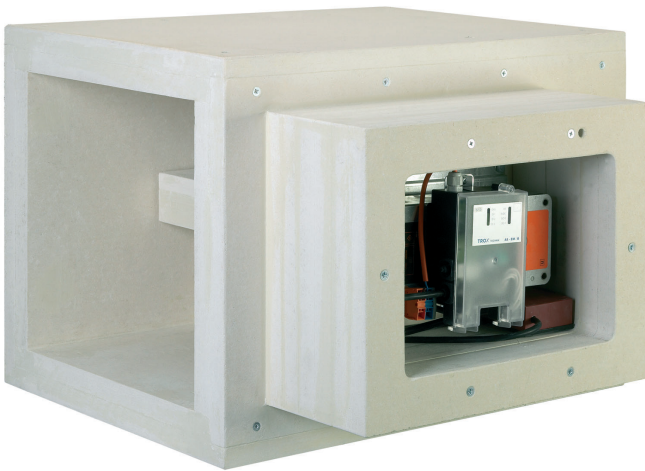


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Product Information on smoke extraction dampers type EK-02 for mechanical smoke extraction systems with air extraction operation

PI/4/24/EN/3



Smoke extraction dampers type EK-02

General building approval **Z-78.3-101**

According to the building inspectorate regulations of the German federal states, smoke extraction dampers type EK-02 may be used in mechanical smoke extraction systems with air extraction operation for single or several fire compartments.

The control required for the intended functionality is guaranteed by a TROXNETCOM solution.

External monitoring, as required by German law, is performed by the FMFA, Baden-Württemberg.

Attention!

Smoke extraction dampers are components which are subject to approval. Therefore in case of use, the "General and Special Regulations" of the general building approval and the conditions for installation, commissioning and maintenance must be observed.

Construction, applications, dimensions, ancillary components and miscellaneous informations

see EK-01 – leaflet no. 4/9/EN/...

Order Code

EK-02 / **1500 x 797 x 800** / **0** / **ZEK**

Type

Dimensions

B x H x L in mm

Ancillary components

0 = without ancillary components

Accessories

ZEK = OPEN/CLOSE actuator (AC/DC 24 V) with battery package and AS Interface module AS-EM/S-EK02

Specification Text

Square or rectangular smoke extraction dampers for use in mechanical smoke extraction systems with air extraction operation, with general building approval granted by the German Institute for Building Technology, Berlin. Suitable for installation in concrete or masonry walls and ceilings, in lightweight partition walls, on the outside of walls and ceilings and in fire-resistant smoke extraction ducts. Casing, damper blade and actuator enclosure made of silicate material. Bearing components made of stainless steel or brass.

Actuation via OPEN/CLOSE actuator with redundant power source (battery package). Control via AS Interface module AS-EM/S-EK02. Actuator, battery package and AS Interface module are mounted in the prewired actuator enclosure.

Fire Resistance Class: EK90

Make: TROX

Type: EK-02

Order Example

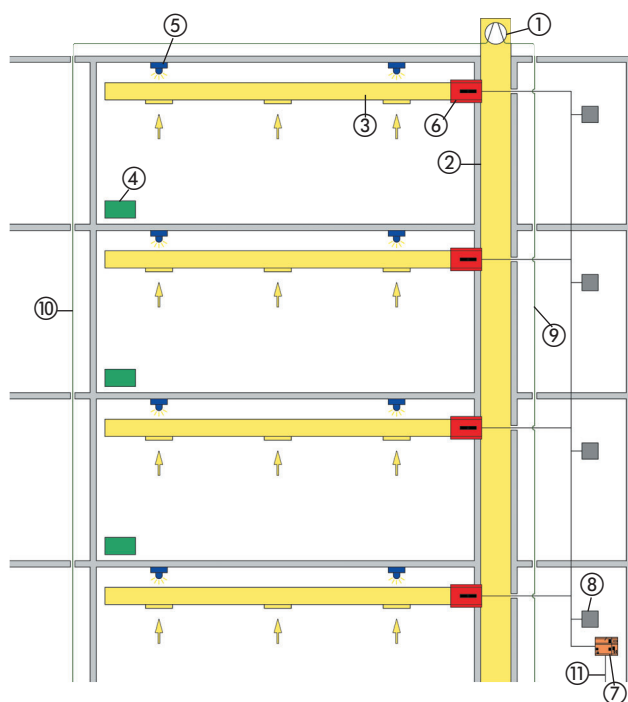
Make: TROX
 Type: EK-02 / 1500 x 797 x 800 / 0 / ZEK
 Qty: 4

Further information and prices upon request.

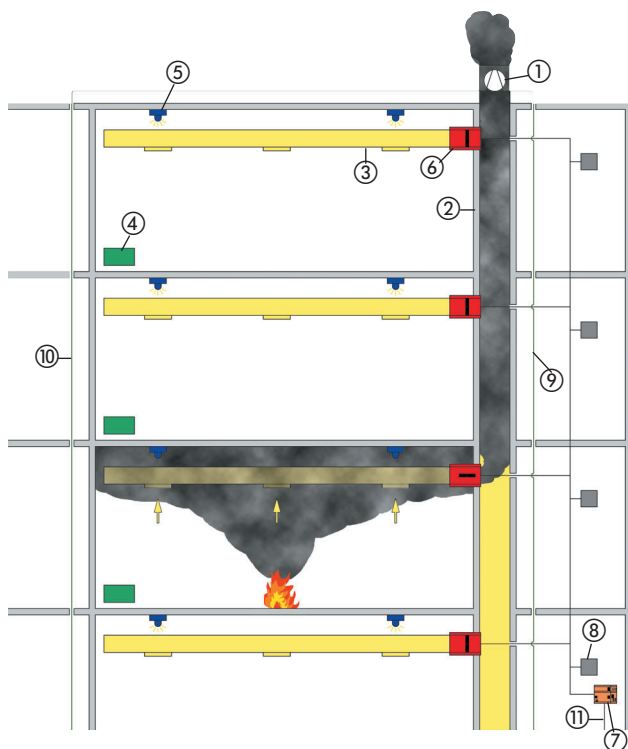
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Installation diagram ventilation mode



Installation diagram smoke extraction mode



Ventilation mode function

Opening and closing

- By a contact given to the input of an AS-Interface module. Each impulse causes the damper position to change.
- By activating the manual control device.

Automatic closing

- In case of voltage breakdown (by redundant power supply).
- In case of switched off ventilator.
- In case of faults in the electrical systems.

Smoke extraction mode function

Opening

- Automatic in case of smoke detection via the allocated smoke detectors.
- By activating the manual control device.
- In case of power failure, the energy required for opening will be supplied from the redundant power supply.

Closing

- All dampers, which are not related to the smoke extraction area, will be closed automatically.
- In case of power failure, the energy required for closing will be supplied from the redundant power supply.

Description

- ① Fire gas ventilator
- ② Smoke extraction duct
- ③ Smoke extraction channel
- ④ After-flow
- ⑤ Smoke detector in accordance with DIN EN 54-7, arrangement and quantity in accordance with DIN-VDE 0833-2
- ⑥ Smoke extraction damper type EK-02 with redundant power supply (battery package) and AS Interface module AS-EM/S-EK02
- ⑦ Controller
- ⑧ Manual control device
- ⑨ Electric power supply
- ⑩ Independent power supply
- ⑪ Optional connection to BMS (Building Management System) – visualisation / operation display

Product Information on smoke extraction dampers type EK-02 for mechanical smoke extraction systems with air extraction operation

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Type EK-02 Smoke Extraction Damper with Additional Venting Function

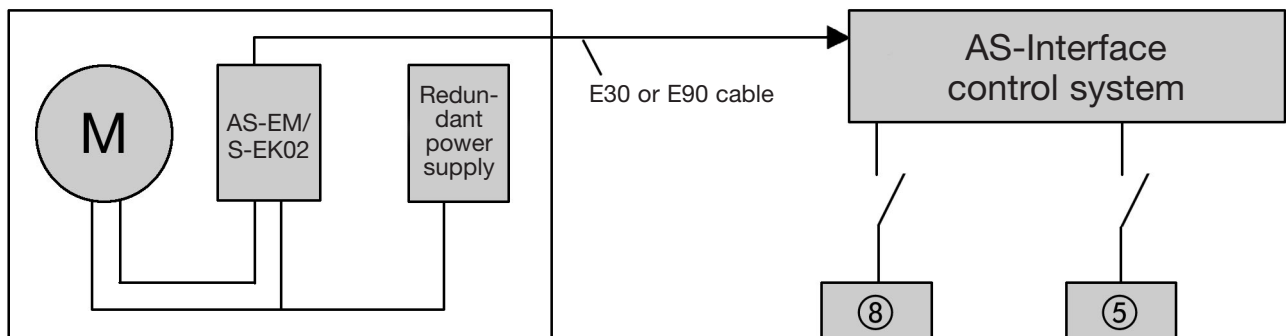
The type EK-02 smoke extraction damper may be used in mechanised smoke extraction systems for single multiple fire areas according to the building inspectorate regulations of the German States. In addition, the Type EK-02 smoke extraction damper may also be installed into mechanised smoke extraction systems if these mechanised smoke extraction systems are also permitted for ventilation.

The Type EK-02 smoke extraction dampers for mechanised smoke extraction systems with an additional ventilation function are to be actuated with control units or systems

in such a way that they are opened as required during ventilation mode. During smoke extraction mode, the smoke extraction dampers in the area from which smoke should be extracted must open or remain open and close or remain closed in the area(s) from which smoke is not to be extracted. In case of a power failure or faults in the control units during ventilation mode, the smoke extraction dampers must close or remain closed.

The control unit is thus decisively responsible for the proper function of the smoke extraction damper with additional ventilation function and, together with the Type EK-02 smoke extraction damper, represents a unit that may not be separated.

Structure of the EK-02 with the AS-EM/S-EK02 control unit



Legend:

- M = Belimo actuator BE 24
- ⑤ = Smoke detector according to DIN EN 54-7
- ⑧ = Hand control unit

The Belimo actuator is wired to the AS-EM/S-EK02 module and the redundant power supply.

The AS-EM/S-EK02 control unit is connected to the AS-Interface control system using a two-wire bus line.

The AS-EM/S-EK02 control unit is used for the accommodation of the limit contact and for the control of the actuator. It converts the analogue signals into the AS-Interface data protocol in digital form.

In case of a power failure and fault in the control unit, the redundant power supply supplies the actuator with voltage so that the smoke extraction damper can still move into the corresponding position.

Functional description

Ventilation mode

Via the AS-Interface control system, the “Ventilate” command is sent to the AS-EM/S-EK02 control unit. This control unit controls the actuator in such a way that the smoke extraction damper moves into the open position.

If a fault occurs in the control unit or the power supply fails, the smoke extraction damper moves into the closed position.

Smoke extraction mode

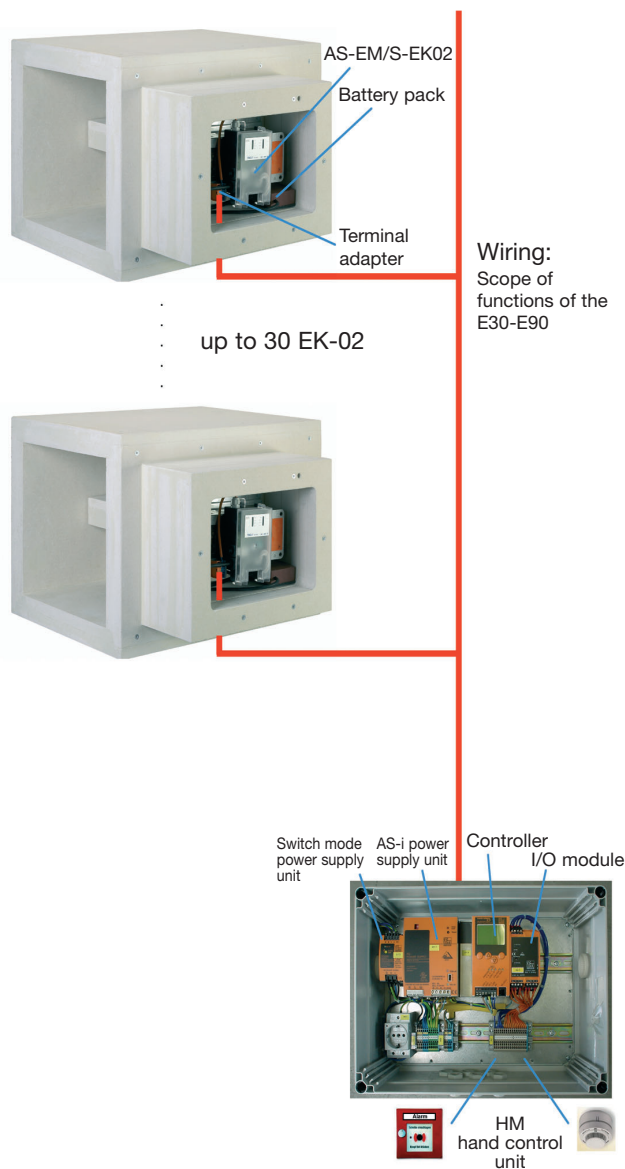
Via the AS-Interface control system, the “Extract Smoke” command is sent to the AS-EM/S-EK02 control unit. This control unit controls the actuator in such a way that the smoke extraction damper in the area from which smoke is to be extracted moves into the open position.

If a fault occurs in the control unit or the power supply fails, the smoke extraction damper in the area from which smoke is to be extracted moves into the open position.

All other smoke extraction dampers that are not located in the area from which smoke should be extracted are moved to the closed position.

Product Information on smoke extraction dampers type EK-02 for mechanical smoke extraction systems with air extraction operation

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General information

For the actuation of the EK-02 with Belimo drive and the AS-i module Type AS-EM/S-EK02, an AS-Interface control system is basically required.

This control system consists of the following components at least:

- 1 x AS-i controller type TNC-A13XX
- 1 x AS-i power supply unit type TNC-A1218
- 1 x 24 V DC power supply unit type TNC-D1020
- 1 x I/O output module type TNC-Z0094

(also available as a complete switch cabinet)

An AS-i control system can have up to 30 or 60 EK-02 dampers according to design.