FK2-EU with fusible link for 72 °C or 95 °C

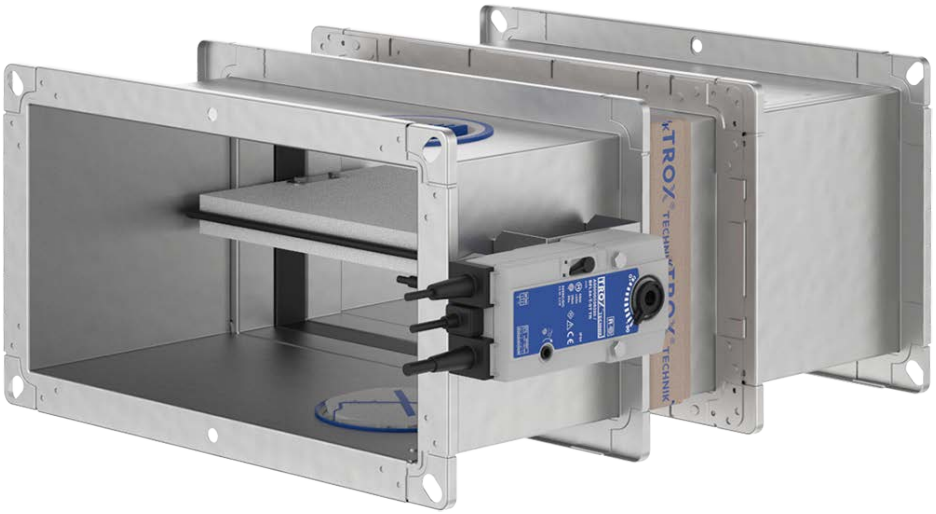
CE compliant according to European regulations

With TROXNETCOM as an option

Tested to VDI 6022

Fire dampers

FK2-EU



For diverse applications

Rectangular fire damper for the isolation of duct penetrations between fire compartments, for a variety of installation situations, available in many sizes and constructions

- Nominal sizes 200 × 100 – 800 × 200 mm, in increments of 1 mm
- Low differential pressure and sound power level
- Integration into the central BMS with TROXNETCOM
- Universal installation options

Optional equipment and accessories

- Electric actuator 24 V/230 V
- Release temperature 72/95 °C
- Duct smoke detectors

General information

Application

- TROX fire dampers of type FK2-EU with CE marking and declaration of performance, for the isolation of duct penetrations between two fire compartments by automated closing in the event of a fire
- To prevent the propagation of fire and smoke through ductwork to adjacent designated fire compartments

Special characteristics

- Declaration of performance in accordance with European Construction Products Regulation
- Classification according to EN 13501-3 up to EI 120 (v_e, h_o, i ↔ o) S
- Complies with the requirements of EN 15650
- Tested for fire resistance properties in accordance with EN 1366-2 (300 Pa and 500 Pa negative pressure)
- Certified mortar-based installation with reduced distances of 40 mm to supporting components or 60 mm between two fire dampers (flange to flange)
- Surrounding gap dimensions in the mortar-based installation with mortar up to 225 mm permitted
- Two inspection accesses with bayonet fixing for single-handed operation
- Hygienic requirements are fulfilled in accordance with VDI 6022-1, VDI 3803-1, DIN 1946-4, DIN EN 13779 as well as Önorm H 6020 and H 6021 and SWKI
- Corrosion protection according to EN 15650 in connection with EN 60068-2-52
- Closed blade air leakage according to EN 1751, class 2
- Casing air leakage according to EN 1751, class C; (B + H) ≤ 700, class B
- Low differential pressure and sound power level
- Any airflow direction
- Integration into the central building management system with the international standard fire damper system in accordance with IEC 62026-2 with AS interface is possible

Classification

- Class of performance up to EI 120 (v_e, h_o, i ↔ o) S according to EN 13501-3

Nominal sizes

- B × H: 200 × 100 – 800 × 200 mm (in increments of 1 mm)
- L: 305 mm or 500 mm

Variants

- With fusible link
- With spring return actuator
- With spring return actuator and duct smoke detector

Parts and characteristics

- Release temperature 72 °C or 95 °C (for use in warm air ventilation systems)
- Single-handed operation

Attachments

- Limit switch for damper blade position indication
- Spring return actuator for 24 V AC/DC or 230 V AC supply voltage
- Network module for the integration with AS-i or LON networks
- Spring return actuator and pre-wired duct smoke detector, 24 V or 230 V supply voltage
- All attachments can be retrofitted

Accessories

- Installation kit GM for installation into solid non-load-bearing walls with flexible ceiling joint
- Installation kit ES for dry mortarless installation remote from solid walls and ceiling slabs or remote from lightweight partition walls with cladding on both ends and a metal support structure
- Installation kit ES for dry mortarless installation in lightweight partition walls or compartment walls with metal support structure and cladding on both ends
- Installation kit ES for dry mortarless installation into shaft walls with metal support structure and cladding on one end
- Installation kit ES for dry mortarless installation into timber stud walls / half-timbered constructions and solid wood walls
- Flexible connectors
- Cover grilles
- Circular spigots
- Profile connecting frame

Useful additions

- Duct smoke detector RM-O-3-D
- Duct smoke detector with airflow monitor RM-O-VS-D

Construction features

- Rectangular or square construction, rigid casing, both flanges with fixing holes
- Suitable for the connection of ducts, cover grilles, spigots, flexible connectors or profile connecting frames
- The release mechanism is accessible and can be tested from the outside
- Two inspection access panels, Ø110 mm, which can be opened without any tools
- Remote control with spring return actuator

Materials and surfaces

Casing:

- Galvanised sheet steel

Damper blade:

- Special insulation material

Standards and guidelines

- Construction Products Regulation
- EN 15650 Ventilation for buildings – Fire dampers
- EN 1366 Fire resistance tests for service installations – Fire dampers
- EN 13501 Fire classification of construction products and building elements
- EN 1751 Ventilation for buildings – Air terminal devices

Maintenance

- The functional reliability of the fire damper must be tested at least every six months; this has to be arranged by the owner of the ventilation system; functional tests must be carried out in compliance with the basic maintenance principles stated in EN 13306 and DIN 31051. If two consecutive tests, one 6 months after the other, are successful, the next test can be conducted one year later.
- A functional test involves closing the damper blade and opening it again; with a spring return actuator this can be done via remote control
- Fire dampers must be included in the regular cleaning schedule for the ventilation system
- For details on functional tests, maintenance and inspection refer to the installation and operating manual

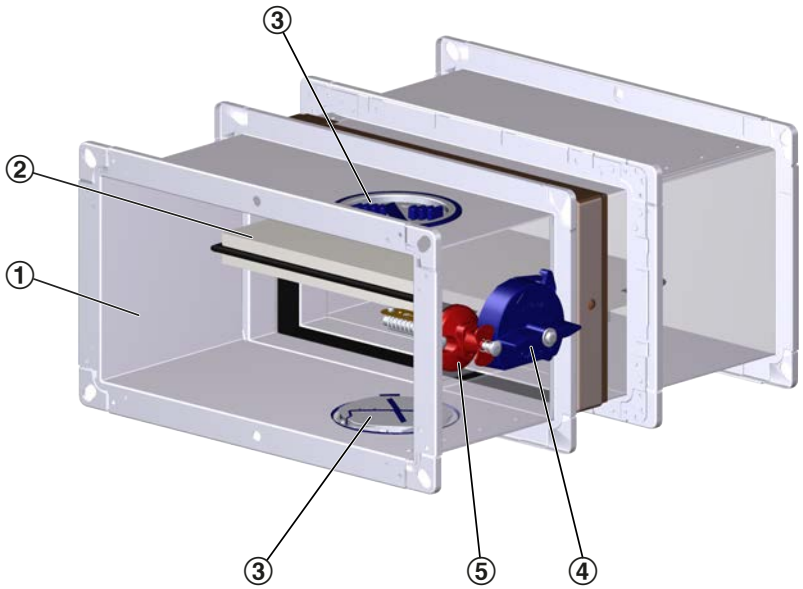
Technical data

- Nominal sizes: 200 × 100 to 800 × 200 mm
- Casing lengths: 305 and 500 mm
- Volume flow rate range: up to 1920 l/s / up to 6900 m³/h
- Differential pressure: up to 2000 Pa
- Temperature range: -20 – 50 °C
- Upstream velocity (with same inflow and outflow): standard construction ≤ 8 m/s, design with spring return actuator ≤ 12 m/s

Function

Functional description

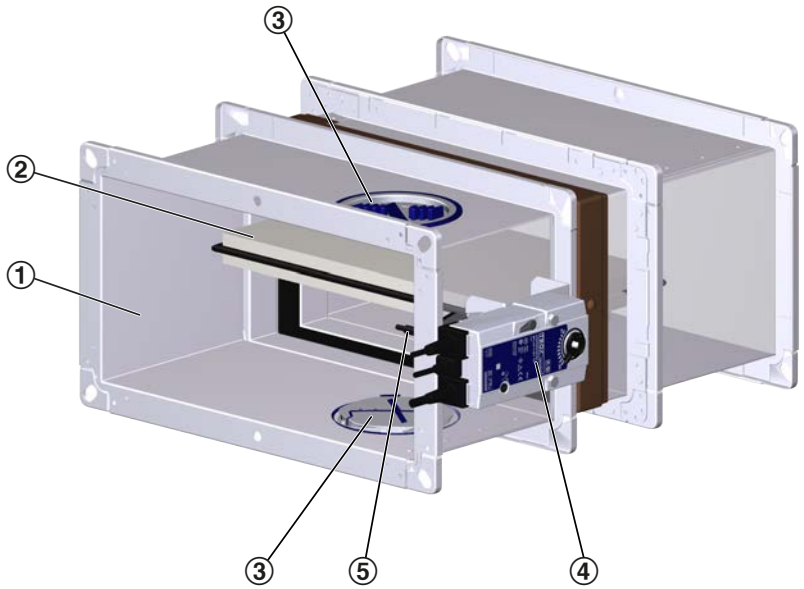
Construction with fusible link



① Casing
② Damper blade
③ Inspection access
④ Handle
⑤ Thermal release mechanism with fusible link

In the event of a fire, fire dampers shut automatically to prevent the propagation of fire and smoke through ductwork to adjacent designated fire compartments. In the event of a fire, the damper is triggered at 72 °C or at 95 °C (use in warm air ventilation systems) by a fusible link. The release mechanism is accessible and can be tested from the outside. One or two limit switches (optional attachment) can be used to indicate the damper blade position.

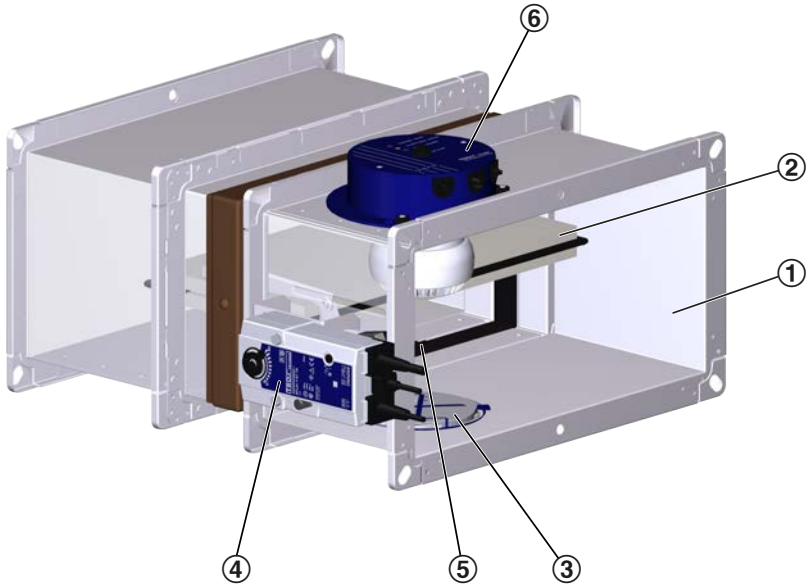
Construction with spring return actuator



① Casing
② Damper blade
③ Inspection access
④ Spring return actuator
⑤ Thermoelectric release mechanism with temperature sensor

The spring return actuator enables the motorised opening and closing of the damper blade; it can be activated by the central BMS. In the event of a fire, the damper is triggered thermoelectrically at 72 °C or 95 °C (use in warm air ventilation systems). As long as power is supplied to the actuator, the damper blade remains open. If the supply voltage fails, the damper closes (power off to close). Motorised fire dampers can be used to shut off ducts. The torque of each actuator is sufficient to open and close the damper blade even while the fan is running. The spring return actuator is fitted with limit switches that can be used for capturing the damper blade position.

Construction with spring return actuator and duct smoke detector



① Casing
② Damper blade
③ Inspection access
④ Spring return actuator
⑤ Thermoelectric release mechanism with temperature sensor
⑥ Duct smoke detector RM-O-3-D

The spring return actuator enables the motorised closing of the fire damper. In the event of a fire, the damper is triggered thermoelectrically at 72 °C.
In combination with the integral duct smoke detector RM-O-3-D, smoke is prevented from being transferred via ductwork into adjacent fire compartments even before it reaches a temperature that would trigger the thermoelectric release mechanism.
As long as power is supplied to the actuator and smoke is not detected, the fire damper remains open. If the supply voltage fails, the detection of smoke and exceeding of the release temperature leads to a closing of the fire damper (power off to close).
Motorised fire dampers can be used to shut off ducts. The torque of each actuator is sufficient to open and close the damper blade even while the fan is running. The spring return actuator is fitted with limit switches that can be used for capturing the damper blade position.
A control input signal from the central BMS is possible.

Technical data

Nominal sizes	200 × 100 – 800 × 200 mm
Casing lengths	305 and 500 mm
Volume flow rate range	up to 1920 l/s or 6900 m³/h
Differential pressure range	Up to 2000 Pa
Temperature range 1, 3	-20 °C to 50 °C
Release temperature	72 °C or 95 °C (for warm air ventilation systems)
Upstream velocit ²	≤ 8 m/s with standard construction; ≤ 12 m/s with spring return actuator

¹ Temperatures may differ for units with attachments. Details for other applications are available on request.
² Data applies to uniform upstream and downstream conditions for the fire damper.
³ Condensation and the intake of humid fresh air have to be avoided as otherwise operation will be impaired or not be possible.

Free area and resistance coefficient, width 200 – 800 mm

H [mm]	①	B [mm]												
		200	250	300	350	400	450	500	550	600	650	700	750	800
100	A [m²]	0.013	0.016	0.02	0.023	0.027	0.03	0.034	0.037	0.041	0.044	0.048	0.051	0.055
100	ζ	1.05	0.96	0.88	0.83	0.78	0.75	0.71	0.69	0.66	0.64	0.62	0.61	0.59
125	A [m²]	0.022	0.028	0.034	0.04	0.046	0.052	0.058	0.064	0.07	0.076	0.082	0.088	0.094
125	ζ	0.93	0.85	0.78	0.73	0.69	0.66	0.63	0.61	0.59	0.57	0.55	0.54	0.52
150	A [m²]	0.031	0.04	0.048	0.057	0.065	0.074	0.082	0.091	0.099	0.108	0.116	0.125	0.133
150	ζ	0.85	0.77	0.71	0.67	0.63	0.6	0.58	0.55	0.54	0.52	0.5	0.49	0.48
160	A [m²]	0.024	0.03	0.037	0.043	0.05	0.056	0.063	0.069	0.076	0.082	0.089	0.095	0.102
160	ζ	0.66	0.6	0.55	0.52	0.49	0.47	0.45	0.43	0.41	0.4	0.39	0.38	0.37
200	A [m²]	0.031	0.04	0.048	0.057	0.065	0.074	0.082	0.091	0.099	0.108	0.116	0.125	0.133
200	ζ	0.74	0.67	0.62	0.58	0.55	0.52	0.5	0.48	0.47	0.45	0.44	0.43	0.41

① Parameter

Quick sizing

Quick sizing tables provide a good overview of the volume flow rates with different sound power levels as well as of differential pressures of up to 35 Pa. Approximate intermediate values can be interpolated. Precise intermediate values can be calculated with our Easy Product Finder design programme.

Volume flow rate q_v For differential pressure Δp_{st} < 35 Pa

H [mm]	LWA [dB(A)]	B [mm]												
		200	250	300	350	400	450	500	550	600	650	700	750	800
100	35	390	484	577	668	759	849	938	1027	1116	1205	1293	1380	1468
125	35	507	627	745	862	978	1093	1208	1322	1435	1548	1660	1772	1883
150	35	619	764	907	1048	1188	1326	1464	1601	1737	1873	2008	2142	2276
160	35	728	897	1063	1227	1390	1550	1710	1869	2027	2185	2341	2497	2653
200	35	835	1028	1216	1402	1586	1769	1950	2130	2309	2487	2664	2841	3017

Volume flow rate q_v For differential pressure Δp_{st} < 35 Pa

H [mm]	LWA [dB(A)]	B [mm]												
		200	250	300	350	400	450	500	550	600	650	700	750	800
100	45	570	707	841	975	1107	1239	1369	1499	1629	1758	1886	2014	2142
125	45	740	915	1088	1258	1427	1595	1762	1928	2094	2258	2422	2585	2748
150	45	904	1115	1323	1529	1733	1935	2136	2336	2534	2732	2929	3126	3322
160	45	1063	1309	1552	1791	2028	2262	2496	2727	2958	3188	3416	3644	3871
200	45	1219	1499	1775	2046	2314	2580	2845	3107	3368	3628	3887	4145	4402

Sizing example

Given data

Volume flow rate: 1000 m³/h
Maximum height: 100 mm
Sound power level: 35 dB(A)

Quick sizing

FK2-EU/550×100×500

Specification text

This specification text describes the general properties of the product. Texts for variants can be generated with our Easy Product Finder design programme.

Specification text

Fire damper in line with the European product standard DIN EN 15650 in square or rectangle construction style with two large inspection accesses that can be operated without tools. Tested for fire resistance properties according to DIN EN 1366-2 (300 Pa and 500 Pa negative pressure), with CE label.
The fire damper manufacturer's declaration of performance (DoP) provides proof of the respective installation conditions. e.g. inside, in front of, at and remote from walls or ceilings, along with the basic characteristics such as size, support structure, design and installation type and the respective classes of performance in accordance with the classification standard DIN EN 13501-3.
The ready-to-use units contain a release mechanism and an interchangeable, fire-resistant damper blade that can be arranged horizontally or vertically depending on the use.
Depending on application, classified from
EI 30 (ve, ho i ↔ o) S to EI 120 (ve, ho i ↔ o) S.

Suitable for:

Mortar-based installation

- In solid walls, lightweight partition walls, compartment walls, safety partition walls and radiation protection walls
- with installation kit for flexible ceiling joint in solid walls
- In shaft walls with metal support structures or steel support structures
- In timber stud walls and half-timbered constructions In solid wood and cross laminated timber walls
- In and on solid walls and in combination with timber beam, solid wood and modular ceilings (System Cadolto)

Dry mortarless installation

- In lightweight partition walls, compartment walls, safety partition walls and radiation protection walls with metal support structures or steel support structures
- In timber stud walls and half-timbered constructions In solid wood and CLT (cross laminated timber) walls
- In shaft walls with metal support structure or steel support structure
- Remote from solid walls and ceiling slabs, with installation kit
- Remote from lightweight partition walls (wall penetration)

Fire batt installation

- In solid walls, lightweight partition walls, fire protection walls, safety partition walls and radiation protection walls with metal support structure or steel support structure and timber stud, half-timbered construction, solid wood and cross laminated timber walls

Size dimensions from (B x H) 200 mm x 100 mm to 800 mm x 200 mm, in increments of 1 mm. Optimised, low-leakage casing, up to tightness class C in accordance with DIN EN 1751 with reduced differential pressure and sound power level, made from galvanised sheet steel. Corrosion protection according to DIN EN 15650 in connection with DIN EN 60068-2-52. The hygiene requirements are fulfilled in accordance with VDI 6022-1, VDI 3803-1, DIN 1946-4, DIN EN 13779, as well as Önorm H 6020 and H 6021 and the SWKI. Casing lengths 305 mm or 500 mm with 30 mm (L=500 mm) flange for connecting to ducting made of non-combustible or combustible materials. Thermal release for 72 °C or 95 °C (warm air ventilation) with fusible link or thermoelectrically with spring return actuator, test switch/push button and control LED. The designs with brushless spring return actuators for opening and closing the fire damper – also when the ventilation system is running and independent of the nominal size – are particularly suited for function testing or the daily shut-off of cable sections. Retrofit of spring return actuators without modification of the rod is possible from the outside.

Special characteristics

- Declaration of performance in accordance with European Construction Products Regulation
- Classification according to EN 13501-3 up to EI 120 (v_e, h_o, i ↔ o) S
- Complies with the requirements of EN 15650
- Tested for fire resistance properties in accordance with EN 1366-2 (300 Pa and 500 Pa negative pressure)
- Certified mortar-based installation with reduced distances of 40 mm to supporting components or 60 mm between two fire dampers (flange to flange)
- Surrounding gap dimensions in the mortar-based installation with mortar up to 225 mm permitted
- Two inspection accesses with bayonet fixing for single-handed operation
- Hygienic requirements are fulfilled in accordance with VDI 6022-1, VDI 3803-1, DIN 1946-4, DIN EN 13779 as well as Önorm H 6020 and H 6021 and SWKI
- Corrosion protection according to EN 15650 in connection with EN 60068-2-52
- Closed blade air leakage according to EN 1751, class 2
- Casing air leakage according to EN 1751, class C; (B + H) ≤ 700, class B
- Low differential pressure and sound power level
- Any airflow direction
- Integration into the central building management system with the international standard fire damper system in accordance with IEC 62026-2 with AS interface is possible

Materials and surfaces

Casing:
- Galvanised sheet steel

Damper blade:
- Special insulation material

Technical data
- Nominal sizes: 200 × 100 to 800 × 200 mm
- Casing lengths: 305 and 500 mm
- Volume flow rate range: up to 1920 l/s / up to 6900 m³/h
- Differential pressure: up to 2000 Pa
- Temperature range: -20 – 50 °C
- Upstream velocity (with same inflow and outflow): standard construction ≤ 8 m/s, design with spring return actuator ≤ 12 m/s

Order code

FK2-EU – W / DE / 400 × 125 × 500 / ES / A0 / Z43
1 2 3 4 5 6 7

1 Type
FK2-EU Fire damper

2 Construction
No entry required: standard construction
W [2] With fusible link 95 °C (only for warm air ventilation systems)
B[3] With coated fusible link 72 °C
WB[3] With coated fusible link 95 °C (only for warm air ventilation systems)

3 Country of destination
DEGermany
AT Austria
CH Switzerland
NL Netherlands

4 Nominal size [mm]
B × H × L

5 Accessories 1
No entry: none
ES[1]
GM[1]

6 Accessories 2
No entry: none
0A – FR

7 Attachments
Z00 – ZA14

1) Only for FK2-EU with L = 500 mm
2) Not combinable with Z...RM and ZA12
3) Only for attachment Z00 - Z03

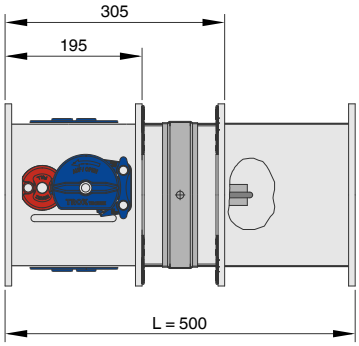
Order example: FK2-EU-W/DE/600x200x500/ES/A0/Z43

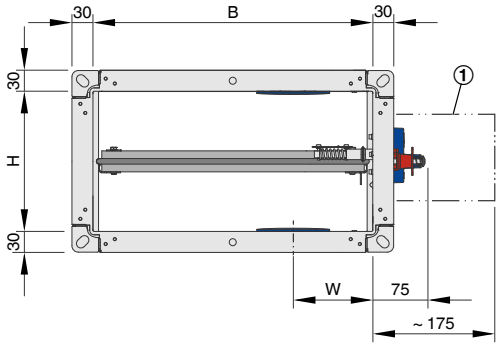
Type	FK2-EU
Construction variant	Casing (galvanised)
Release temperature	95 °C
Country of destination	Germany
Nominal size	600 x 200 x 500 mm
Accessories 1	Installation kit ES
Accessories 2	Cover grille on operating side
Attachment	Spring return actuator 230 V AC

Note:
For further information relevant to design, in particular information on installation situations, please refer to the operating and installation manual.

Dimensions

FK2-EU with fusible link





① Keep clear to provide access to the release mechanism W 115 mm

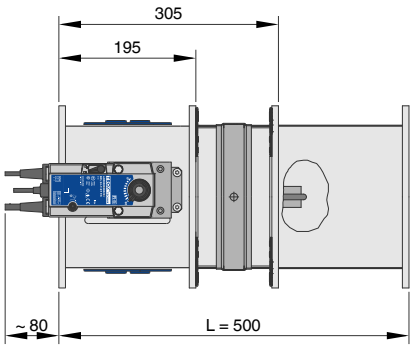
Weight [kg] for casing length L = 305 [mm]

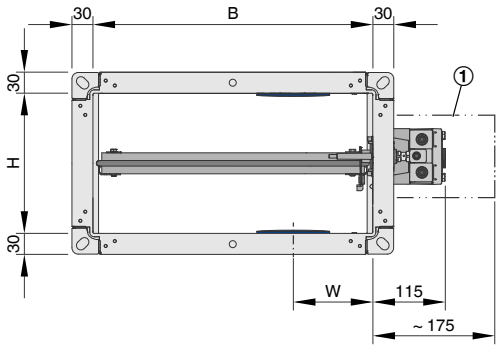
H [mm]	200	250	300	350	400	450	500	550	600	650	700	750	800
100	4	4	5	5	6	6	7	7	8	8	9	9	10
125	4	5	5	6	6	7	7	8	8	9	9	10	10
150	4	5	5	6	7	7	8	8	9	9	10	10	11
160	4	5	6	6	7	7	8	8	9	10	10	11	11
200	5	6	6	7	7	8	9	9	10	10	11	12	12

Weight [kg] for casing length L = 500 [mm]

H [mm]	200	250	300	350	400	450	500	550	600	650	700	750	800
100	5	6	6	7	8	9	9	10	11	11	12	13	13
125	5	6	7	8	8	9	10	11	11	12	13	13	14
150	6	7	7	8	9	10	10	11	12	13	13	14	15
160	6	7	8	8	9	10	11	11	12	13	14	14	15
200	7	7	8	9	10	11	12	12	13	14	15	16	16

FK2-EU with spring return actuator (FK2-EU/.../Z4*)





① Keep clear to provide access to the release mechanism W 115 mm

Weight [kg] for casing length L = 305 [mm]

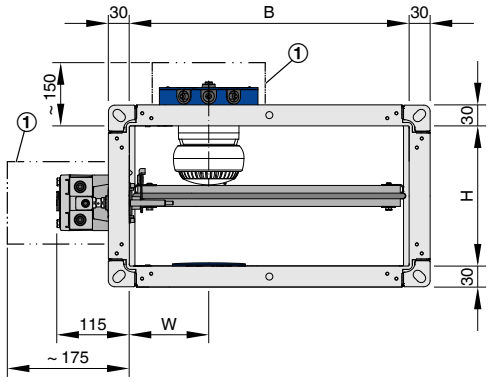
H [mm]	200	250	300	350	400	450	500	550	600	650	700	750	800
100	5	5	6	6	7	7	8	8	9	9	10	10	11

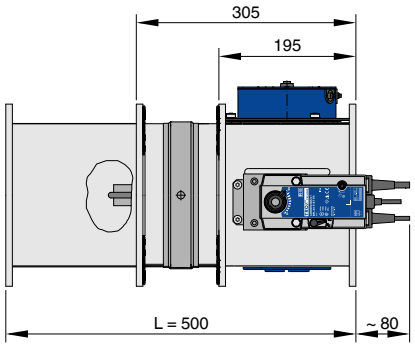
H [mm]	200	250	300	350	400	450	500	550	600	650	700	750	800
125	5	6	6	7	7	8	8	9	9	10	10	11	11
150	5	6	6	7	8	8	9	9	10	10	11	11	12
160	6	6	7	7	8	8	9	10	10	11	11	12	12
200	6	7	7	8	8	9	10	10	11	11	12	13	13

Weight [kg] for casing length L = 500 [mm]

H [mm]	200	250	300	350	400	450	500	550	600	650	700	750	800
100	6	7	7	8	9	10	10	11	12	12	13	14	14
125	7	7	8	9	9	10	11	12	12	13	14	15	15
150	7	8	8	9	10	11	11	12	13	14	14	15	16
160	7	8	9	9	10	11	12	12	13	14	15	16	16
200	8	8	9	10	11	12	13	13	14	15	16	17	17

FK2-EU with spring return actuator and duct smoke detector
(FK2-EU/.../Z4*RM)





① Keep clear to provide access to the release mechanism
W 115 mm

Weight [kg] for casing length L = 305 [mm]

H [mm]	B [mm]												
	200	250	300	350	400	450	500	550	600	650	700	750	800
100	6	6	6	7	8	8	8	9	10	10	10	11	12
125	6	6	7	7	8	8	9	10	10	11	11	12	12
150	6	7	7	8	8	9	9	10	11	11	12	12	13
160	6	7	7	8	9	9	10	10	11	11	12	12	13
200	7	7	8	9	9	10	10	11	12	12	13	13	14

Weight [kg] for casing length L = 500 [mm]

H [mm]	B [mm]												
	200	250	300	350	400	450	500	550	600	650	700	750	800
100	7	8	8	9	10	10	11	12	12	13	14	14	15
125	7	8	9	9	10	11	12	12	13	14	14	15	16
150	8	8	9	10	11	11	12	13	14	14	15	16	17
160	8	9	9	10	11	12	12	13	14	15	15	16	17
200	9	9	10	11	12	13	13	14	15	16	17	17	18

Accessories 1 - Installation kit GM

Installation kit – GM
Application

- Installation into solid non-load-bearing internal walls with flexible ceiling joint requires an installation kit
- With the installation kit the fire damper may be installed just below the movement joint; the joint is not interrupted by the installation kit
- The mineral wool used for the flexible joint can also be used above the fire damper; s ≤ 30 mm after the ceiling has subsided

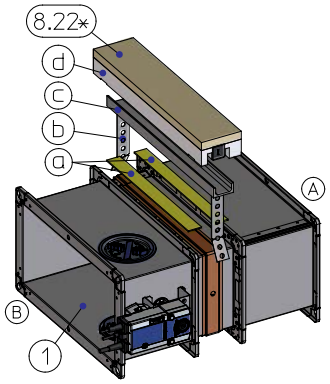
- The fire damper is mortared in together with the installation kit on three sides
- Fire dampers with installation kit only with casing length L = 500 mm
- Installation only with horizontal damper blade

The fire damper and the installation kit must be installed and secured according to the operating and installation manual

Note
For further information relevant to design, in particular information on installation situations, please refer to the operating and installation manual.

L [mm]	Order code
500	GM

Installation kit GM



Installation kit supply package GM

a Filler strips made of mineral wool
b Fixing tabs made of galvanised steel
c U-channels made of galvanised steel
d Cover section made of special insulation material with intumescent seal
8.22* Calcium silicate board, or alternatively mineral wool ≥ 1000 °C, ≥ 140 kg/m³ (if required, to be provided by the customer)
A Installation side
B Operating side

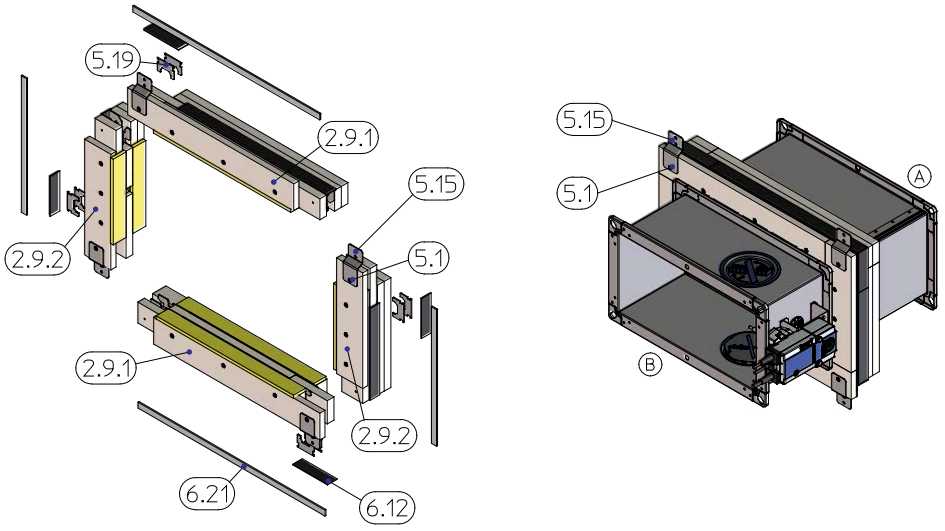
Accessories 1 - Installation kit ES

Installation kit – ES
Application
Universally applicable installation kit for dry mortarless installation

- in lightweight partition walls or compartment walls with metal support structure and cladding on both ends
- in shaft walls with metal support structure and cladding on one end
- in timber stud walls / half-timbered constructions and solid wood walls
- remote from solid walls and ceiling slabs or remote from lightweight partition walls with cladding on both ends and a metal support structure

L [mm]	Order code
500	P1

Installation kit ES



Installation kit supply package ES:
2.9 Installation kit ES
2.9.1 B part (2 ×)
2.9.2 H part (2 ×)
5.1 Dry wall screw 5 × 50 mm (4 – 8 pieces, dependent on the damper size)
5.15 Bracket (4 – 8 pieces, dependent on the damper size)
5.19 Connecting clip (8 pieces)
6.12 Intumescent seal (4 pieces)
6.21 Kerafix 2000 sealing tape
A Installation side
B Operating side

Accessories 2 - Cover grille

Cover grilles
Application
- If only one end is to be ducted on site, the other end must have a cover grille
- For certain heights, extension pieces may be required
- Fire damper, cover grille and, if applicable, extension piece are factory assembled to form a unit
- The free area of the cover grille is approx. 70%
- The fixing holes in the cover grille and extension piece match those in the fire damper flanges
- Cover grilles are also available separately

Materials and surfaces
- Cover grille made of galvanised sheet steel
- Mesh aperture 10 mm × 10 mm, wire width 2 mm

Operating side	Installation side	Order code
Cover grille	-	A0
-	Cover grille	0A
Cover grille	Flexible connector	AS
Flexible connector	Cover grille	SA
Cover grille	Circular spigot	AR
Circular spigot	Cover grille	RA
Cover grille	Profile connecting frame	AF
Profile connecting frame	Cover grille	FA

Cover grilles

① Cover grille, mesh aperture 10 × 10 mm, wire width 2 mm

Accessories 2 - Flexible connectors

Flexible connectors

Application

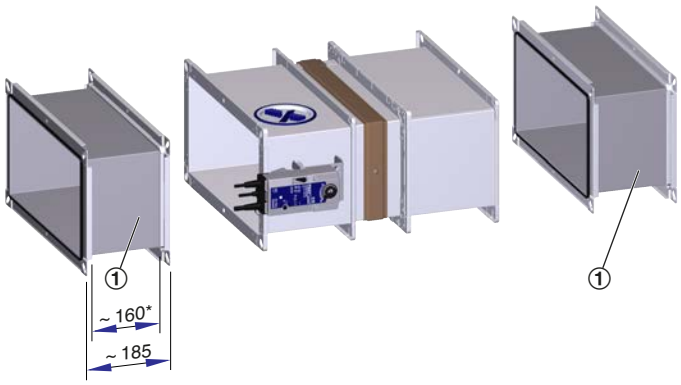
- Ducting must be installed in such a manner that it does not impose any significant loads on the fire damper in the event of a fire. Be sure to comply with the relevant national guidelines and regulations.
- As ducts may expand and walls may become deformed in the event of a fire, we recommend using flexible connectors for installation in lightweight partition walls, shaft walls and lightweight compartment walls, as well as fire batt installation.
- Flexible connectors should be installed in such a way that both ends can absorb both tension and compression
- Flexible ducts can be used as an alternative
- For certain heights, an extension piece may be required; see table "Arrangement of extension pieces".
- The fixing holes in the flexible connectors and extension pieces match those in the fire damper flanges
- Flexible connectors are also available separately

Materials and surfaces

- Flexible connectors made of galvanised steel and fibre-reinforced plastic
- Fire resistance properties according to 4102; B2

Operating side	Installation side	Order code
Flexible connector	-	S0
-	Flexible connector	0S
Flexible connector	Flexible connector	SS
Flexible connector	Cover grille	SA
Cover grille	Flexible connector	AS
Flexible connector	Circular spigot	SR
Circular spigot	Flexible connector	RS
Flexible connector	Profile connecting frame	SF
Profile connecting frame	Flexible connector	FS

Flexible connector



① Flexible connector

Accessories 2 - Profile connecting frame

Profile connecting frame

Application

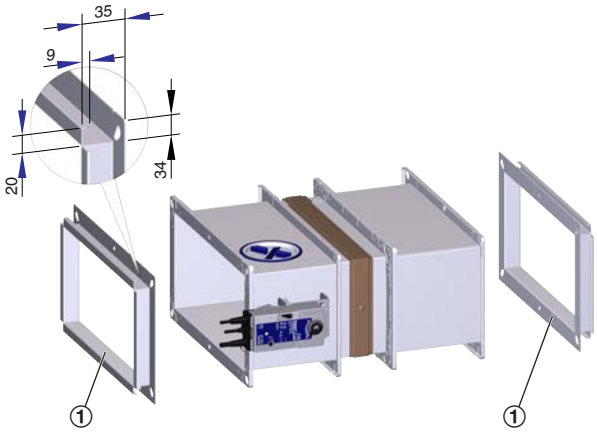
- Profile connecting frames are required for the connection of ducts using a sluice gate valve.
- Lower leakage rates can be achieved when profile connecting frames are installed than when using a flange screw connection.
- Profile connecting frames have a sliding rebate. In addition to the 4-screw corner joints, the duct and profile connecting frame are connected by means of a sluice gate valve.
- The fixing holes in the profile connecting frame match those in the fire damper flanges.
- Profile connecting frames are also available separately
-

Materials and surfaces

- Profile connecting frame made of galvanised steel

Operating side	Installation side	Order code
Profile connecting frame	-	F0
-	Profile connecting frame	0F
Profile connecting frame	Profile connecting frame	FF
Profile connecting frame	Flexible connector	FS
Flexible connector	Profile connecting frame	SF
Profile connecting frame	Cover grille	FA
Cover grille	Profile connecting frame	AF
Profile connecting frame	Circular spigot	FR
Circular spigot	Profile connecting frame	RF

Profile connecting frame



① Profile connecting frame

Accessories 2 - Circular spigot

Circular spigot
Application
- Circular spigots for rectangular FK2-EU fire dampers facilitate the direct connection of circular ducts.
- For certain heights, extension pieces may be required; see table "Arrangement of extension pieces".
- Circular spigots and, if applicable, extension pieces are factory assembled to form a unit.
- The fixing holes in the round spigots match those in the fire damper flanges.
- Round spigots are also available separately.

Materials and surfaces
- Circular spigot made of galvanised sheet steel

Operating side	Installation side	Order code
Circular spigot	-	R0
-	Circular spigot	0R
Circular spigot	Circular spigot	RR
Circular spigot	Flexible connector	RS
Flexible connector	Circular spigot	SR
Circular spigot	Cover grille	RA
Cover grille	Circular spigot	AR
Circular spigot	Profile connecting frame	RF
Profile connecting frame	Circular spigot	FR

Dimensions [mm]

Nominal size	B×H	øD
200	200 x 200	198

Accessories 2 - Extension piece

Extension piece
Application
- When there are cover grilles, circular spigots, flexible connectors, moulds, etc., you may have to use an extension piece for certain heights.

- Fire dampers with flexible connectors, cover grilles and round spigots, including extension parts, are supplied (depending on height).
- Extension pieces are also available separately

Materials and surfaces

- Extension piece in galvanised sheet steel, 195 mm in length

Extension piece

① Extension piece

Attachment - Limit switch

FK2-EU (fusible link construction) with limit switch

Application

- Limit switches with volt-free contacts can indicate the damper blade position
- Up to the maximum switch rating, relays or indicator lights for fire alarm systems can be used
- One limit switch each is required for damper blade positions OPEN and CLOSED
- Fire dampers with a fusible link can be supplied or retrofitted with one or two limit switches (a conversion kit is required for a retrofit).

For the technical data and wiring examples, see the installation and operating manual for FK2-EU.

Attachment	Order code
Limit switch for damper blade position CLOSED	Z01
Limit switch for damper blade position OPEN	Z02
Limit switches for damper blade positions CLOSED and OPEN	Z03

Attachment - Spring return actuator

FK2-EU with spring return actuator

Application

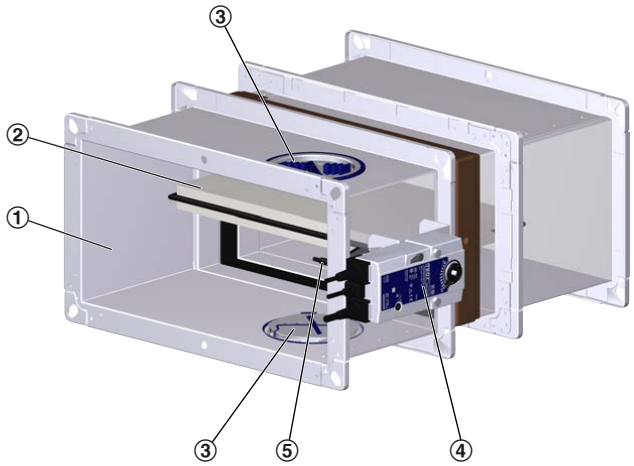
- A spring return actuator allows for the remote control of the fire damper and/or release by a suitable duct smoke detector
- If the supply voltage fails, or with thermoelectric release, the damper closes (power off to close)
- Motorised fire dampers can be used to shut off ducts.
- Two integral limit switches with volt-free contacts can indicate the damper blade position (OPEN and CLOSED)
- The connecting cables of the 24 V spring return actuator are fitted with plugs. This ensures quick and easy connection to the TROX AS-i bus system. Without automation components, the 24 V connection is established using a safety transformer provided by the customer.
- A conversion kit is available for retrofitting an actuator to a fire damper with fusible link.

For the technical data and wiring examples, see the installation and operating manual for FK2-EU.

Attachment	Order code

Spring return actuator 230 V (Belimo)	Z43
Spring return actuator 24 V (Belimo)	Z45
Spring return actuator 24 V (Belimo) including power supply unit BKN230-24-C-MP TR	Z60
Spring return actuator 24 V (Belimo) including power supply unit BKN230-24-C-MP TR and control module BKS24-1 TR	Z61
Spring return actuator 230 V (Siemens)	Z43S
Spring return actuator 24 V (Siemens)	Z45S

Construction with spring return actuator



① Casing
② Damper blade
③ Inspection access
④ Spring return actuator
⑤ Thermoelectric release mechanism with temperature sensor

Attachment - Spring return actuator and RM-O-3-D

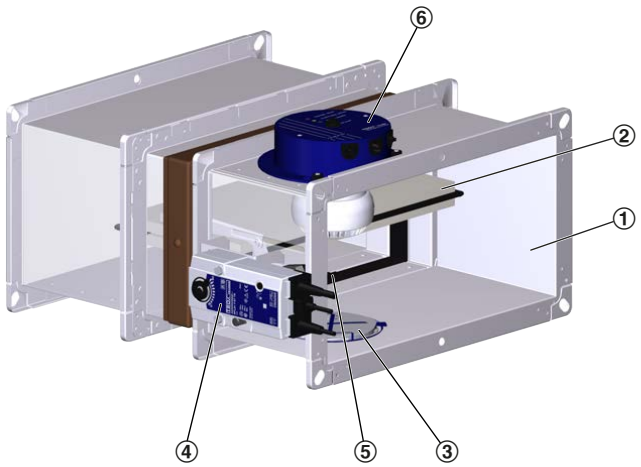
Spring return actuator and duct smoke detector RM-O-3-D
Application

- An open/close actuator allows for remote control of the fire damper and/or release by a suitable duct smoke detector
- If the supply voltage fails, or with thermoelectric release or smoke detection the damper closes (power off to close)
- Motorised fire dampers can be used to shut off ducts.
- Two integral limit switches with volt-free contacts can indicate the damper blade position (OPEN and CLOSED)
- The type RM-O-3-D duct smoke detector must be installed in the lower inspection access and arranged at the top when assembling the fire damper.

For the technical data and wiring examples, see the installation and operating manual for FK2-EU and/or the operating and installation manual for duct smoke detector type RM-O-3-D.

Attachment	Order code
With spring return actuator 230 V (Belimo) and integrated duct smoke detector type RM-O-3-D	Z43RM
With spring return actuator 24 V (Belimo) and integrated duct smoke detector type RM-O-3-D	Z45RM
With spring return actuator 230 V (Siemens) and integrated duct smoke detector type RM-O-3-D	Z43RMS
With spring return actuator 24 V (Siemens) and integrated duct smoke detector type RM-O-3-D	Z45RMS

Construction with spring return actuator and duct smoke detector



① Casing
② Damper blade
③ Inspection access
④ Spring return actuator
⑤ Thermoelectric release mechanism with temperature sensor
⑥ Duct smoke detector RM-O-3-D

Attachment - Spring return actuator and TROXNETCOM

Spring return actuator and TROXNETCOM

Application

- Fire dampers with a 24 V spring return actuator (Belimo) and the modules described here as attachments form a functional unit ready for automatic operation.
- The components are factory assembled and wired
- It enables the integration of various components (modules) into a network regardless of the manufacturer
- The modules control actuators and/or receive signals from sensors.

AS-i

- AS interface is a global standard bus system according to EN 50295 and IEC 62026-2.

- The module transmits the control signals between the spring return actuator and the controller and power unit
- This allows for controlling the actuator and monitoring the actuator running time during functional testing
- The supply voltage (24 V DC) for the module and the actuator is supplied via the 2-wire AS-i flat cable.
- Function display: operation, 4 inputs, 2 outputs

MODBUS RTU / BACnet MS/TP (RS485)

- MODBUS RTU and BACnet MS/TP are protocols for RS485 communication systems.
- Data transmission is based on uniform protocols.
- Only the bus line and the supply voltage remain to be connected by others
- MB-BAC-WA1/2: To provide the control input signal for up to 1 2 fire dampers
- WA1/B3-AD: Connection box for connecting the second fire damper with 24 V DC supply voltage to MB-BAC-WA1/2
- WA1/B3-AD230: Connection box with integral 230/24 V power supply unit for the connection of a second actuator-driven 24 V fire damper to MB-BAC-WA1/2

LON

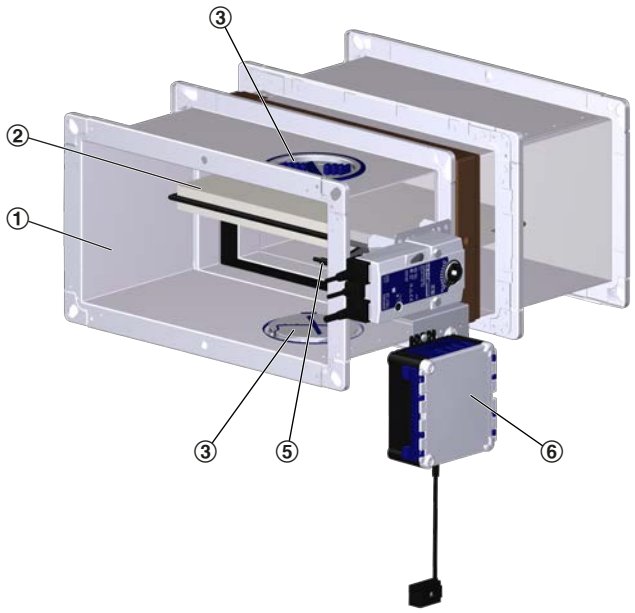
- LON indicates a standard local operating network system with manufacturer-independent communications.
- Data transmission is based on a uniform protocol
- LonMark defines standards to ensure product compatibility.
- Only the bus line and the supply voltage remain to be connected by others
- LON-WA1/B3: To provide the control input signal for up to 12 fire dampers
- WA1/B3-AD: Connection box for connecting the second fire damper with 24 V DC supply voltage to LON-WA1/B3
- WA1/B3-AD230: Connection box with integral 230/24 V power supply unit for the connection of a second actuator-driven 24 V fire damper to LON-WA1/B3

TNC-EASYCONTROL

- TNC-LINKBOX is a wiring aid for connecting a fire damper and the configurable parallel circuit for the TNC-EASYCONTROL decentralised operating and monitoring system.

Attachment	Order code
Spring return actuator 24 V and AS-EM	ZA07
Spring return actuator 24 V, RM-O-3-D and AS-EM	ZA12
Spring return actuator 24 V and MB-BAC-WA1/2	ZB01
Spring return actuator 24 V and LON-WA1/B3	ZL09
Spring return actuator 24 V and WA1/B3-AD	ZL10
Spring return actuator 24 V and WA1/B3-AD230	ZL11
Spring return actuator 24 V and TNC-Linkbox	ZA14
Spring return actuator 24 V and MB-BAC-WA1/2	ZB01

FK2-EU with spring return actuator and TROXNETCOM



① Casing
② Damper blade
③ Inspection access
④ Spring return actuator
⑤ Thermoelectric release mechanism with temperature sensor
⑥ AS-EM

Attachment - Duct smoke detectors

Duct smoke detectors

General

- To prevent smoke from spreading in buildings, it is extremely important that the smoke is detected at an early stage.
- Duct smoke detectors that operate on the principle of light scattering detect the smoke regardless of its temperature so that the fire dampers can be closed before the release temperature of 72 °C is reached.
- If the air contains suspended particles, as is the case with smoke, beams of light are deflected off these. A sensor (photodiode), which does not receive light in clear air, is illuminated by the scattered light.
- The fire damper or smoke protection damper blade is released when the brightness of the scattered light exceeds a certain threshold

Note

For more details, please refer to
the technical leaflets for RM-O-3-D and RM-O-VS-D.

Application

RM-O-3-D:

- Duct smoke detector for fire dampers and smoke protection dampers
- General building inspectorate licence Z-78.6-125
- For airflow velocities from 1 – 20 m/s
- Independent of the airflow direction
- Supply voltage 230 V AC, 50/60 Hz or 24 V DC with voltage monitoring module (VWM) (upon request)
- Volt-free signal and alarm relays
- Integral signal lamps
- Contamination level indicator
- Automatic adjustment of alarm threshold
- Long service life
- Temperature range 0 – 60 °C

RM-O-VS-D:

- Duct smoke detector for fire dampers and smoke protection dampers
- General building inspectorate licence Z-78.6-67
- For airflow velocities from 120 m/s
- Independent of the airflow direction
- Airflow monitoring with warning for lower limit 2 m/s
- Supply voltage 230 V AC, 50/60 Hz
- Volt-free signal and alarm relays
- Integral signal lamps
- Contamination level indicator
- Automatic adjustment of alarm threshold
- Long service life
- Temperature range 0 – 60 °C

Attachments	Order code
Duct smoke detector	RM-O-3-D
	RM-O-VS-D

Duct smoke detectors are attachments and to be ordered separately.
RM-O-3-D can also be supplied assembled and wired for standard application fire dampers.

RM-O-3-D

RM-O-VS-D

Explanation

L
[mm]
Length of the fire damper

q_v
[m³/h]; [l/s]
Volume flow rate

L_{WA}
[dB(A)]
A-weighted sound power level of air-regenerated noise for the fire damper

A
[m²]
Free area

ζ
Resistance coefficient (fully ducted)

B
[mm]
Width of the fire damper

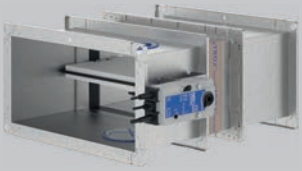
H
[mm]
Height of the fire damper

v
[m/s]
Airflow velocity based on the upstream cross section (B × H or diameter)

Δpst
[Pa]
Static differential pressure

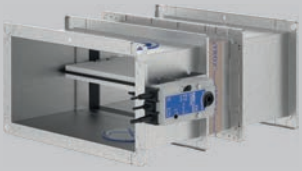
Declaration of performance

DoP/FK2-EU/DE/001



TROX® TECHNIK
The art of handling air

1	**Product** Unique identification code of the product type	**FK2-EU**
2	**Intended use**	Used in conjunction with walls and ceilings to maintain the integrity of fire compartments in HVAC systems.
3	**Manufacturer**	TROX GmbH Heinrich-Trox-Platz 47504 Neukirchen-Vluyn, Germany Phone +49 (0)2845 2020 Fax +49 (0)2845 202265 E-mail trox@trox.de Internet www.troxtechnik.com TROX HESCO Schweiz AG Walderstrasse 125 8630 Rüti ZH Switzerland Phone +41 (0)55250 7111 Fax +41 (0)55250 7310 E-mail info@troxhesco.ch Internet www.troxhesco.ch
5	**System of assessment and verification of constancy of performance**	System 1
6	**Harmonised standard** **Notified body/ies**	EN 15650:2010 The notified body 1322 - IBS carried out the initial inspection of the manufacturing plants and of the factory production control as well as the continuous surveillance, assessment and evaluation of factory production control according to System 1 of the Construction Products Regulation and issued the certificate of constancy of performance: 1322-CPR-74135/01 1322-CPR-61977/01

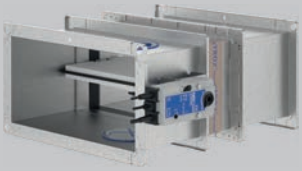


7 Declared performances

200 x 100 to 800 x 200 mm				
Supporting construction	**Construction details**	**Installation location**	**Installation type**	**Class of performance (EI TT)**
 solid wall	d ≥ 100 mm, Distance to load-bearing structural elements ≥ 40 mm, Distance between casings ≥ 60 mm	in the wall	Mortar-based installation	EI 120 (v_e i↔o) S
	d ≥ 100 mm, flexible ceiling joint with installation kit GM, Distance to load-bearing structural elements ≥ 40 mm, Distance between casings ≥ 60 mm	in the wall	Mortar-based installation	EI 90 (v_e i↔o) S
	d ≥ 100 mm, Distance to load-bearing structural elements ≥ 40 mm, Distance between casings ≥ 60 mm	in the wall	Mortar-based installation (partially with mineral wool)	EI 90 (v_e i↔o) S
	d ≥ 100 mm, Installation kit ES	remote from the wall	Dry mortarless installation	EI 90 (v_e i↔o) S
	d ≥ 100 mm, Distance to load-bearing structural elements ≥ 40 mm	in the wall	Fire batt	EI 120 (v_e i↔o) S
 Lightweight partition wall	Metal support structure (steel support structure also), gypsum bonded or cement bonded panel materials or fibre-reinforced gypsum boards, d ≥ 94 mm, with or without mineral wool, Distance to load-bearing structural elements ≥ 40 mm, Distance between casings ≥ 60 mm	in the wall	Mortar-based installation	EI 120 (v_e i↔o) S
	Metal support structure (steel support structure also), gypsum bonded or cement bonded panel materials or fibre-reinforced gypsum boards, d ≥ 94 mm, with or without mineral wool, Distance to load-bearing structural elements ≥ 40 mm	in the wall	Fire batt	EI 120 (v_e i↔o) S
	Metal support structure (steel support structure also), gypsum bonded or cement bonded panel materials or fibre-reinforced gypsum boards, d ≥ 80 mm, with or without mineral wool, Distance to load-bearing structural elements ≥ 40 mm	in the wall	Fire batt	EI 60 (v_e i↔o) S
	Metal support structure (steel support structure also), gypsum bonded or cement bonded panel materials or fibre-reinforced gypsum boards, d ≥ 75 mm, with or without mineral wool, Distance to load-bearing structural elements ≥ 40 mm	in the wall	Fire batt	EI 30 (v_e i↔o) S
	Metal support structure (steel support structure also), gypsum bonded or cement bonded panel materials or fibre-reinforced gypsum boards, d ≥ 94 mm, with or without mineral wool, Installation kit ES, Distance to load-bearing structural elements ≥ 65 mm	in the wall	Dry mortarless installation	EI 90 (v_e i↔o) S
	Metal support structure (steel support structure also), gypsum bonded or cement bonded panel materials or fibre-reinforced gypsum boards, d ≥ 94 mm, with or without mineral wool, Installation kit ES, wall penetration	remote from the wall	Dry mortarless installation	EI 90 (v_e i↔o) S
	Metal support structure with sheet steel, used as a compartment wall, safety partition wall or to provide radiation protection, gypsum bonded or cement bonded panel materials or fibre-reinforced gypsum boards, d ≥ 100 mm, with or without mineral wool, Distance to load-bearing structural elements ≥ 40 mm, Distance between casings ≥ 60 mm	in the wall	Mortar-based installation	EI 120 (v_e i↔o) S

Declaration of performance

DoP/FK2-EU/DE/001

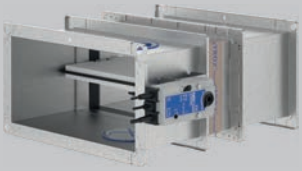


TROX® TECHNIK
The art of handling air

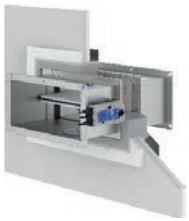
200 x 100 to 800 x 200 mm				
Supporting construction	**Construction details**	**Installation location**	**Installation type**	**Class of performance (EI TT)**
 Lightweight partition wall	Metal support structure with sheet steel, used as a compartment wall, safety partition wall or to provide radiation protection, gypsum bonded or cement bonded panel materials or fibre-reinforced gypsum boards, d ≥ 100 mm, with or without mineral wool, Installation kit ES, Distance to load-bearing structural elements ≥ 65 mm	in the wall	Dry mortarless installation	EI 90 (v_e i↔o) S
	Metal support structure with sheet steel, used as a compartment wall, safety partition wall or to provide radiation protection, gypsum bonded or cement bonded panel materials or fibre-reinforced gypsum boards, d ≥ 100 mm, with or without mineral wool, Distance to load-bearing structural elements ≥ 40 mm	in the wall	Fire batt	EI 120 (v_e i↔o) S
	Timber studs, gypsum bonded or cement bonded panel materials or fibre-reinforced gypsum boards, d ≥ 130 mm, with or without mineral wool, Distance to load-bearing structural elements ≥ 40 mm, Distance between casings ≥ 60 mm	in the wall	Mortar-based installation	EI 120 (v_e i↔o) S
	Timber studs, gypsum bonded or cement bonded panel materials or fibre-reinforced gypsum boards, d ≥ 130 mm, with or without mineral wool, Installation kit ES, Distance to load-bearing structural elements ≥ 65 mm	in the wall	Dry mortarless installation	EI 90 (v_e i↔o) S
	Timber studs, gypsum bonded or cement bonded panel materials or fibre-reinforced gypsum boards, d ≥ 130 mm, with or without mineral wool, Distance to load-bearing structural elements ≥ 40 mm	in the wall	Fire batt	EI 120 (v_e i↔o) S
	Timber studs (also timber panel constructions and timber frames), gypsum bonded or cement bonded panel materials or fibre-reinforced gypsum boards, d ≥ 105 mm, with or without mineral wool, Distance to load-bearing structural elements ≥ 40 mm, Distance between casings ≥ 60 mm	in the wall	Mortar-based installation	EI 30 (v_e i↔o) S
	Timber studs (also timber panel constructions and timber frames), gypsum bonded or cement bonded panel materials or fibre-reinforced gypsum boards, d ≥ 105 mm, with or without mineral wool, Distance to load-bearing structural elements ≥ 40 mm	in the wall	Fire batt	EI 30 (v_e i↔o) S
	Timber studs (also timber panel constructions and timber frames), gypsum bonded or cement bonded panel materials or fibre-reinforced gypsum boards, d ≥ 105 mm, with or without mineral wool, Installation kit ES, Distance to load-bearing structural elements ≥ 65 mm	in the wall	Dry mortarless installation	EI 30 (v_e i↔o) S
	Half-timbered wall, gypsum bonded or cement bonded panel materials or fibre-reinforced gypsum boards, d ≥ 140 mm, with or without mineral wool, Distance to load-bearing structural elements ≥ 40 mm, Distance between casings ≥ 60 mm	in the wall	Mortar-based installation	EI 90 (v_e i↔o) S
	Half-timbered wall, gypsum bonded or cement bonded panel materials or fibre-reinforced gypsum boards, d ≥ 140 mm, with or without mineral wool, Installation kit ES, Distance to load-bearing structural elements ≥ 65 mm	in the wall	Dry mortarless installation	EI 90 (v_e i↔o) S

Declaration of performance

DoP/FK2-EU/DE/001

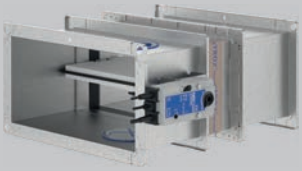


TROX® TECHNIK
The art of handling air

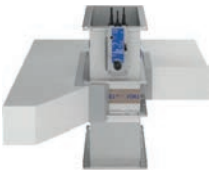
200 x 100 to 800 x 200 mm				
Supporting construction	**Construction details**	**Installation location**	**Installation type**	**Class of performance (EI TT)**
 Lightweight partition wall	Half-timbered wall, gypsum bonded or cement bonded panel materials or fibre-reinforced gypsum boards, d ≥ 140 mm, with or without mineral wool, Distance to load-bearing structural elements ≥ 40 mm	in the wall	Fire batt	EI 90 (v_e i↔o) S
	Solid wood wall / CLT wall, d ≥ 95 mm, Distance to load-bearing structural elements ≥ 40 mm, Distance between casings ≥ 60 mm	in the wall	Mortar-based installation	EI 90 (v_e i↔o) S
	Solid wood wall / CLT wall, d ≥ 95 mm, Installation kit ES, Distance to load-bearing structural elements ≥ 65 mm	in the wall	Dry mortarless installation	EI 90 (v_e i↔o) S
	Solid wood wall / CLT wall, d ≥ 95 mm, Distance to load-bearing structural elements ≥ 40 mm	in the wall	Fire batt	EI 90 (v_e i↔o) S
 Shaft wall	Metal support structure (also steel support structure and facings), cladding on one side, d ≥ 90 mm, ≥ 2 x 20 mm, gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire-rated calcium silicate boards, Distance to load-bearing structural elements ≥ 40 mm, Distance between casings ≥ 60 mm	in the wall	Mortar-based installation	EI 90 (v_e i↔o) S
	Metal support structure (construction with cladding on the inside), cladding on one side, d ≥ 80 mm, gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire-rated calcium silicate boards, Distance to load-bearing structural elements ≥ 40 mm	in the wall	Mortar-based installation	EI 90 (v_e i↔o) S
	Metal support structure (also steel support structure and facings), cladding on one side, d ≥ 75 mm, ≥ 2 x 12.5 mm with reinforcing board to achieve d ≥ 90 mm, gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire-rated calcium silicate boards, Distance to load-bearing structural elements ≥ 40 mm	in the wall	Mortar-based installation	EI 30 (v_e i↔o) S
	Metal support structure (also steel support structure and facings), cladding on one side, d ≥ 90 mm, 2 x 20 mm, gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire-rated calcium silicate boards, Installation kit ES, Distance to load-bearing structural elements ≥ 65 mm	in the wall	Dry mortarless installation	EI 90 (v_e i↔o) S
	Metal support structure (construction with cladding on the inside), cladding on one side, d ≥ 80 mm, gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire-rated calcium silicate boards, Installation kit ES, Distance to load-bearing structural elements ≥ 65 mm	in the wall	Dry mortarless installation	EI 90 (v_e i↔o) S
	Metal support structure (also steel support structure and facings), cladding on one side, d ≥ 75 mm, 2 x 12.5 mm with reinforcing board to achieve d ≥ 90 mm, gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire-rated calcium silicate boards, Installation kit ES, Distance to load-bearing structural elements ≥ 65 mm	in the wall	Dry mortarless installation	EI 30 (v_e i↔o) S

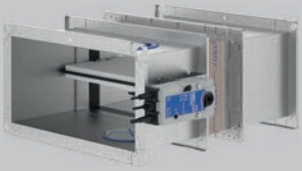
Declaration of performance

DoP/FK2-EU/DE/001



TROX® TECHNIK
The art of handling air

200 x 100 to 800 x 200 mm				
Supporting construction	**Construction details**	**Installation location**	**Installation type**	**Class of performance (EI TT)**
 Solid ceiling slab	d ≥ 100 mm, Distance to load-bearing structural elements ≥ 40 mm, Distance between casings ≥ 60 mm	in the ceiling	Mortar-based installation	EI 120 (h_o i↔o) S
	d ≥ 125 mm, below the ceiling, with horizontal duct, Installation kit ES	remote from the ceiling	Dry mortarless installation	EI 90 (h_o i↔o) S
	d ≥ 125 mm, combined with wooden beam ceilings (glued laminated timber also), Distance to load-bearing structural elements ≥ 40 mm, Distance between casings ≥ 60 mm	in the ceiling	Mortar-based installation	EI 90 (h_o i↔o) S
	d ≥ 125 mm, combined with suspended ceiling systems (Cadolto system), Distance to load-bearing structural elements ≥ 40 mm, Distance between casings ≥ 60 mm	in the ceiling	Mortar-based installation	EI 90 (h_o i↔o) S
	d ≥ 125 mm, combined with solid wood ceilings, Distance to load-bearing structural elements ≥ 40 mm, Distance between casings ≥ 60 mm	in the ceiling	Mortar-based installation	EI 90 (h_o i↔o) S



7 Declared performances

Essential characteristics	Technical specification	Performance
Nominal activation conditions/sensitivity • Sensing element load-bearing capacity • Sensing element response temperature 72 °C, 95 °C	ISO 10294-4:2001	Pass
Response delay/response time • Closure time	EN 1366-2:2015	Pass
Operational reliability • Open and closing cycle, 50 cycles	EN 15650:2010 EN 1366-2:2015	Pass
Durability of response delay • Sensing element response to temperature and load-bearing capacity	ISO 10294-4:2001	Pass
Durability of operational reliability • Testing of the open and closing cycle, 10,000 cycles – B(L)F 230-T(N)-(ST) TR – B(L)F 24-T(N)-(ST) TR – BFN 230-T(N)-(ST) TR – BFN 24-T(N)-(ST) TR – BFL 230-T(N)-(ST) TR – BFL 24-T(N)-(ST) TR – ExMax-15-BF TR – RedMax-15-BF TR – GGA126.1E/T../GGA326.1E/T… – GRA126.1E/T../GRA326.1E/T… – GNA126.1E/T../GNA326.1E/T…	EN 15650:2010	Pass
Protection against corrosion	EN 15650:2010	Pass
Damper blade leakage	EN 1751: 2014	At least class 2
Damper casing leakage	EN 1751: 2014	At least class B

The classification of the fire damper must not be higher than the classification of the wall or ceiling slab it is installed in. In this case the classification of the fire damper is reduced to the certified classification of the wall/ceiling slab.

The performance of the product identified above is in conformity with the set of declared performances. This declaration of performance is issued, in accordance with regulation (EU) no. 305/2011, under the sole responsibility of the manufacturer identified above.

Signed for and on behalf of TROX GmbH:

Neukirchen-Vluyn, 28 October 2019

i.V. Heymann

Jan Heymann • Authorised Representative • CE-marked products