

Technical Description

Relay Module UniVario KMX5000 RK

Original document

Relay Module UniVario® KMX5000 RK [part number: 906361]

IMPORTANT! Read this document before commencing all tasks.

1 General

1.1 About this document

This document describes the intended use of the described product. Observing all specified instructions and safety instructions is the prerequisite for safe work. Furthermore, the local accident prevention regulations and general safety conditions for the use of the product are also applicable.

If this document refers directly or indirectly to laws, regulations, or directives or quotes from them, the manufacturer cannot be held responsible for the correctness, completeness or up-to-date nature of the reference. Always observe local country regulations and their related standards and statutory legislation where the device will be used.

The original document was created in German; any non-German version of this document is a translation.

INFORMATION

The manufacturer reserves the right to make modifications resulting from further developments while retaining the key features of the product described without making corrections to this document.

1.2 Copyright

Any content in this document, particularly texts, photos, and graphics, are protected by copyright. If not otherwise clearly indicated, copyright lies with the manufacturer. Permission to use any content of this document must be obtained from the manufacturer. Anyone violating copyright law, e.g. by copying the contents into their own documentation without the respective permission, is liable to prosecution. Copyright violators shall also receive a written warning and be liable to pay costs.

1.3 Validity

This Technical Description is valid for the relay module type UniVario® KMX5000 RK (hereinafter referred to as KMX5000 RK).

1.4 Purpose

The relay module type KMX5000 RK is designed for the operation of fire detectors of type UniVario® independent of the fire control panel. It includes one relay with potential-free change-over contacts each for the alarm and fault messages.





2 Safety

2.1 Safety and warning notices

Safety and warning notices are marked with symbols in this document. The introductory signal words express the respective extent of the danger.

DANGER

The signal word describes a danger with a high risk level. If the danger is not avoided, it will result in death or serious injury.

WARNING

The signal word describes a danger with a medium risk level. If the danger is not avoided, it may result in death or serious injury.

CAUTION

The signal word describes a danger with a low risk level. If the danger is not avoided, it may result in minor or moderate injury.

NOTICE

The signal word describes a danger with a low risk level. If the danger is not avoided, it may result in property and environmental damage.

Further markings

INFORMATION

This marking emphasizes useful tips and recommendations as well as information for efficient and trouble-free operation.

In instructions, this marking starts with the symbol **i**.

2.2 Intended use

Only use this product in accordance with the operating and ambient conditions as well as the maintenance specifications as described in this document.

The intended use includes observing all notices in this document.

Not intended use

Use for any other or additional purpose is considered as not intended. The manufacturer assumes no liability for any damage occurring as a result of such use; the user solely bears the risk.

2.3 Safe operation

If products are used improperly or for other than their intended purpose, these products can pose hazards or impair the system or other property. Only use products in an undamaged and fully functional condition. If safe operation (e.g. visible damage) can no longer be assured, put the product out of operation without delay and secure against accidental start-up.

Also observe the following:

- Do not carry out any changes, extensions or modifications without the express permission of the manufacturer or distributor.
This also applies to welding work on load-bearing parts.
- Replace components not in perfect order immediately.
- Use only original spare and wear parts.

Also observe the following basic details:



- National safety regulations
- National accident prevention regulations
- National assembly and installation regulations
- Generally accepted technical principles
- Safety and warning notices as described in this document
- Demands on personnel as described in this document
- If applicable, directives for operation in explosion hazard areas (ATEX directive)

2.4 Qualification of personnel

WARNING

Inadequately qualified persons pose a hazard!

Inadequately qualified persons cannot assess the risks involved in handling the product. They expose themselves and others to the risk of severe or fatal injuries.

- All work should be carried out only by persons qualified to do so.

Before starting any work, the following persons must be designated who have the knowledge required to operate the product:

- A person to be responsible for the system
- An operator/person authorized by the operator

For all tasks, only persons from whom it can be expected that they will carry out their tasks reliably are authorized to perform such tasks. Persons whose reaction time is affected, for instance by drugs, alcohol or medication, are not authorized.

Furthermore, all work must only be carried out by persons who meet the following prerequisites:

- They have read and understood this document including the safety instructions and warning notices.
- They are familiar with basic regulations on occupational safety and accident prevention.
- They have been given instruction on handling the product and the entire system.

The various tasks described in this document require that the persons responsible for them have different qualifications. These qualifications are specified in the following section:

Qualified specialist personnel

Qualified specialist personnel are persons with the following qualifications and authorizations:

- Such persons are qualified for the respective activities as a result of their education, experience and participation in a training course conducted by the manufacturer.
- These persons have the appropriate knowledge of standards, directives, accident prevention regulations and operating conditions.
- These persons have been authorized by the person responsible for the safety of the installation to carry out the necessary activities and are capable of recognizing and avoiding possible risks.

Unauthorized persons

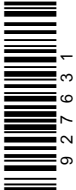
WARNING

Risk of injury for unauthorized persons!

Unauthorized persons who do not meet the requirements described are not familiar with the risks connected with the function (e.g. triggering and/or isolating) of the system.

This poses risk of injury.

- Keep unauthorized persons away from control equipment.
- In the case of doubt, speak to persons and instruct them to move away from control equipment.



2.5 Fields of use

The relay module is used within UniVario® detectors which must not be situated in explosion hazard areas. The use in UniVario® 3GD and UniVario® Ex detectors is not permitted!

3 Scope of Delivery

Amount	Included in Scope of Delivery
1	KMX5000 RK
1	Short-circuit bridge
6	Insulated bushings
6	Serrated lock washers
6	Bolts

Tab. 1: KMX5000 RK scope of delivery

4 Approvals, certificates and listings

VdS-approval	G221020
Norm	EN54-18:2005
Certificate of conformity	0786-CPR-20314

Tab. 2: Approvals, Certificates and Listings

5 Transport, packaging and storage

Transport and packaging

Note the following for transport and packaging:

- Transport packaging items in such a way that they do not create a source of danger due to falling or slipping.
- Protect packaging items against external force such as collision, shock and vibration.
- Immediately upon receipt, inspect packaging items for completeness and visible signs of damage.
- Store the product in its original packaging until it is installed.
- Dispose of the packaging material in accordance with the prevailing legal provisions and local regulations.

Storage

Store packaging items in their original packing as well as dry, dirt-free and within the specifications described in this document.

6 Design and function

In the case of an alarm of the fire detector or a test triggering, the alarm relay is energized via the test input or the Reed contact of the detector. During this process the contact between NO and COM is closed, the contact between NC and COM is opened.

During normal operation the fault relay is energized, i.e. the contact between NO and COM is closed, the contact between NC and COM is opened. In the case of a detector fault or during the operation of the test input or Reed contact at the detector the fault relay is de-energized (i.e. the contact between NC and COM is closed, the contact between NO and COM is opened.)

Normally the alarm is automatically sustained and the fault automatically resets. If the alarm conditions have subsided a manual reset is possible by briefly switching off the detector power supply or by switching the test/reset input (T/R) to -UL (Chapter 8 “Relay module connection diagram” on page 6).

7 Assembly and Installation

Assembly and installation works must be carried out by the following persons only:

Personnel: ■ Qualified specialist personnel

WARNING

No alarm or fault signal if the operating voltage is too low!

An alarm or fault signal is not guaranteed below the minimum admissible amount of operating voltage.

- The admissible amount of operating voltage must not fall below the minimum limit at any time. This needs to be considered especially when dimensioning the connection cables and cable resistances.

NOTICE

With separate power supply for the fire detector and KMX5000 RK there will be no fault message at the KMX5000 RK if the fire detector is switched off or removed from the base!

1. ➔ Insert supplied insulating bushing into the mounting holes of the KMX5000 RK from the bottom.
2. ➔ Insert KMX5000 RK into the detector base.
3. ➔ Plug in the 6-pin flex-connection into the corresponding connection terminals of the detector base (see Fig. 1).
4. ➔ Tighten the connection terminals firmly in the detector base.
5. ➔ Using the supplied attachment screws and serrated lock washers, attach the KMX5000 RK to the detector base (see Fig. 1).

INFORMATION

Ensure that the flex connections make contact.

The conductor cross section to connect the system must be selected on the basis of the number of detectors and modules to be connected, the supply voltage and the cable length.

Fire detectors and KMX5000 RK can be operated from a joint 24 V DC power supply (see [Chapter 8.1 “Common voltage supply” on page 6](#)). Alternatively the fire detector can be operated within a limit value line. The connection values are to be found in the operating instructions of the respective detector. The KMX5000 RK will be supplied separately via a 24 V DC power supply (see [Chapter 8.2 “Separate voltage supply” on page 7](#)).

Duplicate joint return wire (-UL or 0V).

INFORMATION

When connecting two conductors to a connection terminal, the wire cross section of both conductors must be the same.



INFORMATION

Only use original accessories and spare parts from the manufacturer!

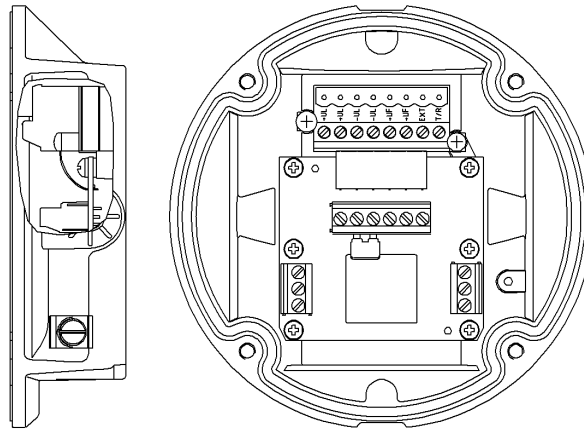


Fig. 1: KMX5000 RK mounted

8 Relay module connection diagram

8.1 Common voltage supply

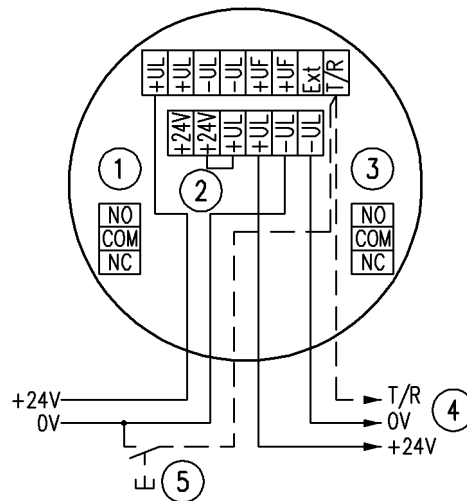


Fig. 2: Relay module connection - common voltage supply

- 1 Alarm
- 2 Short-circuit bridge
- 3 Fault
- 4 To the next detector
- 5 Test/reset (option)



8.2 Separate voltage supply

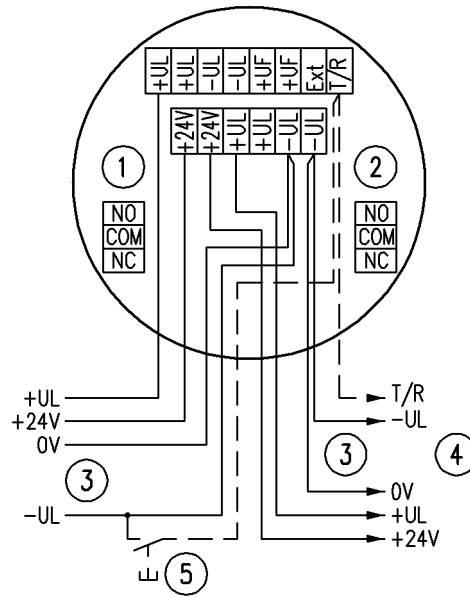


Fig. 3: Connection for separate voltage supply

- 1 Alarm
- 2 Fault
- 3 Shared return conductor
- 4 To the next detector
- 5 Test/reset (option)

NOTICE

With separate voltage supplies to detector and relay module, no fault message occurs at the relay module if the detector is switched off or is removed from the detector base.

9 Technical Data

Dimensions	B x H x T: 64 mm x 24 mm x 57 mm (2,52 in x 0,945 in x 2,25 in)
Weight	0,05 kg (0,11 lb)
Contact type	6-pole flexible connector
Ambient Temperature	-40 °C ... +80 °C (-40 °F ... +176 °F)
Storage Temperature	-40 °C ... +80 °C (-40 °F ... +176 °F)
Relative Humidity	5 % ... 85 % (non-condensing)
Operating Voltage	24 V (14 V ... 29 V) DC
Operating current only KMX5000 RK 3GD (without detector current)	approx. 20 mA at 24 V (Normal operation, fault relay on) approx. 30 mA at 24 V (Alarm relay and fault relay on) approx. 7 mA at 24 V (Alarm relay and fault relay off)
Relay contact switching voltage	max. 60 V D/C, max. 25 V A/C





Relay contact switching current	max. 1 A
Conductor cross-section	min. 0,5 mm ² , max. 2,5 mm ² (min. 20 AWG, max. 14 AWG)
Compatible to detectors	WMX5000, WMX5000 Einloch, WMX5000 FS, WMX5000 FS Flex, FMX5000 IR, FMX5000 UV, YMX5000