



TESTED TO VDI 6022



WITH TROXNETCOM AS  
AN OPTION



CE COMPLIANT  
ACCORDING TO  
EUROPEAN  
REGULATIONS



FKRS-EU WITH FUSIBLE  
LINK FOR 72 °C OR 95 °C

## FKRS-EU



### COMPACT DIMENSIONS, IDEAL FOR RESTRICTED SPACES

Small circular fire damper for the isolation of duct penetrations between fire compartments, available in ten nominal sizes

- Nominal sizes: 100 – 315 mm
- Low differential pressure and sound power level
- Optional stainless steel casing or powder-coated casing for increased corrosion protection
- Can also be used as an air transfer unit
- 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 detector RM-O-3-D

## Application



### Application

- Fire dampers of Type FKRS-EU, with CE marking and declaration of performance, for the isolation of duct penetrations between fire compartments 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 according to Construction Products Regulation
- Classification to EN 13501-3, up to EI 120 ( $v_e, h_o, i \leftrightarrow o$ ) S
- Building inspectorate licence Z-56.4212-991 for fire resistance properties
- Complies with the requirements of EN 15650
- Tested to EN 1366-2 for fire resistance properties
- Hygiene complies with VDI 6022 part 1 (07/2011), VDI 3803 (10/2002), DIN 1946 part 4 (12/2008), and EN 13779 (09/2007)
- Corrosion protection according to EN 15650 in connection with EN 60068-2-52
- Closed blade air leakage to EN 1751, class 3
- Casing air leakage to EN 1751, class C
- Low differential pressure and sound power level
- Any airflow direction
- Integration into the central BMS with TROXNETCOM

### Classification

- Class of performance to EN 13501-3, up to EI 120 ( $v_e, h_o, i \leftrightarrow o$ ) S

### Nominal sizes

- 100, 125, 150, 160, 180, 200, 224, 250, 280, 315
- L: 400 mm

## Description

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### Variants

- With fusible link
- With spring return actuator
- With cover grilles both ends as air transfer unit with general building inspectorate licence: Z-19.18-2128

### Parts and characteristics

- Dry mortarless installation into solid walls and ceiling slabs, lightweight partition walls, fire walls, and shaft walls using an installation block
- Installation with wall face frame on the face of solid walls
- Release temperature 72 °C or 95 °C (for use in warm air ventilation systems)
- Approved installation orientation from 0° to 360°

### 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

### Accessories

- Circular installation block ER
- Square installation kit TQ
- Wall face frame WA
- Installation kit GL
- Cover grille
- Flexible connectors
- Extension piece

### Useful additions

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

### Construction features

- Rigid circular casing suitable for push fitting into cut circular holes without additional drilling and chiselling being required

- Spigot connections with lip seal on both ends, suitable for ventilation ducts according to EN 1506 and EN 13180 plus non-standard but commercial nominal sizes 180, 224 and 280
- Suitable for the connection of flexible connectors or cover grilles
- The release mechanism is accessible and can be tested from the outside
- One inspection access panel
- Remote control with spring return actuator

### Materials and surfaces

Casing:

- Galvanised sheet steel
- Galvanised sheet steel, powder-coated RAL 7001
- Stainless steel 1.4301

Damper blade:

- Special insulation material
- Special insulation material with coating

Other components:

- Damper blade shaft made of galvanised steel or stainless steel
- Plastic bearings
- Seals of elastomer

The construction variants with stainless steel or powder-coated casing meet even more critical requirements for corrosion protection. Detailed listing on request.

### Standards and guidelines

- Construction Products Regulation
- EN 15650:2010 Ventilation for buildings – Fire dampers
- EN 1366-2:1999 Fire resistance tests for service installations – Fire dampers
- EN 13501-3:2010 Fire classification of construction products and building elements
- EN 1751:1999 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 of the ventilation system.
- For details on maintenance and inspection refer to the installation and operating manual

## TECHNICAL INFORMATION

### Construction with fusible link

#### Functional description

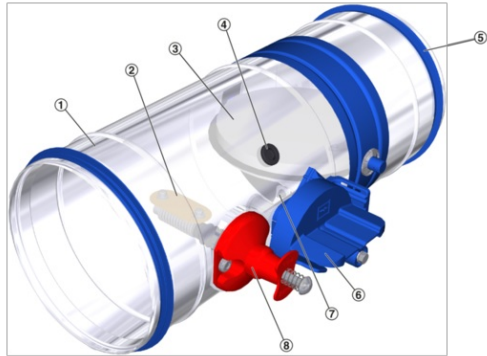
In the event of a fire, fire dampers shut automatically to prevent the propagation of fire and smoke through ductwork to adjacent designated fire compartments. In the event of a fire, the damper is triggered at 72 °C or at 95 °C (use in warm air ventilation systems) by a fusible link. The release mechanism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

### Construction with spring return actuator

#### Functional description

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.

### Schematic illustration of FKRS-EU with fusible link



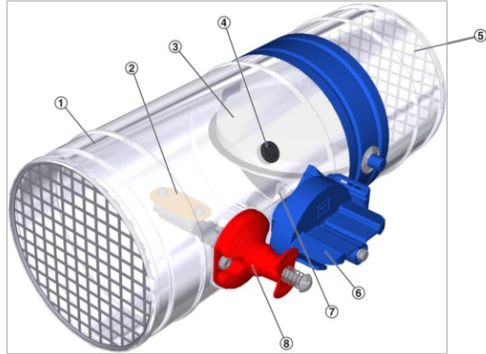
- ① Casing
- ② Fusible link
- ③ Damper blade with seal
- ④ Inspection access (12 mm)
- ⑤ Lip seal
- ⑥ Handle with interlock and damper blade position indicator
- ⑦ Release mechanism
- ⑧

Schematic illustration of FKRS-EU with spring return actuator



- ① Casing
- ② Temperature sensor
- ③ Damper blade with seal
- ④ Inspection access (12 mm)
- ⑤ Lip seal
- ⑥ Spring return actuator
- ⑦ Thermoelectric release mechanism
- ⑧

Schematic illustration of the FKRS-EU as air transfer unit, with fusible link and cover grille



- ① Casing
- ② Fusible link
- ③ Damper blade with seal
- ④ Inspection access (12 mm)
- ⑤ Cover grille
- ⑥ Handle with interlock and damper blade position indicator
- ⑦ Release mechanism

Nominal sizes	100 – 315 mm
Casing length	400 mm
Volume flow rate range	Up to 770 l/s or up to 2770 m³/h
Differential pressure range	Up to 1500 Pa
Operating temperature	At least 0 – 50 °C **
Release temperature	72 °C or 95 °C (for warm air ventilation systems)
Upstream velocity*	≤ 8 m/s with standard construction; ≤ 10 m/s with spring return actuator

\* Data applies to uniform upstream and downstream conditions for the fire damper

\*\* Temperatures may differ for units with attachments

#### Volume flow rate at differential pressure $\Delta p_{st} < 35 \text{ Pa}$

L <sub>WA</sub> [dB(A)]	25	35	45	25	35	45
Nominal size	V					
	l/s			m³/h		
mm						
100	22	35	43	79	126	157
125	40	65	87	144	234	315
150	70	105	150	252	378	540
160	80	125	180	288	450	648
180	105	165	235	388	587	847
200	140	210	295	504	756	1062
224	170	245	345	612	882	1242
250	215	315	445	774	1134	1602
280	280	405	570	1008	1458	2052
315	360	525	735	1296	1890	2646

The Easy Product Finder allows you to size products using your project-specific data.

You will find the Easy Product Finder on our website.

Circular fire dampers for the isolation of duct penetrations between fire compartments.

Tested for fire resistance properties to EN 1366-2, with CE marking and declaration of performance according to the Construction Products Regulation.

Ready-for-operation unit, which includes a fire-resistant damper blade and a release mechanism. For mortar-based installation and dry mortarless installation into solid walls and ceiling slabs, mortar-based installation into non-load-bearing solid walls with flexible ceiling joint, mortar-based and dry mortarless installation into lightweight partition walls with cladding on both sides, lightweight fire walls and lightweight shaft walls, and dry mortarless installation on the face of solid walls. For dry mortarless installation in lightweight partition walls with metal support structure and flexible ceiling joint; for dry mortarless installation in solid walls and ceiling slabs when using a fire batt; in lightweight partition walls with metal support structure and cladding on both sides.

Casing length 400 mm, for the connection to ducts made of non-combustible or combustible materials. Thermal or thermoelectric release at 72 °C or 95 °C (warm air ventilation systems).

Constructions with spring return actuator for opening and closing the fire damper independent of the nominal size and even while the ventilation system is running, e.g. for a functional test.

Simple construction for dry mortarless installation with installation kit: ER, TQ, GL, WA

#### Special characteristics

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- Building inspectorate licence Z-56.4212-991 for fire resistance properties
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- Low differential pressure and sound power level
- Any airflow direction
- Integration into the central BMS with TROXNETCOM

#### Materials and surfaces

Casing:

- Galvanised sheet steel
- Galvanised sheet steel, powder-coated RAL 7001
- Stainless steel 1.4301

Damper blade:

- Special insulation material
- Special insulation material with coating

Other components:

- Damper blade shaft made of galvanised steel or stainless steel
- Plastic bearings
- Seals of elastomer

The construction variants with stainless steel or powder-coated casing meet even more critical requirements for corrosion protection. Detailed listing on request.

#### Technical data

- Nominal sizes: 100 to 315 mm
- Casing length: 400 mm
- Volume flow rate range: up to 770 l/s or 2770 m<sup>3</sup>/h
- Differential pressure: up to 1500 Pa
- Operating temperature: at least 0 – 50 °C \*\*
- Release temperature 72 °C or 95 °C (for use in warm air ventilation systems)
- Upstream velocity: ≤ 8 m/s with standard construction; ≤ 10 m/s \* with spring return actuator

Note:

\* Data applies to uniform upstream and downstream conditions for the fire damper

\*\* Temperatures may differ for units with attachments

**FKRS – EU – 1 / DE / 160 / ER / A0 / Z43**

**1**      **2**      **3**      **4**      **5**      **6**      **7**

**1** Type

FKRS-EU Fire damper

**2** Construction

- No entry: standard construction
- 1 Powder-coated casing
- 2<sup>1</sup> Stainless steel casing
- 7 Coated damper blade
- 1 – 7 Powder-coated casing and coated damper blade
- 2 – 7<sup>1</sup> Stainless steel casing and coated damper blade
- W<sup>2</sup> With fusible link 95 °C (only for use in warm air ventilation systems)

**3** Country of destination

- DE Germany
- Other destination countries upon request

**4** Nominal size [mm]

- 100
- 125
- 150
- 160
- 180
- 200
- 224
- 250
- 280
- 315

**5** Accessories 1

- No entry: none
- ER Circular installation block
- TQ Square installation kit
- WA Wall face frame
- GL Installation kit for flexible ceiling joint

**6** Accessories 2

- No entry: none
- S0 – AS

**7** Attachments

Z00 – ZL08

<sup>1</sup> Only up to DN 200 when a fire batt system is used

<sup>2</sup> W can be combined with all constructions listed under **2**

**FKRS – EU – 1 / DE / 160 / AA / Z01**

**1**      **2**      **3**      **4**      **5**      **6**

**1** Type

FKRS-EU Fire damper

**2** Construction

- No entry: standard construction
- 1 Powder-coated casing
- 7 Coated damper blade
- 1 – 7 Powder-coated casing and coated damper blade

**3** Country of destination

- DE Germany
- Other destination countries upon request

**4** Nominal size [mm]

- 100
- 125
- 150
- 160
- 180
- 200
- 224
- 250
- 280
- 315

**5** Accessories 2

AA

**6** Attachments

Z00 – Z03

### INSTALLATION VIDEO

In the past, openings for the installation of fire dampers in solid walls or ceiling slabs had to be of the exact size; only minimal tolerances were allowed, if at all. This has changed with fire batt solutions as they provide a new level of flexibility. With a fire batt, fire dampers can in fact be installed in openings that are much larger than the fire damper casing – the perimeter gap may be up to 400 mm wide. It is no longer a strict requirement that an installation opening fits the fire damper exactly.

### INSTALLATION VIDEO

Conversion kits are available to fit TROX fire dampers with a spring return actuator.

Type BLF230 (230 V AC)

Type BLF24 (24 V AC/DC)