- actuators of total current consumption up to 24 A or 48 A, depending on the variant. mcr R2324-48V extension module is used for supplying a single group of 48 V- actuators of total current consumption up to 24 A. The module is controlled by a 24 V- signal from mcr 9705 or mcr 0204 smoke exhaust control units (from the actuator line output).

More stable output voltage

Available in two voltage version 24 V- and 48 V-

Additional output on the main board for transmitting the alarm signal to the next module

The modules are made in 8 variants, for example:

mcr R2324-24V

» **R2324-24V-1:**	1 output line 24 V- 24 A
» **R2324-24V-2:**	2 output lines 24 V- each 12 A
» **R2324-24V-K:**	1÷10 output lines 24 V-, ∑=24 A, **(for curtains)**

mcr R2348-24V

» **R2348-24V-2:**	2 output lines 24 V- each 24 A
» **R2348-24V-4:**	4 output lines 24 V- each 12 A
» **R2348-24V-K:**	1÷10 output lines 24 V-, ∑=48 A, **(for curtains)**

mcr R2324-48V

» **R2324-48V-1:**	1 output line 48 V- 24 A
» **R2324-48V-2:**	2 output line 48 V- each 12 A

Fig. 17 mcr R23xx extension module

The device, when connected to a smoke exhaust control panel, provides monitoring of faults on all actuator lines connected to it. The mcr R23xx-xxV module is equipped with two power supply sources for the connected devices: the primary mains supply and a backup battery supply, which is switched on automatically in the event of mains power failure. The battery backup ensures 72 hours of standby operation and at least one opening cycle of the vents during this period. The battery recharge time after complete discharge is up to 24 hours.

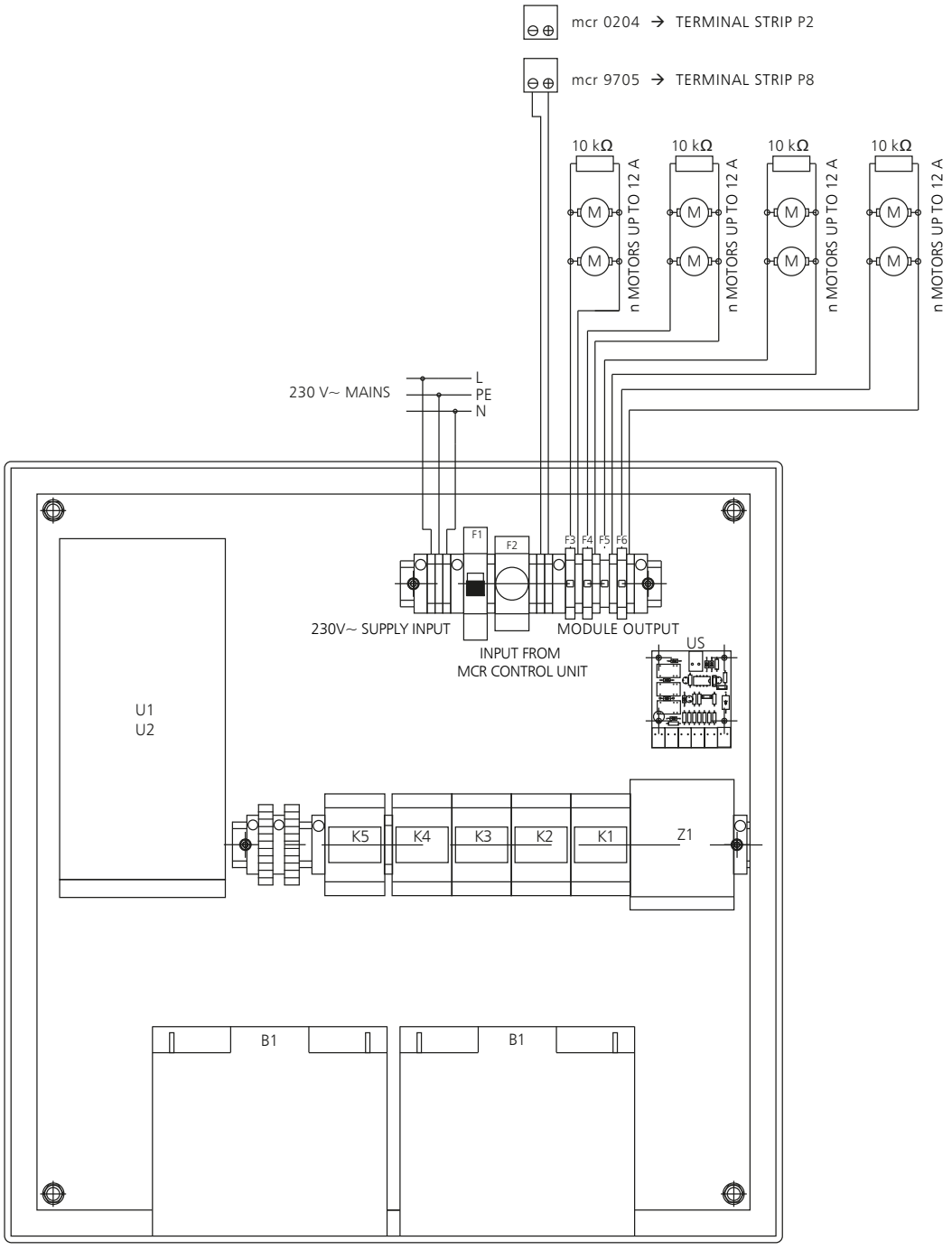
mcr R23xx module features signaling of the following states:

- **230 V~ supply correct** — **green** LED,
- **actuators actions** — **yellow** LED,
- **failure** — **yellow** LED,
- and signal sent to the control panel (in case of actuator line failure, lack of mains power supply, lack of 24 V- backup power supply).

2.6.1 | Technical data of mcr R2324-24V, mcr R2348-24V, mcr R2324-48V extension modules

PARAMETER	VALUE							
type	**mcr R2324-24V**			**mcr R2348-24V**			**mcr R2324-48V**	
variant	**2324-24V-1**	**2324-24V-2**	**2324-24V-K** for mcr PROSMOKE CE curtains	**2348-24V-2**	**2348-24V-4**	**2348-24V-K** for mcr PROSMOKE CE curtains	**2324-48V-1**	**2324-48V-2**
number of output lines (actuators) and line carrying capacity	1 x 24 A	2 x 12 A	1 ÷ 10 output lines 1 x 24 A	2 x 24 A	4 x 12 A	1 ÷ 10 output lines 1 x 48 A	1 x 24 A	2 x 12 A
power supply voltage	230 V~, 50 Hz							
max. mains power consumption	750 VA			1500 VA				
output voltage	24 V-						48 V-	
operating temperature range	-5°C ÷ 40°C							
dimensions (height x width x depth)	600 x 600 x 200 mm							
casing protection rating	IP 30							
cables output	from the back or top of casing							

2.6.2 | Typical configuration of mcr R23xx extension module (4 x 12 A)



2.7 | mcr RPO-1 and mcr RPO-1a fire alarm button

mcr RPO fire alarm button is used in smoke exhaust systems for manual alarm triggering and for indication of operating status of the smoke exhaust unit. Additionally, the button allows for reset of control panel.

The button includes three indication diodes:
» **red** – ALARM
» **yellow** – FAILURE
» **green** – OK

The diodes are connected directly and independently to terminal strip, which ensures versatility of mcr RPO-1 fire alarm button.

» The standard **RPO-1** button is intended for use with Mercor smoke exhaust control units:
– **mcr 9705 and mcr 0204**
(for more information, see pages 15 and 18).

» The **RPO-1a** button is intended for use with Actulux smoke exhaust control units:
– **mcr SVM and mcr SV-ds**
(for more information, see pages 36 and 37).

The buttons are intended for indoor installation The button shall be connected using a cable compliant with the applicable local regulations and installation requirements.

Fig. 18 mcr RPO-1/RPO-1a alarm button

» Technical details

PARAMETR	mcr RPO-1	mcr RPO-1a
	VALUE	
compatible control units	mcr 9705, mcr 0204	mcr SVM, mcr SV-ds
alarm button parameters	24 V-, max. 100 mA	
operating temperature range	-5°C ÷ 40°C	
casing protection rating	IP 3X	
dimensions (height x width x depth)	135 x 135 x 33 mm	
cable cross-section range	0.5 ÷ 0.75 mm^2	
min. number of wires in cable running to unit	7	6
activation method	Indirect (type B)	
type	I (button with indication)	
climatic class	I	
casing color	orange	

2.7.1 | Electrical diagrams of the RPO-1 and RPO-1a buttons

RPO-1

1, 2 – RESET line, wire 1
3, 4 – RESET line, wire 2
5 – LED ALARM cathode
6 – LED ALARM anode
7, 8 – RPO line, wire 1
9, 10 – RPO line, wire 2
11 – FAULT LED cathode
12 – FAULT LED anode
13 – OK LED cathode
14 – OK LED anode

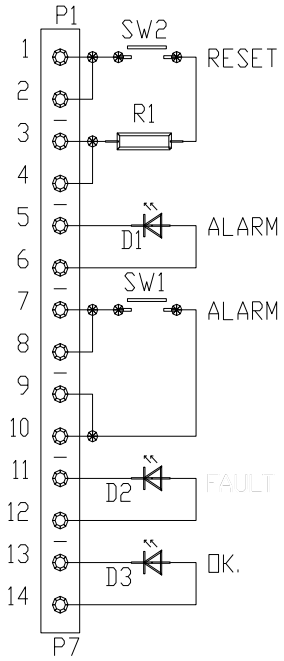
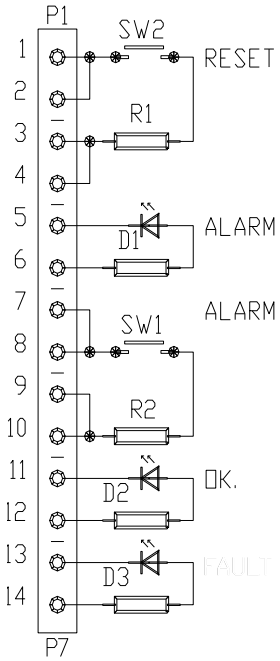


Fig. 19 Electrical diagram of the RPO-1 button

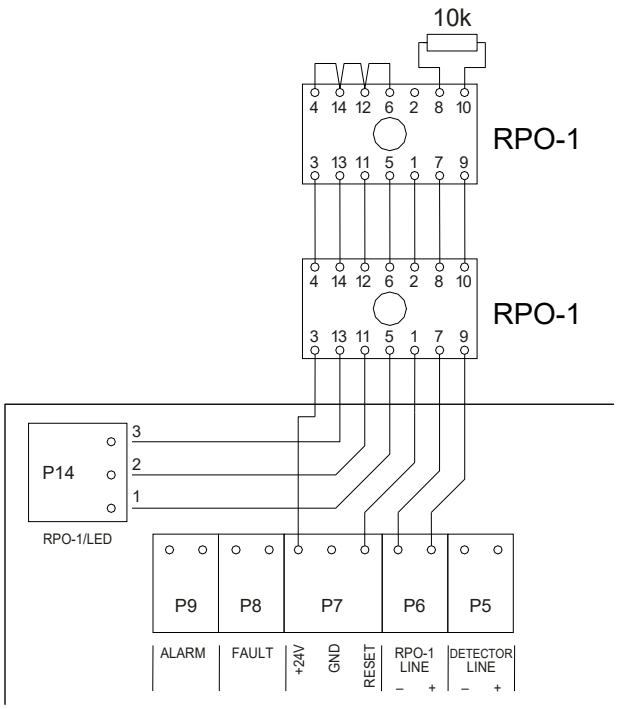


RPO-1a

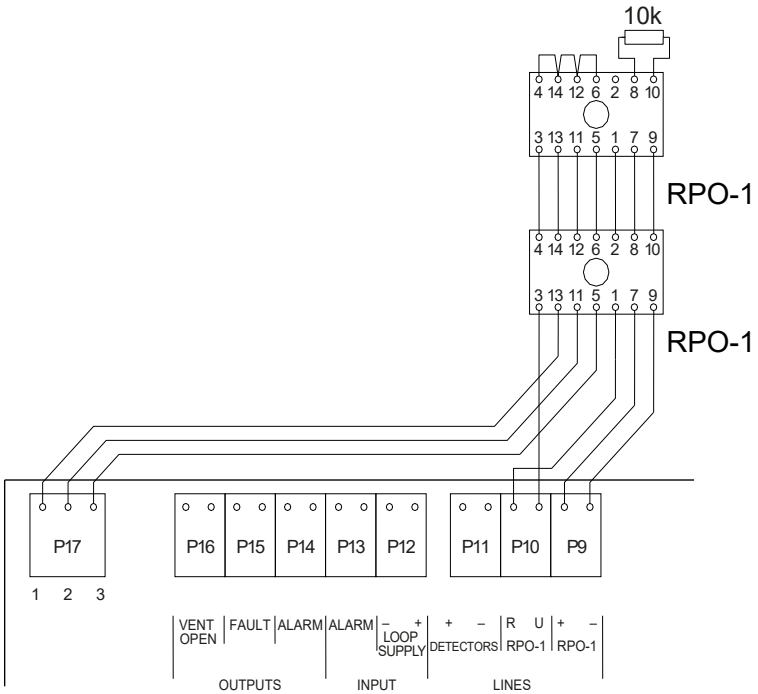
1, 2 – RESET line
3, 4 – GND
5, 6 – LED ALARM (24 V-)
7, 8 – RPO line, wire 1
9, 10 – GND
11, 12 – OK LED (24 V-)
13. 14 – FAULT LED (24 V-)

Fig. 20 Electrical diagram of the RPO-1a button

2.7.2 | Wiring diagrams of the RPO-1 buttons with MERCOR devices



mcr 0204



mcr 9705

Fig. 21 Wiring diagram of the mcr RPO-1 button with the mcr 0204 and mcr 9705 control units

2.7.3 | Wiring diagrams of the RPO-1a buttons with ACTULUX devices

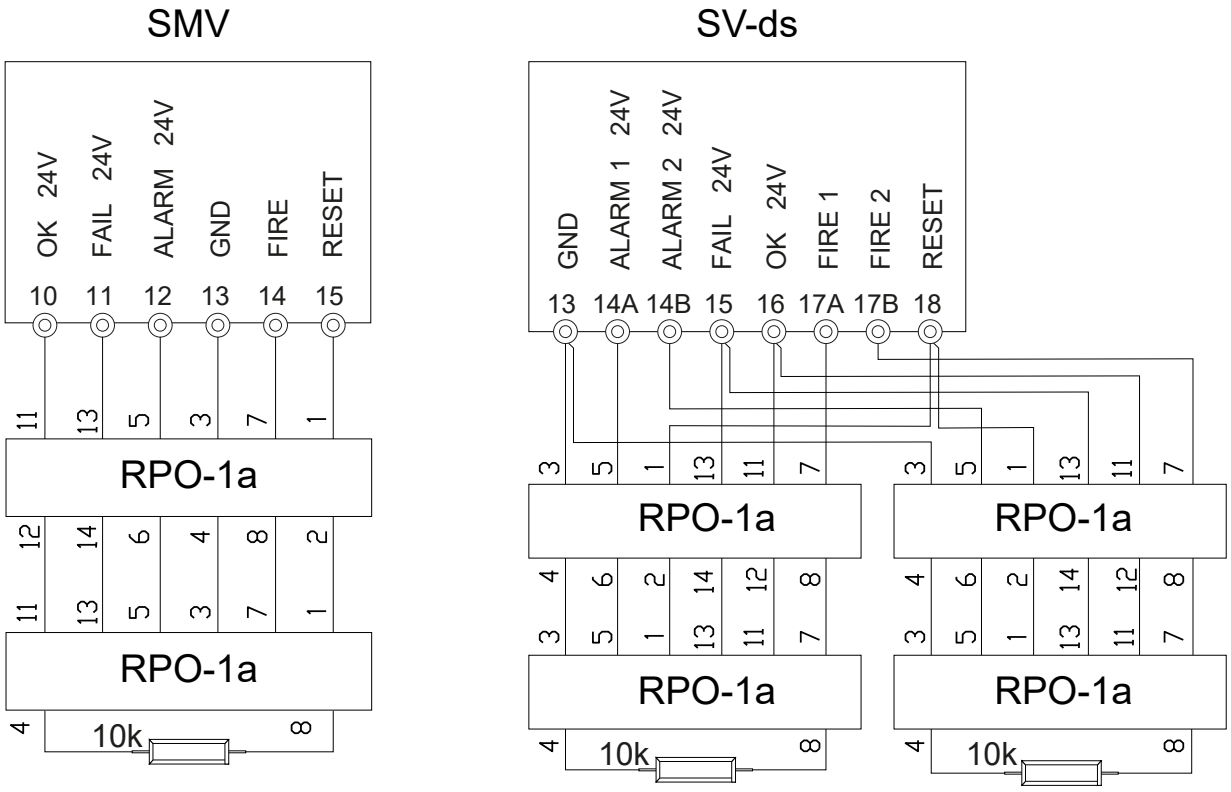


Fig. 22 *Wiring diagram of the mcr RPO-1a button with the SVM and SV-ds control units*

2.8 | OCD optical smoke sensors

Optical smoke sensors are used for detecting visible smoke that appears during the majority of fires. It allows to detect smoke in its initial stage, where the material has just started to burn, which usually comes long before the outburst of open flame and the noticeable increase in temperature. The sensors feature resistance to wind, pressure changes and water vapour condensation. They have large sensitivity to visible smoke.

Optical sensor comprises of a set of two diodes. The first of them – infrared LED diode – emits a light beam. The other, receiving diode is placed in a labyrinth tunnel. In normal conditions, this diode is not exposed to visible light from outside, or from the sender diode. Upon penetration of smoke into the sensor, the receiving diode starts to receive the light emitted through the sending diode, scattered on smoke particles. This causes response of the sensor, and the fuseing of alarm state. The sensors are equipped with optical fuseing indicators (alarm) in the form of diode diode. This facilitates finding activated sensor. Additionally, if the sensors are placed in invisible places, they can be equipped with external fuseing indicators. The sensors are installed in appropriate consoles.

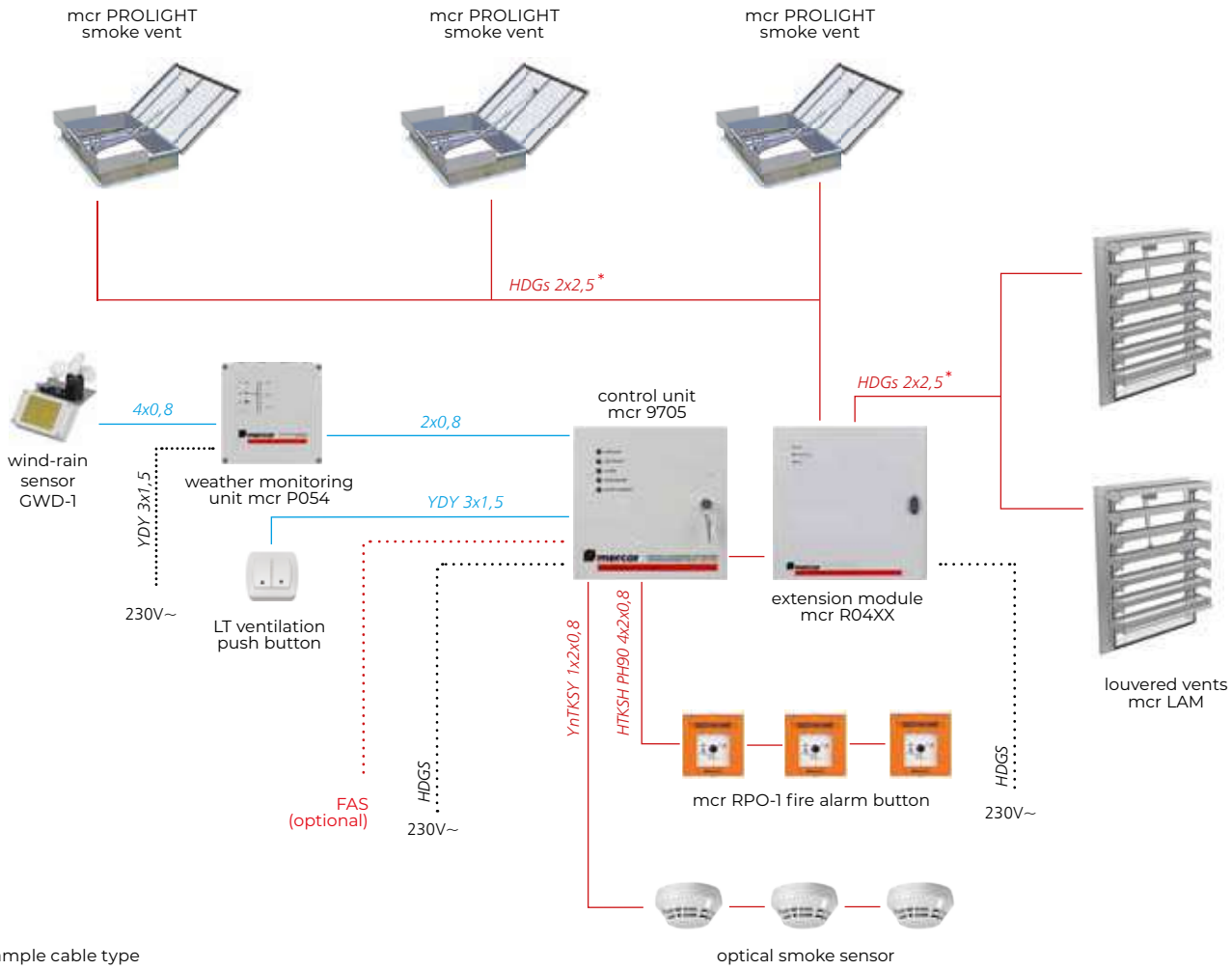
» Technical details

PARAMETER	VALUE
operating voltage	10.8 – 33 V-
max. monitoring current	80 [µA]
alarm current	22/55< [mA]
operating temperature range	-10 ÷ 50 [°C]
max. relative humidity	0 – 95 [%] without condensation and icing
dimensions of sensor, incl. socket	Ø100 x 46 [mm]
weight, incl. socket	130 g / set with base
color	white

Fig. 23 *SD 119-2 optical smoke sensor*

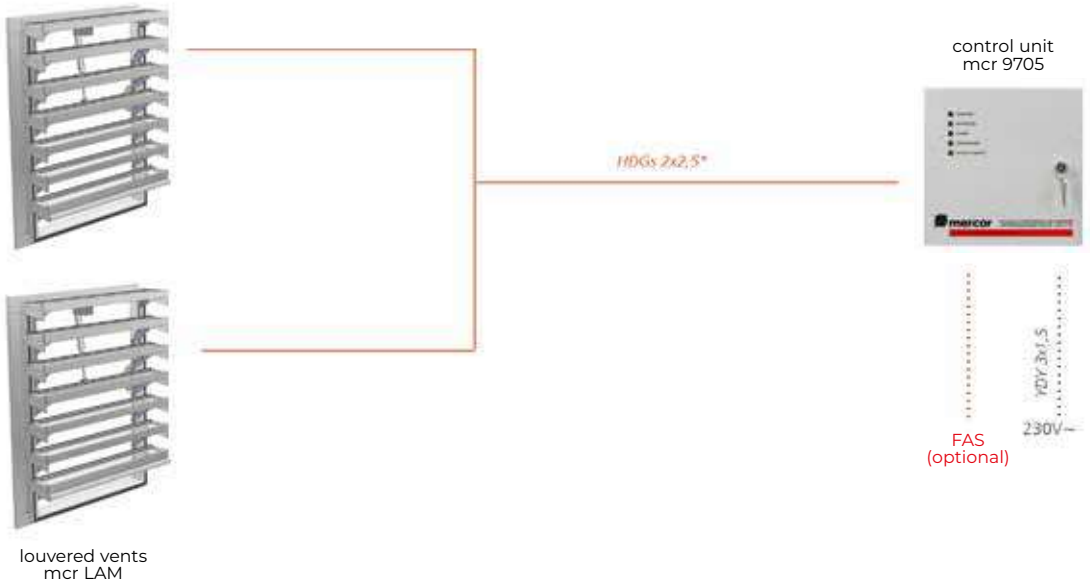
2.9 | Example configurations

2.9.1 | Example connection diagram of 24 V- smoke exhaust and ventilation



* Example cable type

2.9.2 | Example connection diagram of 24 V- smoke exhaust or ventilation



* Example cable type

3. | 230 V~ electric ventilation control system

Smoke exhaust vents with pneumatic control, spot skylights, as well as vents in continuous rooflights may be delivered with 230 V~ electric actuators for ventilation. The use of such actuators allows for daily ventilation of the building, without the necessity of activating alarm opening of vents.

Components of electric ventilation control system:
» weather monitoring unit mcr P054 with GWD-1 wind-rain sensor,
» LT ventilation push button, and additional equipment,
» ventilation actuators,
» electrical system.

Operating principle of electric ventilation system:
Ventilation push button is used for opening and closing vents/windows during their everyday operation. It is additionally recommended to provide the system with weather monitoring unit with wind-rain sensor, causing automatic closing of vents opened for ventilation during adverse weather conditions (rain fall or wind).

3.1 | mcr P054 weather monitoring unit

mcr P054 control unit is used for controlling the operation of actuators of vents or ventilation windows, which should be closed during rain or wind. Smoke exhaust control units, ventilation control units or drives supplied by 230 V~ current may be connected to the device. Closing signal is based on parameters from WM wind sensor and RS rain sensor.

» the device includes 4 switchable contacts which are fused in case of rain/wind, or at mains supply failure; the contact remains switched for a preset time after the ending of rain fall/wind,
» rain intensity is preset by the user (minor rainfall – intense rainfall),
» wind force value is preset by the user, ranging from weak wind (about 5 m/s) to strong wind (about 15 m/s),
» additional input for vent opening sensor (closed when open), allows for optical monitoring of the vents status,
» the device includes indication of the following states:
– 230 V~ supply – **green** LED,
– "wind" alarm – **red** LED,
– "rain" alarm – **red** LEDS,
– "vent open" indication – **yellow** LED,
– wind speed indication – light scale: 7 **yellow** and 1 **red** LED (red for wind speed above 15 m/s).
» plastic wall casing, dimensions height x width x depth: 180 x 180 x 75 mm. IP 54, light grey (RAL 7035), cables output from top or back of casing.

Fig. 24 *mcr P054 weather monitoring unit*

» Accessory equipment for the weather panel

KE 2a expansion module:
Control contactor for expanding the mcr P054 weather panel into more than four independent control groups that will be simultaneously closed during rain and wind.
» control voltage 230 V~, voltage free contact 5 A/230 V~,
» casing made of thermoplastic material, grey (RAL 7035),
» dimensions: 158 x 118 x 76 [mm] (width x height x depth),
» control contactor with six contacts for expanding the weather panel with five independent groups.

3.2 | GWD-1 and GWD-2 wind-rain sensor

3.2.1 | GWD-1 wind-rain sensor

» The standard **GWD-1** sensor is intended for use with the Mercor weather control unit:
  – **mcr P054** (for more information, see page page 28).
» The GWD-1 wind and rain sensor is used together with the weather control unit in natural ventilation systems to automatically close vents/windows in the event of rain or wind.

3.2.2 | GWD-2 wind-rain sensor with weather module

» The **GWD-2** sensor is intended for use with 24 V- smoke exhaust control units manufactured by Actulux and Mercor:
  – **mcr SVM and mcr SV-ds**
    (for more information, see page 36 and 37),
  – **mcr 9705 and mcr 0204**
    (for more information, see page 15 and 18).
» The GWD-2 wind and rain sensor is used in natural ventilation systems to automatically close vents/windows in the event of rain or wind. The D potentiometer allows adjustment of the rain sensor sensitivity from light rain (turn left) to heavy rain (turn right). The W potentiometer allows adjustment of the wind sensor sensitivity from 5 m/s (turn right) to 15 m/s (turn left).
» The sensor is equipped with a potential-free changeover contact with a maximum switching capacity of 1 A.

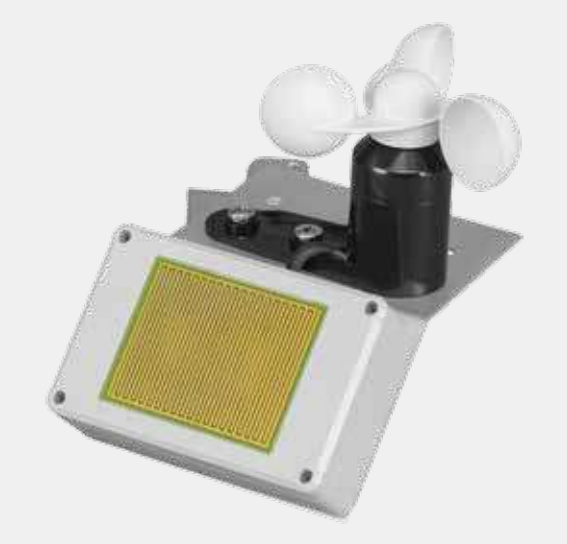


Fig. 25 *mcr GWD-1/2 wind-rain sensor*

The device consists of two components:

WM wind sensor:
» sensor for measuring wind speed,
» sold with rain sensor on mounting console.

RS rain sensor:
» heated rain sensor (heating is enabled after sensor fusing, and is disabled after its drying),
» gold-plated sensing area 80 cm^2,
» sold with wind sensor on mounting console.

Example connection cable of GWD-1 sensors set to weather monitoring unit: YTKSY2x2x0,8.

» **Technical data**

PARAMETER	GWD-1	GWD-2
	VALUE	
compatible control units	mcr P054	mcr SVM, mcr SV-ds, mcr 9705, mcr 0204
enclosure protection rating	IP 54	
cable cross-section range	0.35 ÷ 1.0 mm^2	
dimensions (height x width x depth)	80 x 120 x 40 mm	
color	RAL 7035 (light grey)	
required number of cable cores	3	4

3.3 | Wiring diagram of the GWD-1 wind and rain sensor

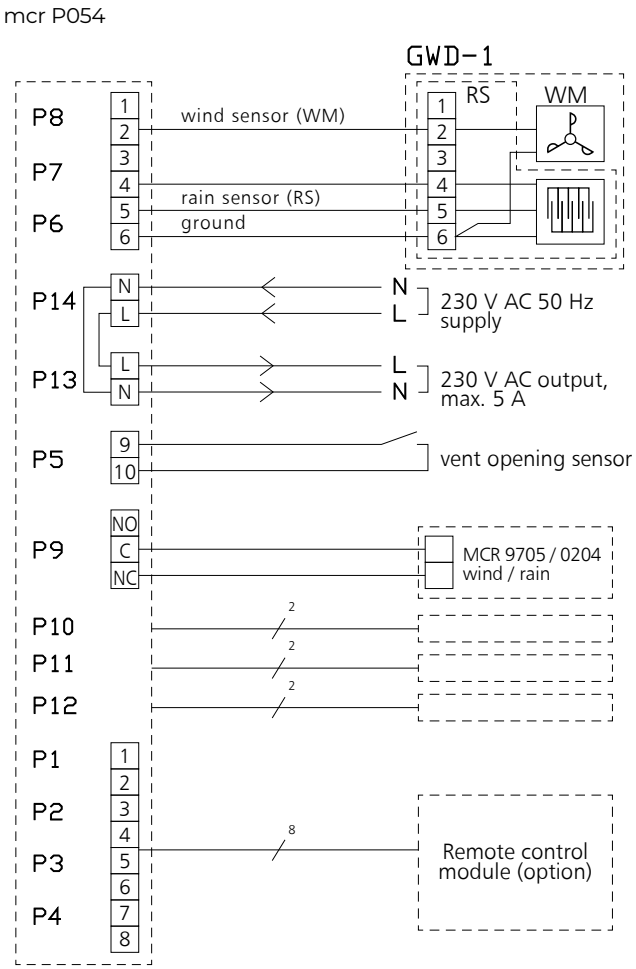


Fig. 26 *Wiring diagram of the mcr P054 weather control unit with the GWD-1 sensor*

3.4 | Wiring diagram of the GWD-2 wind and rain sensor with smoke exhaust control units

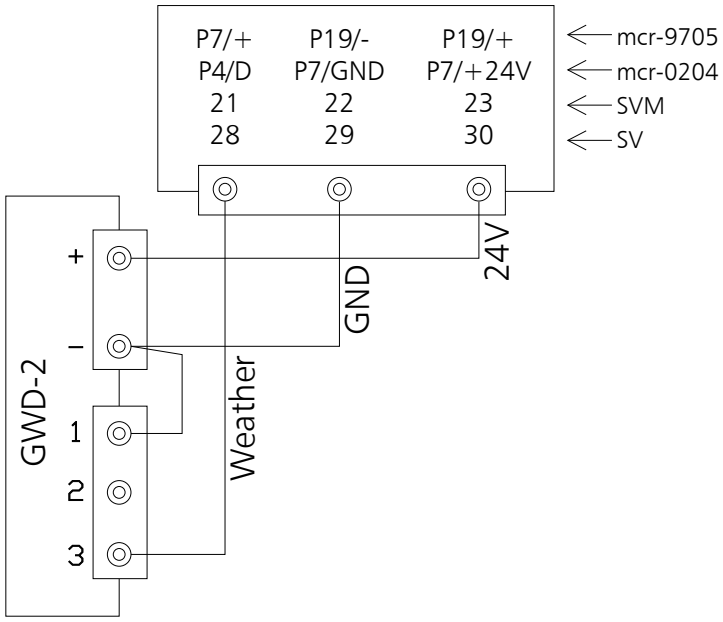


Fig. 27 *Wiring diagram of the mcr 9705, mcr 0204, mcr SVM and mcr SV-ds smoke exhaust control units with the GWD-2 sensor*

3.5 | mcr E electric actuators

Actuators for ventilation are used in smoke vents with pneumatic control, in ventilation vents, and in vents in continuous rooflights. They can be controlled through LT ventilation push button and/or mcr P054 weather monitoring unit.

Fig. 28 *mcr E electric actuators*

» Technical data

ACTUATOR TYPE	LOAD CAPACITY	CLOSING FORCE	POWER CONSUMPTION	EXTENSION	CASING MATERIAL	OPERATING MODE (AS PER DIN VDE 0530)
	[N]	[N]	[W]	[mm]		
E-300-230	500	250	23	300	plastic	S3 25%
E-500-230	500	250	23	500	plastic	S3 25%
E-750-230	500	250	23	750	plastic	S3 25%

» Technical drawings

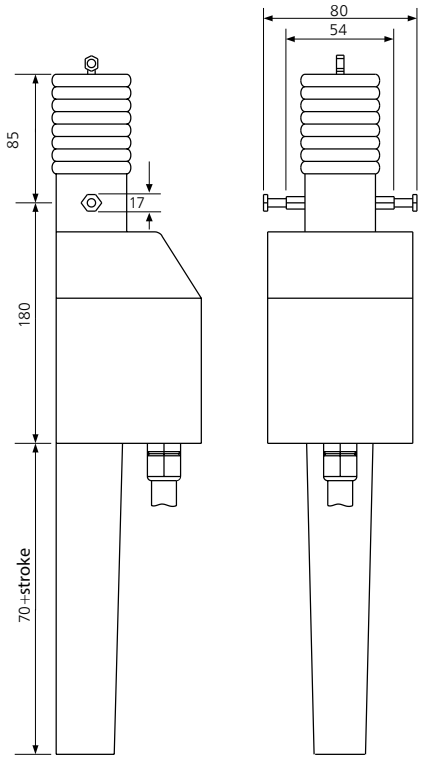


Fig. 29 *Dimensions of mcr E actuator*

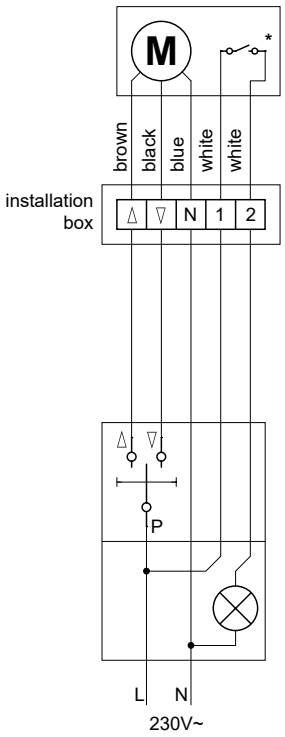


Fig. 30 *Connections diagram for mcr E actuator*

3.6 | Timotion VN1 electric actuators

The VN1 linear actuator has been designed specifically for ventilation applications. The VN1 is made of high-quality aluminium. The VN1 model in the AC version is equipped with a built-in Switched-Mode Power Supply (SMPS), which enables power supply with alternating current.

Fig. 32 Timotion VN1 electric actuators

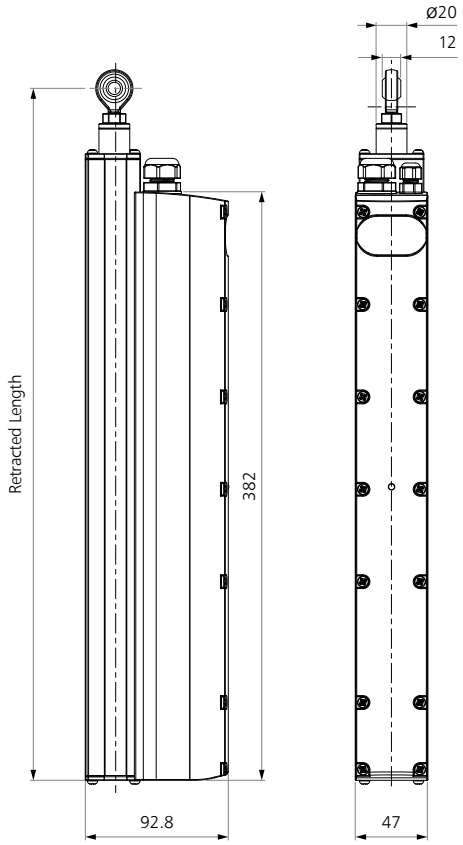
» Technical data

PARAMETER	VALUE
max. load	3500 N (push), 2000 N (pull)
max. speed at max. load	3.8 mm/s
max. speed at no load	13 mm/s
retracted length	≥ 414 mm (AC version)
IP rating	IP 66
stroke	20 – 500 mm
voltage	100 – 240 V~ (50Hz)
operational temperature range	-15°C ÷ +50°C
materials	aluminium

ACTUATOR TYPE (*)	PUSH	PULL	SELF LOCKING FORCE	DUTY CYCLE	230 V~			
					TYPICAL CURRENT [A]		TYPICAL SPEED [mm/s]	
	[N]	[N]	(N)		NO LOAD	WITH LOAD	NO LOAD	WITH LOAD
B	500	500	2500	10% (2 min. on / 18 min. off)	0.60	0.6	9.6	8.2
C	1000	1000	3500		0.60	0.6	6.0	5.1
D	2000	2000	2500		0.60	1.0	9.6	6.4
E	3500	2000	3500		0.60	1.2	6.0	3.8
F	1600	1600	3500		0.60	0.6	13.0	9.1

*	LOAD [N]	MAX. STROKE [mm]
E	≤ 3500	300
D, F	≤ 2000	450
B, C	≤ 1000	500

» Technical drawings



Wires:

Black – outward
Grey – return
Blue – neutral

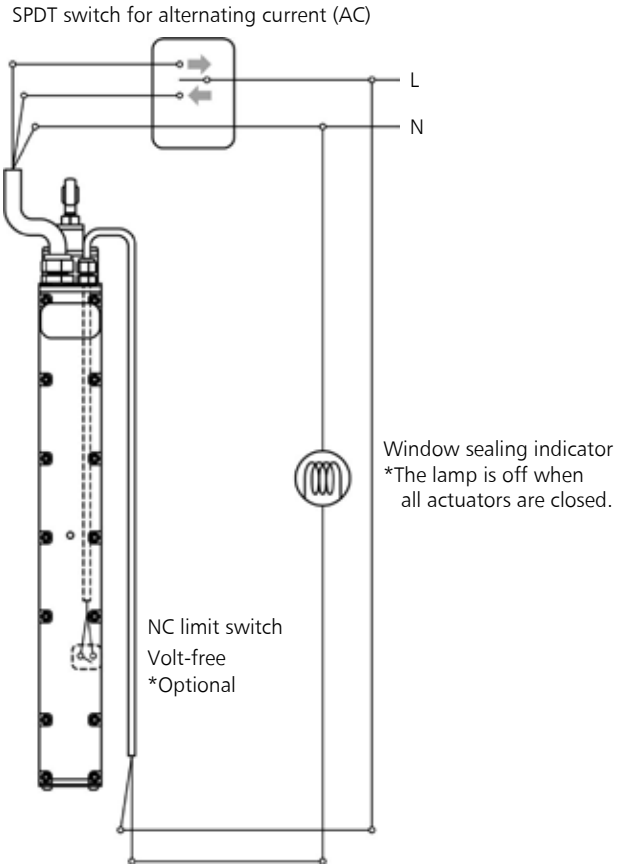


Fig. 33 *Dimensions of Timotion VN1 electric actuators*

Fig. 34 *Connections diagram of Timotion VN1 electric actuators*

3.7 | LT ventilation push button switch

Used for activating (opening and closing) ventilation vents or windows during regular use.
» casing color: white,
» dimensions: 80 x 80 x 55 mm.

Electric diagram

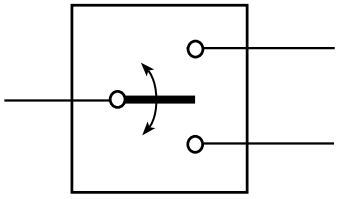
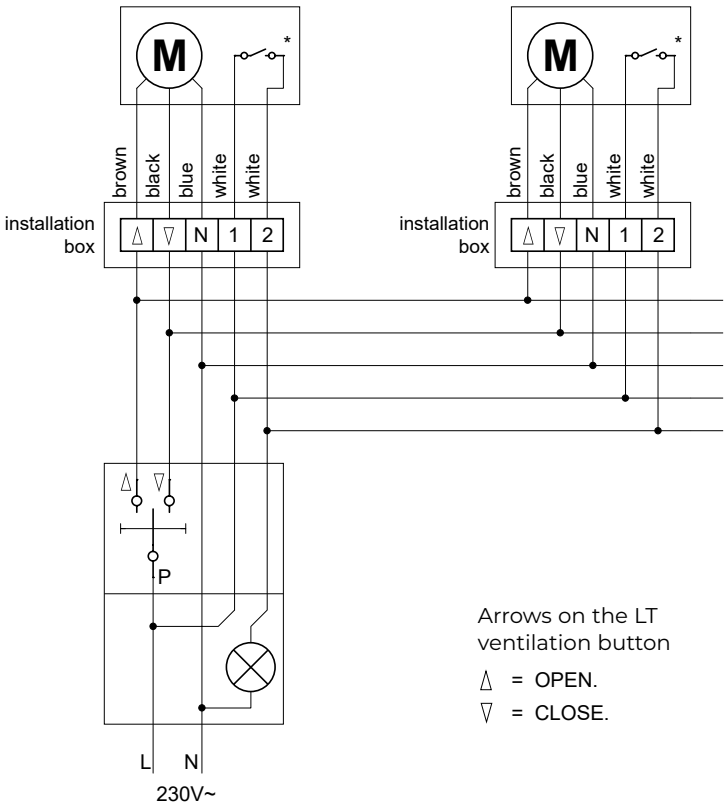


Fig. 35 *LT ventilation button switch*

3.8 | Configurations of 230 V~ electric ventilation control system



NOTE
The use of weather automatics in ventilation vents and windows is recommended.

Fig. 36 *Connections diagram for 230 V~ electric ventilation control system*

3.9 | Electric ventilation control system – with weather monitoring unit

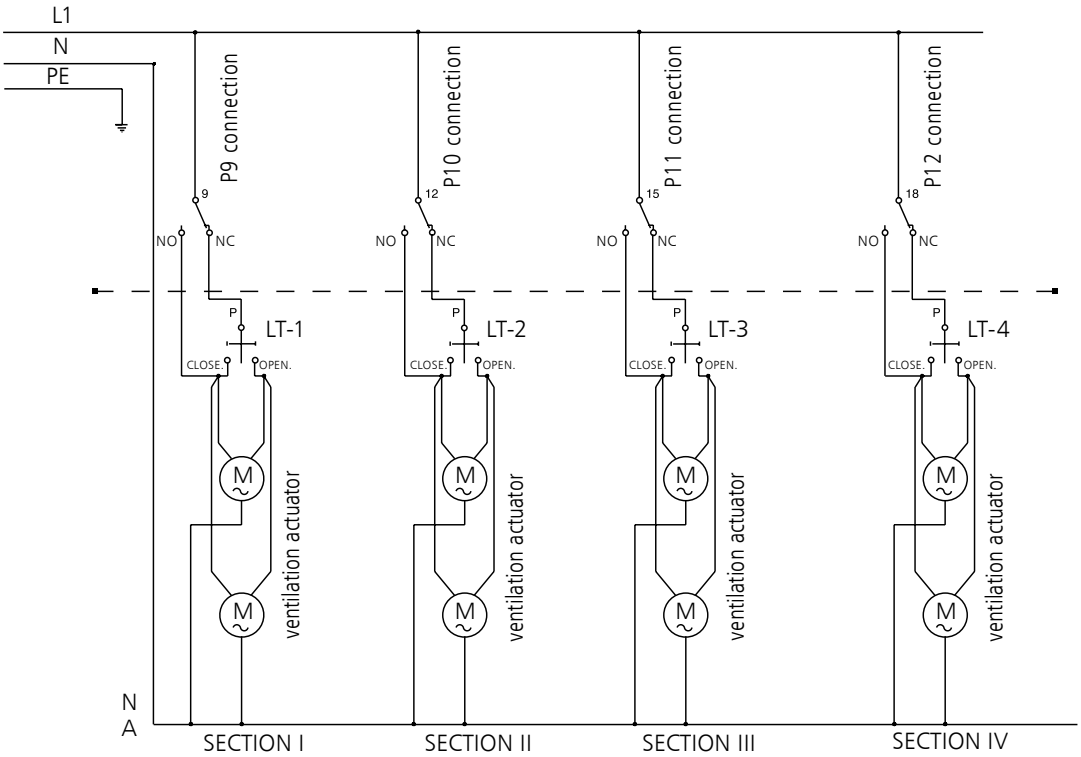
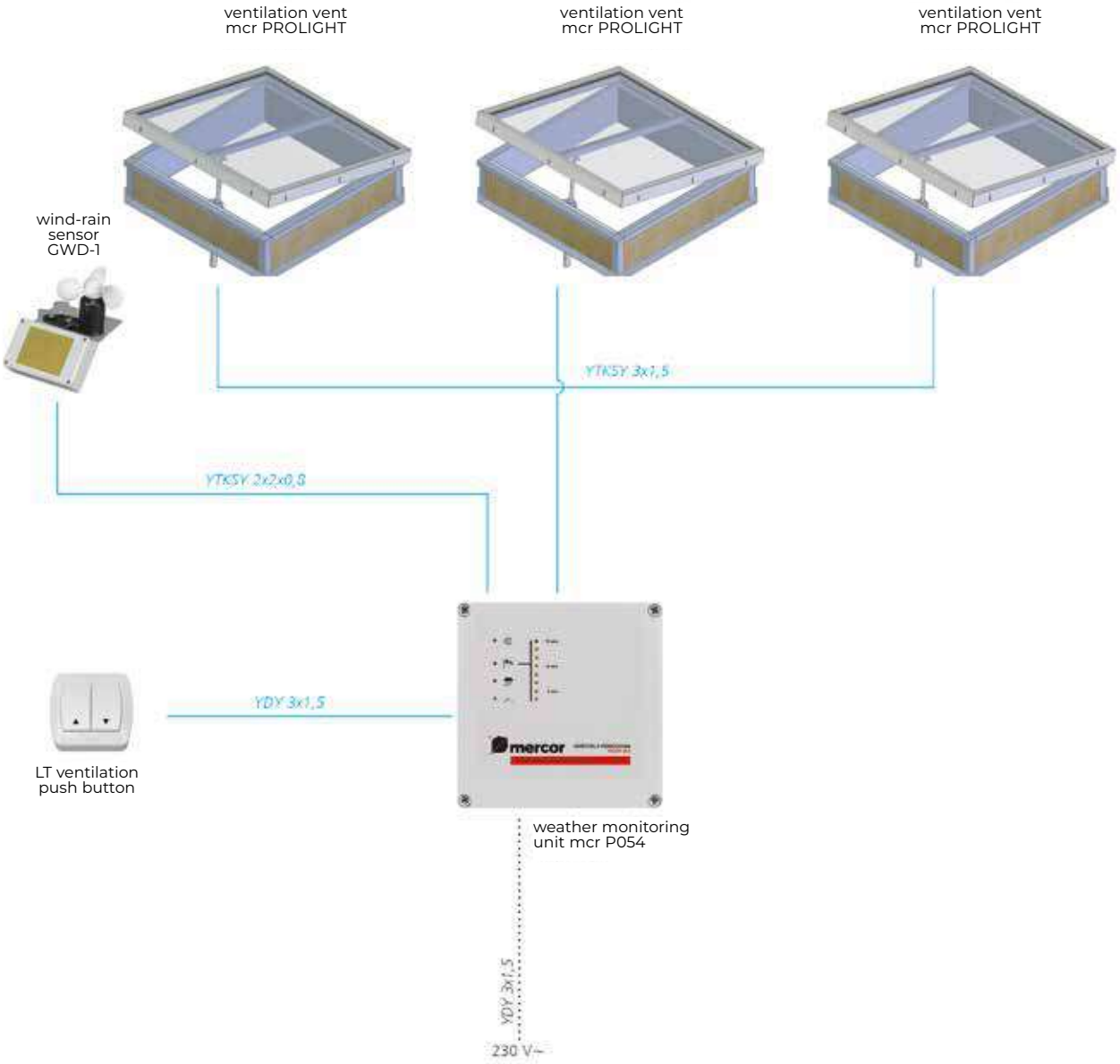


Fig. 37 *Connections diagram of ventilation actuators to mcr P054 weather monitoring unit and GWD-1 wind-rain sensor*

3.10 | Example configurations of 230 V~ electric ventilation control system



4. | 24 V-/48 V- smoke exhaust & ventilation control system

4.1 | mcr SVM/SVM EI 24 V- 5 A or 8 A control unit

Classification in accordance with EN 12101-10 (CE Certificate). mcr SVM control unit is used to activate smoke exhaust devices by alarm signal from various sources. It allows to operate one fire zone and one comfort ventilation group. The control unit is supplied from 230 V~ and provides 24 V- output. Batteries allow for a 72 h stand-by, and at least a single launch of vents in that time.

The control unit allows for:

- remote alarm activation from Fire Alarm System,
- alarm activation by mcr MCP fire alarm buttons,
- automatic alarm activation from smoke detectors,
- comfort ventilation through manual buttons,
- comfort ventilation through remote control (option),
- transfer of all information to another SVM or SV-ds control unit through relay bus,
- automatic closing of vents opened for ventilation in case of rain or strong wind, in response to a signal from wind and rain sensor,
- displaying the unit status through LEDs on its face plate and buzzer,
  - OK,
  - control unit failure,
  - actuator line failure,
  - AC supply failure,
  - DC battery failure,
  - alarm state,
  - opening of the vent,
- SVM control panel with EI option (SVM EI) is in addition equipped with: “The Fireman Priority” override switch input, which allows for the Fireman to control the panel regardless of sensor inputs.

Fig. 38 *mcr SVM/SVM EI*

TECHNICAL SPECIFICATIONS	SVM 24 V- 5 A	SVM 24 V- 8 A
Power supply	230 V~ / max. 1.2 A	230 V~ / max. 1.7 A
Output supply	24 ÷ 28 V-	24 ÷ 28 V-
Motor outputs	1 pcs. (line detection: 1 – 4 lines)	1 pcs. (line detection: 1 – 4 lines)
Max. load	5 A	8 A
Batteries	2 pcs. 12 V- / 7.2 Ah	2 pcs. 12 V- / 7.2 Ah
Dimensions (W x D x H)	238 x 113 x 286 mm	238 x 113 x 286 mm
Fire groups	1 pcs. with line detect. / Max. power consumption for fire switches (LED + buzzer) = 17.6 mA = approx. 8 fire switches	
Comfort groups	1 pcs. unlimited number of comfort switches	
Detector (smoke/heat) input	1 pcs. with line detection / Max. power consumption for detectors = 2.2 mA = approx. 22 pcs. detectors. Trigger point 30 mA	
Weather sensor input/ close all	Yes	Yes
Bus communication	Yes – connection of 2 – 35 pcs. control panels – line detection	

4.2 | mcr SV-ds 24 V-/48 V- control unit

Classification in accordance with EN 12101-10 (CE Certificate). mcr SV-ds control unit is used to activate smoke exhaust devices by alarm signal from various sources. It allows to operate one or two fire zones and comfort ventilation groups. The control unit is supplied from 230 V~ and provides 24 V- or 48 V- output. Batteries allow for a 72 h stand-by, and at least a single launch of vents in that time.

The control unit allows for:

- remote alarm activation from Fire Alarm System,
- alarm activation by mcr MCP fire alarm buttons,
- automatic alarm activation from smoke detectors,
- comfort ventilation through manual buttons,
- comfort ventilation through remote control (option),
- transfer of all information to another mcr SV-ds or mcr SVM control unit through relay bus,
- automatic closing of vents opened for ventilation in case of rain or strong wind, in response to a signal from wind and rain sensor,
- displaying the unit status through LEDs on its face plate and buzzer:
  - OK,
  - control unit failure,
  - actuator line failure,
  - AC supply failure,
  - DC battery failure,
  - alarm state.

Fig. 39 *mcr SV-ds*

TECHNICAL SPECIFICATIONS	mcr SV 24 V-xx-ds Control Panels	mcr SV 48 V-xx-ds Control Panels
Power supply	230 V~ ± 15% / max. 5 A	230 V~ ± 15% / max. 10 A
Output supply	24 V-	48 V-
Motor outputs	2 pcs. (line detection: 1 – 10 lines)	2 pcs. (line detection: 1 – 10 lines)
Max. total load	8 A / 24 A / 30 A / 32 A	8 A / 24 A / 30 A / 32 A
Max. load each motor output	4 A / 16 A	4 A / 16 A
Batteries	8 A – 24 A = 2 pcs. 12 V- / 7.2 Ah 30 A – 32 A = 2 pcs. 12 V-/ 12 Ah	8 A – 24 A = 4 pcs. 12 V- / 7.2 Ah 30 A = 2 pcs. 12 V / 12 Ah + 2 pcs. 12 V- / 7.2 Ah 32 A = 4 pcs. 12 V-/12 Ah
Dimensions (W x D x H)	343 x 178 x 450 mm	343 x 178 x 450 mm
Fire groups	1 or 2 pcs. (by dip switch) with line detect. / Max. power consumption for fire switches (LED + buzzer) = 14 mA = approx. 6 fire switches	
Comfort groups	1 or 2 pcs. (by DIP switch) – Unlimited number of comfort switches	
Detector (smoke/heat) input	2 lines max. 22 pcs. on each / max. power consumption 1.1 mA per line ≈ approx. 2 x 22 = 44 detectors. Trigger point 30 mA	
Weather sensor input/ close all	Yes	Yes
Detector (smoke/heat) input	Yes – connection of 2–10 control panels – line detection	

4.3 | Fire Switch mcr MCP / “Firemans Priority Switch” with reset

Fire alarm button is used in desmoking systems for manual alarm triggering and for indication of alarm or failure status. Fire Switch mcr MCP or “Firemans Priority Switch” with reset is designed for mcr SVM or mcr SV-ds control units.

Technical Data
mcr MCP
Functions: Alarm (open), reset and buzzer off
LED indication: “ok” (**green**), “error” (**yellow**), “alarm activated“ (**red**), “open” (**blue**)
Size: 125 mm x 125 mm x 36 mm (W x H x D)
Temperature range: (-25°C to + 60°C)
Color: Grey or Orange
Protection degree: IP IP43, IP54 and IP65

Fig. 40 *mcr MCP*

Technical Data
“Firemans Priority Switch” with reset
Functions: Manual override of alarm to open or close smoke vent
LED indication: Open / Close (**blue**)
Size: 125 mm x 125 mm x 35 mm (W x H x D)
Color: Orange
Protection degree: IP 40

Fig. 41 *Firemans Priority Switch*

4.4 | mcr AR/AWR 24/250 Wind & Rain Sensor

Wind and Rain Sensor consists of a wind wheel and a rain sensor surface. It is developed for automatic control of smoke and comfort ventilation system. Sensor is equipped with a potential free relay with a contact rating of 250 V~ / 8 A or 24 V- / 8 A. In case of wind and/or rain the relay is activated. Settings for the wind trigger point is adjusted using rotary switch on the main PCB. It is designed for mcr SVM or mcr SV-ds control units.

Technical Data
Power supply: 18 V – 35 V- / 20 V – 35 V- / 200 V – 250 V~
Output contact: NO-NC 1 x potential free change-over contact
Contact rating: 250 V~ / 8 A or 24 V- / 8 A
Dimensions: 80 x 160 x 55 mm (W x H x D / without wind wheel)
Weight: approx. 0.7 kg
Protection class: IP 65
Setting of the wind mode: approx. 1–9 m/s (±20%)
CE-marking: in accordance with the EMC – directive and low voltage directive
Connecting the controller has to be carried out by professionals
The sensor must be cleaned regularly, depending on soil degree, with a wet cloth with water – non abrasive

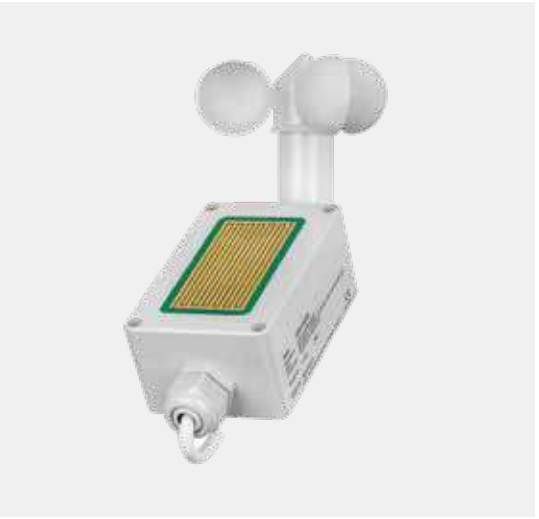


Fig. 42 *mcr AR/AWR 24/250 Wind & Rain Sensor*

4.5 | Remote Control for mcr SVM and mcr SV-ds control units

Enables wireless control of comfort ventilation in mcr SVM and mcr SV-ds control units. Easy installation – simply fit the RF-receiver PCB into the socket. The remote control is paired with the RF-receiver PCB from factory, but it is possible to connect more remote controls.

Technical Data
Battery: 12 V- / 33 mAh type LRV08
Battery lifetime: approx. 2000 of 1 sec. operate function
One receiver can memorize maximum 20 transmitters / remote controls
Carrier frequency: 868.915 MHz
Range: Line of clear sight approx. 400 meters
Protection degree: IP 65

Fig. 43 *Remote Control for mcr SVM and mcr SV-ds control units*

4.6 | Electric chain actuator mcr HCV Door Drive 24/36/48 V- for all doors

» for all doors,
» compact and elegant design,
» built-in electronic overload protection,
» power supply 24/36/48 V-,
» 2 wire line monitoring,
» up to 500 N force at chain entrance point,
» 600 mm chain length,
» soft Close function (reduced closing speed),
» 2.5 m Silicone cable,
» casing made of anodized aluminium,
» tested according to EN12101-2.

Fig. 44 *mcr HCV Door Drive*

Model	Power supply	Pushing / Pulling force (N)	Opening angle	Locking pressure (N)	Protection	Temperature	Speed (mm/s)	Size (mm) (L x W x H)
HCV 500/600mm	24 V- / 1.4 A 36 V- / 1.05 A 48 V- / 0.7 A	500 / 500	90°	2000	IP 32	-25°C ÷ +75°C	10	587 x 82 x 41

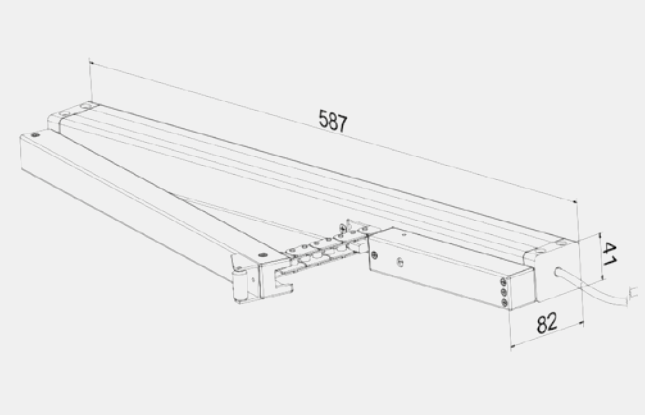


Fig. 45 *Dimensions*

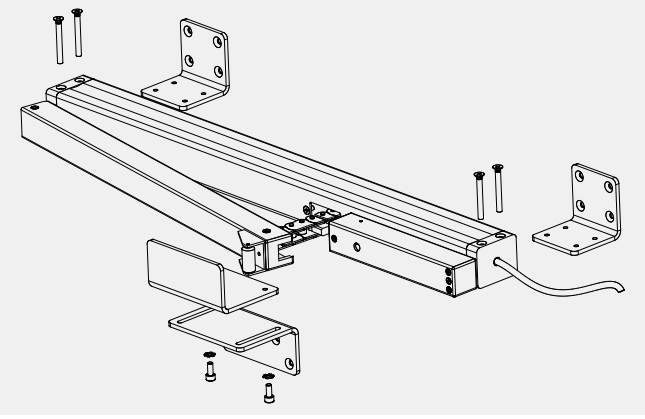


Fig. 46 *Opening bracket set for Inwards*

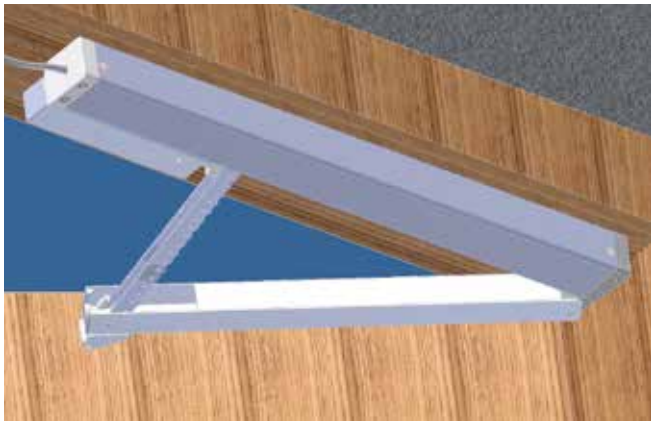


Fig. 47 *Outwards opening*

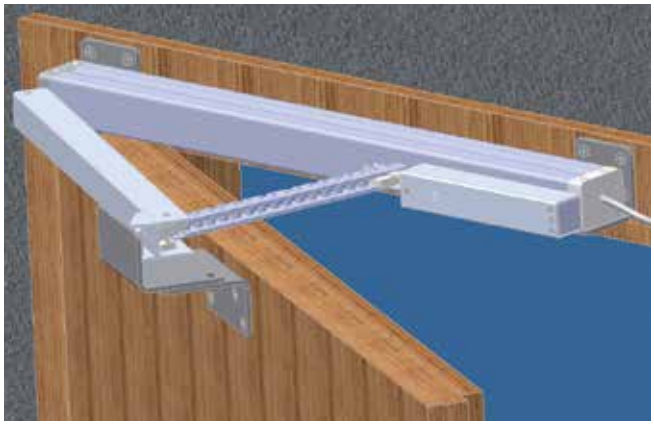
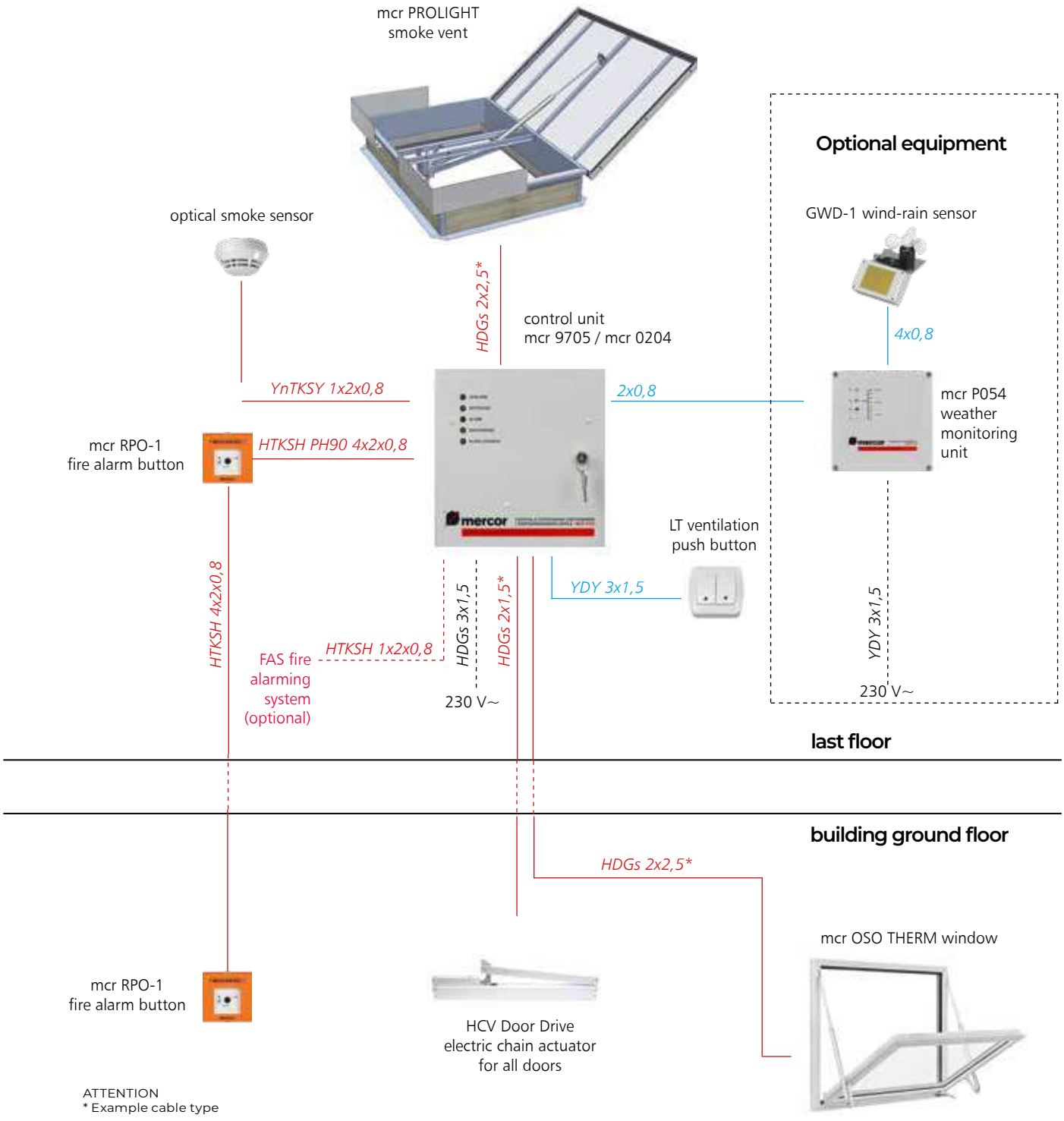


Fig. 48 *Inwards opening*

4.7 | mcr PROLIGHT – example connection diagram of 24 V- smoke exhaust and ventilation in staircase



ATTENTION
* Example cable type

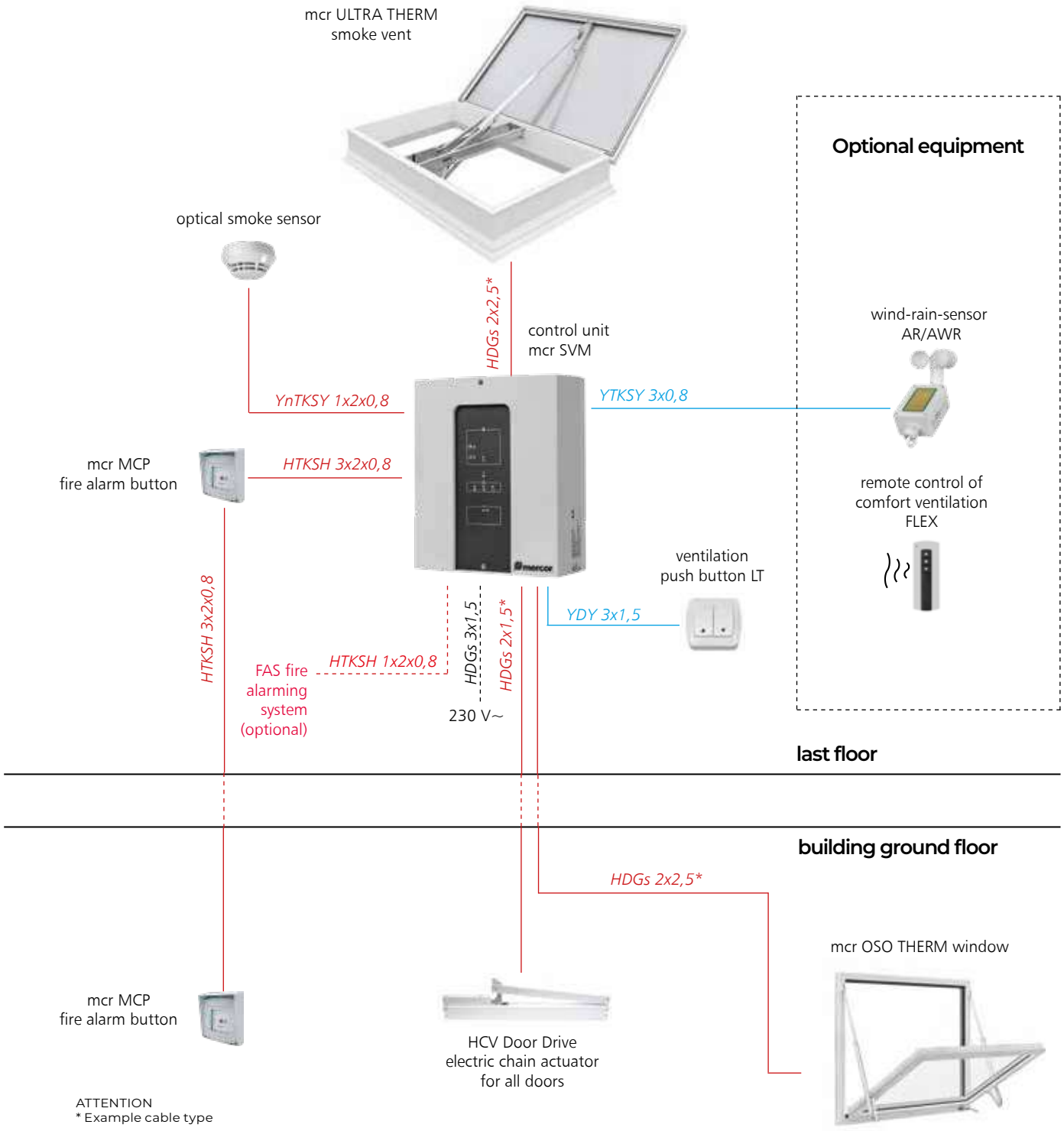
» **Description of the functioning of the electric smoke exhaust mcr Therm System (with mcr PROLIGHT smoke vents)**

The smoke exhaust system is activated when a fire starts. This automatically opens mcr PROLIGHT smoke vents, mcr OSO THERM windows. The entire system is operated by the mcr 9705 or mcr 0204 control unit.

Activation of the electric smoke exhaust system:
» **automatically** – when smoke is detected by the optical smoke detector,
» **automatically (remotely)** – via a signal e.g. from the fire alarming system FAS (as an option when connected),
» **manually** – by the operator, hitting fire alarm button on the mcr RPO-1.

Electrical equipment can also be used for daily, natural ventilation of the room using the LT ventilation push button. The mcr wind-rain sensor GWD-1 automatically closes the smoke vents during adverse weather conditions (rain or wind).

4.8 | mcr ULTRA THERM – example connection diagram of 24 V- smoke exhaust and ventilation in staircase



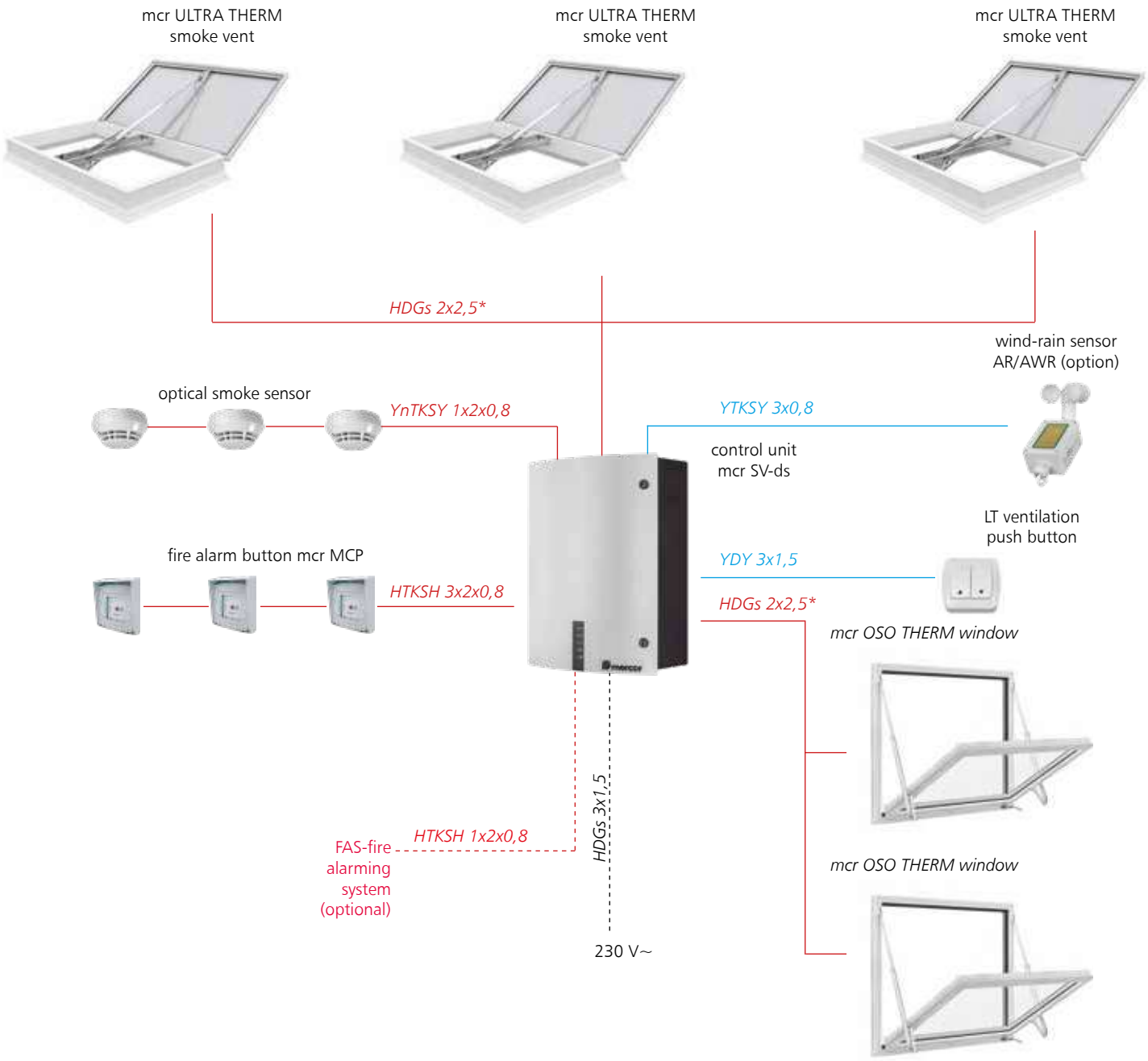
» **Description of the functioning of the electric smoke exhaust system (with mcr ULTRA THERM smoke vents)**

The smoke exhaust system is activated when a fire starts. This automatically opens mcr ULTRA THERM smoke vents and mcr OSO THERM windows. The entire system is operated by the mcr SVM control unit.

Activation of the electric smoke exhaust system:
» **automatically** – when smoke is detected by the optical smoke detector,
» **automatically (remotely)** – via a signal e.g. from the fire alarming system FAS (as an option when connected),
» **manually** – by the operator, hitting fire alarm button on the mcr MCP.

Electric devices can also be used for daily, natural room ventilation with the LT ventilation button. The electric system can be equipped with a wind-rain sensor, causing automatic closing of the ventilation vents during adverse weather conditions (rainfall or wind).

4.9 | mcr ULTRA THERM – example connection diagram of 24 V-/48 V- smoke exhaust and ventilation in staircase



» **Description of the functioning of the electric smoke exhaust as mcr Therm System (with mcr ULTRA THERM smoke vents)**

The smoke exhaust system is activated when a fire starts. This automatically opens mcr ULTRA THERM smoke vents, mcr OSO THERM windows and air supply doors. The entire system is operated by the mcr SV-ds control unit.

Activation of the electric smoke exhaust system:
» **automatically** – when smoke is detected by the optical smoke detector,
» **automatically (remotely)** – via a signal e.g. from the fire alarming system FAS (as an option when connected),
» **manually** – by the operator, hitting fire alarm button on the mcr MCP.

Electrical equipment can also be used for daily, natural ventilation of the room using the LT ventilation push button. The mcr AR/AWR wind and rain sensor automatically closes the smoke vents during adverse weather conditions (rain or wind).

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