Simply.
More.
Safety.

Operating instructions and safety information

Multialert® mini Version 1.3 Compact control unit for AMFE systems

The Multialert® Mini is a specially developed control unit for optimum integration and control of the AMFE system (Automatic Mini Fire Extinguishing Unit). It combines reliable fire detection with effective alarming and an extended scope of protection for a wide range of applications.

This condition manual has been prepared in accordance with the official manual of the manufacturer Meister Brandschutz GmbH & Ko. KG Version 1.3 Rev. 13.

Contents

1. Preambel

Product : Multialert® mini

Development : Meister Brandschutz GmbH & Co. KG

Version : V1.3 / Rev.13

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Multialert® Mini - Compact control unit for AMFE systems

The **Multialert® Mini** is a specially developed control unit for optimum integration and control of the **AMFE system** (Automatic Mini Fire Extinguishing Unit). It combines reliable fire detection with effective alarming and an extended scope of protection for a wide range of applications.

Main features:

1. **Audio/visual signaling:**
   - Controls external lights and acoustic warning signals (≥ 85 dB at 1 meter) for local alarm in case of fire.
2. **Cascading of several AMFE small extinguishing devices:**
   - Enables the connection and synchronous activation of up to two AMFEs to expand the protection volume (up to max. 6 AMFEs optional). Fire detection is carried out using a thermal glass bulb.
3. **Optional smouldering fire detection:**
   - Support of up to two smoke switches for early detection and triggering in the event of smouldering fires.

General information

1.1. Information on these instructions

These instructions enable safe and efficient handling of the AMFE system and Multialert ® mini. The instructions are an integral part of the Multialert ® mini and must be kept in the immediate vicinity and accessible to personnel at all times until the end of the product's service life. Personnel must have carefully read and understood these instructions before starting any work. The basic prerequisite for safe working is compliance with all the safety information and instructions in this manual. In addition, the local accident prevention regulations and general safety regulations for the area of application of the system apply. Illustrations in this manual are for basic understanding and may differ from the actual design of the system.

1.2. Symbol explanation

Safety informations

Safety informations in this manual are identified by symbols. The safety instructions are introduced by signal words that express the extent of the hazard. Always follow the safety instructions and act with caution to avoid accidents, personal injury and damage to property.

Danger!

… indicates an immediately dangerous situation that will lead to serious injury if not avoided.

Caution!

… ... indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

Attention!

... indicates a potentially dangerous situation that can lead to material damage if it is not avoided.

1.3. Limitation of liability

All information and instructions in this manual have been compiled taking into account the applicable standards and regulations, the state of the art and our many years of knowledge and experience.

The manufacturer accepts no liability for damage resulting from

- Non-compliance with the instructions
- Improper use
- Use by untrained personnel
- Unauthorised modifications
- Technical modifications
- Use of non-approved spare parts, components and accessories

The actual scope of delivery may differ from the explanations and illustrations described here in the case of special versions, the use of additional order options or due to the latest technical changes.

The obligations agreed in the supply contract, the general terms and conditions and the manufacturer's terms and conditions of delivery and the statutory provisions in force at the time of conclusion of the contract shall apply.

We reserve the right to make technical changes in the interests of improved performance and further development.

1.4. **Copy right protection**

This manual is protected by copyright and is intended for internal use only.

Transfer of the manual to third parties, duplication in any form - including extracts - as well as utilisation and/or communication of the contents are not permitted without the written consent of Meister Brandschutz GmbH & Co. KG except for internal purposes.

Infringements will result in compensation for damages. Further claims remain reserved.

1.5. Change notes

Revision	Processor	Comment
1	RB	Complete revision incl. layout / design
2	RB	Adjust maintenance mode, percentage deviation 24 V
3	RB	Changing the schemes
4	RB	Installation position
5	RB	Words
6	RB	Description Levels Pictures Swap
7	RB	Update images and notes/dangers
8	RB	Network extensions / further additions
9	RB	Cable length details
10	RB	Fuse
11	RB	IBN Details
12	AS	Reference Commissioning adapter added
13	AS	Editorial changes. Change to Master Fire Protection

1.6. Safety

This section provides an overview of all important safety aspects for optimum protection of personnel and for safe and trouble-free operation.

Failure to observe the instructions and safety information in this manual can lead to serious hazards.

1.7. Responsibility of the operator

Definition of operator:

The customer's company (from the point of view of Meister Brandschutz GmbH & Co. KG) and its customers as well as the operating and maintenance personnel who operate and maintain the Multialert ® mini are to be regarded as the operator.

The Multialert ® mini is used in the commercial sector. The operator of the system is therefore subject to the legal obligations regarding occupational safety.

In addition to the safety instructions in this manual, the safety, accident prevention and environmental protection regulations applicable to the area of use of the system must be observed.

The following applies in particular:

- The operator must inform himself about the applicable health and safety regulations and carry out a risk assessment to identify additional hazards arising from the specific working conditions at the installation site. These must be implemented in the form of operating instructions for the operation of the system.
- During the entire period of use of the system, the operator checks whether the operating instructions he has drawn up correspond to the current status of the regulations and adapts them if necessary.
- The operator clearly regulates and defines the responsibilities for installation, operation, maintenance and cleaning.
- The operator shall ensure that all employees who work with the system have read and understood the operating instructions. In addition, the personnel are trained at regular intervals and informed about the dangers.
- The operator provides the personnel with the necessary protective equipment. Furthermore, the operator is responsible for ensuring that the system is always in perfect technical condition, therefore the following applies:
- The operator ensures that the maintenance intervals described in these operating instructions are adhered to.
- The operator regularly checks all safety equipment for functionality and completeness
- The internal guidelines and regulations of the operating company must be observed.

1.7.1. **Qualifications**

Danger!
Risk of injury due to insufficient qualification!
Improper handling can lead to personal injury and damage to property.
Therefore:
- All work must only be carried out by qualified personnel.

The following qualifications for various areas of activity are explained in the operating instructions.

- Instructed person has been instructed by the operator about the tasks assigned to them and the possible dangers of improper behaviour.
- Specialised personnel are able to carry out the work assigned to them and to recognise and avoid possible dangers independently due to their specialist training, knowledge and experience as well as knowledge of the relevant regulations.
- Qualified electrician is able to carry out work on electrical systems and independently recognise and avoid potential hazards due to their specialist training, knowledge and experience as well as knowledge of the relevant standards and regulations.
- The qualified electrician is trained for the specific location in which they are working and is familiar with the relevant standards and regulations.
- Only persons who can be expected to carry out their work reliably are authorised as personnel. Persons whose ability to react is impaired, e.g. by drugs, alcohol or medication, are not authorised.
- When selecting personnel, observe the age and occupation-specific regulations applicable at the place of use.

1.7.2. **Unauthorised persons**

Danger for unauthorized persons!

Unauthorised persons who do not meet the requirements described here are not aware of the dangers in the work area.

Therefore:

- Keep unauthorised persons away from the work area.
- If in doubt, approach unauthorised persons and instruct them to leave the work area.
- Stop work as long as unauthorised persons are in the work area.

1.7.3. **Work on wiring and other electrical equipment**

Danger for unauthorized persons!

Insufficiently trained personnel or qualified electricians must not work on the electrical components or systems.

Furthermore, the 5 safety rules must be observed under all circumstances.

1. Switch off
2. Secure against being switched on again
3. Ensure that there is no voltage
4. Earthing and short-circuiting
5. Cover or isolate neighbouring live parts.

1.7.4. **Work on the system**

Danger!
Electrical system must be de-energised
De-energise the system when working on it.
Regularly check the system cables for damage.

1.8. Personal protective equipment

Personal protective equipment must be worn at work in order to minimise health hazards.

- The protective equipment required for the respective work must always be worn during work.
- Follow the instructions on personal protective equipment displayed in the work area.

1.8.1. Must always be worn for all work

Wear safety goggles
to protect the eyes from bursting ampoules (glass splinters) and to protect against liquid from the ampoules, to protect against liquid (FK-5-1-12) in the event of release from the AMFE.

1.8.2. Safety data sheet for FK-5-1-12 liquids

CAUTION!
Safety data sheet FK-5-1-12 Liquid is part of the annual safety instruction and must be provided and trained by the operator as important information and hazard information.

1.8.3. Safety data sheet according to 1907/2006/EC

Extinguishing cylinder filled with FK-5-1-12 Engineered Fluid

Danger!
Supplied safety data sheet
Extinguishing cylinder filled with FK-5-1-12 liquid is part of the annual safety instruction and must be provided and trained by the operator as important information and hazard warning.

1.8.4. Glass splinters

CAUTION!
Small glass splinters >5mm are produced when the glass ampoule shatters, cuts are possible.

1.9. Behaviour in the event of danger and accidents

Preventive measures

- Always be prepared for accidents or fire!
- Keep first aid equipment (first aid kit, blankets, etc.) and fire extinguishers to hand.
- Familiarise staff with accident reporting, first aid and rescue equipment.
- Keep access routes clear for rescue vehicles.

Measures in the event of accidents

- Disconnect the power supply.
- Initiate first aid measures.
- Rescue people from the danger zone.
- Inform the person responsible at the scene.
- Alert the emergency services.
- Clear access routes for rescue vehicles.

Operational safety regulations and instructions of the operating company must be observed!

1.10. Skin and eye contact behaviour, inhalation FK-5-1-12

- In case of skin contact → neutralise with plenty of soap and water
- In case of eye contact → remove contact lenses and rinse with plenty of water
- If inhaled → Ventilate well and get fresh air
- If you feel unwell→ consult a doctor

2. Technical data

Multialert ® mini

Electrical characteristics

Rated voltage 24 V DC +/-5 %
Rated current min. 5 A
Control voltage 24 V DC
Max. relay load with resistive load 24/ DC / 3A

If the current load on the contacts exceeds 10mA, the R- AMFE and thus the AMFE system is gradually tripped.

Danger!
Incorrect energisation of the Multialert leads to a defect.
Incorrect energisation of the AMF leads to tripping.

2.1. Operating and safety instructions for the AMFE

The Multialert ® mini may only be operated in conjunction with the AMFE automatic miniature fire extinguishing unit from JOB. The contents of the operating and safety instructions for the AMFE series from JOB GmbH apply.

2.2. Installation position Multialert Mini ®

The Multialert ® mini may be installed on a top-hat rail in any position.

The maintenance switch must be freely accessible in the installation position.

2.3. Cable lengths

Cables connected to the Multialert Mini v1.3 must not exceed 15 metres.

3. Work instruction/ installation

Danger!
Dangerous voltage - always observe the basic safety regulations for electrical engineering.

3.1.1. Danger due to possible remote triggering

CAUTION!
The AMFE may shatter if it is triggered remotely or if maintenance mode is not maintained,
Small glass splinters >5mm are produced when the glass ampoule shatters,
Cut injuries are possible, wear personal protective equipment.

3.1.2. Pressurised liquids escape

CAUTION!
When the glass ampoules burst and the AMFE is triggered, pressurised extinguishing gas there will be an escape of pressurised extinguishing gas.
A safety distance must be maintained.

3.2. **Tested system components: Recommendation**

3.2.1. **External power supply**

Fuse C 6A in front of the power supply unit

Fuse B 4A after the power supply unit

Power supply unit Siemens 24V DC min. 5A

Not preloaded by other consumers

Alternative Siemens 24V DC / 10 A

Fig. 1

Fig. 2

Fig. 3

Fig. 4

To supply the Multialert Mini, it must be ensured that 24 V +/- 3 % and at least 5 A are available.
The 5 A/ 10 A power supply unit must not be loaded with other loads.

3.3. Description of the connections of the Multialert mini

3.3.1. Description of the levels

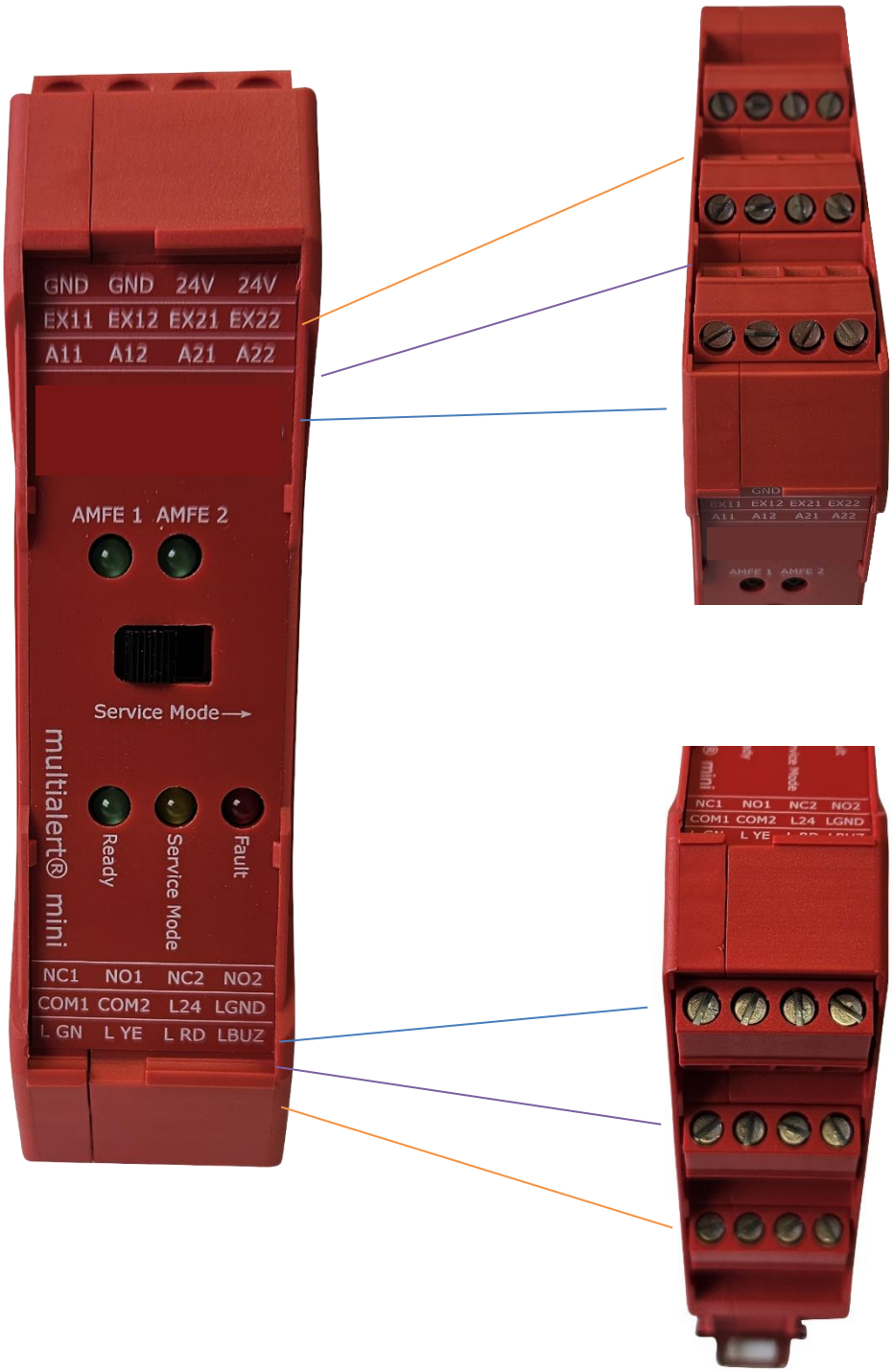


Fig. 5

3.3.2. **Front panel elements**

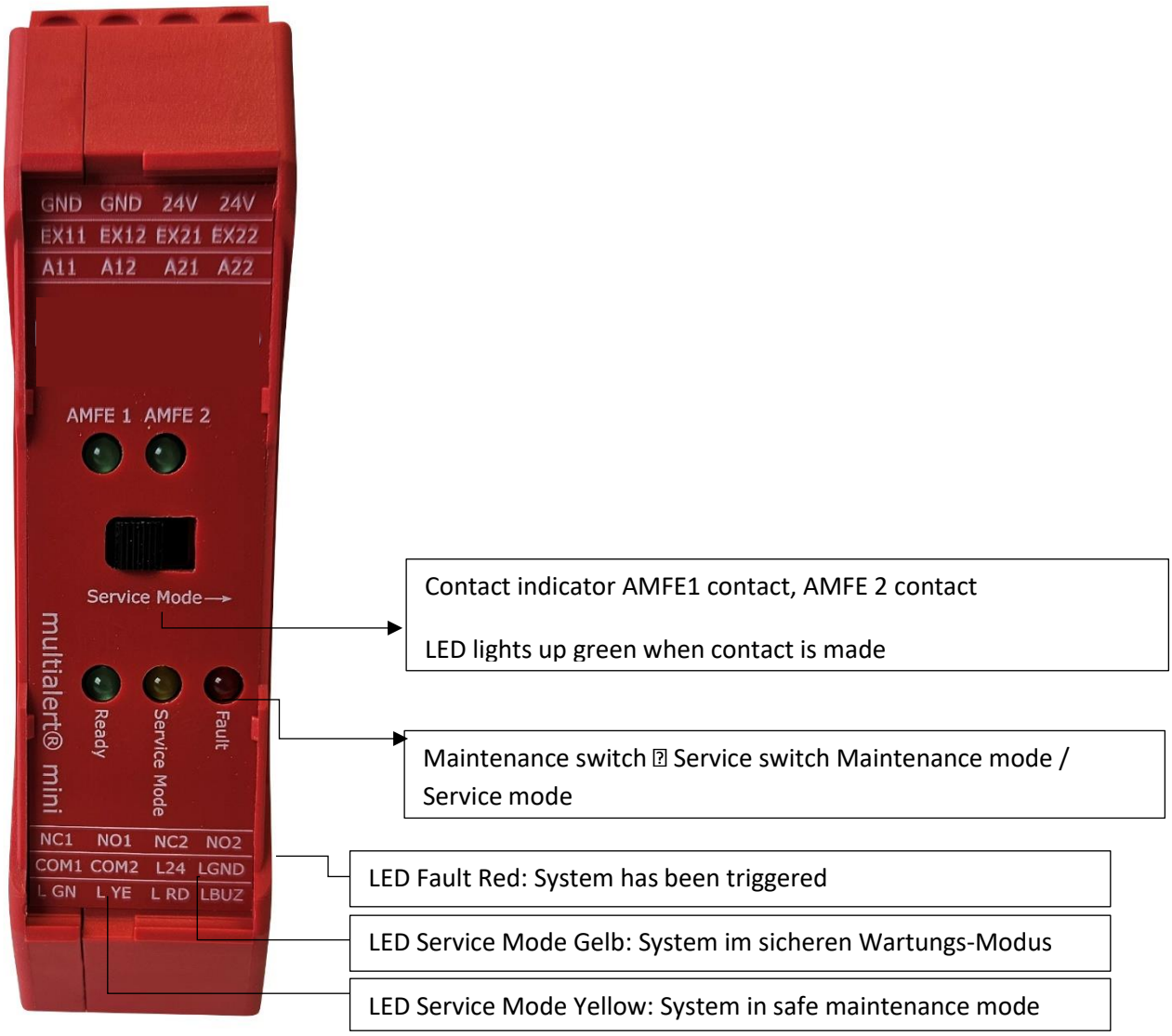


Fig. 6

3.3.3. Upper part connections

Supply Ground Connection internally bridged

Connection 1x GND

Supply 24V DC connection bridged internally

Connection 1x 24V

External smoke detector EX1 Contact 1 / 2 (NC)

Contacts EX11 / EX 12

External smoke detector EX2 Contact 3 / 4 (NC)

Contacts EX21 / EX 22

AMFE 2 connection 1 A21 contact 3

AMFE 2 connection 2 A22 contact 4

AMFE 1 connection 1 A11 contact 1

AMFE 1 connection 2 A12 contact 2

Fig. 7

3.3.4. **Lower part connections**

Fig. 8

Changeover contact 1

NC1 = Normaly Closed 1 NO1 = Normaly Open1

Com1 = 24 V/DC supply of changeover contact 1

Changeover contact 2

NC2 = Normaly Closed 2 NO2 = Normaly Open2

Com2 = 24 V/DC supply of changeover contact 2

Lamp supply

L24 = Supply external lamp with 24 V DC In

LGND = Supply external lamp with earth

(internally bridged) Out

External lamp colour and buzzer connections

LGN = Green lamp signals Ready

LYE = Lamp yellow Signalling maintenance mode

LRD = LAMP Red Signalling Fault

LBUZ = Buzzer Acoustic message Fault

3.3.5. **Prerequisite for connection work Multialert ® mini**

All connection work is carried out without voltage and in maintenance mode.

The voltage is only switched on and maintenance mode exited once the connection work has been completed and checked.

3.4. **Connection work / installation**

3.4.1. **Set maintenance switch to maintenance mode (slide to the right)**

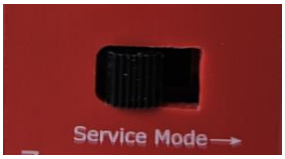


Fig. 9

If the maintenance switch is in service mode (right position), the Multialert Mini V1.3 is in ‘Save Mode’. And the system can be serviced and is ‘switched off’. If the maintenance switch is in Ready Mode (left position), the Multialert Mini V1.3 is in Ready Mode and the system is ‘ready for operation’, in this mode, maintenance work and changes to the system are prohibited.

3.4.2. **Connecting the smoke switch**

(see circuit diagram)

General information Smoke detector:

Indicator light signals the status

Green: Smoke switch active in OK state

Red: Smoke switch active when triggered

JOB Art. no. Sockel 400007

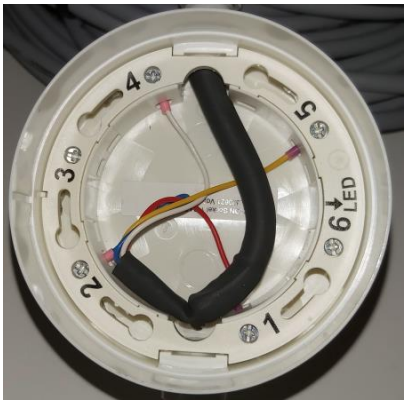


Fig. 11

JOB ART no. Smoke switch 400006

Fig. 12

The smoke switch is removed from the mounting unit by turning it; the connections and mounting unit can be seen in [Fig. 11].

Connection 1 → 24V

Connection 2 → GND

Connections 4 and 5 are the NC / Normally Closed contact of the smoke switch.

Fig. 12] shows the trigger unit of the smoke switch.

The mounting unit is installed in its intended location and wired according to the wiring diagram.

The other end of the cable is connected to the 24 V DC supply as described above. Contacts 4 and 5 of the smoke switch (the NC [Normally Closed] switching contact) are connected to the Multialert mini on EX 11 and EX12 for smoke switch 1 and/or EX 21 and EX 22 for smoke switch 2 according to the circuit diagram.

Fig. 13

Once this wiring work has been completed, the trigger unit of the smoke switch can be plugged into the base, paying attention to the coding and position.

A clockwise turning movement leads to a firm and also detachable connection of the two components.

All 2x2 smoke switch contacts must always be assigned

For the Multialert ® mini to function, both EX1 and EX2 interfaces must be must be assigned the contacts EX11- EX12 and EX21- EX22.
If no smoke detector is available, the EX11 contacts are bridged with EX12 and EX21 with EX22.
Possible combinations:
EX1 = smoke detector or EX1 = cable bridge; contact bridge EX11 with EX12
EX2 = smoke detector or EX2 = cable bridge; contact bridge EX21 with EX22
It is essential that both contacts are connected.
If a contact is not connected and maintenance mode is exited, the system triggers and ignites the connected AMFENs.

3.4.3. **Attach R- AMFEN mechanically**

Attention!
Check the installation conditions at the installation location

Danger!
Check that there is no voltage at the installation location
Establish if necessary

Installation suggestions are available from JOB GmbH.

Info:

- The installation position should be at the top of the switch cabinet.
- The release unit points downwards.
- The maximum position of the release unit is between -45° to vertical and +45°

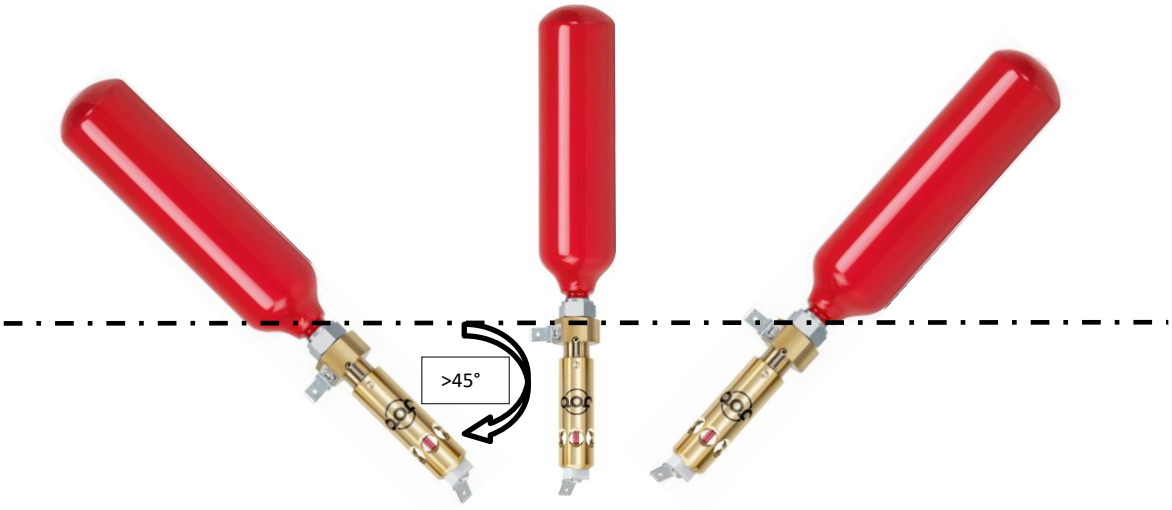


Fig. 14

3.4.4. **Checking the R-AMFE function**

The feedback function of the R-AMFE is achieved by a conductive layer on the glass ampoule in the release unit. The conductive continuity between the two contacts of the release unit can be checked using a multimeter or another suitable measuring device.

The resistance value is approx. 9 Ohm.

Limit values 8 Ohm to 14 Ohm.

The continuity must be guaranteed before installation. See Fig. 15

Fig. 15

If this is not the case, please contact Meister Brandschutz GmbH & Co. KG!

3.4.5. **Connecting the R-AMFEN electrically**

A fire alarm cable is used for the connection. To establish the connection with the R-AMFE, commercially available cable lugs are recommended on the fire alarm cable. [Figure 16, 17].

Information on the electrical connection can be found in the wiring diagram.

(See parts list wiring diagram)

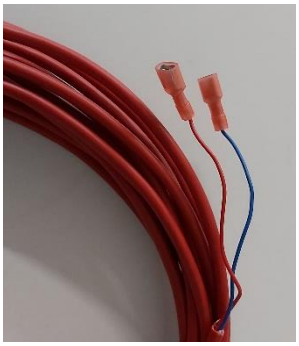


Fig. 16

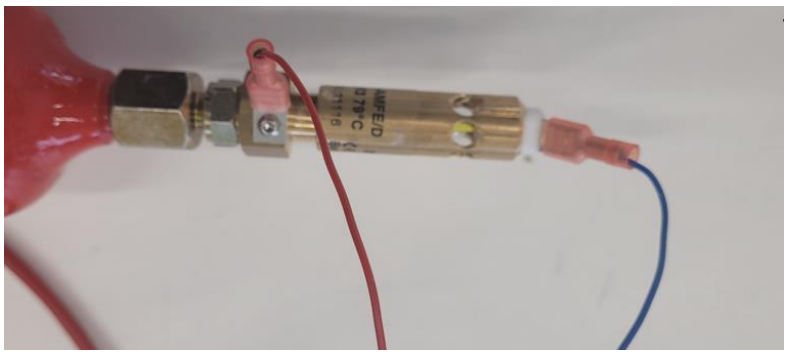


Fig. 17

3.4.6. **AMFE connection on the Multialert ® mini**

Fig. 18

AMFE 1 is contacted at A11 and A12 and signalled on the Multialert Mini AMFE1

AMFE 2 is contacted at A21 and A22 and signalled on the Multialert Mini AMFE 2

Fig. 19

All 2x2 AMFEN contacts must always be assigned
Both LEDs must light up green
For the Multialert ® mini to function, both A1 and A2 interfaces must be assigned to the contacts A11- A12 and A21- A22.
If only 1 AMFE is available, the contacts A11 with A12 or A21 with A22 are provided with a special fuse that can be ordered from Meister-Automation GmbH.
Possible combinations are possible:

AMFE 1	AMFE 2
AMFE 1	Miniature fuse (G-fuse link FF 100mA / 250 V)
Miniature fuse (G-fuse link FF 100mA / 250 V)	AMFE 2

3.4.7. **Miniature fuse holder with cable for connection**

Miniature fuse holder with fuse FF 100mA/250V

G-fuse link

20x5mm

Fast acting 100mA / 250V

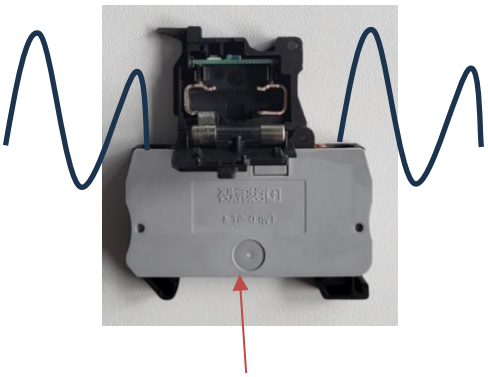


Fig. 20 Fig. 21 Fig. 22

The miniature fuse with holder replaces the second AMFE if only one AMFE is used.

The LED in the fuse holder lights up red if the fuse is defective.

This must then be replaced.

The miniature fuse is also recognised as an AMFE, see Fig. 22

Caution!
If a continuous contact of an AMFE or a fuse is missing in the overall system, the AMFE glass ampoule may have already burst or the fuse may already be defective. In this case, the entire system with all connected AMFEs will trip when maintenance mode is exited.

Caution!
In the event of mechanical stress, as well as weather-specific and environmental stresses, the contacting of the AMFE and the fuse in maintenance mode must be checked regularly for proper function.
If necessary, the contacts should be professionally cleaned and replaced at regular intervals.

After the AMFE has tripped, the microfuse must be replaced.

3.4.8. **Connection of the changeover contacts**

Fig. 23

Changeover contact 1: COM1, NC1, NO1

Changeover contact 2: COM2, NC2, NO2

The two potential-free changeover contacts can be used to switch resistive loads with

24 V/DC max. 3A can be switched on the two potential-free changeover contacts.

This could be used to switch off a power contactor of a relay or a fan.

An external 24 V relay is required for this.

Danger due to external voltage on the changeover contacts
Dangerous voltage - always observe the basic safety regulations for electrical engineering!
! Label external voltages!

3.4.9. **Connection of horn and green/yellow/red lamp/buzzer**

Recommended luminaire: Werma - MC55 RGY Buzzer M12 plug 24VDC

Bild 24

Signal	Cable colour	Function	Approach
Horn LBUZ	Grey	Acoustic warning signal Multialert ® mini triggered	LBUZ
Red LRD	Red	Visual warning signal Multialert ® mini triggered	L RD
Green L GN	Green	Optical OK Multialert ® mini not triggered	L GN
Yellow LYE	Yellow	Optical signal Multialert ® mini in maintenance mode	L YE
L 24	Normal Dark blue	24 V DC supply voltage input	L24
LGND	White	Minus is fed in internally output	LGND

Technical data of the lamp outputs

24 V DC

Holding current <= 150mA individually.

Holding current <= 350 mA for the entire lamp.

3.4.10. Final theses

- Check wiring and tight fit of all elements
- Energise the supply line
- Switch on fuses
- R- AMFEN Check number
- Check fuse / microfuse if necessary
- All R-AMFEN tripping units connected and contact established
- Glass ampoule of the R-AMFEN not damaged
- Smoke switch correctly connected and tested
  (see Smoke switch maintenance)
- All other work completed

- When contact is made with the AMFEN or the replacement fuse, both LEDs light up green.
- If one of the AMFEN LEDs does not light up, there is a fault. See chapter 3.4.6
- If the green LED lights up on the smoke switch, they are supplied with voltage.
- The Normaly Closed contacts in the smoke switch must be wired to the Multialert Mini so that both intended inputs are contacted. If this is not the case, an error has occurred. See chapter 3.4.2

If the maintenance mode is exited and the above points are not observed and a contact point on the Multialert is not assigned or contacted, the system and thus all other AMFENs are triggered immediately.

All contacts must be made accordingly!

Switch off the maintenance switch

System switched active

Multialert ® mini switches to Ready mode

LED lights up green

3.5.System test after commissioning

3.5.1. Commissioning to test the functionality of the system

A complete, fully installed and commissioned system is assumed as a test prerequisite.

a) Maintenance mode status switch is in the right position in maintenance mode

b) Lamp on the Multialert ® mini and any connected external lamp light up orange

c) Disconnect the flat cable connectors from the connected AMFENs as shown in [Fig. 16]

d) Connect the commissioning adapter [Fig. 25] to the fire alarm cables [Fig. 17] of the AMFE:

[Fig. 25]

a) Insert an intact G-fuse link Flink 100mA / 250 V.

b) Once you have replaced all connected AMFENs with the commissioning adapters for the time being, you can proceed with commissioning as described in the previous points.

c) Check the connections for contact.

d) Maintenance mode can be exited via the switch on the Multialert ® mini.

e) LED switches to green.

f) The system is then in a test version in armed mode.

3.5.2. **Triggering and checking the ‘Test version‘**

If the noise switch is actuated or a fine-wire fuse loses contact in the same way as a temperature trigger, all other fine-wire fuses blow.

The green AMFE LED goes out.

The LED on the Multialert ® mini changes to red after triggering. And puts the Multialert mini into the ‘Fault’ alarm state.

After a subsequent continuity check of the fine fuses, all fine fuses should no longer show any continuity.

In this case, it can be assumed that the wiring and functioning of the entire system is correct.

3.5.3. **Dismantling to a functional overall system**

This is done in maintenance mode.

The final step is to unplug the commissioning adapter from the fire alarm cable. The AMFENs are reconnected to the fire alarm cable.

The connections are checked and maintenance mode is exited if the result is positive.

The LED turns green and the system is ‘armed’ and ready for operation.

Attention!

If only one AMFE is used, the miniature fuse in the fuse holder with LED must also be replaced. See Figure [20]
Both AMFEs must be displayed on the Multialert Mini.

Attention!

Check the noise switch connections.

4. Functional description

R-AMFE release unit Multialert® mini

The R-AMFE release unit Multialert® mini, specially developed by Meister Brandschutz GmbH & Co. KG's specially developed R-AMFE release unit Multialert® mini triggers several automatic mini fire extinguishing units in series in a controlled manner, which together can flood and extinguish a certain volume.

Several AMFEs are required for larger enclosures, bayed enclosures and combinations of enclosures of various types with a volume > 1.149m³. This is why the R- AMFE release unit Multialert® mini is used.

The specially developed solution floods and extinguishes a much larger volume via a control unit than a single AMFE. Several combined options were combined to trigger the serial extinguishing.

The AMFEs can be triggered in a targeted manner by activating the serial release via a central smoke switch or a combination of several smoke switches in the event of a fire.

Another option is triggering via the integrated sprinkler ampoule principle, which is installed in every R-AMFE. Depending on the triggering temperature, exceeding the temperature triggers an AMFE in series connection.

The feedback about the triggering, which is analysed in real time, triggers another function of the AMFE. The R function, also known as the resistance function, causes the sprinkler ampoules in the series connection to burst in a targeted manner, thereby extinguishing the entire system.

After each activation, the system itself is ready for use again via an integrated reset. The triggered AMFENs must be replaced. Furthermore, the control cabinet and the interior must be checked for damage and wear. An optionally installed fuse must also be replaced.

Damaged and worn parts must be replaced / repaired.

Control On / Reset / Maintenance switch / Service mode:

Exiting maintenance mode activates the system.
After tripping and replacing the R-AMFEN, the system must be restarted.
To do this, the installation steps must be followed before maintenance mode can be exited.

4.1. Important information for maintenance mode

The R-AMFEs use the same contact for triggering and feedback.

If an R-AMFE in the system is disconnected from the cable contact and thus from the control unit, this is regarded as a pulse for triggering all other R-AMFEs in the system.

To disconnect an R-AMFE from its contacts, it is necessary to set the maintenance switch to the right in service mode.

As a control element, the LED with the colour yellow signals the inactivity of the system.

The system should be switched on or switched back on in maintenance mode to prevent possible voltage peaks at the outputs of the PLC and false tripping of the R-AMFEN.

The triggering characteristic between the signalling and the actual triggering of the individual R-AMFEN takes place one after the other with a time delay.

Important:
To prevent unintentional activation of the AMFE, the maintenance mode must be active!

Meister Brandschutz GmbH & Co. KG accepts no liability for unintentionally triggered AMFEs.

5. Maintenance/servicing

5.1. Cleanliness and dry storage

- The Multialert ® mini must always be kept clean and stored in a dry place.

5.2. Wiring

- The cables and wires must be checked regularly for damage and cable breakage. If damaged, they must be replaced (in maintenance mode!).
- The tight fit of the components must be checked when de-energised.

Inspection interval: every 12 months

5.3. Smoke switch

The function of the smoke switch is verified and documented with a test spray in **maintenance mode**.

The LED in maintenance mode / service mode must be set to yellow, the smoke switch signals triggering with the LED colour red.

The test spray can be obtained from Meister Brandschutz GmbH & Co. KG as an option.

Recommendation:

After testing the smoke switch, it is necessary for it to change to the green LED signalling and to hold this permanently!

It is therefore recommended to wait approx. 30 minutes before exiting maintenance mode; otherwise the R-AMFEN may be triggered unintentionally!

Test interval: every 12 months for smoke switch and other functions

6. Error analysis

a. **Power supply unit, without voltage and function:**

Check the fuses on the power supply unit, primary and secondary fuses,

Measure the voltage and ensure the power supply

Eliminate voltage fluctuations

Voltage tolerances within the tolerance range

Replace overloaded/defective power supply units

b. **LED on the Multialert ® mini does not light up**

Check the voltages, see point a.)

c. **Smoke detector does not light up on control LED, without function**

Checking the fuses and the power supply unit

Checking the connections

Checking the cable connection

d. **Triggering AMFE for no recognisable reason:**

Contamination in the air or in the test chamber of the smoke detector

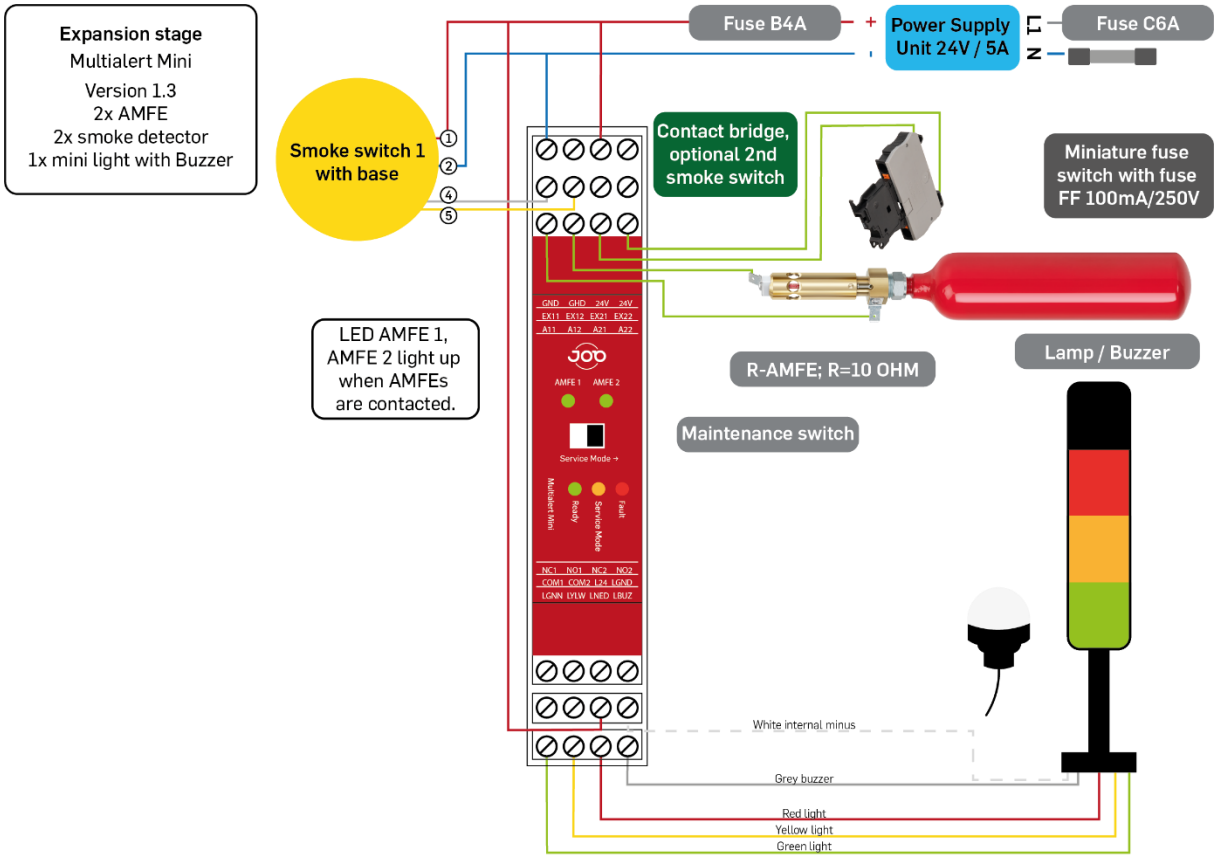
Cable break or loose contacts on the AMFs or on the Multialert Mini

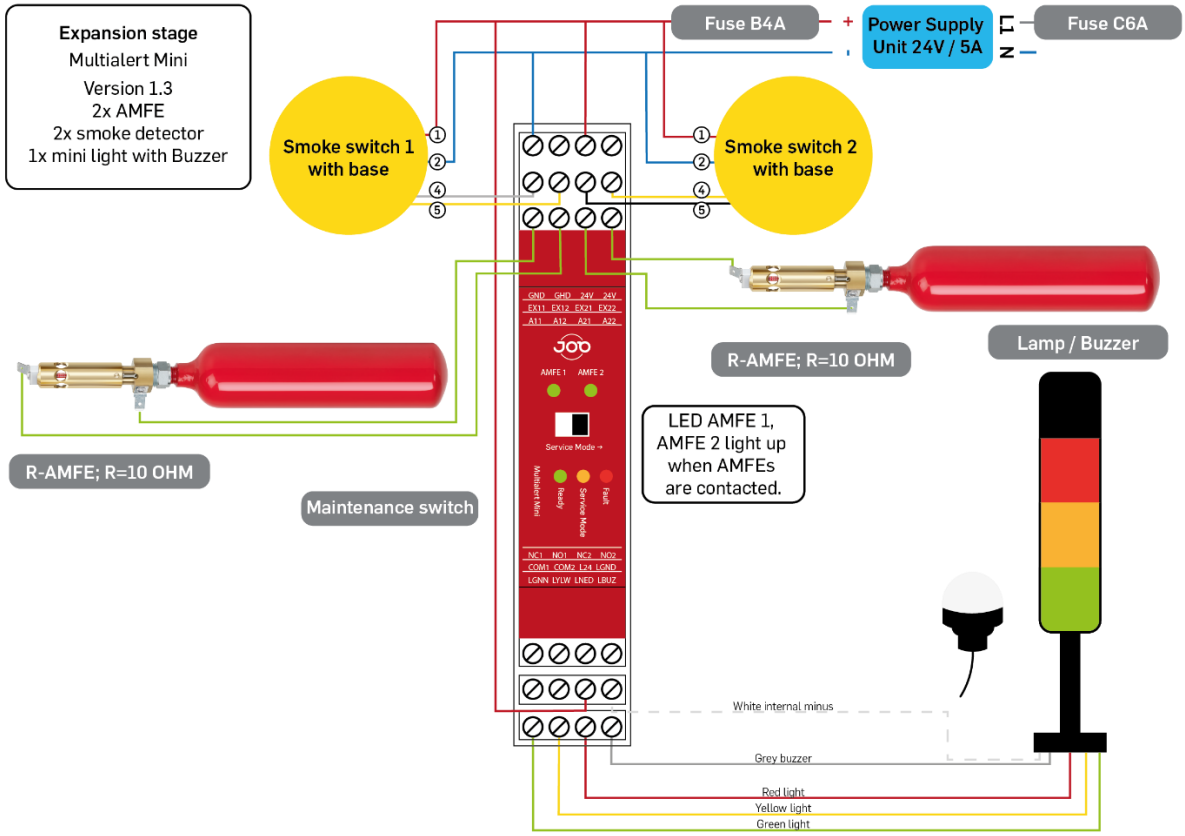
Reason for triggering has already been cancelled and can no longer be traced, as there is no damage

Mechanical damage caused by maintenance personnel (therefore switch on maintenance mode)

Defective power supply units too much or too little voltage, voltage fluctuations

7. Connection images Multialert Mini (see configuration)




Expansion stage
Multialert Mini
Version 1.3
2x AMFE
2x smoke detector
1x mini light with Buzzer
Fuse B4A
Power Supply Unit 24V / 5A
Fuse C6A
Smoke switch 1 with base
Smoke switch 2 with base
R-AMFE; R=10 OHM
R-AMFE; R=10 OHM
Lamp / Buzzer
LED AMFE 1, AMFE 2 light up when AMFEs are contacted.
Maintenance switch
White internal minus
Grey buzzer
Red light
Yellow light
Green light

8. Extension and linking of several Multialert ® mini

8.1. System requirements

See tested components chapter 3.2

A 10 A power supply unit is recommended here. At least a 5 A power supply unit capable of short-term overload, without auxiliary consumers.

Examples:

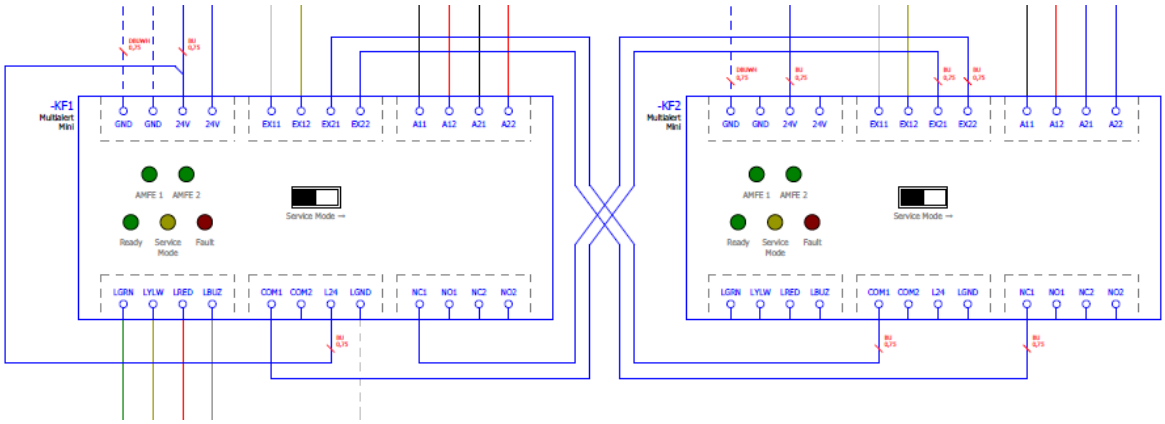
24V DC / 5 A power supply unit

24V DC / 10 A power supply unit

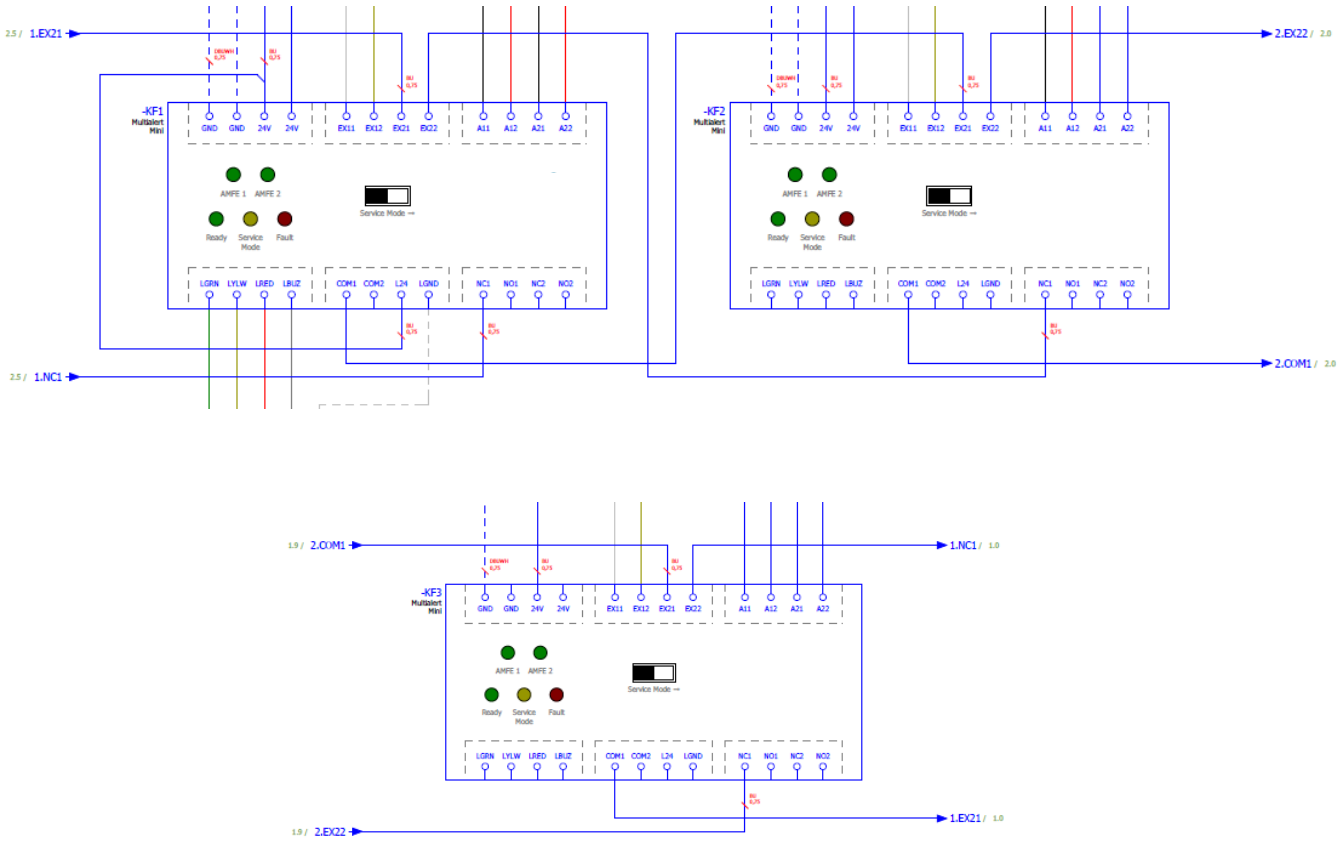
8.2. Interlinked systems

Combinations:	**1 Mini**	**2 Mini**	**3 Mini**
AMFEN	2 x	4 x	6 x
Smoke detector	2 x	2 x	3 x
Indicator lights	1 x	1 x System Master	1 x System Master
Potential-free contacts	2	2	3

8.3. Extract from the wiring diagram Interlinking with 2 Multialert Mini



8.4. Extract from the wiring diagram Interlinking with 3 Multialert Mini



9. Manufacturer contact:

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Phone +49 9342 / 9110-112

10. Disclaimer

The products in the AMFE range are developed and

sold by:

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The AMFE range is **'MADE IN GERMANY'** and is produced and continuously developed in accordance with all applicable local laws and regulations.

AMFE is patent protected in many countries around the world.

S-AMFE and R-AMFE are CE marked.

Despite all efforts and care, the completeness and accuracy of the information in this manual cannot be guaranteed. Technical developments may lead to deviations from the information in this manual. It is recommended that you obtain a more up-to-date version of this manual from the manufacturer before using the products in the AMFE series. The instructions in the safety data sheet for FK-5-1-12 cylinders (available from the manufacturer) must be observed.